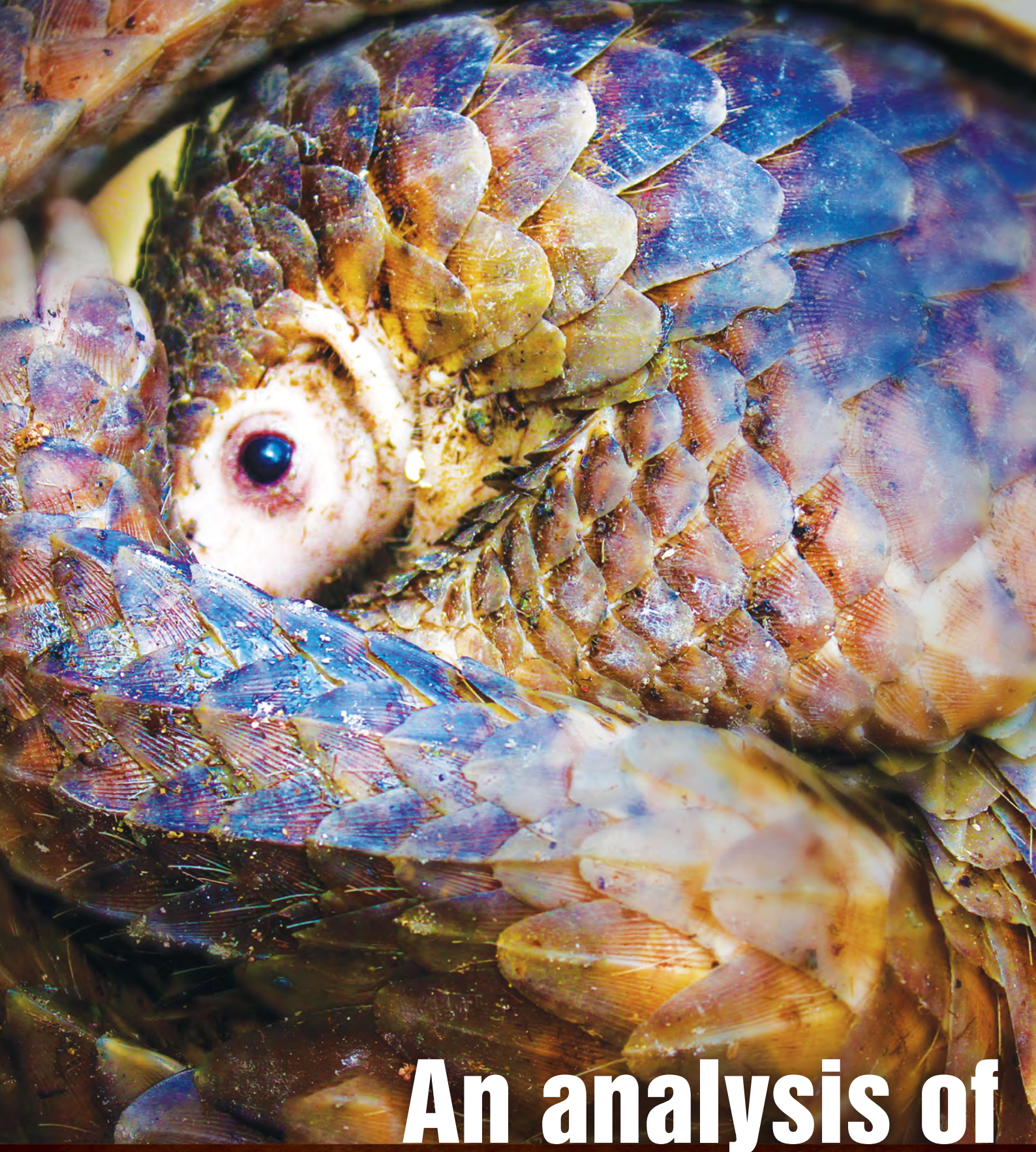

An analysis of WILDLIFE FARMING IN VIETNAM

Based on an investigation of 26 wildlife farms in Vietnam from October 2014 to July 2015

ACTION AGAINST EXTINCTION

Published by Education for Nature - Vietnam (ENV)
Block 17T5, 17th floor, Room 1701, Hoang Dao Thuy Str., Cau Giay Dist., Hanoi, Vietnam

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Citation
Vu, Quyen, Carvill, Ronan, Bui, Ha, Hendrie, Douglas, and Orders, David, 2017. An analysis of wildlife farming in Vietnam, 2017. Education for Nature – Vietnam (ENV).

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EXECUTIVE SUMMARY

Commercial wildlife farming is the practice of raising and breeding wildlife species in captivity with the goal of harvesting animals or animal products for commercial profit. Proponents of commercial wildlife farming believe that supplying the market with domesticated wildlife products will result in a decrease in the hunting of wild animals and aid conservation efforts by acting as a source for supplementing or reintroducing populations. A thorough investigation of wildlife farming in Vietnam is critically needed to allow decision makers to make sound decisions on the commercial farming and trade of endangered species, as well as develop effective legislation that will help reduce threats and prevent endangered species from becoming extinct in the wild.

This study set out to meet this need by surveying registered wildlife farms across Vietnam, from October 2014 to July 2015, using semi-structured face-to-face interviews with farm owners. During the survey, if the farm owner was not available, workers or relatives of the owners were interviewed. Interviews were covert and conducted with the aid of a questionnaire.

In this study, it was found that:

- 26 out of 26 farms surveyed were involved in some degree of illegal wildlife laundering activity. 16 out of 26 interviewees specifically confirmed that their farms were involved in laundering wildlife.
- 17 out of 19 farms were claimed by interviewees to sell transportation papers, and a number of farm owners offered to sell transportation papers to the researchers.
- 10 out of 11 farms were confirmed by interviewees to buy transportation papers from other farms or Forest Protection Department (FPD) officials.
- 18 out of 18 farms were claimed by interviewees to buy animals without transportation papers (i.e., illegal animals).
- 14 out of 14 farms were confirmed by interviewees to sell animals without transportation papers.
- Interviewees in 14 out of 18 farms who were asked stated that FPD officials had received illegal payments from their farms.
- Interviewees in 17 out of 26 farms could not or would not accurately report the number of each species present at their farm. In nine out of 26 farms where both the number of animals present and the number registered were reported, the numbers did not match, and in five cases, were wildly conflicting.
- Production was mainly based on laundering animals through farms, with few cases in which intentional breeding was recorded.

Based on results from this survey and a number of other studies including ENV's survey results amongst provincial FPDs, ENV highly recommends terminating commercial farming of endangered species, strengthening policy and regulations regarding farming, actively investigating farms with signs of laundering, and reinforcing the role of the FPD in the management of wildlife farms. In order to achieve the most accurate results from FPD farm inspections, a set of standardized techniques should be developed, alongside an integrated national database of registered farms made available to all local FPDs, in order to manage sales and transportation of animals amongst farms.

ABBREVIATIONS

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
ENV	Education for Nature-Vietnam
FPD	Forest Protection Department
IUCN	International Union for Conservation of Nature
WCS	Wildlife Conservation Society

DEFINITIONS

Batch management	Purchasing and storing animals of a specific species, then selling all or most of them in a large quantity each time.
Commercial wildlife farming	Commercial wildlife farming is the practice of raising and breeding wildlife species in captivity with the goal of harvesting animals or animal products for commercial profit (WCS, 2008).
Incidental breeding	The accidental breeding of animals on a farm neither managed nor run for continuous breeding production. Incidental breeding may occur when animals are kept in mixed sex groups or females are already pregnant when arriving at farms.
Laundering	Laundering refers to the legalization of illegally obtained, largely wild-caught, animals by claiming they are captive-bred, allowing for their integration into the legal trade network.
Transportation papers	A transportation paper is a list of forest products approved by the Forest Protection Department (FPD). It also serves as the permit showing legal origins of animals being transported. [1]
Recorded species	All the species that were registered, present and/or reported by interviewees at surveyed farms.

[1] Clause 5, Article 3 and Article 5 of Circular 01/2012/TT-BNNPTNT of the Ministry of Agriculture and Rural Development dated January 4, 2012 regulating lawful documents on forest products and examination of origin of forest products **(Circular 01/2012)**

INTRODUCTION

Commercial wildlife farming is the practice of raising and breeding wildlife species in captivity with the goal of harvesting animals or animal products for commercial profit (WCS, 2008). There exists a distinction between farming animals for commercial purposes and breeding wild animals for conservation purposes. When farming for commercial purposes is undertaken, the pursuit of a product which can be sold for profit is the prime motivation behind the practice. Breeding wildlife for conservation purposes is undertaken to protect a species against degradation of a species' gene pool, decline in a species' population and extinction. For an animal to be bred in captivity for conservation purposes, care must be taken to ensure the maintenance of genetic integrity (for example, not allowing the inbreeding of animals) and to ensure that captive-bred animals still possess natural instincts and behaviors. Breeding for conservation purposes requires that animals can be eventually placed in and survive within a natural suitable environment. These requirements are not required for commercial farming.

This report only focuses on commercial wildlife farming. Throughout the report, the terms 'commercial wildlife farming' and 'wildlife farming' refer to the practice of raising a wildlife species (capable of breeding in captivity) for commercial profit, and are used interchangeably.

As the demand for wildlife products continues to rise, commercial wildlife farming has been proposed as an alternative to the unsustainable practice of wildlife hunting and trade—practices that are considered to be major causes of biodiversity loss in the tropics (Milner-Gulland and Bennett, 2003; Redmond *et al.*, 2006; Bennett, 2002; Broad *et al.*, 2003). Commercial wildlife farming is argued to improve species conservation by substituting the supply of wild-harvested species with a cheaper, captive-bred alternative (IUCN, 2001; Lapointe *et al.*, 2007).

Proponents of commercial wildlife farming believe that filling the market with high quality domesticated wildlife products will lower the price of wildlife goods and result in a decrease in the hunting of wild animals (Bulte and Damania, 2005). Wildlife farms also have the potential to aid conservation efforts by acting as a source for supplementing or reintroducing populations; for example, the Siamese crocodile reintroduction to Cat Tien National Park from 2001 to 2004 (Murphy *et al.*, 2004). Supporters also argue that wildlife farming may alleviate poverty and improve food security in rural areas (Cicogna, 1992; Revol, 1995; Ntiamoa-Baidu, 1997). Due to these potential benefits, commercial wildlife farming has been actively encouraged and facilitated by governments in most of Southeast Asia, including Vietnam (Parry-Jones, 2001; WCS and TRAFFIC, 2004).

While wildlife farming has been present in Vietnam since the 1800s, it has rapidly grown over the past 20 years in terms of species, extent, and scale (Do Kim Chung, 2003). As of the end of 2016, based on data from the National FPD, there were approximately 26,000 households engaging in commercial farming in Vietnam. However, many of which are not registered with the authorities (WCS, 2008). A large variety of species are farmed in Vietnam, many of which are globally threatened species such as fresh-water turtles and crocodiles (WCS, 2008). The latest records from the CITES/WCMC database reveal the magnitude of the Vietnamese wildlife export trade from 2012 to 2013, as seen in Table 1.

Table 1. Vietnam's species export trade.[2]

Species	No. of Specimens Traded
Yellow-headed temple turtles (*Heosemys annandalii*)	90,535
Siamese crocodiles (*Crocodylus siamensis*)	51,196
Long-tailed macaques (*Macaca fascicularis*)	11,960
Oriental rat snakes (*Ptyas mucosa*)	486,000
Water monitor lizards (*Varanus salvator*)	172,500

To meet such high demand, Vietnamese suppliers have reportedly bred wildlife in captivity and supplemented stocks with wild-caught animals from various regions in Vietnam and Southeast Asia (Nooren and Claridge, 2001; Bell *et al.*, 2004; Lin, 2005; WCS, 2008; CFI, 2015).

Vietnam is a key player in the region's legal and illegal networks of wildlife trade, producing and supplying animals for both domestic and international markets. The fact that both legal and illegal forms of wildlife trade operate in Vietnam

[2] Information extracted from http://trade.cites.org/.

raises concerns about the validity of wildlife farming, particularly the farming of endangered species (WCS, 2008; Brooks *et al.*, 2010; Phelps *et al.*, 2013). Such concerns have been supported by studies that identify major flaws in current wildlife farming practices in Vietnam, resulting in negative impacts on wildlife conservation efforts and further threatening species at risk of extinction (WCS, 2008; Brooks *et al.*, 2010; ENV, 2012; Phelps *et al.*, 2013).

One major issue concerning wildlife farming is the presence of widespread laundering (WCS, 2008; Brooks *et al.*, 2010; CFI, 2015). Laundering can lower the transaction cost of smuggling and trading illegal commodities, and may increase market penetration and demand (Damania and Butle, 2001). Laundering has been documented at multi-species farms (Brooks *et al.*, 2010; WCS, 2008; CFI, 2015) indicating that wildlife laundering is prevalent within the wildlife farming industry in Vietnam.

It is strongly suspected that wildlife laundering is the cause of many recorded declines in wild populations, such as the decline in porcupine populations in Son La province, Vietnam (WCS, 2008). In the case of the Siamese crocodile (*Crocodylus siamensis*), wherein commercial farming of the species coincided with its virtual extirpation from the wild in both Thailand and Vietnam, laundering is generally recognized as the cause (IUCN, 2015; Meachem,1997; WCS, 2008).

Replacing and supplementing with wild-caught animals is a common practice at wildlife farms. Some species may not breed or grow well in captivity, thus wild input is necessary to meet the market demand for such species. Other species may breed or grow at such low rates and/or require such high levels of animal husbandry that commercial breeding is economically unviable (Phelps *et al.*, 2013). This inability to meet demand solely through captive breeding likely encourages laundering to build enough supply (Lyons and Natusch, 2011; Mockrin *et al.*, 2005). It has been suggested that certain species (e.g., pangolins) should not be commercially farmed because they cannot realistically provide a sufficient captive-bred supply to meet market demand (Phelps *et al.*, 2013; ENV, 2012).

For wildlife farming to decrease pressure on wild populations and positively impact conservation efforts, captive-bred animals must be economically competitive with wild-caught animals (Phelps *et al.*, 2013). Ideally, wildlife farming should be a cheaper, more acceptable alternative to a wild-caught supply (Phelps *et al.*, 2013). It is reported, however, that the price of wild-caught animals in Vietnam is often either the same (WCS, 2008) or cheaper (Brooks *et al.*, 2010) than captive-bred animals, likely because farming requires the investment of time and money to breed, raise, and feed a large number of animals over long periods of time. Wild-caught animals are generally cheaper and quicker to supply, particularly if the probability of getting caught and fined is low (Mockrin *et al.*, 2005). For commercial farming to be economically competitive with a wild-caught supply, enforcement risk must be high enough to increase the cost of laundering wild-caught animals (Damania and Butle, 2001). If enforcement risk is low, as is reportedly the case in Vietnam (WCS, 2008; Brooks *et al.*, 2010; CFI, 2015), captive breeding will not be economically competitive, and the laundering of wild animals will be the most profitable option (Mockrin *et al.*, 2005; Lyons and Natusch, 2011).

The effective enforcement of wildlife farming laws in Vietnam is therefore critical in determining whether wildlife farming is beneficial to conservation. Effective monitoring of wildlife farms, enforcing restrictions, and targeting illegal activity is necessary to increase the cost and risk of wild-harvesting and to make it unviable in the market (Phelps *et al.*, 2013). However, several reports about wildlife farming in Vietnam have raised serious doubts about whether the FPD, the authority responsible for enforcing wildlife farming laws, can effectively enforce wildlife farming laws and practices (WCS, 2008; Brooks *et al.*, 2010; CFI, 2015). Many FPD officials lack the knowledge and experience to do their jobs effectively (WCS, 2008). The FPD's lack of use of individual identity markers for captive wild animals and the difficult nature of differentiating between wild-caught and farmed animals has allowed for a system where farm management record books can easily be manipulated to launder wildlife (WCS, 2008).

The consequences of poor enforcement efforts are apparent in the negative outcomes of wildlife farming that have been documented throughout Vietnam. The general consensus in conservation literature and among conservation organizations is that commercial breeding operations of endangered species are poorly monitored, weakly regulated, and hinder wildlife conservation efforts in Vietnam (WCS, 2008; Brooks *et al.*, 2010; ENV, 2012; CFI, 2015). As a result, previous studies recommended that there should be stricter controls, harsher penalties, and an end to the farming of endangered species (WCS, 2008; Brooks *et al.*, 2010; CFI, 2015).

Commercial farming of species protected under Decree 32/2006/ND-CP and Decree 160/2013/ND-CP is permitted as long as farms meet the requirements stipulated by Decree 82/2006/ND-CP (amended by Decree 98/2011/ND-CP). These vague, apparently poorly enforced requirements threaten wild populations of endangered species. Recent drafts of some relevant legal instruments clearly indicated the intention of the authorities to further liberalize the farming of endangered species. While these drafts have been lobbied against and scaled back, endangered species farming would still be legal in practice under current laws.

As part of the strategy to conserve and protect endangered species in Vietnam, a thorough investigation of wildlife farming in Vietnam is critically needed to allow the government to make sound decisions on the commercial farming

and trade of endangered species, as well as develop effective legislation that will help reduce threats and prevent endangered species from becoming extinct in the wild.

This study set out to meet this need by surveying wildlife farms in Vietnam that contain many endangered species. The following four interconnected aspects of wildlife farming in Vietnam were investigated:

1. **Illegal Activities:** The scale and types of illegal activities associated with wildlife farms (laundering wild animals, illegal trade, manipulating farm records, etc).

2. **Management and Enforcement:** The institutional capacity and functioning of the FPD to manage and regulate wildlife farming.

3. **Production:** The captive breeding practices and techniques of wildlife farms.

4. **Trade Dynamics:** The sources, destination of sale, and market conditions.

METHODS

Twenty-six large multi-species wildlife farms were surveyed across Vietnam using semi-structured face-to-face interviews with farm owners from October 2014 to July 2015. During the survey, if the farm owner was not available, workers or relatives of the owner were interviewed.

19 out of 26 farms have the highest number of animals and/or the highest number of species registered with provincial FPDs. Due to the sensitive nature of the study, covert identities were used, including the roles of a student or a wildlife trader, to approach the interviewees. Interviews were covert and conducted with the aid of a questionnaire. This questionnaire was used to assess all facets of wildlife farming in Vietnam. Based on the varying levels of openness of the interviewees, not all questions could be safely asked without jeopardizing the cover of the researchers or the cooperation of the interviewees. As a result, the questions were adjusted based on the researchers' judgment of the attitudes of the interviewees concerned in order to gain credible information on the different farms. Since different questions were asked across the farms, results on certain answers were presented as the rate to the total number of interviewees being asked particular questions.

The interviews addressed key topics about farm operations and FPD enforcement, as well as information on breeding methods and animal husbandry. Below are the main variables recorded during survey interviews, which respond to the four aspects of wildlife farming identified above.

Farm Interviews

General information

In the interviews, general questions about the farm were asked including farm name, farm opening date, farm location, species registered/reported, and current number of individuals of each species registered/reported.

Trade information and farm operational activities

Questions were asked in the interviews to obtain the following information: the reported sources of stock, reported destinations of sale, main buyers, primary sale products, administrative procedures, management of farm stocks, records of births/deaths, and records of sales/purchases. Other aspects of trade were explored through informal discussions.

In this study, a farm was considered to be involved in laundering of wild-caught/illegal animals if it met one or more of the following criteria: admission of laundering, observable snare wounds on animals indicating they were wild-caught, possession of animals not legally registered, buying and/or selling animals without transportation papers, and buying and/or selling transportation papers.

Enforcement and management

Questions were asked to gain information about the FPD's management practices on wildlife farms, including inspection methods such as checking farm management books, counting and identifying individuals. Details about FPD procedures for the notification of inspections and registration of births, deaths, sales, and purchases were also recorded in the interviews.

Breeding and animal husbandry

During the survey, ENV's researchers questioned the interviewees to determine the breeding production system applied to each species at a farm. If interviewees claimed animals were bred at their farms, they were then asked to provide details about the reproductive cycles, such as length of gestation, number of clutches per year, clutch size, and birth times. They were also asked about the number of breeding pairs present, the number of births per year, the prevalence of newborn deaths, batch management practices, the number of generations that have been bred on the farm, new stock (if any) brought in to prevent inbreeding, approaches used to prevent inbreeding, and the monitoring of births and deaths of newborns. The researchers then used this testimony in combination with observation of farm conditions, FPD records, and known reproductive biology of species to determine the breeding production systems of surveyed farms.

If answers were inconsistent with the known reproductive biology of the species, and/or the observed farm conditions indicated that breeding (considering the known literature on captive breeding) would be unlikely, then it was assumed that there was no breeding and a "no production" breeding system was determined. If one (when only one was obtained) or both of the reported reproductive biology and observed farm conditions correlated to breeding, then breeding was assumed to have occurred on the farm. However, the determination of which type of breeding, whether

incidental, captive-propagation or closed cycle breeding, was ascertained by further analysis of the observations and testimony. If collected evidence was insufficient to determine the breeding system, then the status was considered inconclusive.

If an interviewee stated that their farm didn't intend to breed their species or rear them in a controlled manner for profitable production then it was assumed that this was the truth, as there was no logical motive to provide a lie that implied illegal activity, especially as all farms surveyed were registered as breeding farms. For the same reason when an interviewee stated that his animals incidentally bred, this was assumed to be true unless there was clear contrary evidence (Table 2).

Table 2. Description of captive breeding production systems at surveyed farms.

#	Breeding Production System	Description
1	No production	Animals do not breed or they only incidentally breed together. No clear intention by the farm owners to breed or rear animals in a controlled manner for profitable production.
2	Contained propagation	Maintaining a breeding captive population with continued input from the wild, including when initial stocking is from an illegal wild source.
3	Closed cycle breeding	Continuous breeding in a controlled manner for profitable production with no additional specimens from the wild apart from initial legal wild stocking.
4	Inconclusive production	The breeding system was unclear between (1) and (2) or between (2) and (3) or between (1) and (3).

For a legal wildlife farming industry to be founded, initial stocking must be taken legally from the wild in a careful manner, sanctioned and monitored by experts to have minimal impact on wild populations. Thus, theoretically many wildlife farms may have been founded on perfectly legitimate initial wild stocking. The distinction must be made between sanctioned and monitored legal initial wild stocking and illegal initial wild stocking. Therefore, for the purposes of this report where the legality of the wildlife farm breeding systems are being considered, the initial stocking legality will play a role in determining the breeding system classification of farms. This classification places those farms with legitimate initial stocking (even wild sources) and no further wild input as being closed cycle breeding farms (the gold standard), while those with initial illegal wild stocking as contained propagation. For example, if a farm has an illegal initial stocking from the wild but thereafter breeds the animals with no input from the wild, such a farm will be classified as a contained propagation farm.

For a farm to be classified as a "no production" farm, all species present had to be under a "no production" system. If at least one species was in a contained propagation system, a farm would be classified as a "contained propagation" farm. Regardless of the types of production systems present on a farm, if at least one species was under a closed cycle breeding system then the farm was classified as a "closed cycle breeding" farm.

Observations

When the investigators were permitted to tour farm facilities, observations were recorded including enclosure sizes and description, number and identity of animals present, social groupings present, and enclosure capacities.

Any clear indicators of illegal activity that one would reasonably expect FPD officials to detect if they inspected the farm were noted. Such clear indicators include: snare wounds on animals, presence of unregistered animals, incongruent numbers of animals registered compared to those present, buying and selling animals frequently and in batches, lower or higher enclosure capacity than would be expected according to the number of animals registered, overcrowded animals in unsuitable enclosures, and the absence of breeding practices despite being registered as a breeding farm.

Study Sites

Based on registration records provided by FPDs, there were thousands of wildlife farms in Vietnam at the time of the survey, but most of them were registered with a small number of animals belonging to one single species. According to these records, large multi-species farms had the greatest trade volume and the highest number of endangered

species. Therefore, they probably attracted more attention from local FPD officials. An understanding of large multi-species farm practices would therefore be very informative regarding the current state of wildlife farming in Vietnam, especially in terms of endangered species, which were the focus of this study. Therefore, ENV selected the 19 biggest farms, as well as seven farms that ENV researchers can approach, in order to obtain a representative cross-section of wildlife farms in Vietnam.

The surveyed farms were distributed along the length of Vietnam to obtain information on the intra-national trade, as well as different farming practices across Vietnam. Wildlife farms were surveyed in 10 provinces to represent samples from the northern, central, and southern regions of Vietnam: Northern (Ha Noi, Ha Nam, Vinh Phuc, Bac Ninh), Central (Quang Binh, Quang Tri, Quang Ngai) and Southern (Tay Ninh, Ho Chi Minh and Dong Thap) Vietnam (Fig. 1).

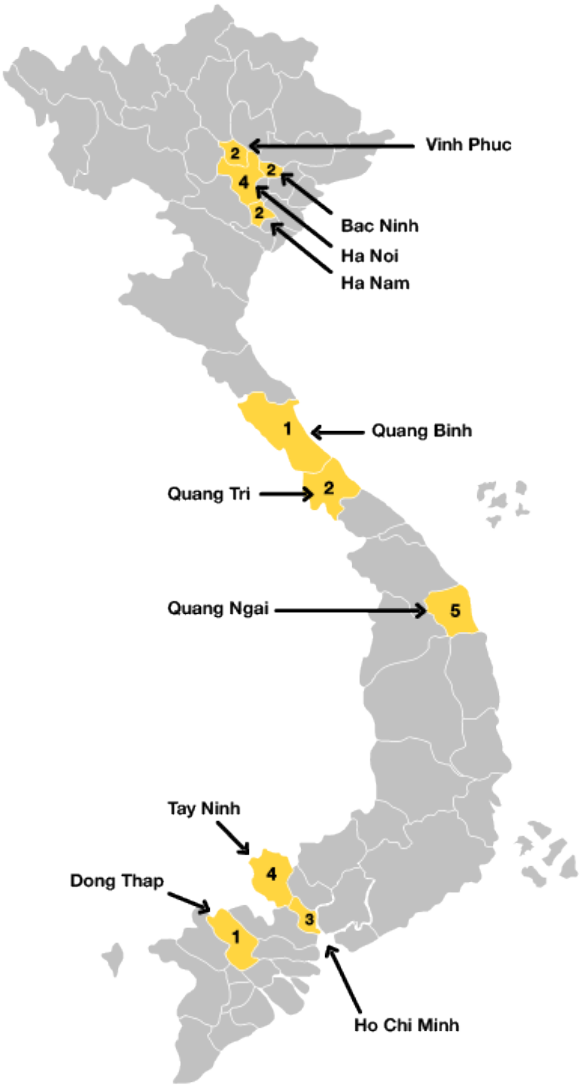


Figure 1. Provincial map of Vietnam. Surveyed provinces are highlighted in grey, and the number of farms surveyed in each province is indicated by the number displayed on the province.

Data Analysis and Presentation

Since the questions were not the same for all surveyed farms, the responses were presented as fractions indicating the total number of interviewees asked the question.

If the interviewees stated that they farm monitor lizards, it was assumed that both clouded monitor lizards (*Varanus bengalensis*) and water monitor lizards (*Varanus salvator*) native to Vietnam were referred to, unless specifically stated otherwise.

RESULTS

General Farm Information

A total of 26 wildlife farms were surveyed in northern (10), central (8), and southern Vietnam (8). A total of 46 different animal species were registered, reported, or observed at farms. These species included 17 turtle species, eight snake species, five bird species, two civet species (*Paradoxurus hermaphroditus* and *Paguma larvata*), two monitor lizard species (*Varanus bengalensis* and *Varanus salvator*), two porcupine species (*Hystrix brachyura* and *Atherurus macrourus*), Sunda pangolin (*Manis javanica*), Chinese pangolin (*Manis pentadactyla*), Siamese crocodile (*Crocodylus siamensis*), and seven other small mammal species (see Appendix II for species list).

Results from the survey indicate that wildlife farms in southern provinces had larger numbers of species compared with farms in the northern and the central provinces (Figure 2). The highest number of species registered to a single farm was 17. One farm in the South had the largest number of animals (more than 6,000) of seven different species.

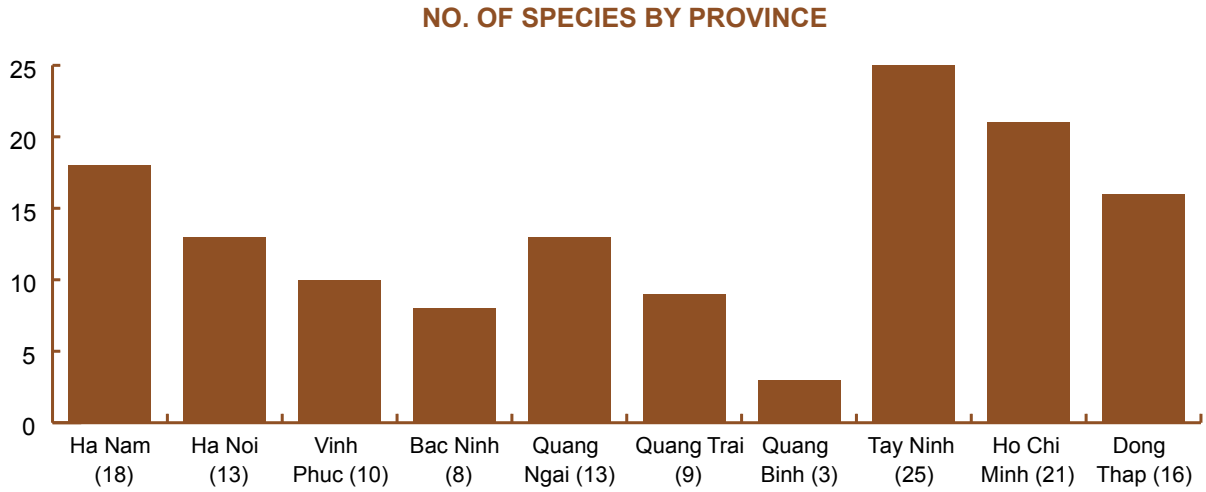


Figure 2. Number of species registered/present by province.

Interviewees in 17/26 farms could not or would not accurately report the number of each species present at their farms at the time of the survey because they said they did not monitor the number of animals closely. In all nine farms where both the stated number of animals present at the farms and the number of animals registered were recorded, the numbers did not match. Especially at five farms, there was a great difference between the number of animals registered and the number of animals present at the farms (e.g., 10 turtles were stated as present versus 4,000 registered on paper).

Conservation and protection status

During the survey, twenty globally and nationally endangered and critically endangered species were recorded (registered, present or reported by interviewees) at farms. Of which, twelve species are globally critically endangered and endangered species (Table 3).

Twenty species protected by Vietnamese law (Decree 32/2006/ND-CP and/or Decree 160/2013/ND-CP) were recorded at surveyed farms, especially six species which were strictly protected under Decree 160/2013/ND-CP, and two species which were listed in group IB of Decree 32/2006/ ND-CP (Table 3). 21/26 farms possessed at least one species protected under Decree 32/2006/ND-CP, and 10/26 had at least one species protected under Decree 160/2013/ND-CP.

Two CITES Appendix I species, the clouded monitor lizard (*Varanus bengalensis*) and the Siamese crocodile (*Crocodylus siamensis*), and 24 CITES Appendix II species were recorded at 21/26 surveyed farms. CITES Appendix I species were recorded at 14/26 farms.

A pangolin kept at a farm in Tay Ninh province. Sunda pangolins (Manis javanica) and Chinese pangolins (Manis pentadactyla) receive the highest protection level under Vietnamese laws. They are reportedly unable to be farmed in captivity.

Table 3. The conservation and protection status of recorded species at surveyed farms (as of the date of this report).			
Protection Status	**Number of Species**	**Conservation Status**	**Number of Species**
CITES		**IUCN Red List**	
App I	2	Critically Endangered	6
App II	24	Endangered	6
App III	5	Vulnerable	8
Not listed	15	Low risk/Near Threatened	1
		Low risk/Least Concern	19
		Not listed	6
Decree 32/2006/ND-CP		**Vietnamese Red Book**	
Group IB	2	Critically Endangered	5
Group IIB	17	Endangered	11
Not listed	27	Vulnerable	8
		Threatened	0
Decree 160			
Listed	6	Not Threatened	2
Not listed	40	Not listed	20

Animal Husbandry and Breeding

Breeding production systems

Determining the breeding production system of a given farm was not very difficult since many interviewees stated that their farms were used to launder wildlife, bred no animals, or had consistent input from wild sources. In addition, evidence of laundering and poor animal husbandry conditions indicated the lack of breeding production systems at farms. Based on these factors, the investigators strongly believed that 13 surveyed farms had no breeding production system. These farms were essentially trade operations that stored and sold wild/illegally sourced animals. Eight farms had at least one species in a "contained propagation" system. There were five farms where the breeding production system could not be determined and therefore were categorized as inconclusive production. Out of these farms, one farm was confirmed to have successfully bred Malayan porcupine (*Hystrix brachyura*) and common palm civet species (*Paradoxurus hermaphroditus*) to F2 generation (i.e., the 3rd generation). This was also the only farm that reportedly bought new stock to prevent inbreeding and possessed a clear system to prevent inbreeding. However, the legality of their stock could not be confirmed, thus ENV could not determine the breeding system of the farm, whether it was a propagation or closed breeding production (Figure 3).

Several turtle species being kept together indicated a lack of a breeding production system in one of the surveyed farms.

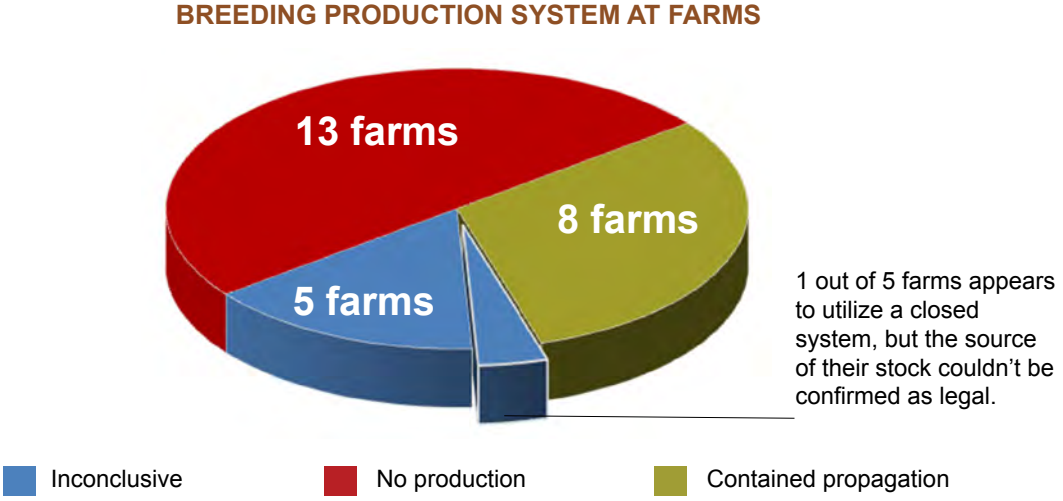


Figure 3. Recorded breeding production systems in use at farms.

Interviewees claimed that breeding of any kind involved 16/46 recorded species. However, researchers could only confidently determine breeding for 13 species. Of those, incidental breeding was determined for 10 species and intentional breeding was determined for 10 species. (Table 4).

Table 4. Species breeding that was confidently determined.

#	Species	Intentional Breeding		Incidental Breeding
		Contained Propagation	Inconclusive	
1	Asian yellow pond turtle (*Mauremys mutica*)	X		
2	Brush-tailed porcupine (*Atherurus macrourus*)			X
3	Chinese cobra (*Naja atra*)	X		
4	Clouded monitor lizard (*Varanus bengalensis*)	X		X
5	Common palm civet (*Paradoxurus hermaphroditus*)		X[3]	X
6	Common rat snake (*Ptyas mucosa*)	X		X
7	Giant Asian pond turtle (*Heosemys grandis*)	X		X
8	Indochinese rat snake (*Ptyas korros*)	X		X
9	Malayan porcupine (*Hystrix brachyura*)	X		X
10	Masked palm civet (*Paguma larvata*)			X
11	Radiated rat snake (*Elaphe radiata*)	X		X
12	Vietnamese pond turtle (*Mauremys annamensis*)	X		
13	Wild pig (*Sus scrofa*)			X
	Total	**10**		**10**

According to those interviewees questioned, 17/19 farms had no stated precautions against inbreeding and allowed uncontrolled free mating among the laundered batches of animals. According to the interviewees, no farms used any animal marking or tagging techniques to determine identity; however, four farms did number cages in order to monitor animal identities.

During the inspection period, twenty globally and nationally endangered and critically endangered species were commonly recorded at surveyed farms. However, there was no breeding activity amongst a majority of these species

[3] Common palm civet was confirmed to have been bred to the F2 generation intentionally at a farm where the breeding production was unclear between contained propagation and a closed cycle breeding system.

at surveyed farms, including Siamese crocodile which has been successfully bred in captivity in Vietnam. Results of the investigation reveal that most of these endangered species were laundered from the wild, and legalized at farms. Evidence indicates that some endangered species were able to breed at surveyed farms, but required constant inputs from the wild (Table 5).

Table 5. Breeding production system of endangered species at surveyed farms.

#	Species	No Production	Contained Propagation	Incidental Breeding
1	Asian yellow pond turtle (*Mauremys mutica*)		X	
2	Chinese cobra (*Naja atra*)	X	X	
3	Chinese pangolin (*Manis pentadactyla*)	Inconclusive		
4	Chinese stripe-necked turtle (*Mauremys sinensis*)	X		
5	Chinese three-striped box turtle (*Cuora trifasciata*)	Inconclusive		
6	Clouded monitor lizard (*Varanus bengalensis*)	X	X	X
7	Common pheasant (*Phasianus colchicus*)	X		
8	Common rat snake (*Ptyas mucosa*)	X	X	X
9	Elongated tortoise (*Indotestudo elongata*)	X		
10	Four-eyed turtle (*Sacalia quadriocellata*)	Inconclusive		
11	Indochinese box turtle (*Cuora galbinifrons* or *Cuora bourreti* or *Cuora picturata*)	X		
12	Indochinese rat snake (*Ptyas korros*)	X	X	X
13	Keeled box turtle (*Cuora mouhotii*)	X		
14	King cobra (*Ophiophagus hannah*)	X		
15	Reticulated python (*Python reticulatus*)	X		
16	Siamese crocodile (*Crocodylus siamensis*)	X		
17	Sunda Pangolin (*Manis javanica*)	X		
18	Vietnamese pond turtle (*Mauremys annamensis*)		X	
19	Water monitor lizard (*Varanus salvator*)	X	X	X
20	Yellow-headed temple turtle (*Heosemys annandalii*)	X		
	Total	**15**	**7**	**4**

Official Documentation Procedures

The following is a brief overview of the documentation procedures used by wildlife farm management to legally increase or decrease the number of legal animals registered on their farm, including the transport of animals to other wildlife farms. This overview is intended to help readers better understand how documents can be manipulated for wildlife laundering purposes.

Every farm possessed a management book where the farm owner was required to record the total number, sex, and fluctuations in numbers (if any) for each species present. Farmers must record any increase (by birth/purchase) or decrease (by death/sale) of species including details of date, total number, numbers of males and females, and the specifics of the sale/purchase.

In practice, whenever farm owners wanted to declare a change in the number of animals due to births, deaths, sales, or purchases, they had to notify the authorities who were then expected to inspect the farm. During inspection, authorities would ensure that the management book and the number of animals present on the farm both matched the notified change. If no discrepancies were found, authorities would update the checking minute , a document used by authorities to monitor changes in the numbers of animals over time on a farm. They would then stamp and sign both the management book and checking minute to confirm the updates.

To legally transport animals to a buyer, farmers had to obtain a list of forest products approved by the FPD, commonly referred to by farm owners and FPD officials as a “transportation paper” (hereinafter referred to as “transportation paper”). To obtain this transportation paper, farm owners had to prepare a dossier of request for forest product certification to send to the FPD. The dossier had to include a list of forest products (in this case, wild animals), sale invoices under the Ministry of Finance’s regulations (if any), and documents proving the legal origin of the animals under the State’s current regulations. Certification would have to be issued by the FPD immediately (or after three working days at the latest) upon receiving a valid dossier. To determine the validity of a dossier, the FPD would compare the number of animals recorded in the latest checking minute and the list of forest products proposed for certification. If the number of animals for transportation was not larger than those in the latest checking minute, the authorities would provide certification on the list of forest products.

If anything was unclear in the dossier, FPD officials would inspect the farm (as described above) to determine whether the farm had the correct number of legal animals requested for sale. If the farm had the correct number of legal animals, the authorities would then provide certification on the information in the list of forest products, including the number and date written in the enclosed invoices and license plate numbers of any vehicles used for transporting animals, and take responsibility for the accuracy of this list as well as the legal origin of wildlife. After the sold animals had been shipped from the farm, the FPD would inspect the farm to confirm changes in the number of animals, and update the checking minute and the management book.

Case Study 1: CITES certified breeding farm (P.T. Ltd.) in Ho Chi Minh City

P.T. Ltd. in Ho Chi Minh City had the largest number of registered animals of any farm surveyed in the study with 4,000 turtles and 2,000 monitor lizards registered. The owner claimed that he could supply monitor lizards, common palm civets (*Paradoxurus hermaphroditus*), giant Asian pond turtles (*Heosemys grandis*), yellow-headed temple turtles (*Heosemys annandalii*), elongated tortoises (*Indotestudo elongata*), Asian box turtles (*Cuora amboinensis*), and various species of snake. The farm had a CITES-issued breeding certificate for elongated tortoises and giant Asian pond turtles. The owner stated that he did not maintain breeding stock of these species, and he would sell all of them if the price was good enough. Despite having thousands of animals registered, only 10 individual turtles were reported at the time of the survey.

The management system used on this farm, which apparently optimized profit while still maintaining the appearance of breeding, ensured that continuity of breeding and independence from wild caught supplementation was impossible.

An experienced senior employee of this wildlife farming company made statements that clearly demonstrated that a controlled captive breeding system was not used for large multi-species farms. He stated that, “Obtaining animals from illegal sources and legalizing them through the farm is normal business. Only farmers would breed animals.” “Farmers” in this case referred to people who bred small quantities of animals at their farm. The level of supply from his farm, measured in tons, indicate a level of demand that captive breeding could not supply. The interviewee also stated that he had a good relationship with the authorities because his farm was considered a model farm by the FPD. He reported that the FPD knew of his business, and that they would help him to increase the number of animals or issue legal papers for animals if he paid them a fee. He said he had to pay 5 to 10 million VND (~USD$ 225 to USD$ 450) for an FPD official’s signature depending on the time and the species of animal. For example, he claimed that he could increase the number of monitor lizards on paper from 2,000 to 10,000 by claiming births, and he would only have to pay 50 million VND (~USD$ 2250) to the authorities to do so. The owner stated that owners of wildlife farms and the authorities (FPD) had a win-win relationship because they both benefited from each other.

[4] Clause 6, Article 3 and Article 6 of Circular 01/2012
[5] Form No. 3 of Circular 01/2012
[6] Clause 5, Article 3 and Article 5 of Circular 01/2012
[7] Clause 2, Article 7 of Circular 01/2012
[8] Point a, Clause 3, Article 7 of Circular 01/2012
[9] Point b, Clause 3, Article 7 of Circular 01/2012
[10] Point c, Clause 3, Article 7 of Circular 01/2012

Illegal Activities and Trade

Laundering wild-caught animals

Through the survey, it was revealed that 26/26 farms surveyed were involved in some degree of illegal wildlife laundering activity. 16/26 farms admitted to laundering wildlife. The laundering farms usually used a batch management system. A large shipment of animals was usually brought in and held until a good price was offered for all or most of the batch. Batch buying and selling was probably a reason why low numbers of animals were observed at some of the surveyed farms during the investigation, despite the fact that large numbers of animals were registered with the authorities.

The missing limbs and the aggressive behaviors of the civets in one farm were indicative of wild-caught and possibly laundered animals.

13/20 registered globally and nationally critically endangered and endangered species were observed or stated to be present by interviewees of the stated laundering farms. Four out of the 20 species globally and nationally critically endangered and endangered species were only found at those farms that were stated to be laundering farms. 22/31 CITES listed species recorded were observed at stated laundering farms. 5/31 CITES listed species were only recorded at stated laundering farms.

10/26 surveyed farms were considered large-scale laundering farms, as their farming and trade operations involved more than 10 species and could supply laundered animals in tons (Table 6) across international borders. Interviewees of these 10 farms claimed that all or part of their supply of wild-caught animals came from wild sources in Cambodia, Thailand, or Laos. Interviewees in 12/22 farms stated that China (via the Mong Cai border gate in Quang Ninh) was a major final destination for much of their wildlife, although most interviewees stated that their farms had multiple supply sources and sale destinations.

Interviewees in large-scale laundering farms stated that they usually paid money off to FPD officials who allowed them to operate their illegal business with impunity (Case Study 2 and 3). Other interviewees in smaller-scale laundering farms stated that they bribed FPD officials in various forms, and they still had to be more vigilant and manipulate farm management records to launder animals.

Based on the interviews, there were two main methods for legitimizing illegal animals at their farms. The first method was by purchasing transportation papers from other farms (proving the legal origin of animals) that contained a fraudulent number of purchased animals and species, and then presenting the papers to FPD officials when they inspected the farm. The FPD officials would then update the checking record to include the animals. When one farm needed a transportation paper, another farm would supply it and vice-versa. Occasionally, in order to legalize a large number of illegal animals, large-scale laundering farm owners had to buy many different transportation papers from smaller farms.

The second method was by claiming false births or not reporting deaths, and/or selling animals without permits. Claiming false births to legitimize the increased number of animals at their farms was commonly used by farm owners. For example, if one individual of a species can only give birth to five juveniles per year, the farm owner will multiply the number of female individuals with five and claim the result as the number of births. FPD officials, who were bribed, would update the management book, produce a new checking minute, and then issue transportation papers if needed. Large laundering farm owners often had enough money to pay off FPD officials, who increased the number of animals in the checking minute without inspection (Case Study 2). Smaller farm owners did not have the capital to pay off FPD officials, so it appeared that they had to work harder to manipulate their records and deceive FPD officials.

Interviews indicated that the interviewees were not diligent between inspections (they did not need to be) as they were given notice of inspection in advance. Results from this study indicate that the registered records did not match with the number of animals and species stated by interviewees at all 26 surveyed farms. In some cases, the reported/observed number of animals present at farms was either too high or too low compared to the registered number. According to interviewees, before each FPD inspection, farm owners would ensure animals present at their farms appeared to match the registered number by buying or selling batches of animals or manipulating records.

Case Study 2: Wildlife laundering by T.D. Farm in Dong Thap

The interviewee claimed that all the animals at the farm came from wild sources in Cambodia. The farm owner had obtained many different species from Cambodia without official papers, including giant Asian pond turtles (*Heosemys grandis*), Asian box turtles (*Cuora amboinensis*), and keeled box turtles (*Cuora mouhotii*). Despite the registration of all these species on the farm, only a small number of turtles and snakes and many empty enclosures were observed during the survey.

Various turtles being kept in squalid conditions at the farm.

The interviewee also stated that the farm was opened as a cover for laundering illegal wildlife and for selling false transportation papers to other farms stating legal origin of the animals as being from his farm. He said that he could supply transportation papers for all the registered species at his farms, and if there were a large quantity of animals for which he was not able to produce sufficient legal papers by himself, he would obtain legal papers from other farms. The price of papers for snakes or common turtle species was reportedly between 8,000 VND to 10,000 VND/kg (~USD$ 0.35 to USD$ 0.45/kg). Papers were more expensive for less common turtles, which were at the time reportedly sold at the range from 15,000 VND to 25,000 VND/kg (~USD$ 0.67 to USD$ 1.12/kg) depending on the species. The interviewee also mentioned that these papers were purchased from FPD officials. He also told ENV researchers that whenever FPD officials inspected his farm, he paid them off so that he would not be penalized for having contradicting numbers of wildlife present versus what he had registered with authorities and was permitted to have.

Domestic and cross-border trade operations

From information gathered in interviews on sources and sale destinations, the wildlife trade in Vietnam generally flowed from south to north. According to interviewees in southern provinces, most wildlife arriving at their farms were from Cambodia and/or Thailand (Case Study 3). Especially those in Tay Ninh, where they often obtained animals from Cambodia and Thailand in large quantities (Table 6). The interviewees in central Vietnam (Quang Tri and Quang Ngai province) stated that their suppliers were from Ho Chi Minh and southern-central provinces such as Dak Lak, Gia Lai, Kon Tum, and Phu Yen. The interviewees in Hanoi claimed that their wildlife came from central and southern provinces including Tay Ninh, Quang Tri, Quang Binh, Hue, Ha Tinh, Dak Lak, Kon Tum, and Gia Lai. One interviewee said that his farm also got wildlife from Laos.

Seven farms reported details of the total weights and numbers of animals that they could supply. Three of the four farms surveyed in Tay Ninh, all of which were large-scale laundering operations, mentioned that they had supplied tons of animals which originated from other countries (Table 6 and Case Study 3).

Table 6. Supply capabilities by number of days stated by farm owners.
Note: *"Days" means the maximum number of days it takes for each farm to meet the demand for animals.*

Farm Name	Province	Species	Number	Weight	Days	Registered Animals
N.T.U Farm	Bac Ninh	Asian yellow pond turtle (*Mauremys mutica*)	500-1000 hatchlings	N/A	365	N/A
N.Q.M Farm	Binh Phuoc	Asian yellow pond turtle (*Mauremys mutica*)	300-400 hatchlings	N/A	365	N/A
D.V.D Farm	Hanoi	Brush-tailed porcupine (*Atherurus macrourus*)	N/A	500-700kg	7	N/A
		Civet species	100	300kg	7	189
		Asian porcupine (*Hystrix brachyura*)	100	N/A	7	N/A
P.T Ltd.	Ho Chi Minh	Monitor lizard	N/A	1 metric ton	4-5	6000

Farm Name	Province	Species	Number	Weight	Days	Registered Animals
N.V.T Farm	Tay Ninh	Giant Asian pond turtle (*Heosemys grandis*)	N/A	1-2 metric tons	10	2192
N.T.X Farm	Tay Ninh	unclear	N/A	1-2 metric tons	1	498
N.T.H.C Farm	Tay Ninh	Turtle species	N/A	3-4 metric tons	10-15	N/A
		Turtle species	N/A	<1 ton	1-2	N/A
		Civet species	40-50	N/A	2	N/A
		Long-tailed macaque	1000s	N/A	N/A	N/A

Interviewees in farms in southern provinces (Tay Ninh, Ho Chi Minh, and Dong Thap) claimed that their major sales destinations were China, Hai Phong city, Hanoi and Ho Chi Minh City). Farm owners in central provinces said that their main sales destinations were China (mostly through Mong Cai border gate) and Hanoi. Farm owners in Hanoi stated that their main sales destinations were the city of Hanoi, Quang Ninh (to Mong Cai border gate with China), and Hai Phong. Many larger-scale farms stated that they had their own trucks that were used to transport wildlife, and some rented their trucks to other farms. Some farms also reportedly used airplanes to transport civets (Case Study 3).

In the interviews, the Mong Cai border gate bordering China was frequently mentioned as a major sale destination. Interviewees stated that shipments of animals were often transported by truck to the Mong Cai border gate. A number of interviewees discussed the prices of animals in Chinese Yuan. For example, one interviewee stated that giant Asian yellow pond turtles (*Mauremys mutica*) were 250 CNY/kg (~USD$ 38/kg), elongated tortoises (*Indotestudo elongata*) were 105 CNY/kg (~USD$ 16/kg), and monitor lizards were priced at 75 CNY/kg (~USD$ 11.50/kg). Another interviewee stated that he had to pay a fee of 4 CNY/kg (~USD$ 0.60/kg) for transporting wildlife through the Mong Cai border gate to China.

Many interviewees stated that the demand in China for a particular species fluctuated greatly, therefore they changed the animals they housed based on that demand. For example, during an investigation, there were a lot of elongated tortoises (*Indotestudo elongata*) and monitor lizards observed at a farm. According to the interviewee on this farm, the reason was that these species were once highly valued in China, but the price in China recently dropped so they would continue to hold these animals until the price increased.

According to some interviewees, China was the primary sales destination for wildlife, but the domestic market in urban areas was growing. In many cases, prices for certain wildlife species in Vietnam were reportedly higher than in China.

In many cases, according to the interviewees, the shipping address was bogus. This illegal process was commonly used because it was difficult for provincial FPDs to verify the legality of the animals and the shipping address.

Case Study 3: International trade operation of N.T.H.C's farm in Tay Ninh

N.T.H.C farm was reportedly the largest turtle and civet trade operation in Tay Ninh province. The owner also owned another farm near the Ka Tum border gate with Cambodia. The farm in Tay Ninh was registered and reported having the following species: water monitor lizard (*Varanus salvator*), clouded monitor lizard (*Varanus bengalensis*), giant Asian pond turtle (*Heosemys grandis*), yellow-headed temple turtle (*Heosemys annandalii*), radiated rat snake (*Elaphe radiata*), small Asian mongoose (*Herpestes javanicus*), common rat snake (*Ptyas mucosa*), brush-tailed porcupine (*Atherurus macrourus*), long-tailed macaque (*Macaca fascicularis*), Asian box turtle (*Cuora amboinensis*), masked palm civet (*Paguma larvata*), common palm civet (*Paradoxurus hermaphroditus*), elongated tortoise (*Indotestudo elongata*), Chinese cobra (*Naja atra*), Malayan snail-eating turtle (*Malayemys subtrijuga*), Asian leaf turtle (*Cyclemys dentata*), and Sunda pangolin (*Manis javanica*). The interviewee claimed that all the animals at her farm were sourced from Cambodia and Thailand, and that she hired three people working in Thailand and Cambodia to collect animals. She also often hired gangsters to accompany her shipments to avoid police and prevent robbery. She claimed that she could supply three to four tons of turtles within 10-15 days, or less than a ton within one or two days. She also claimed that she

could supply 40 to 50 civets every two days. These high numbers indicate that this farm had steady and well established supplies.

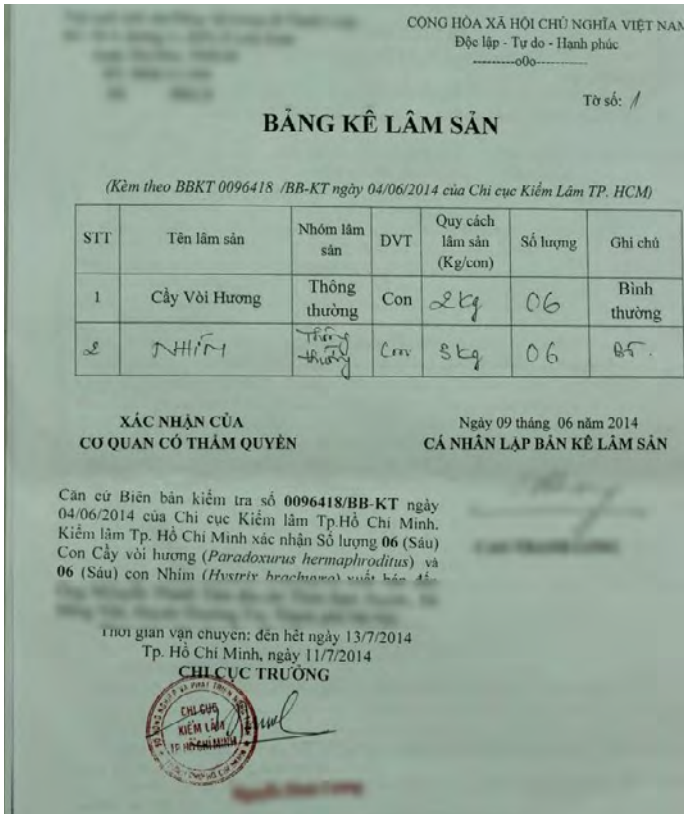
The interviewee stated that she never had to worry about the authorities because she paid them all off. She stated she could provide transportation papers to any destination in Vietnam. She could even obtain transportation papers for animals and species that were not registered at her farm. She said that it was not necessary to report false births because she had a great relationship with FPD officials, and all she had to do was make a phone call and tell them what species and how many animals she would like them to record in the transportation papers. The interviewee also said that she often reused a set of transportation papers multiple times by shipping animals by airplanes, and then quickly sending the transportation papers back by air so that another shipment could be transported under the same papers.

According to this interviewee, she sold civets to traders in Hanoi, and to Chinese traders who previously visited her farm. In the past, she used to own two trucks for transporting wildlife to the Mong Cai border gate. However, she recently started shipping civets to the north by airplanes. She said that she also traded pangolins in small numbers (one or two) each time, hidden in a package and shipped to Ho Chi Minh City. She claimed that she used to export thousands of macaques sourced from Cambodia to Russia and China.

Document manipulations

As previously mentioned, owners of wildlife farms used different methods to manipulate records and obtain transportation papers to legitimize wildlife from illegal sources. According to the interviewees, buying and selling transportation papers was a common practice among farms and some large farms had turned it into a profitable business practice. FPD officials also utilized transportation papers as a means of deriving profit from the wildlife farming business (see more detail in the Enforcement and Corruption section). Survey results indicate that according to the interviewees, 17/19 farms sold transportation papers, and a number of farm owners offered to sell papers to the ENV investigators. Ten out of eleven farms were claimed by interviewees to buy transportation papers from other farms or FPD officials. The price of transportation papers increased with the sensitivity/rarity of a particular species; for example, a set of papers for a single pangolin reportedly costs 3.5 million VND (~USD$ 157) while a common palm civet paper only costs 200,000 VND – 350,000 VND (~USD$ 9 - USD$ 16).

During an investigation, an investigative journalist was able to purchase a set of transportation papers using the bogus name of a non-existent farm. The process of purchasing the permit was simple, taking just a few phone calls (Figure 4 and Case Study 4).



CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Tờ số: 1

BẢNG KÊ LÂM SẢN

(Kèm theo BBKT 0096418 /BB-KT ngày 04/06/2014 của Chi cục Kiểm Lâm TP. HCM)

STT	Tên lâm sản	Nhóm lâm sản	ĐVT	Quy cách lâm sản (Kg/con)	Số lượng	Ghi chú
1	Cầy Vòi Hương	Thông thường	Con	2kg	06	Bình thường
2	NHÍM	Thông thường	Con	5kg	06	

XÁC NHẬN CỦA CƠ QUAN CÓ THẨM QUYỀN

Ngày 09 tháng 06 năm 2014
CÁ NHÂN LẬP BẢN KÊ LÂM SẢN

Căn cứ Biên bản kiểm tra số **0096418/BB-KT** ngày 04/06/2014 của Chi cục Kiểm lâm Tp.Hồ Chí Minh. Kiểm lâm Tp. Hồ Chí Minh xác nhận Số lượng **06** (Sáu) Con Cầy vòi hương (*Paradoxurus hermaphroditus*) và **06** (Sáu) con Nhím (*Hystrix brachyura*) xuất bến đi...

Thời gian vận chuyển: đến hết ngày 13/7/2014
Tp. Hồ Chí Minh, ngày 11/7/2014
CHI CỤC TRƯỞNG

Figure 4. A transportation paper for civets and porcupines purchased by an investigative journalist from T.L Farm in Ho Chi Minh City.

Case Study 4: Buying papers from T.L Farm in Ho Chi Minh province

T.L Farm in Ho Chi Minh is a large farm that advertised the selling of legal papers through a Facebook account. An investigative journalist contacted the farm owner via Facebook, and told him that he needed to legalize six civets and six porcupines that he purchased from an illegal source. The journalist provided the farm owner with a fake name and address of a fake farm, and was able to buy a set of papers that stated the animals were bought from T.L farm, a legal source (Figure 3). The price was 650,000 VND (~USD$ 30) for one pair of civets and 250,000 VND (~USD$ 11) for one pair of porcupines.

The advertiser also stated that he could produce transportation papers for many wildlife species which were supposedly raised on his farm. These species included Malayan porcupine (*Hystrix brachyura*), common palm civet (*Paradoxurus hermaphroditus*), mouse deer (*Tragulus kanchil*), bamboo rat (*Rhizomys sinensis*), Indian peafowl (*Pavo cristatus*), green peafowl (*Pavo muticus*), common pheasant (*Phasianus colchicus*), spot-billed duck (*Anas poecilorhyncha*), hill myna (*Gracula religiosa*), pangolins, Lophura species, and Polyplectron

species. The interviewee stated that the price of transportation papers depended on the species and number of animals. For example, the price for transportation papers for a pair of civets could be from 500,000 VND to 700,000 VND (~USD$ 22 to USD$ 31). However, the price would be less, 400,000 VND (~USD$ 18) per pair, if there were 50 civets. He also claimed that it was very easy for him to get transportation papers from the FPD for civets because he had 400 to 500 civets registered at his farm. When he sold civets to customers who didn't require transportation papers, he would accumulate capacity and sell transportation papers with a large quantity of civets to other customers. The interviewee claimed that he had a close relationship with FPD officials and could therefore produce transportation papers easily.

When asked, all interviewees in all 18 farms being questioned admitted that their farms bought animals without the required transportation papers. The interviewees stated that when animals were bought without papers, animals usually came from wild sources or in low quantity shipments from small farms. One interviewee said that occasionally, in order to fulfill an order, owners of larger farms would buy animals from smaller unregistered farms, and when the animals arrived on the farm, they would be legalized by claiming false births.

When asked, interviewees claimed that all 14 farms being questioned sold animals without transportation papers. They said that selling animals without transportation papers was a common practice when selling animals to restaurants in small quantities, as pets, or if it was a sensitive or illegal species (e.g., Vietnamese pond turtle (*Mauremys annamensis*) or pangolin). They also often did not obtain transportation papers if the animals were being transported over a short distance and within the same province as the risk of being caught was low. One interviewee stated that his farm once sold and transported pangolins to other nearby farms without transportation papers.

According to the interviewees, if FPD officials stopped a shipment from being transported across provinces, they could hold the shipment for 23 hours (even if the shipment had valid transportation papers), in order to extort a bribe. If the shipment didn't have valid transportation papers, the owner could quickly purchase a set of transportation papers from another farm, and have the papers sent and submitted to the FPD so that the shipment would be released. This process was considered expensive and usually used as a last resort in urgent situations. Two interviewees reported that they would use the same transportation papers for a number of shipments as long as the dates on the papers were still valid. As mentioned in Case Study 3, the owner of N.T.H.C farm claimed that she shipped animals via airplanes to Hanoi. Then she flew the transportation papers back, so that they could reuse the permit since it had not yet expired.

Claiming false births or not recording deaths were common methods of producing extra capacity in farm management books. This capacity could be filled by buying illegal animals or used to produce transportation papers that could then be sold to other farms. Interviewees stated that nine out of elevent questioned farms had claimed false births in order to gain maximum capacity on paper so that they could sell transportation papers, or launder animals. If the local FPD inspected the animals, the owner would have to purchase a number of juveniles to give the impression of births. This method was also reported for pangolin species. One interviewee said that his farm would obtain juvenile pangolins from wild sources in Cambodia to give the impression of breeding.

Two interviewees said they did not have to claim false births because they were so close with FPD officials that the pretense was not necessary. They would merely have to pay FPD officials for their signature to increase their farm's capacity. Another interviewee mentioned a further ploy that involved overstating the number of births when animals actually did produce offspring, in order to gain the capacity to launder. For example, one farmer mentioned that if his turtles only laid 100 eggs, he would claim they laid 300.

Enforcement and Corruption

Enforcement and monitoring

Interviewees in four out of five farms stated that the FPD usually gave warning of an impending inspection. This gave farm owners time to balance their management books and the number of animals present at their farms by buying, selling, or hiding animals. According to these farm owners, if FPD officials inspected their farms and there were fewer animals than registered, they could make an excuse to explain the discrepancy. For example, one farm owner used the excuse that his animals were at another farm for breeding purposes to bring "new blood" onto the farm. Apparently, excuses were acceptable, farm owners bore no responsibility to prove or verify their story, and no penalties were given.

Interviewees in seven out of nine farms stated that when FPD officials inspected their farms, they usually did not count the animals present. All nine farms claimed that FPD officials never checked the identity of animals in any way. One likely reason for this, is that FPD officials were reportedly held responsible if animals were injured during the inspection process. For example, turtles in a pond, buried eggs, and snakes can be very difficult to count unless they are removed and separated.

Corruption

Interviewees in 14/18 farms stated that FPD officials had received illegal payments (i.e. bribes) of some kind from their farms. FPD officials reportedly received illegal payments in all provinces surveyed except Quang Tri. Three out of the four interviewees of large farms in Tay Ninh claimed that FPD officials received illegal payments from them. Illegal payments were received for providing false transportation papers, registering false births, and for overlooking or facilitating laundering. For example, the interviewee of one farm said that owners of wildlife farms and FPD officials were like brethren as they benefited from each other.

According to the interviewees, most of the illegal payments that FPD officials received resulted from the sale of transportation papers or other required papers. As mentioned previously, prices of wildlife were frequently quoted with and without transportation papers; animals with transportation papers were more expensive because buyers had to bear the cost of purchasing the transportation papers. One interviewee quoted that the cost for a FPD official's signature was 5 million to 10 million VND (~USD$ 225 to USD$ 450) depending on the time of year and animal species. Another said he could easily increase his legal paper records of monitor lizards from 2,000 to 10,000 animals. One interviewee reported that when transporting a shipment from Dong Thap to Mong Cai, the farm sometimes had to pay FPD officials in some provinces that they travelled through, even if they had the correct transportation papers. He usually had to pay 2 million VND to 3 million VND (~USD$ 90 to USD$ 135) to FPD officials so that they would not hold their shipment for 23 hours.

Interviewees of some large farms claimed that they had such close relationships with FPD officials that they could still claim increases without needing to manipulate the records in the management book (Case Studies 3, 4, and 5). For example, one interviewee stated that FPD officials never inspected his farm, and another said that the inspection was in fact just a show to give the appearance that the FPD officials were doing their jobs.

Case Study 5: N.V.C Farm in Quang Ngai province

The interviewee of the N.V.C Farm stated that the farm was opened for the sole purpose of legitimizing illegally sourced animals (i.e. wild-caught). The interviewee claimed that he could buy animals without transportation papers, and he could sell transportation papers for all the species that had been registered at his farm including clouded monitor lizard (*Varanus bengalensis*), common palm civet (*Paradoxurus hermaphroditus*), Malayan porcupine (*Hystrix brachyura*), elongated tortoise (*Indotestudo elongata*), yellow-headed temple turtle (*Heosemys annandalii*), Malayan snail-eating turtle (*Malayemys subtrijuga*), Asian leaf turtle (*Cyclemys dentata*), Indochinese box turtle (*Cuora galbinifrons*), keeled box turtle (*Cuora mouhotii*). The farm also offered to supply the unregistered Chinese stripe-necked turtle (*Mauremys sinensis*).

The interviewee stated that he purchased papers from FPD officials at a standard price that FPD officials typically charged. He also said that he occasionally sold transportation papers to traders in Tay Ninh, whose shipments had been stopped due to lack of legal transportation papers.

The interviewee said that it was easy to obtain papers from FPD officials to increase the number of animals on the farm, and he did it regularly by reporting false births. He claimed that he was so close with local FPD officials that he did not have to maintain a management book. Whenever he needed transportation papers with the signatures of three people: the Chief of the District FPD, the responsible FPD official, and the Head of the Legislation and Inspection Department, a set of transportation papers could be completed in just a few hours if all of those three people were present in their offices. He claimed that one time he urgently needed transportation papers, but the Chief of the District FPD was not in his office. He solved the problem by faking the Chief's signature, took the stamp from the Chief's office, and then stamped the papers himself.

DISCUSSION

Captive Breeding and Animal Husbandry

Wildlife farming has been proposed to reduce the pressure on wild animal populations from the illegal wildlife trade by supplying the market with a viable alternative to wild-caught animals (Phelps *et al.*, 2013). This requires an independent population of captive breeding individuals, with minimal input of wild-caught individuals after the initial establishment stage.

Evidence from the investigations suggests that farm owners did not invest much in building appropriate enclosures with suitable habitats for registered species. In most cases, no indication of an existence of effective captive breeding systems was found. Most of the enclosures observed were very basic and were used to house animals in a batch management system. Crowded enclosures and poor animal husbandry indicate that enclosures were clearly designed for short-term storage of animals, and demonstrably unsuitable for successful breeding or even captive rearing. This is because laundering was cheap, low risk, and investments can be turned around quickly. Meanwhile, investing in proper facilities and other costs associated with breeding and raising wildlife could be very expensive and not profitable.

Survey results strongly indicate that most species could not breed well in the controlled environments and current husbandry conditions of Vietnamese wildlife farms. Of those species that reportedly did breed at farms, incidental breeding was the most common form, with no intention to further captive breed in a controlled manner for profitable production at surveyed farms. Most surveyed farms, except one, lacked any kind of management system to prevent inbreeding. While nine farms bred at least one species in a controlled system, evidence from six of these farms clearly indicates that they constantly obtained inputs from the wild. Two out of nine farms, despite not sourcing animals from the wild, were initially stocked with wild-caught animals. Only one farm could potentially be classified as a closed system (i.e. no wild input), however this was inconclusive as there was not enough evidence to determine the legality of the initial stockings.

The breeding and rearing capacity of surveyed farms ranged from low to almost nonexistent, but supply capacities were stated in tons by owners of these farms. These contradicting situations suggest that farming has been commonly used as a cover for laundering of wild-caught animals, and that wildlife farming in Vietnam has failed to meet the most basic condition required to farm CITES listed species: the ability to breed the species in a controlled environment (WCS, 2008). In other words, wildlife farming in Vietnam is far removed from producing captive-bred animals that can replace wild sources at a scale large enough to saturate the market for most species, which is necessary for any wildlife conservation benefit (Phelps *et al.*, 2013).

The fact that 20 out of 46 species recorded at surveyed farms were globally and nationally endangered and critically endangered species is very concerning, especially as the breeding of most of these species was absent at surveyed farms, and many of them were considered to be large-scale laundering farms. Survey results also indicate that monitoring and management of these species at wildlife farms was not stricter than for other common species. Therefore, farming of these species under current conditions in Vietnam poses a serious threat to their wild populations.

Trade Operations

Overwhelming evidence from this survey indicated that wildlife farming in Vietnam was not a legitimate business, and in fact it was mostly used as a legal cover to protect their illegal wildlife trade operations. It seems that the larger the farm (in terms of registered animals and species), the larger the animal laundering and trade operation it became. Due to the low risk of being strictly punished under the law, large-scale laundering of wildlife was a much more attractive and profitable business than investing in breeding and raising wildlife in captivity. The market price for any species was reportedly unpredictable and fluctuated as species come in and out of demand. However, these surveyed farms had adapted to such fluctuations to maximize their profit.

Results from the survey indicate that these farms had many stable sources of wildlife, and could reportedly provide large quantities (tons) of registered species if they were given advance notice. According to the interviewees, their sources of wildlife did not only come from within Vietnam but also came from neighboring countries including Laos, Cambodia, and Thailand. They also stated that they had several different ways to legitimize illegally sourced animals, reduce investment and maximize profits from “farming” activities.

Survey results indicated that the wildlife trade route was primarily from south to north. Final destinations, according to interviewees, were mostly major urban centers in Vietnam such as Ho Chi Minh City, Hanoi and Hai Phong, and China via the Mong Cai border gate in Quang Ninh province. Such information was also in sync with intelligence collected by ENV throughout the years.

Management of Wildlife Farms

The FPD is the law enforcement agency which is responsible for registering wildlife farms, managing them to prevent illegal wildlife trade, and ensuring the contribution of farming to wildlife conservation. However, information collected through interviews with farm owners indicated that management of wildlife farms by local FPDs was ineffective.

Specifically, local FPDs do not have any effective measures to strictly manage wildlife farms. Lacking the ability or methods to distinguish between legal and illegal animals found at farms, FPDs are forced to rely on the validity of management books, and the honesty

of farm owners. This fact puts the FPD at a distinct disadvantage, which hinders prevention of wildlife laundering and illegal trade through farms. In one of the abovementioned examples, FPD officials usually did not count animals against the records during their inspections due to fear of financial repercussions from farm owners or the possibility of an accidental animal deaths during inspections.

During the course of this study, ENV investigators found clear evidence indicating animal laundering and non-existent captive breeding operations at farms as evidenced by animal injuries from snare traps, large discrepancies between the official records and the numbers of animals present at farms, and sub-standard housing conditions. However, possibly due to a lack of essential skills and resources, FPD officials had neither confronted nor challenged these farms on these problems. Moreover, since farm owners were given notice of FPD inspections in advance (in accordance with the law), they could hide, purchase, or sell animals so that the number of animals at their farms appeared to match with the registered number. Information collected through interviews in this survey suggested that corruption within the FPD in all surveyed provinces, except Quang Tri, also contributed to the ineffective management of wildlife farms in Vietnam.

Conclusion

The survey involved a sampling of 26 large multi species farms in 10 provinces in Vietnam. Results from this study clearly show that the Vietnamese wildlife farming sector failed to meet the conditions necessary to benefit conservation, and the extensive animal laundering reported during the study no doubt has had a serious negative impact on wild populations of laundered species.

Below is a list of conditions necessary for wildlife farming to have a positive impact on wildlife conservation which have not been fulfilled or have been fulfilled only partially by the Vietnamese wildlife farming sector:

- **Capability of animals to breed in the conditions provided:** Incidental breeding is widespread. The majority of captive species housed at wildlife farms did not breed in the husbandry conditions provided by farms, except for species viable for breeding in a controlled environment.

- **Continuity of captive breeding:** Many species did not breed at all. Additionally, input from the wild was still constantly required. No production was found at most farms. There was no confirmed case of a closed captive breeding operation (i.e. no wild input) – the standard system for effective wildlife farming.

- **Independent supply:** Laundering was abundant and widespread, occurring at all 26 farms in this study in different levels, and further supported by WCS, 2008; Brooks *et al.*, 2010; CFI, 2015.

- **Farming should be economically competitive with wild harvesting:** Wildlife laundering was much more profitable than captive breeding and farming of wildlife because laundering was cheap, low risk, and investments can turn around quickly. Meanwhile, investing in proper facilities and other costs for breeding and rearing could be very expensive and not profitable.

- **Captive bred supply is sufficient to meet the demand:** The fact that year-round demand for individual wildlife species was measured in tons, combined with poor captive breeding practices, suggest that it is completely infeasible for the demand for wildlife products in Vietnam and in the region to be solely supplied by captive breeding. Some species could neither grow nor breed well to meet market demand. Even species that could breed easily in captivity were not bred in surveyed farms since captive breeding is not as profitable as laundering.

- **Farmed and wild specimens are easily distinguishable:** There is currently no scientific method to tell legal animals apart from illegal ones. Captive bred and wild-caught animals could not be reliably distinguished, apart from those with obvious snare wounds (supported by WCS, 2008).

- **The demand for species is reliable:** Demand for different species fluctuated, which made specialization in captive breeding for a specific species a risky venture. This situation makes large multi-species laundering farms an economically safer option, as they can be flexible and adapt to market conditions.

- **Regulations are well enforced:** FPDs are not effective in managing wildlife farming, from licensing those farms to detecting illegal activities. Moreover, current regulations are vague, conflicting, and have many loopholes that have been exploited by owners of wildlife farms in Vietnam.

- **Farms are sufficiently monitored:** Substantial evidence from this survey indicates that wildlife farms in Vietnam have been poorly managed due to corruption and a lack of capacity amongst FPD officials. This conclusion is supported by previous studies (WCS, 2008; Brooks *et al.*, 2010; CFI, 2015).

RECOMMENDATIONS

Following consideration of the evidence and information collected during this study, ENV highly recommends the following:

Terminate commercial farming of endangered species: The government and responsible agencies prohibit the commercial farming of threatened and endangered species that are listed for full protection under national laws and CITES Appendix I, with few exceptions.

Wildlife farming should be restricted to common species for which Vietnam's Chief Scientific Authority has determined are suitable for farming. The conditions of which should be based on breeding ecology and growth, and for which farming of these species is determined through thorough scientific evaluation to have no detrimental impact on wild populations of these species as a result of their legal farming and trade. The list of species suitable for commercial farming must be published on the website of CITES Management Authority.

Strengthen regulations: Regulations on commercial farming, husbandry, breeding practices, and enclosure requirements, as well as violations and punishments need to be clearly defined and explicitly stated based on expert advice for each species.

Farm owners should not be permitted to farm a species unless they can demonstrate a full understanding of the regulations, and have the means to be able to meet these requirements.

Regulations ensuring that farms have closed captive breeding production should be formulated. There should also be detailed systems put in place to regulate the exchange of breeding stock between farms and to prevent inbreeding, which is likely prevalent in current conditions.

Investigate farms laundering wildlife: Significant investigations by law enforcement should target major farming operations where laundering has been reported. Where laundering is detected, owners should be subject to prosecution and imprisoned. Their farms and the vehicles, tools, and investments derived from or associated with the commission of criminal activities should be seized and transferred to the State. Less serious violations of wildlife farming regulations should be addressed in accordance with the law, and if repetitive or serious in nature, licensing of the farm should be immediately revoked and all captive animals transferred to an appropriate facility.

Strengthen FPD role in management of farms: Management of commercial farms must be strengthened to prevent abuse of the regulations and criminal activity such as laundering. For this purpose, additional training for FPDs is necessary to provide the base of knowledge and skills required to effectively manage wildlife farms.

FPDs must exercise greater transparency and be held accountable for administering regulations entrusted to them by the government. Violations of this trust should be strictly enforced with punishment ranging from dismissal to criminal prosecution.

Coordination between FPDs: Greater integration of FPDs across provinces is recommended to better monitor the domestic trade of animals. An integrated national database of registered farms should be available to local FPDs so that they can record, update, and cross-check farm information including animals, movements, breeding, trade and any other changes. This database could also be used as a management tool to detect suspicious activities, and ensure that local FPD officials and farms do not violate the law.

For example, the fraudulent, multiple uses of transportation papers could be stopped by the FPD. A province communicating with the FPD in the province where the shipment is to be received, indicating that a shipment of animals is inbound, would ensure an inspection. Laundering animals to non-existent farms could also be dealt with by only granting transportation papers to verified farms on the database.

Inspection techniques should be standardized across Vietnam with the following key requirements:

- There should be no notice given prior to inspection, and farm owners should be required to make their farms accessible to responsible FPD officials at all times. Farm inspections should be conducted on an unpredictable and frequent basis to ensure that all wildlife farms strictly follow the law (with no presence of laundering or any other illegal activity), and fulfill the enclosure and animal husbandry standards of all concerned species.

- As recommended by WCS (2008), the burden of evidence as to the source of the animals and any inconsistency between the registered and observed numbers of animals should be on the farm owners and not the authorities.

- In most cases, the farm owner should also be legally required to present the animals in such a way that FPD officials can easily count them.

- The detection of any management practices that are not conducive to captive breeding production, such as batch management practices, should trigger an investigation to determine if the farm is participating in any laundering activities.

Currently, there is a counterproductive relationship between wildlife farming and wildlife conservation in Vietnam, and this needs to change. Systems should be in place to give farm owners the incentive to contribute to wildlife conservation. Reporting systems should also be put in place so that farmers who launder wildlife can be anonymously reported to the authorities. The legality of farming certain species should relate to the conservation status of that species in the wild. For example, if a species reaches “threatened” on the IUCN or Vietnamese Red List then farming should be immediately prohibited and terminated.

APPENDICES

Appendix I. Requirements for legal wildlife farming stipulated by Decree 82/2006/ND-CP.

Breeding and rearing farms must meet the following requirements:

a) The farm must be constructed to suit the characteristics of the reared species and the farm's production capacity.

b) [The farm owner must] Register to breed species, which are certified in writing by CITES Scientific Authority, in a manner that such species with constant reproductive ability throughout many generations is conducted in a controlled manner.

c) [The farm owner must] Register to rear species which are certified in writing by CITES Scientific Authority in a manner that rearing of such species shall not impact conservation of such species in the wild.

d) [The farm owner must] Ensure safety conditions for humans and proper environmental hygiene in accordance with regulations prescribed by the State.

đ) [The farm owner must employ] People with professional capacity meeting requirements on management, techniques related to breeding, raising, taking care of reared species and preventing diseases.

e) Organizations, households and individuals extracting infant animals and eggs from the wild to raise for commercial purposes must be authorized by the provincial FPD.

Please note, farm owners must register their farms with the provincial FPD if they raise or breed animals stipulated in Decree 32 and Decree 160.

(Source: Decree 82/2006/ND-CP)

Appendix II. List of species observed/registered/reported on the wildlife farms surveyed and their status under CITES, IUCN, and Vietnamese law (LC=Least Concern, NT=Not Threatened, VU=Vulnerable, EN=Endangered, CR=Critically Endangered).

	Species	Cites Appendix	IUCN	Vietnamese Red List	Vietnamese Law
CLASS MAMMALIA (MAMMALS)					
Deer					
1	Lesser mouse deer (*Tragulus kanchil*)		LC	VU	IIB Decree 32
Mongooses					
2	Small Asian mongoose (*Herpestes javanicus*)	iii	LC		
Palm civets					
3	Common palm civet (*Paradoxurus hermaphroditus*)	iii	LC		
4	Masked palm civet (*Paguma larvata*)	iii	LC		
Pangolins					
5	Chinese pangolin (*Manis pentadactyla*)	ii	CR	EN	Decree 160 IIB Decree 32
6	Sunda pangolin (*Manis javanica*)	ii	CR	EN	Decree 160 IIB decree 32
Old World monkeys					
7	Long-tailed macaque (*Macaca fascicularis*)	ii	LC	NT	IIB Decree 32

Species		Cites Appendix	IUCN	Vietnamese Red List	Vietnamese Law
8	Rhesus macaque (*Macaca mulatta*)	ii	LC	NT	IIB Decree 32
Old World porcupines					
9	Asian porcupine (*Hystrix brachyura*)		LC		
10	Brush-tailed porcupine (*Atherurus macrourus*)		LC		
Bamboo rats					
11	Chinese bamboo rat (*Rhizomys sinensis*)		LC		
Pigs					
12	Wild pig (*Sus scrofa*)		LC		
CLASS AVES (BIRDS)					
Ducks					
13	Lesser-whistling duck (*Dendrocygna javanica*)		LC		
14	Spot-billed duck (*Anas poecilorhyncha*)		LC		
Peafowl and pheasants					
15	Common pheasant (*Phasianus colchicus*)		LC	EN	
16	Indian peafowl (*Pavo cristatus*)	iii	LC		
Mynas					
17	Common hill myna (*Gracula religiosa*)	ii	LC		
CLASS REPTILIA (REPTILES)					
Crocodiles					
18	Siamese crocodile (*Crocodylus siamensis*)	i	CR	CR	IIB Decree 62
Geckos					
19	Tokay Gecko (*Gekko gecko*)			VU	
Monitor lizards					
20	Clouded monitor lizard (*Varanus bengalensis*)	i	LC	EN	IIB Decree 32
21	Water monitor lizard (*Varanus salvator*)	ii	LC	EN	IIB Decree 32
Snakes					
22	Bocourt's water snake (*Enhydris bocourti*)		LC	VU	
23	Common rat snake (*Ptyas mucosa*)	ii		EN	IIB Decree 32
24	Indochinese rat snake (*Ptyas korros*)			EN	

Species		Cites Appendix	IUCN	Vietnamese Red List	Vietnamese Law
25	Puff-faced water snake (*Homalopsis buccata*)		LC		
26	Radiated rat snake (*Elaphe radiata*)				IIB Decree 32
Cobras					
27	Chinese cobra (*Naja atra*)	ii	VU	EN	IIB Decree 32
28	King cobra (*Ophiophagus hannah*)	ii	VU	CR	Decree 160 IB Decree 32
Pythons					
29	Reticulated python (*Python reticulatus*)	ii		CR	IIB Decree 32
Freshwater turtles					
30	Asian box turtle (*Cuora amboinensis*)	ii	VU	VU	
31	Asian leaf turtle (*Cyclemys dentata*)	ii	NT		
32	Asian yellow pond turtle (*Mauremys mutica*)	ii	EN		
33	Black marsh turtle (*Siebenrockiella crassicollis*)	ii	VU		
34	Chinese stripe-necked turtle (*Mauremys sinensis*)	iii	EN		
35	Chinese three-striped box turtle (*Cuora trifasciata*)	ii	CR	CR	Decree 160 IB Decree 32
36	Four-eyed turtle (*Sacalia quadriocellata*)	ii	EN		
37	Giant Asian pond turtle (*Heosemys grandis*)	ii	VU	VU	IIB Decree 32
38	Indochinese box turtle (species: *Cuora galbinifrons*, *Cuora bourreti*, *Cuora picturata*)	ii	CR	EN	Decree 160 (only *Cuora galbinifrons*)
39	Keeled box turtle (*Cuora mouhotii*)	ii	EN		
40	Malayan snail-eating turtle (*Malayemys subtrijuga*)	ii	VU	VU	
41	Vietnamese pond turtle (*Mauremys annamensis*)	ii	CR	CR	Decree 160 IIB Decree 32
42	Yellow-headed temple turtle (*Heosemys annandalii*)	ii	EN	EN	IIB Decree 32
Tortoises					
43	Elongated tortoise (*Indotestudo elongata*)	ii	EN	EN	IIB Decree 32
44	Impressed tortoise (*Manouria impressa*)	ii	VU	VU	IIB Decree 32
Softshell turtles					
45	Asiatic softshell turtle (*Amyda cartilaginea*)	ii		VU	
46	Chinese softshell turtle (*Pelodiscus sinensis*)		VU		

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Education for Nature - Vietnam (ENV) was established in 2000 as Vietnam's first non-governmental organization focused on the conservation of nature and the protection of the environment. ENV combats the illegal wildlife trade and aims to foster greater understanding amongst the Vietnamese public about the need to protect nature and wildlife. ENV employs creative and innovative strategies to influence public attitudes and reduce demand for wildlife trade products. ENV works closely with government partners to strengthen policy and legislation, and directly supports enforcement efforts in the protection of endangered species of regional, national, and global significance.

ENV Strategic Programs

Since 2007, ENV has focused its activities on three major program areas that comprise ENV's integrated strategic approach for addressing illegal wildlife trade in Vietnam. These include:

- Reducing consumer demand for wildlife products through investment in a long-term and sustained effort to influence public attitudes and behavior.
- Strengthening enforcement through direct support and assistance to law enforcement agencies, and mobilizing active public participation in helping combat wildlife crime.
- Working with policy-makers to strengthen legislation, close loopholes in the law, and promote sound policy and decision-making relevant to wildlife protection.

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