

# Proceedings

## Management of seized wildlife workshop

Cuc Phuong National Park

16-17 June 2011



CRITICAL ECOSYSTEM  
PARTNERSHIP FUND

hội thảo

## QUẢN LÝ THÚ Y ĐỐI VỚI ĐỘNG VẬT HOANG DÃ TỊCH THU

*Vườn Quốc gia Cúc Phương, ngày 16-17/6/2011*





## Management of seized wildlife

### Workshop

16-17 June 2011

**Goal:** Strengthen the management of seized wildlife to reduce the potential threat to human, livestock and wildlife health, and maximise the benefits to conservation of wild populations

#### Knowledge objectives:

- A comprehensive understanding of the challenges and strengths associated with the current management of seized wildlife in Vietnam
- Introduction to basic principles of temporary care and management of live wild animals following seizure
- Detailed understanding of the specific requirements for the care and management of Monitor lizards, snakes, primates, civets, primates and freshwater turtles immediately following seizure
- Steps to making the most appropriate conservation decision regarding the placement of seized wildlife

#### Participants:

Provinces of Quang Ninh, Haiphong, Lang Son, Ninh Binh, Thanh Hoa: Forest Protection Department , Department of Animal Health, Department of Animal Quarantine.

Central Agencies: Vietnam Forest Directorate (VNFD), CITES MA, National DAH, Ranger Area 1 (QN), Ranger Area 2 (Thanh Hoa).

Vietnamese rescue centres: Cuc Phuong National Park, Carnivore and Pangolin Conservation Program (CPCP), Turtle Rescue Centre (TRP), The Endangered Primate Rescue Center (EPRC), Cu Chi Wildlife Rescue Centre (CCRC) and Soc Son Wildlife Rescue Centre (SSRC)

Wildlife Conservation Society (WCS): WCS Vietnam Program

**Dates:** 2 days (16-17 June 2011)

**Location:** Cuc Phuong National Park

## Detailed agenda

Time	Topic	Instructor/Facilitator
<b>Day 1 16/6/2011</b>	<b>Introduction to wildlife trade, seizures, and placement options</b>	
0700-0730	Participant Register	CITES
0730-0745	Introduction of participants	CITES/FPD/DAH
0745-0800	Objectives and Expected outcome	WCS
0800-0830	Law and regulations for management of wildlife and Overview of the illegal wildlife trade in Vietnam	CITES
0830-0900	Recommendations for the management of animal health for confiscated wildlife in Vietnam	Dept Animal Health
	<i>Coffee break</i>	
0915-0945	Illegal wildlife trade - risks to Human, domestic animal and wildlife health	Dr Leanne Clark
0945-1000	Discussion/Questions	
1000-1030	Overview - Objectives of managing seized wildlife from seizure to placement	Dr Leanne Clark
1030-1100	Techniques to identify wildlife	Tran Xuan Viet
	<i>Lunch break</i>	
1400-1430	Overview of short-term care of seized wildlife following confiscation (How to handle wildlife, perform a basic health check, and provide food and temporary housing to confiscated wildlife prior to placement)	Dr Leanne Clark
1430-1500	Case Study: Confiscation of small carnivores - common health concerns seen in confiscated small carnivores, temporary care measures, placement options	Tran Quang Phuong, Carnivore and Pangolin Conservation Program, CP National Park
	<i>Coffee break</i>	
1515-1545	Case study: Turtle confiscation - common health concerns seen in confiscated turtles, temporary care measures, placement options	Hoàng Văn Thái, Turtle Rescue Centre, Cuc Phuong National Park
1545-1600	Plenary session - questions, discussion	WCS
1600-1630	Tour - Tour Primate Rescue Centre	EPRC
1630-1700	Tour - Turtle Conservation Centre (with a focus on quarantine and rehabilitation of confiscated wildlife)	TCC
1700-1730	Tour - Carnivore and Pangolin Conservation Program (with a focus on quarantine and	CPCP



	rehabilitation of confiscated wildlife)	
<b>Day 2 17/6/2011</b>	<b>Initial management of seized wildlife</b>	
0730-0800	Case study: Confiscation of lizards and snakes - common health concerns seen in confiscated snakes and lizards, temporary care measures, placement options	Le Xuan Lam, Cu Chi Wildlife Rescue Centre
0800-0830	Case study: Confiscation of primates - common health concerns seen in confiscated primates, temporary care measures, placement options	EPRC
0830-0850	Soc Son Rescue Centre: Animals accepted, procedure for transfer of live wildlife to Soc Son Rescue Centre	Soc Son Rescue Centre
	<i>Coffee break</i>	
0910-0940	Group activity - Biosafety and the correct use of Personal Protective Equipment (PPE)	Dr. Leanne Clark
0940-1010	Rationale for euthanasia & destruction of seized wildlife	Dr. Leanne Clark
1010-1145	SWOT analysis of placement options for confiscated wildlife in VN	WCS
1145-1200	Closing	CITES MA
	Lunch break	
1400-1700	Tour in Cuc Phương	
1800-2030	Farewell party	

[Type the abstract of the document here. The abstract is typically a short summary of the contents of the document. Type the abstract of the document here. The abstract is typically a short summary of the contents of the document.]



## Participant list

STT	Họ và tên	Đơn vị	Chức vụ	Điện thoại	Email
1	Nguyễn Cao Lễ	Chi cục Kiểm lâm Quảng Ninh	Trưởng phòng		
2	Hà Xuân Kinh	Chi cục Kiểm lâm Quảng Ninh	Hạt trưởng Hạ Long		
3	Lê Văn Thanh	Hạt Kiểm lâm Móng Cái	Hạt trưởng		
4	Hoàng Ngọc Trâm	Chi cục Kiểm dịch động vật vùng Quảng Ninh	Trưởng phòng Kiểm dịch		
5	Nguyễn Thị Kim Chung	Chi cục Thú y Quảng Ninh	Cán bộ phòng Tổ chức-Thanh tra		
6	Trần Thị Ngọc Hà	Chi cục Thú y Quảng Ninh	Cán bộ phòng Kỹ thuật		
7	Đỗ Thị Lâm	Kiểm lâm vùng 1	Phó Giám đốc		
8	Phạm Văn Dũng	Chi cục Kiểm lâm Hải Phòng	Kiểm lâm viên		
9	Cao Thị Hải Xuân	Chi cục Kiểm lâm Hải Phòng	Kiểm lâm viên		
10	Đoàn Bá Vương	Chi cục Thú y Hải Phòng	Cán bộ trạm chuẩn đoán xét nghiệm bệnh ĐV		
11	Khúc Thị Minh	Chi cục Thú y Hải Phòng	Cán bộ trạm chuẩn đoán xét nghiệm bệnh ĐV		
12	Hoàng Xuân Ngoan	Chi cục Kiểm lâm Lạng Sơn	Phó Chi cục Trưởng		
13	Triệu Văn Lý	Chi cục Kiểm lâm Lạng Sơn	Cán bộ đội cơ động		
14	Hoàng Quy	Chi cục Thú y Lạng Sơn	Phó Chi cục Trưởng		
15	Mã Bình Nguyên	Chi cục Thú y Lạng Sơn	Cán bộ kỹ thuật		
16	Hoàng Ngọc Tuyên	Chi cục Kiểm dịch động vật vùng Lạng Sơn	Phó Chi cục Trưởng		
17	Trần Thanh Tâm	Chi cục Kiểm lâm Ninh Bình	Phó Chi cục Trưởng		
18	Lê Sỹ Dương	Chi cục Kiểm lâm Ninh Bình	Kiểm lâm viên		
19	Đình Quốc Sự	Chi cục Thú y Ninh Bình	Chi cục trưởng		
20	Vũ Quang Hưng	Chi cục Thú y Ninh Bình	Trưởng phòng Kỹ thuật		
21	Nguyễn Văn Vân	Chi cục Kiểm lâm Thanh Hoá	Phó trưởng phòng Thanh tra PC		
22	Lê Đức Hải	Chi cục Kiểm lâm Thanh Hoá	Kiểm lâm viên		



23	Nguyễn Hữu Định	Chi cục Thú y Thanh Hoá	Chi cục trưởng		
24	Lương Xuân Vũ	Chi cục Thú y Thanh Hoá	Chuyên viên		
25	Nguyễn Văn Hạnh	Kiểm lâm vùng 2	Trưởng phòng kỹ thuật nghiệp vụ		
26	Hà Công Tuấn	Tổng cục Lâm nghiệp	Phó Tổng cục trưởng		
27	Hoàng Văn Năm	Cục Thú y	Quyền Cục trưởng		
28	Văn Đăng Kỳ	Cục Thú y	Trưởng phòng Dịch tễ		
29		Cục Thú y	Trưởng phòng Kiểm dịch		
30	Phạm Thế Sơn	Cơ quan Thú y vùng 1	Phòng kiểm dịch		
31	Đỗ Trọng Kim	Cục Kiểm lâm	Phó Cục trưởng		
32		Cục Kiểm lâm			
33	Đỗ Quang Tùng	Cơ quan quản lý CITES Việt Nam	Phó Giám đốc		
34	Lê Hiếu Văn	Chi cục Kiểm lâm Hà Nội	Phó trưởng phòng Thanh tra PC		
35	Scott Roberton	WCS			
36	Leanne Clark	WCS			
37		Trung tâm cứu hộ động vật Sóc Sơn			
38		Trung tâm cứu hộ động vật Củ Chi			
39		Trung tâm cứu hộ rùa Cúc Phương (TRC)			
40		Chương trình bảo tồn thú ăn thịt và tê tê (CPCP)			
41		Trung tâm cứu hộ linh trưởng nguy cấp Cúc Phương (EPRC)			
42		Vườn Quốc gia Cúc Phương			
43		Vườn Quốc gia Cúc Phương			
44	Phan Thị Nguyệt	Cơ quan quản lý CITES Việt Nam	Chuyên viên		
45	Vương Tiến Mạnh	Cơ quan quản lý CITES Việt Nam	Chuyên viên		
46	Hoàng Kim Thành	WCS			
47	Nguyễn Thị Mỹ	WCS			
48	Dương Việt Hồng	WCS			
49	Nguyễn Văn Long	WCS			

## Press Release

### Cần những giải pháp cấp thiết cho quản lý thú y đối với động vật có nguồn gốc hoang dã

“ĐVHD trong quá trình vận chuyển thường rất yếu, đây thực sự là mối tiềm ẩn các loài bệnh dịch đe dọa tới sức khỏe con người cũng như vật nuôi và thú hoang dã. Nhiều số liệu cho thấy khoảng 70% các bệnh truyền nhiễm tác động đến con người có nguồn gốc hoang dã.” Đây là những chia sẻ của bác sĩ thú y Leanne Clark tại hội thảo “**Quản lý thú y đối với động vật có nguồn gốc hoang dã**” khai mạc sáng nay tại Vườn Quốc gia Cúc Phương.

**Đây là hội thảo đầu tiên và lớn nhất tại Việt Nam về nội dung quản lý thú y với động vật hoang dã (ĐVHD) bị tịch thu với sự tham dự của hơn 50 đại biểu, do** Tổng cục Kiểm lâm, Văn phòng quản lý CITES, Cục thú Y cùng Hiệp hội bảo tồn ĐVHD (WCS) phối hợp tổ chức.

Trong những năm gần đây, buôn bán trái phép động vật hoang dã tại Việt Nam ngày càng gia tăng với tốc độ chóng mặt, Việt Nam dần trở thành quốc gia trọng điểm trong mạng lưới buôn bán trái phép ĐVHD trên thế giới. Tình hình buôn bán trái phép này đã và đang dẫn đến sự tuyệt chủng của các loài ĐVHD tại Việt Nam. Không chỉ vậy nó còn trở thành mối đe dọa tới sức khỏe con người và gây ra những bệnh không lường trước như HIV, SARS, H5N1, sán não phổi... Trong khi đó công tác quản lý và cứu hộ ĐVHD tịch thu hiện vẫn còn nhiều hạn chế và thiếu sự đầu tư.

Tiến sĩ Phạm Văn Đông, Phó Cục trưởng cục thú ý phát biểu: “Việc phối hợp tổ chức thực hiện giữa ngành kiểm lâm, với ngành thú y và các ngành khác trong quản lý chăn nuôi, vận chuyển, giết mổ, cứu hộ và giám sát dịch bệnh ĐVHD trong thời gian qua chưa được tốt. Hội thảo đã đem lại cơ hội chia sẻ các biện pháp nhằm củng cố hiện trạng trên như ban hành quy chế phối hợp, tổ chức đào tạo tập huấn cho cán bộ liên quan, tăng cường thông tin tuyên truyền”.

Hội thảo đã thu hút sự tham gia của hơn 50 cán bộ cấp Trung Ương như Cục Kiểm Lâm, Văn phòng quản lý CITES, Cục Thú Y, Cơ quan Kiểm lâm vùng 1, Cơ quan Kiểm lâm vùng 2, Cơ quan thú y vùng 1, cán bộ cấp tỉnh như Chi cục Kiểm Lâm, Chi Cục thú Y, Cơ quan kiểm dịch động vật của các tỉnh Quảng Ninh, Hải Phòng, Lạng Sơn, Ninh Bình, Thanh Hóa và Chi Cục Kiểm Lâm Hà Nội. Hội thảo còn có sự góp mặt của các chuyên gia đến từ Vườn quốc gia Cúc Phương, Chương trình bảo tồn thú ăn thịt và tê tê, Trung tâm cứu hộ rùa Cúc Phương, Trung tâm cứu hộ linh trưởng nguy cấp Cúc Phương và Trung tâm cứu hộ ĐVHD Sóc Sơn.

Ông Hà Công Tuấn, Phó Tổng cục trưởng Tổng cục Lâm Nghiệp nhấn mạnh: “Con người phải có trách nhiệm với việc bảo vệ ĐVHD, ngăn chặn buôn bán trái phép ĐVHD và các dịch bệnh có thể lây truyền từ ĐVHD. Hội thảo mở ra cơ hội chia sẻ các bài học kinh nghiệm để quản lý cứu hộ ĐVHD sau tịch thu theo đúng pháp luật cũng như kỹ thuật thú y giữa các cơ quan cấp trung ương, địa phương và các chuyên gia trong nước và ngoài nước”.

Các chủ đề thảo luận bao gồm những nguy cơ về sức khỏe và bảo tồn trong quá trình chăm sóc, xử lý ĐVHD sau tịch thu của các loài bị buôn bán trái phép phổ biến, các kỹ thuật gây chết/tiêu huỷ, và phân tích để tìm cách cải tiến các biện pháp xử lý ĐVHD bị tịch thu tại Việt Nam.



Hội thảo là một hoạt động trong khuôn khổ dự án “Giảm thiểu hoạt động buôn bán trái phép động vật hoang dã được bảo vệ từ Việt Nam sang Trung Quốc” của WCS do GEF (Quỹ môi trường toàn cầu) và CEPF (Quỹ đối tác về các hệ sinh thái trọng yếu) tài trợ.

###

**Thông tin nền:**

WCS là tổ chức bảo tồn phi lợi nhuận của Mỹ được thành lập năm 1895 với sứ mệnh bảo tồn động vật hoang dã và các vùng đất hoang dã, hiện đang hoạt động tại trên 60 nước ở Châu Phi, Châu Á, Châu Mỹ Latin và Bắc Mỹ.

Liên hệ: Cô Dương Việt Hồng, phụ trách truyền thông, WCS Việt Nam, ĐT: (04) 35149750, DĐ: 0904099913, e-mail: [dvhong@wcs.org](mailto:dvhong@wcs.org)



## Brief minutes

### WORKSHOP ON VETERINARY MANAGEMENT OF SEIZED WILDLIFE

*Cúc Phương National Park, 16-17 June, 2011*

#### **Discussions:**

Dr. Ky talked about the current situation of rabies in Vietnam and mentioned the national program for rabies up to 2015. He raised a question about whether any study on rabies infection between wildlife and human has been done yet

Leanne answered: Rabies has not been paid much attention. There are many types of rabies coming from rat and it is originated from bats. Human started to be infected because of bat biting. In the US, rabies originated from animal biting has been studied. Almost all of animals and humans having rabies virus can spread them to community so we need to be careful when choosing animals as pets. We have not done any research on rabies in wildlife species in Vietnam.

Dr Kỳ: In case of Leptospirosis, there are a great number of infected cases in Vietnam. In many provinces, people still eat muroid, which has been identified to be the host of Leptospirosis. He has no idea about the situation of this disease in other countries. He also wanted to ask for information of rabies infection by eating weasels.

Leanne answered: Actually, there has not been any research on mustelids and civet, however, if studied, we would see that mustelids and civet also carry rabies virus. In Vietnam, we have not carried out many researches on the impact of wildlife diseases to human health but we hope that in the near future, we can cooperate with animal health Dept and CITES to do it. We know that in Africa, this virus exists but we can not affirm whether wildlife in Vietnam is infected or not. So we need to do researches. Wildlife living in their own natural habitat will not affect human and livestock but our actions increase the risk of rabies infection.

#### **Discussion:**

Leanne asked questions about objectives of confiscating traded animals

1. Biodiversity conservation. To help human and nature become closer
2. Leanne: for implementation of wildlife protection law
3. To ensure human health because if not, it would be a source of disease that infects human, livestock and other wildlife.

To release wildlife back to their natural habitats.

**Discussions:**

Question: After seizing, FPD and DAH altogether deal with confiscated animals under circular No. 90. According to this circular, healthy animals will be released back to the nature while unhealthy animals will be brought to rescue centers and conservation or scientific facilities. In 2008, we seized 21 tons of wildlife which was 9 tons in 2009. In the first 5 months of this year, 3 ton of wildlife was confiscated including pangolins, turtles, snakes and a small number of primates. However, when releasing animals back to the nature, we want to assure that habitat is suitable for them to live. So, in what basis can we claim whether that habitat is suitable or not? In cooperation with animal health office, check-up for wild animals is rarely done. The mandatory criteria for releasing are that animals must be healthy; however, capacity of animal health office is weak. Another point needed to mention is that sometimes we want to release them but the forest manager boards do not approve it. In some occasions, farmers want to hand over animals such as bear to local authorities but they demand a pay. What should we do to solve this problem? Will rescue center pay for any of it? We hope that participants here will share their experiences.

Mr. Tùng CITES answered: When composing circular No. 90, we already considered criteria of animals for releasing and other potential infections. We think that these illegally traded animals can spread diseases since they are very weak and can be pathogen carriers so we do not encourage releasing animals and have thought of totally banning it. With this case, it is necessary that animal health office joins preparation and destruction process. In the past, we had more than 4000 bear individuals but due to accelerating bear and bear bile trade, there are now about 3600-3800 bear individuals remaining. In terms of problem relating to handing over animals, many people want to do it because raising bears is very money-consuming and almost all of them have illegal origins. If we accept to pay for some cases, all the remains will also ask for compensation.

Question: In this workshop, experts discuss 8 problems regarding epidemic, rescue and management of seized animals. The workshop has the positive impact but it is very difficult to apply all the experts' opinions in reality. Here are some difficulties that we encountered in the process of seizing animals:

- Participants joining ID species process are very important. The identification should be done by a law enforcement agency before the prohibited animals or specimens are seized. Otherwise, they might be mistaken with livestock. FPDs more or less have experiences in species identification but environmental police, border army, customs do not. Moreover, cooperation cannot happen all the time between all agencies as well as identification based on ID book. Therefore, we think you should organize more training courses and invite us and other agencies.
- Due to lack of experiences and knowledge about ID species, you need to show samples, products or derivatives to guide us in training courses. It's easier to identify species but products and derivatives such as tiger bone balm, rhino horn or medicinal derivatives are not. So you should include this in training programmes.

- Many animal health facilities, the facilities for temporal housing of seized animals, and the transference of seized animals to rescue centers are facing with a lot of difficulties. For example, in 2009, Quang Ninh confiscated a great quantity of wild animals such as wildcat, king cobra, bear, Chinese ratsnake, Indian cobra, iguana and pangolin. The process firstly was not easy since animals may be extremely fierces due to poachers' cruelty during transportation. We had to keep bears in a larger cage and did numerous medical treatments. Moreover, the facilities in Quang Ninh and Hai Phong FPD were poor so that sometimes there were not enough cages as well as medicine, which we did not either have money or receive any investment to buy more.
- Another problem is prosecution. We cannot officially declare they were bears until four expertise agencies came to identify them. It took a lot of time to identify while the legal period of keeping animals was only 24 hours while we still had to wait for experts like Mr. Canh and Mr. Phuong to ID them.
- ID species process is cheap but DNA testing and taking samples are expensive and difficult.
- We always have to deal with a lot of difficulties in animal handling, animal transferring, selling or dedicating for scientific purposes, especially with animal release. If one species is confiscated, we will need experts to confirm whether it should be released or not, identifying the appropriate habitat and animal health status.

Mr. Tùng CITES answered:

- Wildlife derivative and product identification is difficult and takes a long time
- In terms of legal procedure, it will be discussed in other workshops
- In terms of scientific agencies, there is no regulation that only one particular agency can have the ability to identify but all authority agencies can join the process. You can ask many agencies but not only Mr. Canh.
- Regarding the problem of releasing animals, the answer is the same as mentioned above.

Dr. Leanne WCS answered: You are right regarding animal health ability in Vietnam. Only some agencies have good skills in animal health, however, there are many veterinarians all over the world and they do not have good professional skills. Many universities, which have animal health department, recognize this problem and they are planning to organize many training courses and need a long term solution for this issue. Many facilities have improved their infrastructure to identify whether it is wild animals or not and Animal Health Department also pay attention to this issue so that it is unnecessary to worry about identification work. For solution, there is not just one bear rescue center, we should contact with all centers that we know.

Mr Việt WCS answered: In terms of identifying animal relating products, in 2009, we organized about 10 trainings with the participation of many parties. In Quang Ninh, we have hold 4 or 5 training courses of ID species and wildlife products for many agencies and we still want to organize more courses for officials. Derivatives are more difficult to identify but we heretofore trained agencies to recognize some of them. Besides, both CRES and CITES are doing identification work.

Mr. Đông DAH asked: We mainly monitor livestocks. With wildlife, monitoring and quarantine are limited but we hope that sub-law document systems will soon be issued regarding this problem. So, could you let me know some of the most common diseases that wildlife usually suffers from? With this question I hope that agencies working in animal health and other related fields get more information and come up with timely solutions.

Dr. Leanne WCS answered: This is really a big question. We have raised chickens and pigs for a long time but each year, new diseases still spread. We have to face with them and some of the diseases are still incurable. Both common diseases which have not been studied yet and the new ones are needed to concentrate on. Cooperation between animal health department and FDP is essential in order to study and understand thoroughly animals in wild environment and rescue centers and livestock as well to find out popular diseases amongst them. Therefore, upon waiting for the result, If any of you find any disease symptoms appear when dealing with animals, you should contact animal health agencies to have the most optimal solution. I hope that we will have other workshop to discuss this question.

Leanne asked some questions about euthanasia and participants answered in papers and discussed. The results were:

1. Is killing an appropriate solution?
  - Most of the participants agreed
  - Some thought that euthanasia by electric shock and CO2 suffocation are appropriate
  - 2 participants thought that killing was not the best solution
2. In what situation do you think that euthanasia is the best solution for seized animals?
  - Injured animals which are incurable cannot be released back to the nature
  - Infected animals that can be harmful to humans, livestock and other wildlife
  - Animals that lose parts of the body (digit or necrotic injuries) cannot get back to their habits
  - Animals which suffered from bad impacts during transportation
  - Animals that cannot be raised anymore
  - Sick animals that take the expensive treatments
  - Unknown-origin animals and carry germs

### **Discussions:**

Mr. Kỳ DAH: Your presentation is very interesting and accurate for terrestrial animals and livestock. With undestroyed animals, there are great potential of causing disease. We agree on all animal health theories.

Dr. Leanne WCS: I know that the problem is how to destroy and what method to choose? We want to collaborate with DAH and veterinarian school to guide veterinarian about euthanasia.

After listening to the presentation, do any of you change your opinion about euthanasia? And after killing seized animals, who would you contact?

Results achieved from participants:

1. Do you change your opinion about euthanasia?
  - The majority of participants agreed with euthanasia
  - Some participants who didn't agree with euthanasia now changed their mind.

2. If you decide to perform euthanasia on animals, who will you contact to do it?

- Animal health agencies
- Wildlife rescue center
- Environment management agencies
- Local authorities
- wildlife conservation organizations
- Wildlife reserve
- Veterinarian (depending on species and quantity)
- Wildlife management agencies
- FPD

Local animal health facilities

**Group 1: Transferring to rescue center, scientific facilities**

Advantages:

- Animals' health restored
- Gene source conservation
- Populations increased
- Have educational value and raise the awareness of the public.
- Help scientific work
- Money saving (pay by rescue centers)
- Prevent potential risks for natural population
- Stop illegal trade

Disadvantages:

- Costly in terms of investing for building infrastructure, expenses for raising and caring.
- Limited knowledge on raising process and disease treatment
- Potential risks of infections for humans and other species
- Unclear regulations of animal transfer
- Limited human resources and poor infrastructure

**Group 2: Releasing back to the nature**

Advantages:

- Increased natural population
- Ecological environment balance
- Species conservation
- Support scientific work
- Raise aware of wildlife conservation if research succeeds

Disadvantages:

- Potential risks of infections for humans and other species
- Time consuming to verify animal origin and habitat
- Hard to adapt to new environment which causes difficulties for protection. Easy to be recaptured.

- High expense of releasing back. For example: if one species do not get used to this new environment, it will be costly to move it to another one.
- Limited information of suitable areas for animals and lack data of animal origin
- Hard to evaluate after releasing

### **Group 3: Destruction**

#### Advantages:

- Prevent diseases and ensure health for humans and other animals
- Assure environmental sanitation
- Ease pain for animals
- Cost saving (Money/time)
- Prevent wildlife circulation on the market
- Raise awareness for the public and deter traders

#### Disadvantages:

- Decreased wildlife population in the nature
- Do not take full advantage of samples serving for scientific purposes and display.
- Lose precious gene source, especially endangered animals
- Destruction procedure is complicated
- Loss of revenue for national budget

### **Group 4: Legal liquidation**

#### Advantages:

- Increased income for national budget
- Save money, human resources and time
- Serve scientific purposes, pharmacy and making specimen

#### Disadvantages:

- Opposed to conservation aims
- Encourage illegal wildlife trade and transportation
- Corruption in liquidation procedures
- Bring animals back to illegal trade circulation and then be killed by wildlife traders
- Potential risk of disease infection due to limited quarantine ability
- Threaten natural population
- Have no support for scientific research
- Waste national budget for long term conservation work