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Title: A case study on tigers' prey (deer) poaching from Sundarbans: main threat to wild tiger conservation in Sundarbans, Bangladesh

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Programme: Master of Science in Forestry

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**A case study on tigers' prey (deer) poaching from
Sundarbans: main threat to wild tiger Conservation
in Sundarbans, Bangladesh**



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2018

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Sundarbans: main threat to wild tiger Conservation
in Bangladeshi Sundarbans**

Course Title: Thesis Work

Course No: FWT-5112

A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science at Khulna University

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DECLARATION

I, Anwarul Islam, declare that this research work is a result of my own works and it has not been submitted or accepted for a degree in any other University.

Candidate *Anwarul Islam*

Date.....*12.03.17*.....

DEDICATION

To my beloved parents

ACKNOWLEDGEMENT

My great submission is to the Almighty who provided me with the physical and mental soundness during my field work. My endless gratefulness goes to my respected supervisor Dr. Md. Nazmus Sadath, Professor, Forestry and Wood Technology Discipline, Khulna University, Khulna for unvarying supervision, suggestions, continuous cordial assistance and incredible contribution which helped me to complete my thesis.

I am very grateful for the strategic direction, cooperation, support and supply of tiger-human conflict information from the Bangladesh Forest Department.

I am also indebted to Mr. Madinul Awashan, Divisional Forest Officer, Wildlife & Tourism division, Boyra, Khulna for his cordial instruction in writing this paper; Samir Ranjan Gayen, Executive officer (Sudirty), Munshiganj, Shamnagar; Mohan Kumar, Chief Executive officer (LEDARS), Shamnagar; Ranajit Kumar Bormon, Local Journalist, Shamnagar.

I would like to thank my friends and well-wishers who created a comfortable research environment by welcoming me to their facility and providing field assistance. In particular, I would like to thank Sazib Uddin and Ashique Tanveer Cezar for providing necessary help for the field work. I am grateful to those evil groups (anonymous and confidential) for sharing their experiences on wildlife poaching and trafficking.

Thanks to Ekashua TV, Jamuna TV, ATN news, Daily Manabjamin, Daily Shangram, Daily Prothomalo, online newspapers and several regional dailies.

I am thankful to the members of community (Mowali, Bawali, Shrimp collector, Fishermen, Crabs collector) in Sundarbans who cooperated with me during interviews, sharing their experiences and have enlightened this study with their perceptions.

I especially thanks to my local sources who helped with providing information about poaching and marketing and helped to sketching the trafficking channel.

This research would not have been complete without the support of my family. My parent's love, encouragement and good wishes always kept me focused into my study.

Anwarul Islam

ABSTRACT

Prey (deer) poaching is a common scenario in Sundarbans where flesh and hide from deer have local and international demand. Local consumption of deer flesh is a luxury food and luxurious uses of deer hide like coats, belts, vanity bags, wallets etc. are the unremitting poaching pressure on deer in Sundarbans. Loss of prey animal (deer) is eventually reduced the capacity of Sundarbans to support tigers. The poaching of tiger prey is a key threat to tiger persistence; a clear understanding of tiger diet is a prerequisite to conserve declining populations.

This study tried to reveal the present intensity of poaching, causes of poaching and actors of poaching and trafficking and framing the poaching and trafficking route from Sundarbans. This study revealed the causes behind the poaching and trafficking. Content analysis of secondary relevant data sources and open ended interviews of different stakeholders were the methodology of this study. This study found 60-70 poacher groups are active in forest adjacent villages; identified 46 deer poaching hotspot village besides Sundarbans. It found poachers and traffickers were highly connected with local elites, politicians and corrupted government officials. Around 50 available documents were analyzed and 250 interviews of different stakeholders were carried out. This study consider last 2 years as its time frame. Based on the study results, It suggest that forest managers should focus their efforts on minimizing the poaching of tiger and all tigers' prey, and that future studies on wildlife crime be of long duration and large spatial extent to improve our understanding of crime channel and actors of this crime. Behavior change of is a hard enough challenge; only by putting human behavior at the heart of our strategies to tackle unsustainable and often illegal national and international trade of wildlife; ultimately mitigate its impact on biodiversity of Sundarbans.

Keyword: Sundarbans, Wildlife conservation, Poaching and Trafficking.

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ABBREVIATIONS

ACF	Assistant Conservator of Forest
BGB	Border Guard Bangladesh
BTAP	Bangladesh Tiger Action Plan
CITES	Convention on International Trade in Endangered Species
DFO	Divisional Forest Officer
FD	Forest Department
IUCN	International Union for Conservation of Nature
IRMP	Integrated Resource Management Plan
RAB	Rapid Action Battalion
SBCP	Sundarbans Biodiversity Conservation Project
SRF	Sundarbans Reserved Forest
TIB	Transparency International Bangladesh
TRAFFIC	Trade Record Analysis of Flora and Fauna In Commerce
UNODC	United Nations Office on Drugs and Crime
WB	World Bank
WCCU	Wildlife Crime Control Unit
WWF	World Wildlife Fund

Chapter One

Introduction

1.1 Background of the study

The tiger (*Panthera tigris tigris*, Linnaeus 1758) is the flagship species; the largest member of the cat family is widely considered to be one of the most charismatic on earth. Throughout centuries, the tiger has been revered as a cultural icon over much of its range. Royal Bengal Tiger is categorized as an endangered species globally (Chundawat et al. 2011) and critically Endangered nationally (IUCN-Bangladesh 2000). Since the early 1970s tigers have been used as an umbrella species for wildlife conservation in South Asia. It is widely accepted that these predators play a relatively major role in shaping prey communities in the stable environment of tropical forests. At the beginning of the last century an estimated 100,000 wild tigers roamed the Asian continent. Over the past 100 years tigers have lost 93% of their range and their numbers have declined by more than 95%. Unfortunately, tigers' unrelenting decline continues, and fast too. There is a thriving population of 106 tigers in the SRF (Bangladesh Forest Dept.2015). Tiger conservation has become a global issue in the recent year.

Approximately 100000-150000 deer and 20000-25000 wild boars remain in Sundarbans (FD, 2004); those are prey of Bengal tigers. In Bangladesh, three prey species- deer, wild boar and rhesus macaque- together comprise 95 per cent of the biomass consumed by tigers (Khan, 2008). Reza (2001a) recorded spotted deer, wild boar and monkey as the main prey species of tigers with 69%, 15% and 5% of total weight. Bengal tiger gets through 6-10 kg (13–22 lb.) of meat in one time, needs 2555kg (7 kg X 365 days) of meat per year that is roughly about 73 spotted deer or wild boar (Tamang, 1993) . With a population of 106 tiger in SRF the total amount of meat will be required 270830 kg, which is 7738 number of spotted deer or Wild boar per year.

Poaching of tigers is generally considered to be a threat to the persistence of tigers (e.g. Miller et al. 2011), but Karanth & Stith (1999) and Karanth et al. (2004) have clearly demonstrated that prey depletion can be an equal threat. Therefore, poaching of the prey on which the tiger populations depend is as important as poaching of tigers themselves. A national NGO (Wild Team, 2009) found 1100 deer being poached each year from Sundarbans. As the top predator, the tiger plays an important role in keeping the ecosystem



healthy for a range of animals and human communities who share its forest habitats. The threats to the tigers are well known, and include poaching to feed the voracious demand for tigers and their parts, poaching of their prey, direct killing by the communities living amongst tigers to revenge livestock losses or even the loss of human life and the rapid destruction of the grasslands and forests where tigers and their prey live. Extensive poaching of wild prey (basically deer), however, has led to a dramatic decrease in prey density in the Sundarbans over the past decades, with a corresponding significant reduction in tiger density. In Bangladesh almost all wildlife trade is illegal and punishable offence, driven by voracious consumer demand. Although international trade in them is banned, deer (hide, skull, antenna, etc.), tiger (hide, bone, skull, teeth etc.) are among the products sold across Asia, Europe and North America, primarily for use in traditional Chinese medicine and as luxury goods among the newly affluent. This large-scale demand has led to the Bangladesh emerging as a major source and supply route for organized wildlife crime. Traders yield high profit margins with a low risk of being caught. The decline and loss of flagship species affects not only the balance of nature, but also the livelihoods of people who depend on intact ecosystems. Some international organization work closely with government officials to protect the wildlife, landscape; involves local communities in creating sustainable approaches to economic development.

Illegal wildlife trade is a multibillion dollar business. Organized criminal networks operate across the India, Bangladesh, Nepal and Thailand; aided by corruption, poverty and weak laws. The complex systems used by the traders begin with gathering local intelligence and end with a very profitable final sale, almost always in another part of the world. Bengal tigers and deer are the prime targets in trade operations from Sundarbans. The process begins with the recruitment of a local individual who is familiar with the forest and location of the animal. These details are then passed to a poacher who sets up a trap. After a tiger is killed, the hide is scarified and the carcass is usually buried. When a tiger is killed, a separate group cures the skin, packs the meat, and stores the bones and claws – all at the site of the killing. Locals who know route are paid to transport the illegal wildlife products. After the illegal wildlife reaches the country of demand, the product is sold to the highest bidder. Money from the transaction is laundered, often within federal tax and revenue agencies, before beginning the next cycle of supply and demand. However, illegal wildlife trade poses the greatest threat, causing already shrinking species populations to decline even more rapidly.



1.2 Problem statement

The global demand for wildlife and wildlife products is estimated to be worth billions of US dollars each year (Wyler and Sheikh 2008, Barber-Meyer 2010). The poaching of tiger prey is a key threat to tiger persistence; a clear understanding of tiger diet is a prerequisite to conserve dwindling populations. The largest felid in the world, the tiger (*Panthera tigris*), is threatened due to habitat destruction, prey depletion and poaching (Nowell&Jackson 1996).Of these threats, the poaching of tiger prey is considered the most insidious because of its potential to not only impact tiger populations by increasing rates of human-tiger conflict, but also indirectly affect them by decreasing their prey base and presumably, depressing their reproduction (Karanth & Stith 1999). Accurate knowledge of a species' dietary habits is one of several prerequisites for effective conservation, and it is fundamental to conservation initiatives such as habitat prioritization, protection and restoration. Given its importance to the conservation of the species, it is not surprising that tiger diet has received considerable attention.

The tiger is carnivorous animal and it is a topmost component of the food chain and deer is the main (69%) pray animals of tiger in Sundarbans, if deer loss from SRF the food chain will be broken down, the whole eco-system will be collapsed and the forest as well as other wildlife will be disappearing in the long from the forest. A scarcity of herbivorous prey caused either by poaching or environmental factors might increase the tiger's interest in human prey. Large number of prey (deer) poaching is eventually reduced the capacity of the Sundarbans to support the tiger. So it is a burning issue to know the population size and habitat requirement of Spotted Deer in the SRF. So it is an important conservation issue to know the abundance of prey species like spotted deer and barking deer in the SRF. Deer may be poached from any part of the Sundarbans due to the widespread distribution of forest users and current limited protection capacity of the Forest Department. Deer poachers may consist of both organized poachers, often the same criminals who are involved in tiger poaching and opportunistic poaching and the forest resource users. Most of the cases poachers are highly connected with local elites, politicians and corrupted officers. More than fifty poacher groups are active in different parts of Sundarbans. These groups are highly active in both east and west part of Sundarbans basically in Shamnagar upazilla of Satkhira, Dacope in Khulna, Sharankhola upazilla of Bagerhat, and Patharghata upazilla of Barguna Districts.



Long term research on population ecology of free ranging population of spotted deer in Bangladesh has not been done so far. But no quantitative research study so far has been done on the distribution of prey species in different vegetation's and evaluate the poaching trends of deer from the Sundarbans. The study will provide valuable information for conservation specialists, to prepare a species conservation action plan and to perform further researches on this species.

1.3 Research objective

The specific objective of this study is conserve the wild tiger and it's pray (deer) and will try to reveal the wildlife poaching route from Sundarbans; will try to find out the probable tonic to remedy from this problem.

- Assess the number with seasonality, intensity of deer poaching and demand of venison and hide from market analysis.
- Try to design the model of the national and international trafficking of venison and hide in black-market and smuggling channel of deer hides as well as body parts of wild animal.
- Assess the knowledge of local communities about the wildlife (deer, tiger etc.) poaching and its effect on biodiversity.
- Assess the causes behind the wildlife poaching and trafficking from Sundarbans.
- Analysis the existing laws and its implementation on prey poaching situation by the law enforcing agencies and Analysis the different actions which have done by law enforcing agencies to minimize the pray poaching and to stop the activities of the poachers.

1.4 Research questions

- What is the seasonal variation of deer poaching in Sundarbans?
- What is the market demand of deer flesh, deer hide and others body parts?
- What is the trafficking and smuggling channel/route of deer flesh and deer hide?
- What is the bottleneck of existing laws and its implementation on this situation?
- What are the causes of wildlife poaching and trafficking from Sundarbans?
- What are the actions which have done by law enforcing agencies to minimize the pray poaching and to stop the activities?



Chapter Two

Literature review

2.1 The Sundarbans

2.1.1 Geographic location

The Sundarbans is south of the Tropic of Cancer, and located between N' 21°30' - 22°40', and E' 88°05'- 89°55' in the Ganges-Brahmaputra delta (Iftekhhar and Islam 2004). The Sundarbans mangrove forest in the Gangetic delta is the largest continuous mangrove area in the world (10,284 km²) with 4,267 km² (41.5%) in Indian territory and 6,017 km² (58.5%) in Bangladesh, possibly one of the biggest remaining tiger populations on the world, human-tiger conflicts are more frequent than in any other tiger area of the world. The total landmass of the forest is 4,143 km² (68.85%) covered with mangrove vegetation, bare ground, scrub and the grassland. The remaining 1,874 km² (31.15%) (Runkel, 1996) is water bodies in the form of numerous rivers, canals and creeks of widths varying from a few meters to several kilometers. The Sundarbans is 4.2% of total land area and 44% of total forestland area in Bangladesh (Haider, 2004). Remote sensing analysis suggests that the net forest area of the Sundarbans increased by 1.4% from the 1970s to 1990, and then decreased by 2.5% between 1990 and 2000 (Giri et al. 2007).

2.1.2 Climate

The Sundarbans climate can be classified as maritime, humid, and tropical, with marked seasonality in weather patterns. The seasons are described as dry (December-February), pre-monsoon (March-May), monsoon (June-September), and post-monsoon (October-November). Average annual rainfall ranges from about 1,800 mm in Khulna near the north of the Sundarbans to 2,790 mm on the coast, with the majority of the rainfall (70-80%) occurring during the monsoon. Daily temperatures range from 2°C in January to 43°C in March (Seidensticker and Hai 1983; Gopal and Chauhan 2006). Cyclones primarily occur in May-June or October-November, and have a major impact on the coastal ecosystem, causing loss of vegetation, property, and human lives (Seidensticker and Hai 1983; Islam and Peterson in press).

2.2 Wildlife

According to Wildlife (Conservation & Security) Act, 2012, -Wildlife" means different types and species of animals or different stages of their life cycle, whose source is considered as wild.



Wildlife includes any animal, aquatic and land vegetation which forms part of any habitat. Thus the term wildlife effectively encompasses all forms of life, whether plant or animal which are found wild in nature. This would also include marine, freshwater and coastal ecosystems (Security and Conservation Act, 2012). Wild animal means any animal specified in schedule-1, 2 and 4.

2.2.1 Wildlife of Sundarbans

Bengal tiger is the most important wildlife in sundarbans. The others are about 289 terrestrial faunal species of 185 genera (Seidensticker and Hai, 1983) and 219 aquatic faunal species of 146 genera (Chantarasri, 1994) had been earlier reported as found living in the sundarbans. The SRF and surrounding areas have a rich avifauna and 315 species including 95 species of waterfowl, 38 species of raptor, and 9 species of kingfisher representing 48% of the birds known to occur in Bangladesh have been recorded (IUCN, 1994; Hendrichs 1975; Seidensticker and Hai 1983; Sarker and Sarker 1986; Chaudhuri and Choudhury 1994; Hussain and Acharya 1994; Naskar and Mandal 1999). About 375 wildlife species of them 35 reptiles, over 300 birds, 32 mammals and 8 amphibians are found in sundarbans (SBCP, 2004). Moreover, 200 -300 fish species are recorded in SRF (Chaudhuri and Choudhury 1994; Hussain and Acharya 1994; Sanyal 1999; Islam and Haque 2004) and Giant honey bee (*Apis dorsata*) (Chakrabarti 1987a; Gopal and Chauhan 2006).

Table: 2.1 Faunal biodiversity of Sundarbans comparison to whole Bangladesh

Fauna	No. of species available in Bangladesh	No. of species available in SRF	% in SRF as compared to Bangladesh
Mammals	116	32	27.59
Aves	868	300+	34.56+
Reptiles	143	35	24.48
Amphibians	22	8	36.36

Source: IUCN, 2000; Hendrichs, 1975; Seidensticker, 1983; Hussain & Acharya, 1994; FRMP, 1997; IRMP, 1998

The major wildlife species are Bengal tiger (*Panthera tigris tigris*), Spotted deer (*Axis axis*), Wild boar (*Sus sacrofa*), Monkey (*Macaca mulatta*), Crocodile (*Crocodylus porosus*), Rock python (*Python molurus*), King cobra (*Ophiophagus hannah*), Common krait (*Bungarus caeruleus*), Olive ridley turtle (*Lepidochelys olivacea*), Green turtle (*Chelonia mydas*), Irrawaddy dolphin (*Orcaella brevirostris*), Melon-headed dolphin (*Neophocaena phocaenoides*), Minor lizard (*Varamus bengalensis*), Common otter (*Lutra lutra*) etc.



The major birds are Brown-winged king fisher (*Halcyon amauroptera*), Rudy kingfisher (*Halcyon coromandra*), Blac-winged kite (*Elanus caeruleus*), Brahminy kite (*Haliastur indus*), Red jungle fowl (*Gallus gallus*), Little heron (*Butorides striatus*), Great egret (*Casmerodious albus*), lesser adjutant (*Leptoptilos javanicus*), White bellied sea eagle (*Haliaeetus leucogaster*) etc.

2.2.2 Extinct wildlife in SRF

Once SRF was enrich in various kind of wildlife. Due to unfavorable environmental condition some of the species are extinct. The extinct wild animals are noted in following table.

Table: 2.2 Extinct wildlife in SRF

English name	Species name	Scientific name
Wild buffalo	Wild buffalo	<i>Bubalis bubalis</i>
Deer	Hog deer	<i>Axis porcinus</i>
	Swamp deer	<i>Cervus duvauceli</i>
	Samber	<i>Cervus unicolor</i>
Rhino	Indian one-horned rhino	<i>Rhinoceros unicornis</i>
	Javan rhino	<i>Rhinoceros sondaicus</i>
Crocodile	Marsh crocodile	<i>Crocodyles palustris</i>

Source: Hussain and Acharya, 1994

2.2.3 Prey base species in Sundarbans

In Sundarbans the main prey base of Bengal tiger are spotted deer and wild boar. Beside Bengal tiger also eat Monkey, Otter, Crabs and Fish. Hendrichs (1997), Tamang (1993) and Integrated Resource Management Project (1996-1997) report on prey base population in Sundarbans are given below:

Table 2.3 Status of major prey base species in SRF

Name of Species	No. of individuals			
	Hendrichs (1971)	Tamang (1993)	IRMP (1996-97)	FD-2014
Spotted deer	80,000	90,537	1,00,000-1,50,000	1,00,000-1,50,00
Barking deer	-----	29,181	----	
Wild boar	20,000	45,269	20,000-25,000	20,000-25,000
Monkey	40,000	40,000	40,000-25,000	40,000-50,000
Otter	20,000	20,000	20,000-25,000	

Source: FD, 2014; IRMP, 1998.



2.2.4 Scant analysis of tiger

From the results of scant and kill data analysis, it seems that spotted deer, wild boar and Monkey are the most common prey species of Bengal tiger. The following table shows the recorded data (Reza, 2000).

Table: 2.4 Scant analysis of tiger

Prey species	Av. Body of wt. (kg.)	Scant %	Kill%	Average %
Spotted deer	55	69.23	65.38	67.30
Wild boar	38	15.66	23.07	19.36
Rhesus macaque	8	5	-	2.50
Monitor lizard	6	-	11.53	5.76
unidentified	-	10.18	-	5.09
Total	-	100	100	1000

Source: Reza, 2000

Out of 52 tiger scants the percent of different prey base are found as, Spotted deer 69.23%, Wild boar 15.66%, Monkey 5%, unidentified animal parts 10.18% of total weight of scants. The soluble materials 6% was soil, sometimes grasses were found as soluble material (Reza, 2000). According to Reza (2000) out of 26 preys, tiger kill 17 (65%) Spotted deer, 6 (23%) Wild boar and remaining 3 (12%) is Monitor lizard, Monkey, Otter etc. on an average a tiger needs among 6-10 kg of meat daily. Past studies based on baits and wild prey indicates a tiger needs 2555kg (7 kg X 365 days) of meat per year that is roughly about 73 spotted deer or wild boar (Tamang, 1993) . With a population of 106 tiger in SRF the total amount of meat will be required 270830 kg, which is 7738 number of spotted deer or wild boar per year.

2.3 Wild crime

2.3.1 Poaching

Poaching refers to a variety of offences that criminalize the unlawful taking of wild animals. For instance, poaching may involve the hunting of animals that belong to a protected species, or illegal hunting outside designated areas, UNODC, 2012

2.3.2 Wildlife crime/trafficking

Wildlife crime/trafficking refers to any "environmental-related crime that involves the illegal trade, smuggling, poaching, capture or collection of endangered species, protected wildlife (including animals and plants that are subject to harvest quotas and regulated permits), derivatives or products thereof" (South and Wyatt, 2011; WWF, 2012:9). Crimes therefore



refer to acts committed in contravention of national law, and at the international level, to violations of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

2.3.3 Wildlife trade

It refers to the sale and exchange of animal and plant resources. This includes ornamental animals' products such as corals for aquaria, reptile skins for the leather industry, tortoise shell, as well as ornamental plants such as orchids and cacti. It also includes timber products, medicinal and aromatic products, such as taxol, agar wood, musk, fisheries products and live animals for the pet trade including parrots, reptors, primates, and a wide variety of reptiles and ornamental fish.

As per Article I(c) of the CITES, "Trade" means export, re-export, import and introduction from the sea.

Wildlife trade involves hundreds of millions of individual plants and animals' species. Wildlife trade is diverse, ranging from live animals and plants to a vast array of wildlife products derived from them including food products, exotic leather goods, wooden musical instruments, timber, tourist curios, fish, other food products and medicines. Most wildlife trade is probably within national borders, but there is a large volume of wildlife in trade internationally. Many forms of wildlife trade are legal but a significant part of the trade is illegal and violation of international and national regulations and legislation.

2.4 Responsible authorities and regulations

2.4.1 Existing agencies responsible for wildlife crime control in Bangladesh

Wildlife and Nature Conservation Circle, Bangladesh Forest Department is working for wildlife management in the country in consists with following 07 wildlife divisions and one unit; those are Wildlife Management and Nature Conservation Division, Dhaka, Wildlife Management and Nature Conservation Division, Khulna, Wildlife Management and Nature Conservation Division, Chittagong, Wildlife Management and Nature Conservation Division, Moulvibazar, Wildlife Management and Nature Conservation Division, Hobigonj, Wildlife Management and Nature Conservation Division, Rajshahi, Wildlife Management and Nature Conservation Division, Sherpur and Wildlife Crime Control Unit (WCCU).

Other than these specialized divisions all territorial forest divisions of the Forest Department are also working for wildlife management, nature conservation and law enforcement. To combat wildlife crime Forest Department has collaboration with following law enforcement



agencies of the country are Rapid Action Battalion (RAB), Bangladesh Police, Border Guard Bangladesh (BGB), Bangladesh Coast Guard and Customs Intelligence

2.4.2 Existing acts to protect wildlife in Bangladesh

2.4.2.1 Wildlife (Conservation & Security) Act, 2012

Section 6. Prohibition related to wild animals and plants.

(1) *“No person shall hunt any wild animal without a license or, as the case may be, obtaining a permit under this Act, or willfully pick, uproot, destroy or collect any plant mentioned in Schedule IV.”*

(2) *“The Government may, by notification in the official Gazette, prohibit hunting of any specified or all wild animals in a specific forest area or throughout Bangladesh for a specific period.”*

Section 28. Import.

(1) *“No person shall import — (a) through any other route except customs port of entry; (b) without CITES certificate, where applicable; and (c) without licence; any wild animal or parts thereof, trophy, uncured trophy, or plants mentioned in schedule IV or its part or derivative thereof.”*

(2) *“The Quarantine certificate issued by the appropriate authority of the country of import shall be produced for each imported wild animal or plants mentioned in schedule IV or derivative thereof, upon arrival at customs port of entry.”*

Section 29. Export.

“No person shall export or re-export— (a) through any other route except custom port of exit; (b) without CITES certificate, where applicable; and (c) without licence; any wild animal or parts thereof, trophy, uncured trophy, or plants mentioned in schedule IV or parts or derivatives thereof.”

Section 32. Seizure.

(1) *“Any Officer, for taking measures under this Act, may seize the following articles or goods, namely: — (a) hunted, acquired or captured wild animals without licence or animals reproduced from it during captivity; (b) dead or dying wild animals on account of accident; (c) such wild animals or parts thereof, trophy or uncured trophy, meat, part of body or any plant mentioned in schedule IV or parts or derivatives thereof, not registered under this Act or for which no licence has been received; (d) weapons, articles or tools used in committing an offence; (e) such wild animals or parts thereof, trophy, uncured trophy, meat, part of body or any plant mentioned in schedule IV or parts or derivatives thereof not imported or*



exported under sections 28 and 29 : Provided that the provisions of this sub-section shall not be applicable in case of trophy of wild animal or memorials used as tradition, heritage or part of daily life of small ethnic-community. "

(2) "All articles or goods seized under sub-section (1) shall be liable to confiscation in favour of Government. "

(3) "The seizing officer may take measure to dispose of the articles or goods seized under sub-section (1), which is quickly and naturally perishable, by sale, damage, removal or any other means according to the manner prescribed by rules. "

Section 34. Penalties for certain offences.

"If any person — (a) forges, exchanges or interferes with any other means or alters registered mark and fixed registered mark under section 11; or (b) purchases, sells, imports or exports any wild animal or parts thereof, meat, trophy or any derivative thereof or forest product or any plant mentioned in schedule IV or derivatives thereof, from any other person without having licence or permit — he shall be deemed to have committed an offence and for such offence, be punished with imprisonment for a term not exceeding 1 (one) year or with a fine of Taka not exceeding 50 (fifty) thousand or with both and in case of his repetition of the same offence, he shall be punished with imprisonment for a term not exceeding 3 (three) years or with a fine of Taka not exceeding 2 (two) lac or with both. "

Section 36. Penalties for killing tiger, elephant, etc.

(1) "If any person kills any tiger or elephant mentioned in schedule I without obtaining any licence under section 24, he shall be deemed to have committed an offence and shall be non-bailable for such offence and, be punished with imprisonment for a term not less than 2 (two) years and not exceeding 7 (seven) years and also with a fine of Taka not less than 1 (one) lac and not exceeding Taka 10 (ten) lac and, in case of his repetition of the same offence, he shall be punished with imprisonment for a term not exceeding 12 (twelve) years and with a fine of Taka not exceeding 15 (fifteen) lac: Provided that the provisions of this section shall not apply, when a person is attacked by a tiger or elephant causing threat to life of such person and such tiger or elephant is killed for saving life of such person: Provided further that when questions of filing a case in this respect arise, the station officer may, in consultation with the warden, file a case. "

(2) "If any person collects, acquires or purchases or sells any trophy, uncured trophy, meat, parts of body of any tiger or elephant mentioned in schedule I without obtaining a permit under section 10, he shall be deemed to have committed an offence and for such offence, be



punished with imprisonment for a term not exceeding 3 (three) years or with a fine of Taka not exceeding 3 (three) lac or with both and in case of his repetition of the same offence, he shall be punished with imprisonment for a term not exceeding 5 (five) years or with a fine of Taka not exceeding 5 (five) lac or with both."

Section 37. Penalties for killing cheetah, lam cheetah, hoolock, sambar deer, crocodile, gharial, whale or dolphin, etc.

(1) "If any person kills any cheetah, lam cheetah, hoolock, sambar deer, crocodile, gharial, whale or dolphin mentioned in schedule I, he shall be deemed to have committed an offence and for such offence, be punished with imprisonment for a term not exceeding 3 (three) years or with a fine of Taka not exceeding 3 (three) lac or with both, and in case of his repetition of the same offence, he shall be punished with imprisonment for a term not exceeding 5 (five) years or with a fine of Taka not exceeding 5 (five) lac or with both: Provided that the provisions of this section shall not apply, if a person is attacked by a cheetah or crocodile causing threat to life of such person and the cheetah or crocodile is killed for saving life of such person: Provided further that when questions of filing a case in this respect arise, the station officer may, in consultation with the warden, file a case."

(2) "If any person collects, acquires or purchases or sells or transports any trophy, uncured trophy, meat, parts of body of cheetah, lam cheetah, hoolock, sambar deer, crocodile, gharial, whale or dolphin mentioned in schedule I, he shall be deemed to have committed an offence and for such offence, be punished with imprisonment for a term not exceeding 2 (two) years or with a fine of Taka not exceeding 1 (one) lac or with both, and in case of his repetition of the same offence, he shall be punished with imprisonment for a term not exceeding 4 (four) years or with a fine of Taka not exceeding 2 (two) lac or with both."

Section 38. Penalties for killing birds or migratory birds, etc. — (1) "If any person kills any birds or migratory birds mentioned in schedule I and II, he shall be deemed to have committed an offence and for such offence, be punished with imprisonment for a term not exceeding 1 (one) year or with a fine of Taka not exceeding 1 (one) lac or with both, and in case of his repetition of the same offence, he shall be punished with imprisonment for a term not exceeding 2 (two) years or with a fine of Taka not exceeding 2 (two) lac or with both."

(2) "If any person collects, acquires or purchases or sells or transports any trophy, uncured trophy, meat, parts of body of birds or migratory birds mentioned in schedule I and II, he shall be deemed to have committed an offence and for such offence, be punished with imprisonment for a term not exceeding 6 (six) months or with a fine of Taka not exceeding 30



(thirty) thousand or with both, and in case of his repetition of the same offence, he shall be punished with imprisonment for a term not exceeding 1 (one) year or with a fine of Taka not exceeding 50 (fifty) thousand or with both.''

Section 42. Penalties for filing a case of false or harassment or wrongful seizure.

(1) ''If any officer, authorized under this Act by contravening any provision under this Act seizes any article or material or harasses any person, he shall be deemed to have committed an offence, and for such offence, be punished with imprisonment for a term not exceeding 6 (six) months or with a fine of Taka not exceeding 50 (fifty) thousand.''

(2) ''If the accused is acquitted by a court at the end of hearing and trial of any case filed under this Act and the court mentions it clearly in the judgment that the complaints brought against the accused is false, groundless and harassing, the complainant shall be deemed to have committed an offence and for such offence, be punished with imprisonment for a term not exceeding 1 (one) year or with a fine of Taka not exceeding 1 (one) lac or with both.''

Section 43. Cognizibility, non-cognizibility, bailability, non-bailability and compoundability of offences.

''Offences committed under section 36 shall be cognizable and non-bailable and the offences committed under other sections, except the section, shall be non-cognizable, bailable and compoundable subject to compensation.''

2.5 Main reasons for wildlife poaching and trafficking

2.5.1 Traditional Medicine

An estimated 80 % of the world's population are said to rely for primary health care on traditional medicines. Many traditional medicines (herbal remedies, traditional medicines to ingredients for industrial pharmaceuticals) use wildlife as ingredients, for example traditional East Asian medicines use parts and derivatives from more than 1000 plant and animal species including tiger bone, bear gall bladder, pangolin scales, rhinoceros horn and Dendrobium orchids. Emerging evidence of rhinoceros horn being used as a palliative medicine for cancer, along with its use as a "hangover cure" by affluent people in some countries. In China and Hong Kong, tiger bones are ground and used to make tonics and balms to soothe rheumatic pain and to help cure a variety of other illnesses. Tiger penises preserved in wine are used to increase sexual virility and help treat impotence. Certain medical encyclopedias prescribe tiger bones, stir-fried with wine or vinegar to reinforce sinews and bones and to help bring down fevers. Such recipes and medical prescriptions command a loyal following of believers in their medicinal powers who will pay top dollar. In Taiwan, for example, tiger penis soup



sells for up to \$320 a bowl, while a bottle of wine containing 10 grams of powdered tiger bones sells for approximately \$10. Tiger products, such as claws and hides, are also in great demand in countries like South Korea, Japan, and Yemen.



Fig: 2. 1. a. Herbal medicine made from tiger, b. Bear bile and c. Bear bile products

2.5.2 The Pet Trade

Much of the pet trade is dominated by reptiles and birds, and an increasing trend exists to meet the demand of specialist collectors for some of the world's rarest species. These 'hobbyists' often specialize in particular groups of species such as types of parrots and songbirds (e.g. Straw-headed Bulbul *Pycnonotus zeylanicus*, Palm Cockatoo *Probosciger aterrimus*), tortoises and freshwater turtles (e.g. Indian Star Tortoise *Geochelone elegans*, and the Pignosed Turtle *Carretochelys insculpta*), snakes or lizards, with a view to collecting the broadest, and often the rarest, range of species. It is this global demand for rare and exotic pets that fuels much of the illegal collection and smuggling from the renowned biodiversity hotspots in South-east Asia – as well as rising demand from countries within South-east Asia for endemic species from Africa, South America and Australasia.



Fig: 2. 2. a. Spotted Deer, b. Fishing Cat, c. Common Mongoose, d. Black headed Munia, e. Hill Moina, f. Rose ringed Parakeet, g. Spotted Dove

2.5.3 Food, Wild Meat/Bush meat

For many people, wildlife is an important source of protein; wild meat from species such as deer, pangolin and snakes is consumed as delicacies or 'tonic' food items, rather than for subsistence needs. In East Asia, meat from freshwater turtles (such as the South-east Asian Box Turtle *Cuora amboinensis*) is consumed in huge volumes despite the fact that three-quarters of the 90 species found in Asia are considered threatened, and 18 are considered critically endangered, such as the River Terrapin *Batagur baska*. As turtles are long-lived animals, consumers hope to attain similar longevity, and many believe that the 'wildness' of the meat will benefit their health. However, in recent decades, growing human populations, unsustainable harvesting and illegal activities have put additional pressure on these resources.

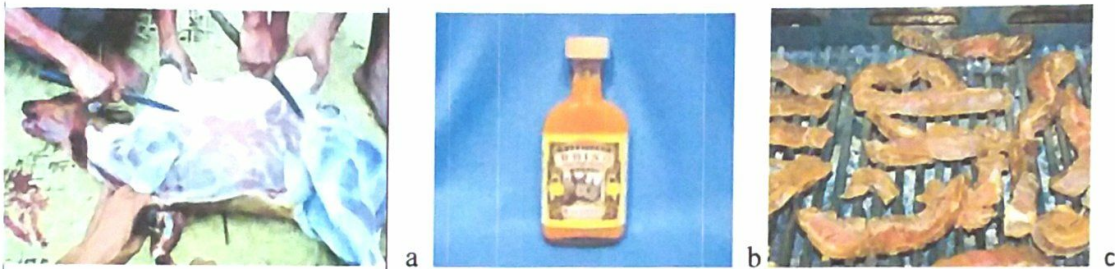


Fig: 2. 3. a. Deer flesh, b. Sauce made from Rhino horn, c. Bush meat of Snake

2.5.4 Trophies, Decorations, Luxury items and perfume

Many wildlife specimens and curios are collected by museums and private individuals. A wide range of animal products are found in Southeast Asia's ornamental trade, including elephant ivory carvings, products made from the shell of the Hawksbill Turtle *Eretmochelys imbricata*, seashells, coral souvenirs, mounted insects such as butterflies and beetles. Horns, antlers and heads are hunted and traded for their value as trophies, such as those from Sambar *Cervus unicolor* and Serow *Naemorhedus sumatraensis*. International travellers frequently have the option to purchase goods made from endangered species, such as marine turtle products and elephant ivory while abroad. Musk deer gland is hunted for its gland; highly expensive perfume is made from musk deer gland. Often this illegal trade is unintentional, resulting from ignorance of the laws and of which species require permits for export and or import. In many cases, these products can be legally offered for sale in popular tourist locations, but transporting them across international borders requires special permits, such as those issued by CITES authorities. In other cases, wildlife products are sold in open violation of national or local laws – and concerted investigations and law enforcement is needed to police any continuing availability. Little or no information is available to alert buyers to the illegal nature of some purchasing options, or regarding the effect the market for these

products has on wild populations. Greater awareness of the legality of wildlife souvenir trade is needed to enable travellers to buy wisely.

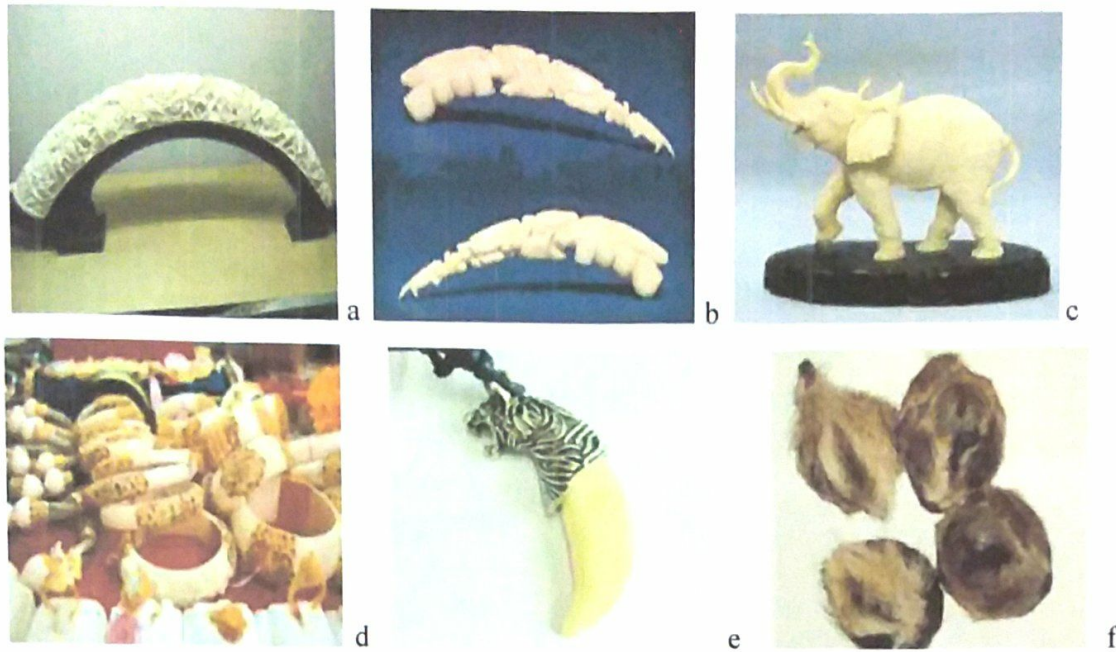


Fig: 2. 4. a. Trophy made from Elephant ivory, b. Trophy made from Elephant ivory, c. Trophy made from Elephant ivory, d. Ornaments made from made from Elephant ivory, e. Key ring made from Tiger teeth, f. Musk deer gland use for perfume making.

2.5.5 Skins, furs, wools and feathers

Skin, furs, wool and hair from many species of mammals, reptiles and even fish are traded in the international market to make products ranging from clothing and accessories such as footwear, shawls and wallets, to ornaments, charms, and rugs. In many cases, this trade is bringing some of the world's most endangered species closer to extinction, with the Tibetan Antelope or Chiru *Pantholops hodgsonii* and Asian wild cats such as Tiger *Panthera tigris*, Leopard *Panthera pardus* and Clouded Leopard *Neofelis nebulosa* being prime examples.

The poaching is being driven by a substantial domestic Indonesian market for Tiger skins and other parts, especially claws and teeth for trophies, charms and souvenirs. Reptile skins, particularly crocodile, snake (like Reticulated Python *Python reticulatus* and Rock Python *P. molurus*) and monitor lizards *Varanus* spp., dominate the exotic leather market, while some tanneries produce munt jack and pangolin leather products.



Fig: 2.5. a. Chair decorated with Deer hide, b. Bag made from Crocodile skin, c. Bag made from Tiger hide, d. Ladies hills made from Python skin, e. Belts made from Python skin, f. Shoes made from Python skin, g. Coat made from Pangolin skin, h. Bengal Tiger skin, i. Coat made from wild animal hide, j. Cap made from Bear hide, k. Crown made with wild bird feathers, l. Cap made from fur of wild bird.

2.5.6 Other products and services

Many animals and plants or derivatives are used for religious purposes. South-east Asia's forests contain diverse resources that are used to generate income for many levels of society, as well as foreign currency and tax revenue when those resources are exported. Many rural communities depend on a variety of forest products for their food, medicines and livelihoods. Unfortunately, in many cases the need to conserve forest ecosystems is being overlooked in

the rush to supply global markets with timber and other forest products. Illegal logging and timber smuggling is a growing problem, due to an inexhaustible demand, particularly for high-value species. The trade in Ramin *Gonystylus* spp. is a pertinent example of such a species from Southeast Asia that illustrates the full spectrum of challenges to regulate and enforce harvest, export and re-export controls. Agar wood, the highly prized fragrant heartwood produced by several species in the Thymeleaceae family, is used primarily for medicinal, religious and aromatic purposes in Asian cultures ranging from the Middle East through to China (including Hong Kong and Taiwan) and Japan. Indonesia and Malaysia are the main producer countries and despite threats of over-harvesting and illegal trade, there are clear prospects for long-term sustainable management of this high-value forest product. The great majority of ornamental plants in trade, including most orchids and pitcher plants, have been artificially cultivated in nurseries, but large numbers are still taken directly from the wild with specialist collectors actively seeking out rare, exotic and often endangered species to add to their collection

2.6 Wildlife poaching methods

Fire arms: Most mammals especially elephant & rhino & birds etc.; Leg traps: Tigers, Leopards, otters, deer species etc.; Wire traps and snares: Smaller Mammals; Poisoning: Tigers, Leopards, elephants etc.; Poisoned arrows: From bird to elephants; Electrocuting: Small mammals to elephant; Pit method: Rhinos, elephants etc.; Netting: Small mammals, birds, butterflies etc. and aquatic species; Harpooning: Whale & sharks; Bird trapping: Birds.

2.7 Impacts of the illegal wildlife trade

Unlawful harvest of and trade in live animals and plants or parts and products derived from them. Wildlife is traded as skins, leather goods or souvenirs; as food or traditional medicine; as pets, and in many other forms. Illegal wildlife trade runs the gamut from illegal logging of protected forests to supply the demand for exotic woods, to the illegal fishing of endangered marine life for food, and the poaching of elephants to supply the demand for ivory. Illegal wildlife trade is also often unsustainable, harming wild populations of animals and plants and pushing endangered species toward extinction. Endangered animals and plants are often the target of wildlife crime because of their rarity and increased economic value. Furthermore, illegal trade negatively impacts a country's natural resources and local communities that might otherwise benefit from tourism or legal, sustainable trade. Thousands of wildlife species are threatened by illegal and unsustainable wildlife trade. For example, in recent months significant media attention has gone to the plight of the world's rhinoceros species,



which are facing increased poaching as demand for their horns increases in Asia. In some parts of Asia, rhino horn is considered to be a powerful traditional medicine, used to treat a variety of diseases. While there is little scientific evidence to support these claims, the dramatic rise in poaching to supply this demand is pushing rhinos toward the brink of extinction.

2.8 Causes of illicit wildlife trafficking increasing

The primary motivating factor for wildlife traders is economic, ranging from small scale local income generation to major profit-oriented business, such as marine fisheries and logging companies. Between collectors of wildlife and the ultimate users, any number of middlemen may be involved in the wildlife trade, including specialists involved in storage, handling, transport, manufacturing, industrial production, marketing, and the export and retail businesses. In fact most of us are involved in wildlife trade in some way, even if it just as end consumers of wildlife products. Illicit wildlife trafficking has increased over the last few years despite the combined efforts of the international community, governments and civil society. The trend is confirmed by some of the most recent events relating to wildlife trafficking. For example, 2011 was the highest year on record for elephant poaching; the theft of rhinoceros horns from museums, auction houses and antique shops has increased in the European Union; ivory estimated to weigh more than 23 tones – a figure that represents 2,500 elephants – was confiscated in 17 large-scale (>800 kg) seizures of illegal ivory in 2011; and the illegal poaching of rhinos in South Africa surged to a record high in 2011, with a final death toll of 448. WWF has confirmed that between 2007 and 2011 the numbers of rhinos poached in South Africa increased by 3,000 percent.

2.9 The value chain of illicit wildlife trafficking

In wildlife trade, both legal and illegal, there is always a value chain from the capture or harvesting of wildlife to transportation and marketing to consumers. Intermediate collation and/or processing destinations are usually found along the chain. In this general pattern, a distinction can be made between source countries and consumer countries, but the two roles are not necessarily mutually exclusive. Organized criminal groups essentially form distribution networks across national boundaries linking source countries and consumer countries, often via important transit destinations. They commonly use indirect routes to avoid detection.



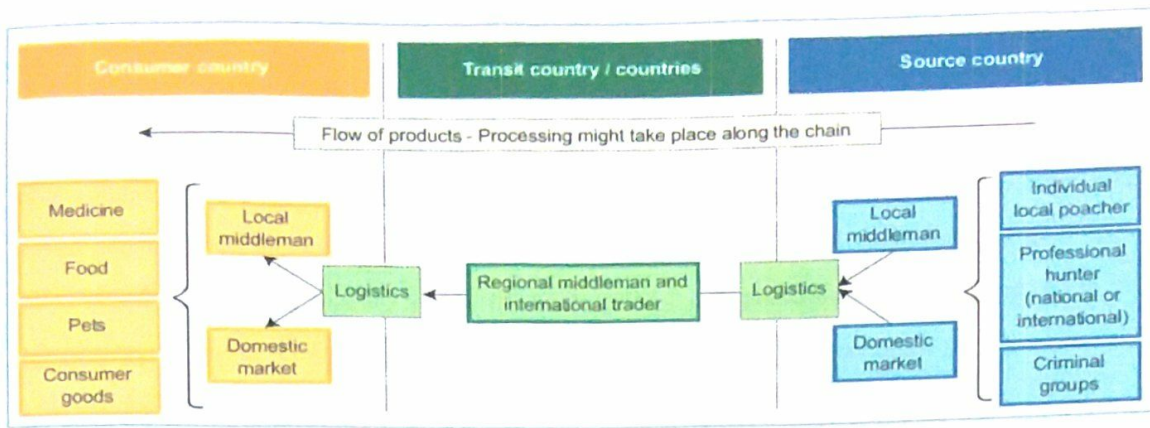


Fig: 2.6. Illicit wildlife trafficking value chain; Source: UNODC, 2010

2.10 Drivers of demand

The demand for wildlife products comes from a number of different consumer groups and is, in some cases, heavily influenced by culture. On one side of the spectrum, there is demand that is fueled by the perceived medicinal value of some products or the social status that is associated with them. On the other side, there is demand that is fueled by opportunistic buying and often ignorant tourists who purchase souvenirs or pets to take home. The sources of demand most frequently mentioned by government representatives interviewed in this study are: Medicinal products; Perceived medicinal value, such as cancer treatment, is driving demand. Consumer goods; Associated social status is driving demand – for example, at the CITES 62nd Standing Committee meeting a representative from the Chinese government stated, “In recent years, the collection of arts and crafts, jewelry and antiques, including ivory carvings, has become fashionable and the price of those items has increased significantly.” Other drivers of demand include opportunistic buying driven by the desire to possess exotic pets, hunting trophies and rare plants and animals. All the respondents interviewed for this study were of the opinion that the primary driver of demand is the social status associated with the products being trafficked. However, it is not possible to clearly quantify the relative importance of each factor and its influence on demand for wildlife products.

2.11 Drivers of supply

The international supply chain for illicit wildlife trafficking involves organized criminal groups that are attracted to the availability of huge profits and the low-risk nature of the crime, including the absence of credible enforcement, prosecution, penalties and other deterrents. The profits to be made are very high, with the value of the products increasing by multiples of 25 to 50 along the commodity chain. There are many different actors who

facilitate the supply side of illicit wildlife trafficking. Illegal wildlife products are generated in a range of different ways— from local individual poachers who, facilitated by local middlemen, act out of opportunism or need; to criminal and rebel groups that seek to finance their illegal activities; and professional international hunters who use their experience for higher profit, often working for international clients. Illegal wildlife products can also come from legally hunted trophies, privately held stocks not declared or registered with the authorities, or the theft of products from private and public owners and institutions.

2.12 Wildlife trafficking channel

2.12.1 Nature of market

The harvesting of natural resources is basic to every day human life. The global exchange of wild plants and animals provides us with food, pharmaceuticals, building materials, decorative objects, clothing, cultural and religious items, and pets. In 2008, the combined global value of legally traded commodities derived from wild plants and animals was approximately US\$24.5 billion. The supply of wildlife is not infinite and its trade requires tight and rigorous regulation. While the illegal trade in wildlife is a major threat to biodiversity, it provides a significant source of profit for criminals. By distorting and undercutting legitimate commerce, it can cause economic and social disruption. Governments impacted by illegal wildlife trade are deprived of direct and indirect sales and tax revenues on import and export goods – goods which would normally be state-controlled natural resources. Furthermore, the high level of corruption underpinning this illegal activity poses a serious threat to national governance. Where the illegal wildlife trade is allowed to continue, it can also undermine sustainable development and poverty alleviation objectives because it depletes the natural assets upon which rural communities depend for their livelihoods. Plant and animal products provide subsistence to the rural population with food, energy, materials for housing, medicines and income. Lack of access to this capital erodes vital coping mechanisms for a large part of rural communities.

Population growth and burgeoning affluence has led to rising demand for exotic and luxury products, including wildlife products. China is the largest economy and simultaneously the largest consumer market for wildlife. Most wildlife is consumed as food or as ingredients in traditional medicines. One study in Guangdong, China found that rising income accounted for 80% of the increase in shark fin consumption in that province. Consume wildlife for ostentatious reasons, such as displaying social status and respect for guests, as well as for perceived health benefits. Traditional medicine attracts a wildlife trade driven by often-



unverified beliefs about the medicinal properties of rare plants and animals or their parts and derivatives. Examples include: orchids, tiger parts and rhino horn. In Asia, traditional medicine is tied very closely to cultural values and traditions that have been practiced for thousands of years. The World Health Organization estimates that 80% of the population in some Asian and African nations is dependent on traditional medicine for primary health care. Believed to be expanding at a rate of 10% per annum, the market for traditional medicine is linked to illegal wildlife trade as it involves the consumption of products from endangered animals and their parts and derivatives. Although the medicinal properties of most traditional medicines using ingredients from endangered wildlife have been scientifically refuted, these medicines continue to be used. This use poses an enormous challenge to both policy makers and enforcement agencies. The most dramatic example of such misconceptions is the use of rhino horn, whose demand has recently grown exponentially in Viet Nam, after the spread of uncorroborated claims that rhino horn medicine cured a Vietnamese official of cancer. Today, a kilo of rhino horn is valued at approximately that of a kilo of gold. As a result, the survival of rhinos is under unprecedented pressure. Increasing wildlife trade is driving a broad range of wildlife species towards global extinction. The threat to iconic species like tigers, rhinoceros, elephants, and tuna is well-known globally. Yet, there are many more mammals, reptiles, marine species and plants that have declined drastically. Unfortunately, for these species, there is very limited public awareness. Consequently, protection is weak.

2.12.2 Wildlife trafficking media/route

The illegal wildlife trade encompasses a broad spectrum of commodities. It is best understood as a collection of generally different trade chains, each with its own smuggling methods, trafficking routes and markets. These trade chains may include both domestic and international specialists involved in storage, handling, transport, manufacturing, industrial production, marketing and retailing of wildlife products. Internet, e-banking and efficient transport systems give dealers and smugglers unprecedented access to new markets (The World Bank 2005). Transport infrastructure (such as new roads opening up forested areas) provides better access to previously remote areas. This facilitates extraction and trade of wildlife products. Open borders and better infrastructure have both also permitted inflows of poachers and traders to areas where wildlife can be sourced (TRAFFIC 2008). Wildlife is transported by land, air or sea in different ways. Traffickers often use the same routes as legal importers, but falsify certificates, exploit regulatory loopholes, take advantage of poor capacity in law enforcement agencies or obtain genuine documents corruptly. Concealment



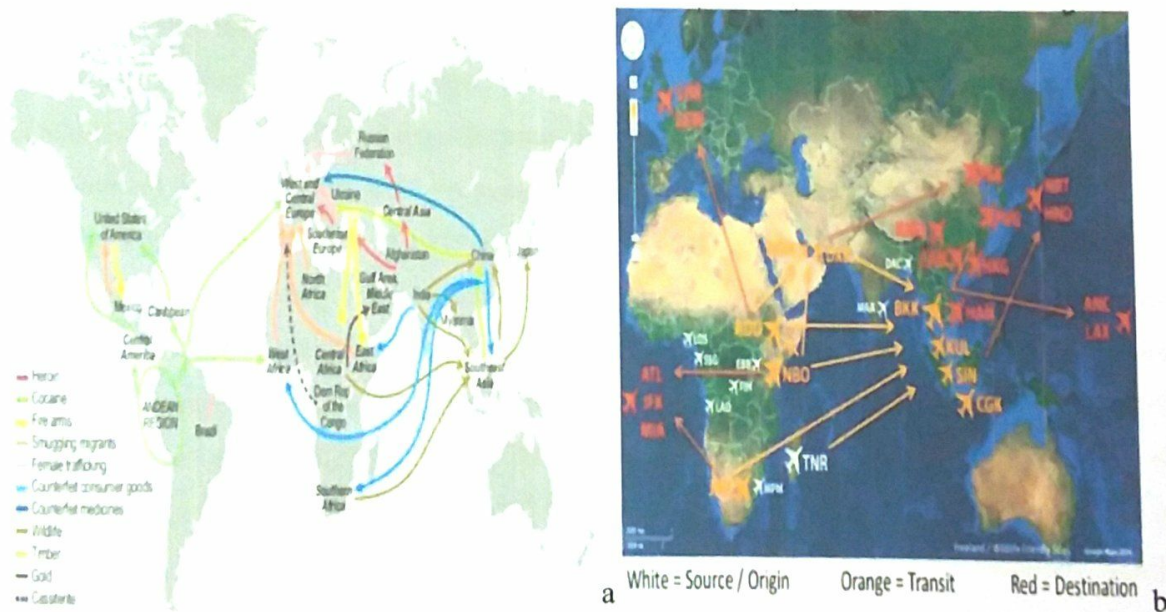
methods are limited only by the relative bulk of shipments and the ingenuity of the smugglers. On airlines in the Pacific and Asia, wildlife traffickers have been caught squeezing birds into tubes, packing animals like tiger cubs into hand luggage and hiding eggs in specifically designed clothing. By land, transportation is carried out in special hidden compartments in cars, vans and trucks, and by employing couriers to take larger loads across borders in separate and smaller containers. Bears traded illegally in Viet Nam have even been transported as patients in ambulances and in vehicles carrying fake government plates (SFNC 2003). A common method for smuggling includes fraudulent paperwork or mixing protected species with legal shipments of look-alike species. Wildlife “laundering” also occurs when wild-collected plants and animals are passed off as captive bred. Countries in East Asia and the Pacific can play one or more roles (source, transit and destination) in the illegal international wildlife trade. Indonesia remains a key source country because it retains more intact forests than its Southeast Asian neighbors. Its forests are critical to the sustainability of species. As indicated by a staggering number of seizures between 2007 and 2011, New Zealand has become a source for criminal networks trading into Europe, but also as a destination country for endangered species coming from Southeast Asia and the Pacific Islands. Major trans-shipment countries in Southeast Asia are Malaysia, Singapore, Thailand and Viet Nam. Viet Nam is both a major consumer country and an important trade conduit to China. In 2000, the estimated revenue generated by the illegal wildlife trade in Viet Nam totaled US\$67 million, more than 12 times the value of the legal wildlife trade in that country (The World Bank 2005). By some estimates, 3,500 to 4,000 tons of illegal wildlife (foodstuffs and forest products) are trafficked in and out of Viet Nam each year (Nguyen 2008). Thailand is mainly a consumer and trans-shipper of pets and high-value luxury items. The trade is driven by its growing economy with accompanying increased purchasing power. It is facilitated by the country’s major international transport hubs. The increase in sales of illegal wildlife on the internet and the mushrooming of smaller markets in provincial cities in the outskirts of Bangkok poses a challenge to law enforcement efforts (Todd 2011). In markets across Southeast Asia, illegal wildlife is often openly sold in otherwise legal market contexts. In Indonesia, Pramuka market in Jakarta is one of the region’s largest wildlife markets, specializing mostly in exotic birds from Asia and around the world. Pasay City in Manila is the focus of trade in rare and endemic species from the Philippines. In Myanmar, international border crossings with Thailand and China (such as Three Pagodas Pass, Tachilek, Mong La and Golden Rock) also function as wildlife markets. The trade includes



big cats and bear parts. Keng Larb in northeast Shan State is becoming a new center for transnational wildlife trade, mainly by river to China, Lao PDR and Thailand. The demand for illegal tiger parts (skins for trophies, penises, meat and bones for medicinal products) is increasing, particularly in China. Buyers of tiger parts are principally mainland business elites, public officials and the military, supplied by dealers in illicit medicinal products (EIA 2010). While India remains the world's largest supplier of tiger products, Indonesia, Nepal, Thailand and Viet Nam have emerged as increasingly significant players in the trade over the last decade. Globally, there were 463 recorded seizures of tiger products from 2000 and 2010, including significant seizures in cities across China, Indonesia, Lao PDR, Malaysia, Thailand and Viet Nam (Verheij and others 2010). Wildlife traffickers will change routes opportunistically to take advantage of new infrastructure, reduce transaction costs or avoid detection by authorities. In recent years, ivory hauls of one metric ton (mt) or more have occurred with increasing frequency, suggesting the growing involvement of African-based but Asian run organized crime syndicates in the trade. Within Southeast Asia, large ivory seizures in Malaysia 2010-2011 indicate that the country was a major trans-shipping hub in this chain. These shipments were likely bound for China, as that country has major ivory processing centers. As noted above, shipments have been made under false pretenses, mislabeled as recycled plastics and mixed with scrap plastic materials. The ability to move huge volumes of ivory at a time (even up to 7 mt) is indicative of the sophisticated criminalization of this trade. The sophistication has been driven by increased requirements for finance, investment in facilities for storage and staging purposes, and the ability to exploit well-organized trading links and networks between source countries and end-use markets. Furthermore, organized crime groups typically employ the tactics of collusion, corruption and protection to subvert the effectiveness of government regulators and law enforcers at important trade transit points such as border crossings, airports or seaports. As outlined above, China is the largest consumer in East Asia and the Pacific of wildlife for food, for traditional medicine and other purposes such as ornaments. In 2010, Chinese Customs made 933 seizures of wildlife (China Customs 2011). An analysis of the seizures suggests that illegal wildlife not only enters mainland China, but is also exported to neighboring provinces of Hong Kong (China) and Taiwan (Province of China), as well as Japan and the Republic of Korea. According to the official data, Beijing and Guandong accounted for 80% of the total number of seizures in 2010, mainly due to the high level of connectivity of these two towns by air and sea ports. The vast majority of these seizures relate to imports. In particular, the



number of seizures increased during national holidays, indicating that the trade correlates with vacation travel. Ivory represented 80-90% of such seizures, equivalent to an average of two ivory seizures a day. In 93% of the cases, the smugglers were Chinese, travelling from East Africa and the Middle East and detected at airports. The official data shows few seizures in the Tibet Autonomous Region and in provinces directly bordering Myanmar, Lao PDR and Viet Nam, although different sources indicate that those areas are exposed to large amounts of illegal wildlife entering China (UNODC 2010). In comparison with other East Asian countries, sentencing for wildlife trafficking in China is severe. Between the years 2000 and 2010, prison sentences for the illegal trafficking of tiger parts ranged from five years to life imprisonment. The growth of internet commerce, including illicit transactions contributed to the growing illegal wildlife trafficking trade in the region. The most commonly traded item is ivory. But the trade also includes many protected animal and plant species including tiger parts, birds and primates. Online traders disguise illegal items by using misnomers or by advertising items as imitations but certify product authenticity in the item description. In some cases, wildlife items, including rhino horn and tiger products, are advertised as historical artifacts, with sellers claiming to have documentation showing their provenance



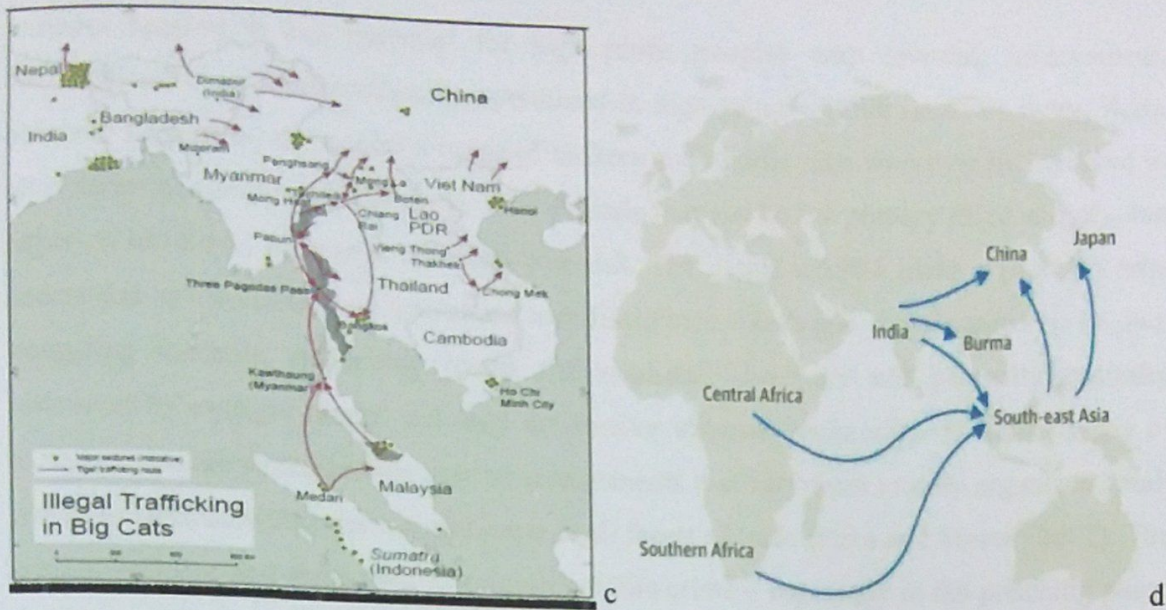


Fig: 2.7. a. The global routes of transnational organized crime; Source: UNODC. 2010, b. Airport hotspot for wildlife trafficking, c. Illegal trafficking channel of big cats; Source: Oswell, 2010, d. Wild trafficking route in South-east Asia.

2.12.3 Trafficker

The illegal wildlife trade is a lucrative business that involves a diverse range of actors, from rural harvesters, professional hunters, intermediate traders, wholesalers and retailers to final consumers and users (TRAFFIC 2008). Illegal wildlife trade chains may be as simple as individual consumers making direct contact with specialty suppliers or it may involve networks of global scales. Long-distance movements of high-value wildlife require the involvement of a wide range of brokers, middle-men and shippers who are not necessarily wildlife traders but rather experts in the contraband of illegal goods, including drugs. Individuals involved may include domestic and international specialists in storage, handling, transport, processing, packaging, exporting, marketing, security and retailing. Various participants may handle 'official' expenditures (such as purchasing permits and paying fines), and 'unofficial' expenditures (bribes). They may also provide loans against future delivery of wildlife (Nijman 2010). The involvement of organized networks dealing in illegal wildlife in other crimes (e.g., drug trafficking, human trafficking, etc.) is difficult to ascertain. While there are sporadic reports of convergence of wildlife crime with drug trafficking and alleged human trafficking, such incidence at this stage is considered occasional and largely opportunistic. In fact, the trade in wildlife is very specialized and it requires skills – such as species identification and animal handling – that are not immediately transferrable to other crime areas. Furthermore, many specialized wildlife traffickers tend to engage in this

business because it has potential for high profit margins with low-risk involvement. Nevertheless, large scale trafficking operations in high-value wildlife (such as ivory, rhino horn and tiger parts) do require a range of brokers and middle-men who may be involved in other forms of contraband. For them, wildlife trade may not be the primary illicit activity, but rather an additional income at relatively low risk. The illegal wildlife trade is probably best understood as a collection of specialized sub-disciplines – each one accompanied by its own smuggling methods, trafficking routes and markets. These are not generally centrally controlled by a single leader, but they do involve informal reciprocity. Different types of wildlife crime are structured via myriad arrangements that vary from loosely organized small groups to large networks that control some or all facets of trade (Pires and Moreto 2011). The level of violence and force used to commit wildlife crime – especially in the poaching phase – varies significantly according to the market value of the trafficked species. In East Asia and the Pacific, illegal wildlife harvesters are predominantly rural poor people engaged in the trade to supplement otherwise low incomes. Poachers will often operate on an individual or ad hoc basis as a result of specific requests from a trader or a middleman (Hoare 2007). The majority of adult men (women are involved in 20% of cases and children in less than 10%), working with small networks of family members or associates, who have links to middlemen, markets or distribution centers. In many cases poor rural people are dependent on this income for their subsistence. This fact, coupled with specialization and exclusivity in trade chain relations, renders them particularly at risk of exploitation by unscrupulous traders or middlemen.

2.12.4 Money handling

Most interdictions and investigations of wildlife crime in East Asia and the Pacific have not been accompanied by efforts to understand and address associated monetary flows. Consequently, little is known about criminal financing and money handling in the trade. Typically, harvesters are paid upon sale of the illicit wildlife good. In some cases however, harvesters are paid advances by traders ordering particularly valuable species. It is important to highlight that harvesters are rarely paid a monthly wage to hunt or gather wildlife on behalf of middlemen or traders (TRAFFIC 2008). Evidence suggests that harvesters are typically connected with intermediary traders or middlemen. These buying agents may receive wildlife products directly from individual harvesters, or engage with harvesting communities to acquire specific wildlife products. The value added over the course of the wildlife marketing and processing chain can be substantial. It tends however, to be unequally apportioned among



trade chain participants (Neumann and Hirsch 2000). The value of animals and wildlife products typically increase by 25-50% as they pass consecutive links in the supply chain. This is particularly true in the case of rare medicinal and luxury items (tiger parts, rhino horn and ivory). An item worth just US\$20 at the time of its capture can be worth up to US\$100 at point of export, US\$600 at import in the destination country, and can be sold to a specialist retailer at US\$1,100.49 Internet-based trade is another matter. A proliferation of online chat rooms and forums dedicated to exotic pets, coupled with new bank transfer mechanisms like Paypal, have resulted in a steadily growing illegal mail order trade in live animals. There is potential to trace the perpetrators if appropriate enforcement recourses are dedicated to the problem

2.12.5 Cash Flow

From a methodological standpoint, providing precise estimates of the volume and value of the illegal wildlife trade is simply not possible at this point in time. The trade is highly diverse and the available data is very limited. Common sources of information for conducting such an analysis are market surveys and seizure data. However, both of these sources are flawed to some degree. Market surveys provide relevant information on the kind of species that are more commonly traded as well as their related prices. Nonetheless, they do not capture the size of the phenomenon either in terms of aggregate volumes and values or in terms of geographic coverage. On the other hand, seizure data provides useful information on the volumes of the illegal wildlife trade, but the official data often fails to meet requirements of quality, consistency and regularity in the collection and recording phase. Based on existing literature, and on the selection of the limited data sources in this area, a conservative estimate for the illegal trade in selected mammal species to and within Southeast Asia and the Pacific is close to US\$400 million, with more than half of this trade involving ivory products. Surprisingly, the value of the black market for relatively unknown species – such as pangolins – dwarfs the value associated with the rarer, emblematic species, like tigers, which nevertheless provide a highly profitable niche for organized crime networks. Although precise information is not available, it is often reported that traffickers can obtain around US\$50,000 from the sale of one wild tiger or up to US\$60,000 per kilogram of rhino horn. According to analysis conducted within UNODC, the profit margins for this trade have reached values that can be compared with other forms of transnational organized crime such as methamphetamine and heroin trafficking. Contrary to common misconceptions, the largest black market in wildlife products in the region is not related to mammal species or reptiles



but rather to marine wildlife, such as live reef fish for food, ornamental reef fish and corals. This market – which does not include off-shore illegal fishing – is estimated to generate an income of approximately US\$850 million for the criminal enterprises involved. Existing studies by NGOs, as well as recent UNODC surveys among the law enforcement community, reveal that the range of wildlife illegally traded in Southeast Asia and the Pacific is significantly broader than the species mentioned above. This includes snakes, turtles, monkeys, orchids, lizards, slow loris, aloe vera, geckos and many more. Data for this trade remain extremely scattered and susceptible to miscalculations and gross oversights. A review of some of the most credible information (derived mainly from a few market surveys) indicates a market value in these species ranging from US\$500,000 to US\$1 million. Nevertheless, this value is based on isolated market “observations” at given locations (for instance some specific wildlife markets) and at given times (for instance over a period of a few days/weeks). Such observations do not therefore capture the real size of the phenomenon neither in terms of annual revenues nor in terms of regional coverage. Based on the above analysis and in consideration of the fact that the actual value of the illegal wildlife trade in the region should encompass more species, more countries, and highly volatile prices at retail level, a conservative estimate values the regional illegal wildlife trade at US\$2.5 billion a year, excluding illegal timber and off-shore fishing. This amount includes wildlife that is either traded in a completely clandestine manner as well as wildlife that is concealed, mis-declared and/or disguised within legal shipments.

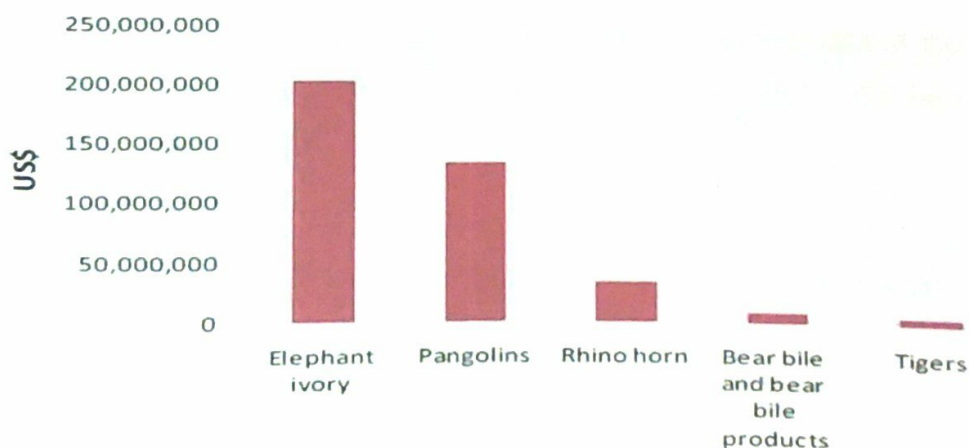


Fig: 2.8. Value of the illegal wildlife trade in East Asia and the Pacific; Source: UNODC, 2010

Chapter Three

Methodology/Approach

3.1 Study area

The Bangladesh Sundarbans (N' 21°30' - 22°40', and E' 88°05' - 89°55') and its vicinity are taken under consideration for conduct interview. Probably highest rate of wildlife poaching occurs in this area. The world largest continuous mangrove area (10,284 Sq.km) with 4,267 Sq.km (41.5%) in Indian territory and 6,017 Sq.km (58.5%) in Bangladesh. Possibly Sundarbans is the biggest remaining tiger populations in the world and most possibly complex biodiversity remains in this land. Eight upazilas (administrative divisions) named Shyamnagar, Koyra, Dacope, Mongla, Morrelganj, Sharankhola, Mathbaria and Patharghata immediately adjacent to the Sundarbans and consider as wildlife poaching hotspot. Although there are no human inhabitants inside the Sundarbans, eight upazilas with a total population of around 1.7 million people lie directly adjacent to the forest boundary and approximately 3.5 million local people are directly involved in collecting forest products; are live under poverty level. People live on the fringes of the Sundarbans either partially or completely depend on the natural resources of the Sundarbans. These people have little choice but to go to the Sundarbans, either legally (with necessary permission from the Forest Department) or illegally. My sample unit was defined by Burigolani Range and that falls under Shamnagar upazila of Sathkhira district. Shamnagr upazilla has five forest adjacent unions with 82 villages and few of them are very close to the forest. It considered rational that wildlife poaching was comparatively high in this area because it's proximity of the forest and get easier access to forest compared with others.

3.2 Reconnaissance Survey

In order to get a view of the nature of the poaching and trafficking; a reconnaissance survey was initiated to acquire some basic ideas through the personal interview with the local people of the study area. During the survey, views were exchanged with the peoples about the objectives. The survey helped to realize the nature of the crime.

3.3 Questionnaires preparation and testing

Considering the objective of the study questionnaires were prepared based on the theory of wildlife conservation and wildlife crime scene investigation. Three specific questionnaires were made from different stakeholders. Questionnaire for local stakeholder was made based



on their knowledge and limitations. A questionnaire was made for professionals those who concerned wildlife poaching and trafficking based on policy implementation and forest department current activities. A questionnaire was made for the school students based on their personal experience.

A pretest had been done for all types of questionnaires before completion questionnaires.

3.4 Sample size & Sampling technique

This research based on both primary and secondary data. Two data collection methods could be applied in the field survey viz. quantitative and qualitative methods. For primary data collection; primary data obtained from field survey and personal interview with structured and semi structured questionnaires. Interviewing method was applied to collect information. It conducted 10 with local leaders (political & traditional) of forest adjacent villages, 10 with research group (University professor, Journalist, local & international NGOs) those concerned about this matter, 5 with administrative personnel (FD officer and other law enforcing agencies) to assess the route of poaching and identify the bottleneck of existing laws and its implementation. Before questionnaire survey it monitored several throughout this year in different forest adjacent villages to identify the hotspot villages and it divided the village into deer poaching hotspot village and others based on secondary source and its local sources. It conducted survey in 100 households with structured questionnaire from 10 forest adjacent villages of Shamnagar upazilla to assess the amount of meat they consume this year; 5 villages were inside hotspot and others from outside of hotspot. Randomness was strictly ensured for better output. During questionnaire survey it conducted interview to 50 school students, 25 of them in hotspot villages and 25 in except ones. It also conduct with 25 forest resource collectors and 30 local people who involved in other professions, Simple random sampling method applied to collect primary data. It conducted 10 interviews with the evil who involved in deer poaching (still/before) to gather experience about poaching and smuggling also 10 interviews with actor who directly and indirectly involved in different stage of poaching chain and purposive method was applied here. This study considered last 2 years (2015-2016) only for secondary data as its time frame and primary data collected from 5th August, 2016 to 31st August, 2016. NGO's, journalists, conservationists were considered key informants and they consulted me by different means; over telephone, by direct interaction and over mail; involved in the research of wildlife conservation for a long time and who published research articles; took as main referent for this study. Secondary data



collected from forest offices, published and non-published journals, newspapers and electric media.

3.5 Secondary data collection

Relevant secondary data collected from forest departments' official records, newspapers (local, national & international) clipping, publications, periodicals, journals (national & international), NGO's etc. It also collected information at least 2 blog about wildlife poaching from Sundarbans. It collected two years (2015-2016) secondary data of wildlife poaching and trafficking from two national newspapers and five online newspapers from their online archive. It collected and analyzed available documents about wildlife (deer, tiger) poaching from Sundarbans.

3.6 Data Analysis

The data were processed, analyzed and interpreted to find the result of the study. After completion of data collection the response to the questions of interview schedule were transferred to a master sheet to facilitate tabulation. Qualitative data were converted into quantitative forms by means of suitable scoring whenever necessary. Coding and tabulation was done according to the objectives of the study. Cross tabulation, frequency analysis, logical text interventions were done. The analyzed data were represented through tabular and graphical form. The report of the study is written through the systematic way by using computer program of MS word-2010 version, and MS Excel-2010 version.



Chapter Four

Result & Discussion

4.1 Wildlife poaching and trafficking prone area in Sundarbans

Before conducting questionnaire survey it examined and cross examined throughout this year in different forest adjacent villages through secondary sources as well as its own sources to identify the poaching prone villages. It found 46 prone villages and 60-70 deer poacher group active in Sundarbans east and Sundarbans west division but locals and professionals had little information about tiger poacher. Main causes of being prone village were inaccessibility, close to the forest and absence of authorities.

Table: 4.1 Number of active poacher groups and Number of hotspot villages in Sundarbans

Range	No. of Poacher group active	Prone area
Burigoalini range	15-20	Gabura union (Dumuria, 9 no. Sora, Parishamari, Chandnimukh, Jelakhali); Burigoalini union (Datinakhali); Munshiganj union (Bijoy sordarer ghat, Mirgan, Jotindranagar); Ramjannagar union (Kalinchi, Tengrakhali, Koikhali, Joykhali).
Khulna range	10	Koira upazila (Moheshshoripur, Kalikapur, Choukoni, Tetultolachor, Shekherkon, 4 no. Koira, 6 no. Koira, Shakbaria, Gutiabari, Patakhali, Jorashing, Golkhali, Khasitana, Gotirgher); Paikgancha upazila (Chandkhali, Lashkor, Soladana, Bedkhasi).
Sarankhola range	15-20	Sonatola, Tofalbari, Chalrayenda, North Tofalbari, Taljora, Horintana, Moratola, Tetulbaria, Araibeki, Naoli.
Chandpi range	20	Patharghata, Tengrakhali, Badurtola, Kanthaltola.
Total	60-70	46 village

It found 13 deer poaching hotspots villages in Burigoalini range that belonging to five forest adjacent unions and also found approximately 15-20 poacher groups were active in this range. Recently two pirate/robber groups surrendered to the home minister and six tiger traffickers were shot by RAB during gunfight in last year.



4.2 Poaching and trafficking

4.2.1 Poaching technique of tiger and deer in Sundarbans

Poacher hunts tigers in Sundarbans using different technique (poison trap, shitka, spring trap and gun). Firstly poison traps are now very popular to the tiger poacher group. In poison trap they inject poison (furadun) into dead deer or other animals caracas, they put this trap in tiger walking route then tiger get easy food and get die. Secondly they use invisible nylon net/neck trap. It is easy but very effective technique for tiger hunting as well as deer hunting. This trap execute in tiger and deer walking route and make an obstacle in movement, then tiger or deer trapped and try to make it free; after few moment it feel tired then poacher strike with stick to kill. Shitka kol (local name) is a traditional technique; to make this trap poacher group use small, thin but strong tree and bent opposite to the walking route of wild animal; a trigger attached with the trap, when an animal touch the trigger then bend tree hit the animal with potential forces. Sometimes tiger poachers use spring trap and gun to hunt tiger.

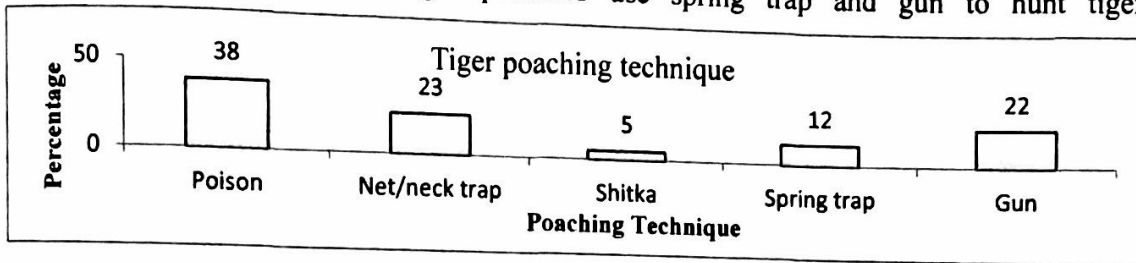


Fig: 4.1 Tiger poaching technique

It found 38% respondent stated that poacher hunt tiger with poisoning, 23% net/neck trap and 22% using gun. But secondary data showed different; now tiger poachers are not interested to use gun to hunt tiger because gun shoot make hole in the valuable hide/skin then they get lower price from consumer. Recently sized tiger and deer hide has no sign of gun shoot (bullet). So now they use others technique like poison trap, nylon rope/ net trap and shitka. It has no chance to damage the skin.

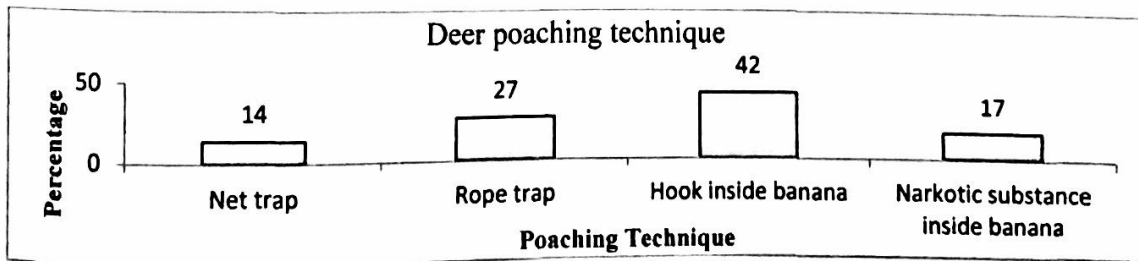


Fig: 4.2 Deer poaching technique

Opportunistic or professional poachers make bait with hook/narcotic substance inside the banana to trap the deer. Then poachers strike the narcosis animal to kill. It found most of the respondent (42%) stated that poacher use hook inside banana to make bait to hunt deer.



4.2.2 Trafficking technique of tiger and deer from Sundarbans

After poaching the wildlife, including tigers from the Sundarbans, the local poachers bring them to the nearby villages and process the hides, bones and other limbs of the wildlife. They extract tiger hide from dead body then bury the caracas and remark the buried area. Then they locally treat the hide and dry in open sun. Few days after, caracas get composed then they again go the remarked area and few month later collect the skull, teeth and bones. Later, they sell those to the international smugglers. Tiger flesh, fats, penis has local and international demand. If locals get chance to get this; they collect and dry in open sun and preserve this for future use. These wild products are hiding under the ice of fishing drum, box of fishing boat and under the fish basket.

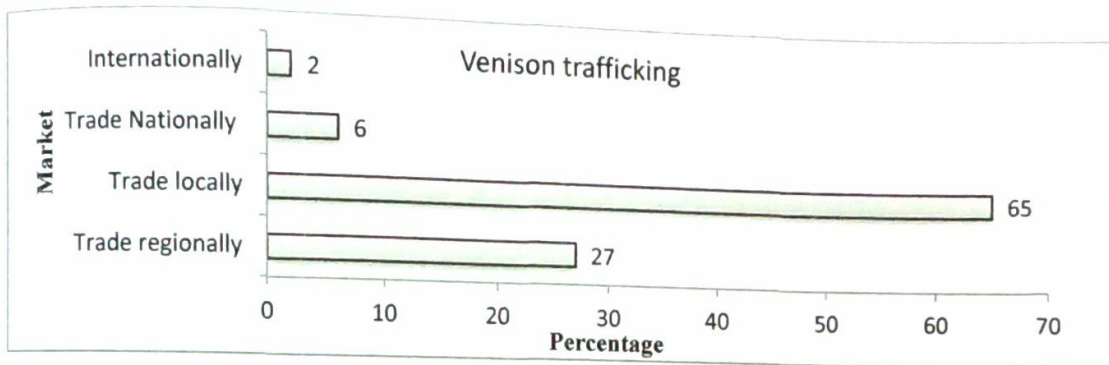


Fig:4.3 Venison trafficking

It found most of the respondent (65%) stated that most of the venison is traded locally, and 27% stated that venison trade inside this region, 6% stated that the few of nationally (that is within the political borders of Bangladesh) and the very few 2% stated venison some time smuggle to India.

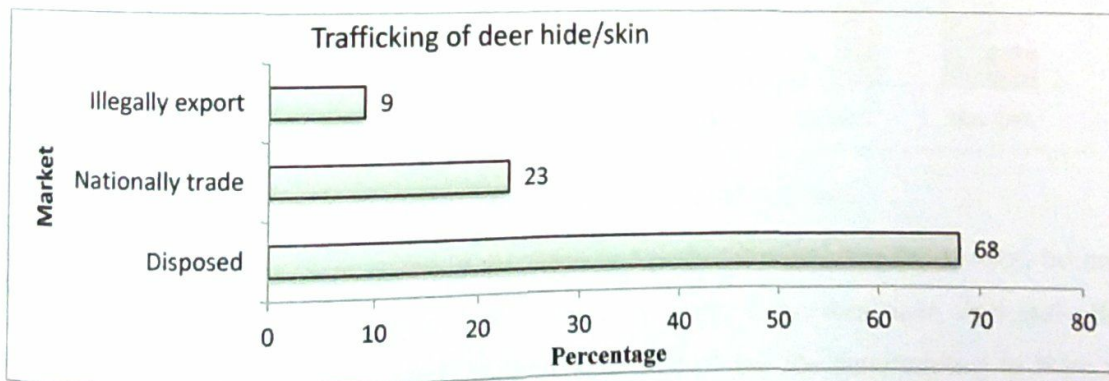


Fig: 4.4 Trafficking of deer hide/skin

Large volume of deer hides are traded within political border and rest is exported mixing with other legal animals' leather products or raw leather. It found 73% of the tiger hide and 95% of tiger skull/bone was traded internationally. Traffickers illegally carry with luggage in their

suitcase. Trafficker use special vehicle with hidden compartment or chamber. Trafficker uses water transport in Bangladesh because it is less risky than road.

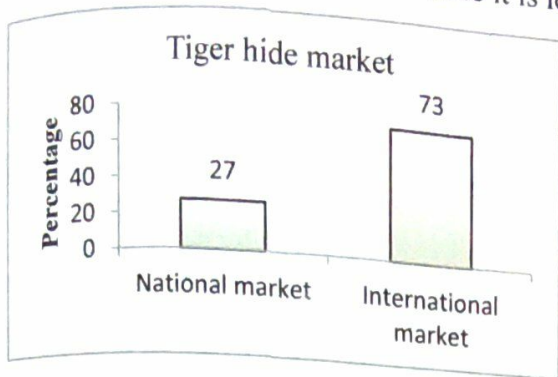


Fig: 4.5 Tiger hide market

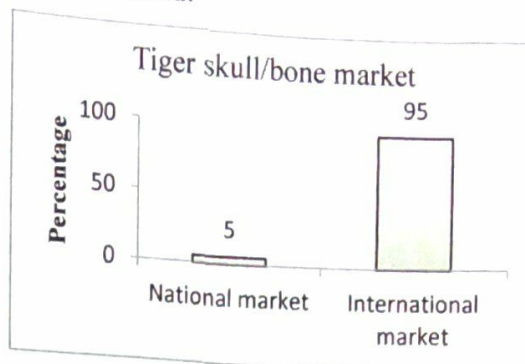


Fig: 4.6 Tiger skull/ bone market

Without intelligence information is impossible to identify a tiger hide from luggage with an x-ray checking in airport. Most probably traffickers use sea port to transport bone, skull and other parts to cross international border.

4.3 Perception on Seasonality of poaching tiger and deer

It found Tiger poaching intensity had less seasonal variation but the intensity of deer poaching fluctuate with season. It found deer poacher were active in mainly in winter (November to February) because of demand and quality (taste) of venison also found most of the poaching activities occur in vora gone (full moon or dark moon period of a lunar month).

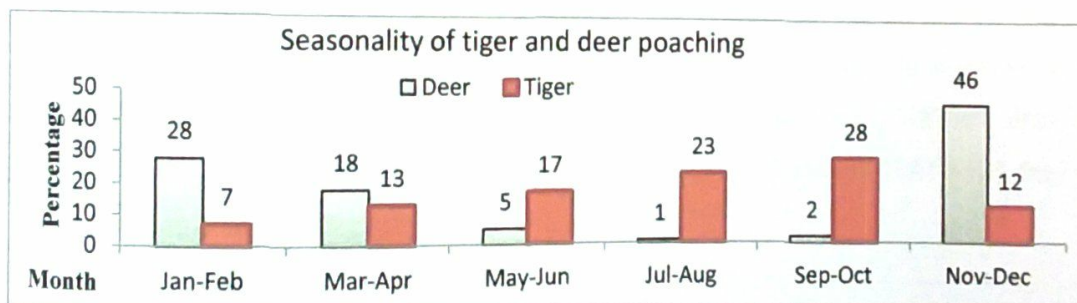


Fig: 4.7 Seasonality of poaching tiger and deer

It found tiger poachers were active in monsoon and post monsoon (June to October) because in rainy season high tide inundate most of the part of the forest then tiger, deer and other animal gather in the upland; in this time poacher groups use the opportunities to hunt the target animal easily. They cruelty hunt the target and enjoy the moment. Poacher hunt tiger all year round but they hunt deer except monsoon. In monsoon period taste of venison is sour due to taking keora (*Sonaratia apitala*) leaf and fruit. The intensity of deer hunting escalates in winter. Religious festival (Rashmela) has a great effect on deer poaching.

4.4 Intensity of deer poaching and trafficking

The population figure of deer was roughly 120000-150000 individuals and tiger was 440 individuals in 2004 in Sundarbans. But in recent census (2015) shows 106 tiger individuals remain in Sundarbans; after the census law enforcing agencies seized five tiger hide; it indicates the real number will be lower than the census. It is impossible to calculate the actual number; how many tiger/deer are killed by poacher. During its survey period it found 13 deer/wildlife hotspot villages out of 82 forest adjacent ones in five different unions under Shamnagar upazilla belonging to Burigoalini forest range, Satkhira.

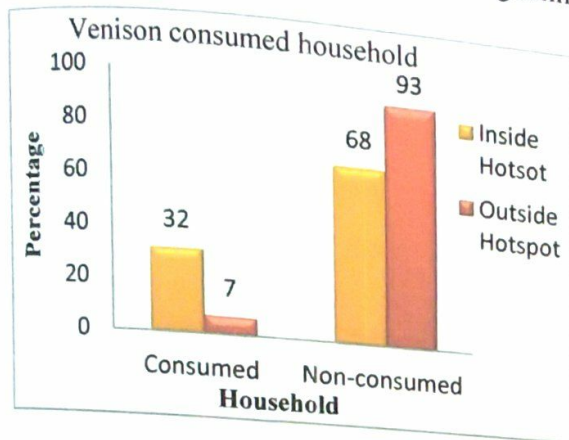


Fig: 4.8 Venison consumed household

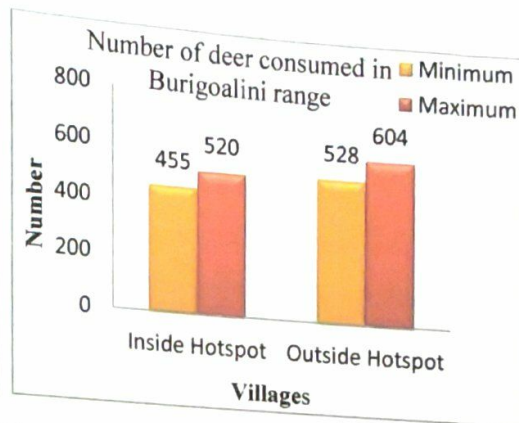


Fig: 4.9 Number of deer consumed

It found 32% of households consumed venison in this year at least one time and 8% of them consumed more than one in hotspot villages also found 7% households consumed venison in except of hotspot villages in this year. It found at least 35-40 deer were consumed per hotspot village that showed about (35-40 X 13) 455-520 deer. Also found 528-604 deer were consumed 69 villages except hotspot villages. It revealed approximately 1061-1124 deer were consumed in this year in Burigoalini Forest Range.

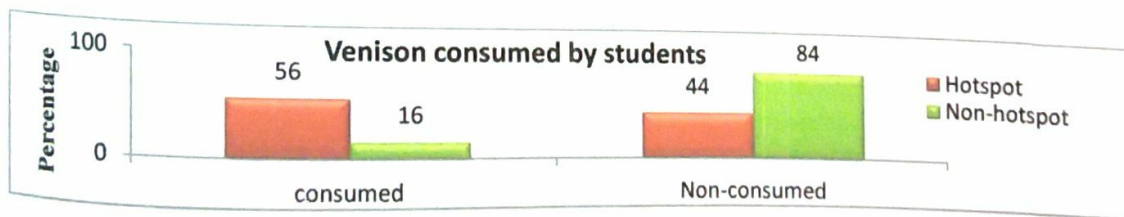


Fig: 4.10 Venison consumed by student

It found 56% of hotspot village students consume venison and 16% of students except hotspot villages consume venison in this year; most of them ate venison in their own houses and few of them ate in neighbor/friends/relatives house. In 2011 a national NGO named Wild Team showed 11195 individual deer killed per year. Locals and professionals stated that now

this figure is lower than the past but not less than 3000-5000. National daily news named Daily Sangram reported in 30, November, 2015 about thousand deer hunt in period of celebrating Rushmela. They interrogated 50 tourist boats and found 30-35 tourist boats where they (tourist) confessed about eating venison in Rushmela period also added few boats got more than 10 deer. We don't know the actual density of tigers' prey in Sundarbans and demanding density of prey to support remaining tiger population. During my community survey I found most of the resource collector stated the rarely notice deer inside the forest in this year that indicates the density of the prey species is below than that of past.

4.5 Perceptions of locals and professionals about the actor of deer and tiger poaching

Local stated that sometimes opportunistic resource harvester poached deer for their own consumption and for relatives and neighbor. It found that, is impossible to trace an opportunistic poacher. Mostly opportunistic poachers don't sell venison; they don't take any risk to sale venison. Deer poachers may consist of both organized poachers, often the same criminals who are involved in tiger poaching and opportunistic poaching and the forest resource users. Sometimes pirates extort resource users are forced to hunt deer and tiger because they have knowledge about the tiger and deer territory. Most of respondents stated that poachers are highly connected with pirate and robber groups; also added some criminals are involved in extortion of resource users. They believed most of the cases poachers are highly connected with local elites, politicians and corrupted officers. More than sixty poacher groups are active in different parts of Sundarbans. A respondent of Sora village of Gabura union of Shamnagar upazila near the Sundarbans also said there are a number of active wildlife poachers' groups in their neighborhoods and the villagers can hardly raise their voice in fear of reprisal. These groups are highly active in both east and west part of Sundarbans basically in Shamnagar upazila of Satkhira, Koira upazila of Khulna, Mongla and Sharankhola upazila of Bagerhat, and Patharghata upazila of Barguna Districts.

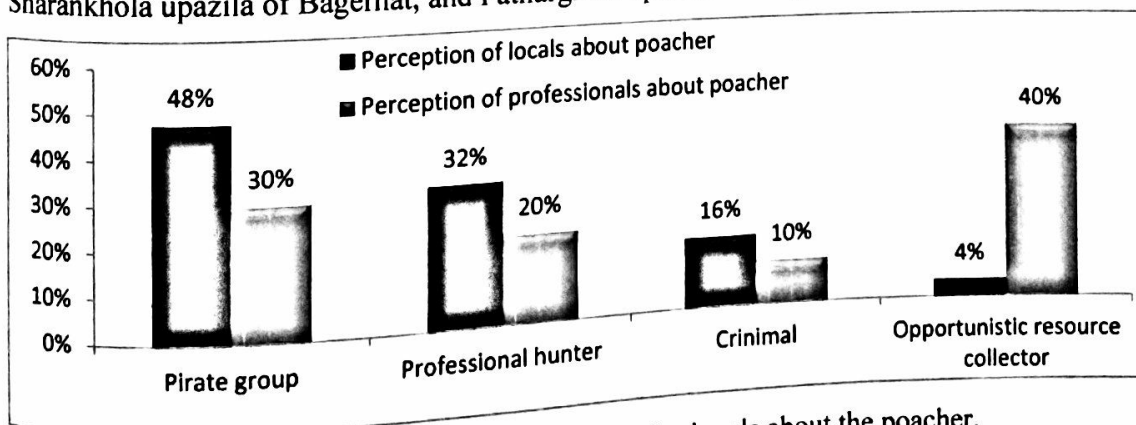


Fig: 4.11 Perceptions of locals and professionals about the poacher.



They (local interviewee) stated that poacher groups are composed of pirates (48%), professional hunters (32%) criminals (16%), and few opportunistic resource collectors (4%); they added that resource users are innocent but forest department harass them. Professionals didn't agree with local interviewee; they stated that 40% poachers are resource user and 30% pirates, 10% criminals and 20% professional hunters. Both had different perception about deer poaching but more or less had same comment about tiger poaching; they stated organized poacher syndicates are responsible for tiger killing.

4.6 Perception of local communities and professionals about actors of trafficking

There are many different actors who facilitate the supply side of illicit wildlife trafficking. Between poachers and the ultimate users, any numbers of middlemen are involved in the wildlife trade, including specialists involved in storage, handling, transport, manufacturing, industrial production, marketing, and the export and retail businesses, and these may operate both domestically and internationally. Most of the local respondents and professionals stated that well organized crime syndicates are increasingly involved in wildlife crime. They also added that organized crime syndicates have well established networks which can generally be divided into five phases, with a specific activity associated with each phase: (1) poacher, (2) local courier, (3) national facilitator, (4) national exporter and (5) receiver in the consumer country.

Most of the respondents both local and professional stated that tiger poacher group have interconnection with national and international smugglers; they added that sometimes tiger poacher and deer poacher is the same person. Locals believed that tiger poacher and trafficker syndicate is multidisciplinary group. They stated that local courier and poacher are same person or group member and added that national facilitators are composed of criminals, corrupted politician and government officials. Most of the interviewee didn't have any idea about national exporter and consumer country. In venison trafficking, most of the cases local consumers consume the meat; sometimes venisons and skin are smuggled to West Bengal, India through Shamnagar border but its volume is very low. Most of the deer skin buried and few of deer skin sale to the target consumer through local courier or agents. It has a little domestic market. There is no evidence of illegal export of deer skin but it may smuggle with other legally exported leather or leather products as a leather exporting country. See Fig: 4.12 and Fig: 4.13



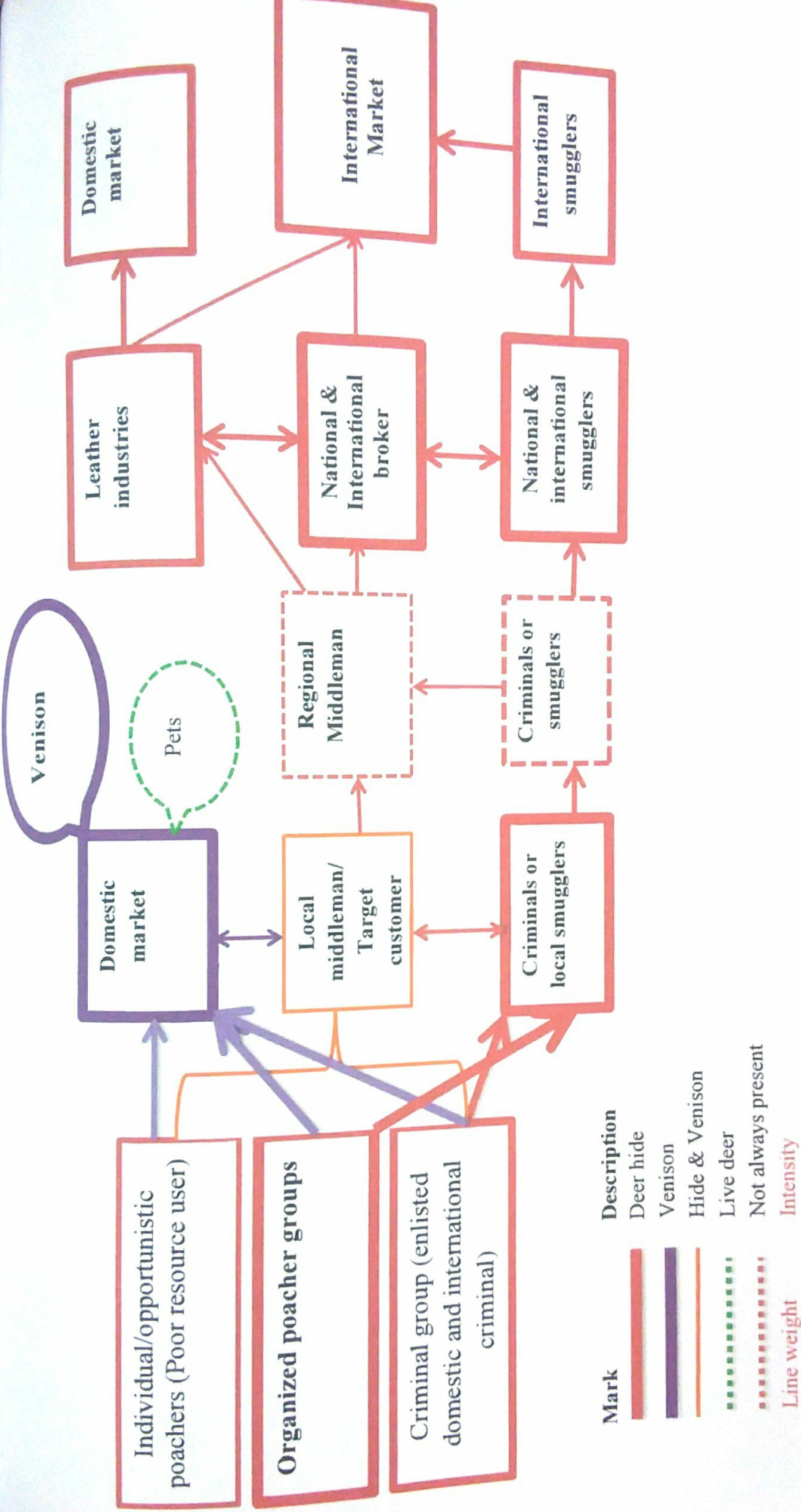
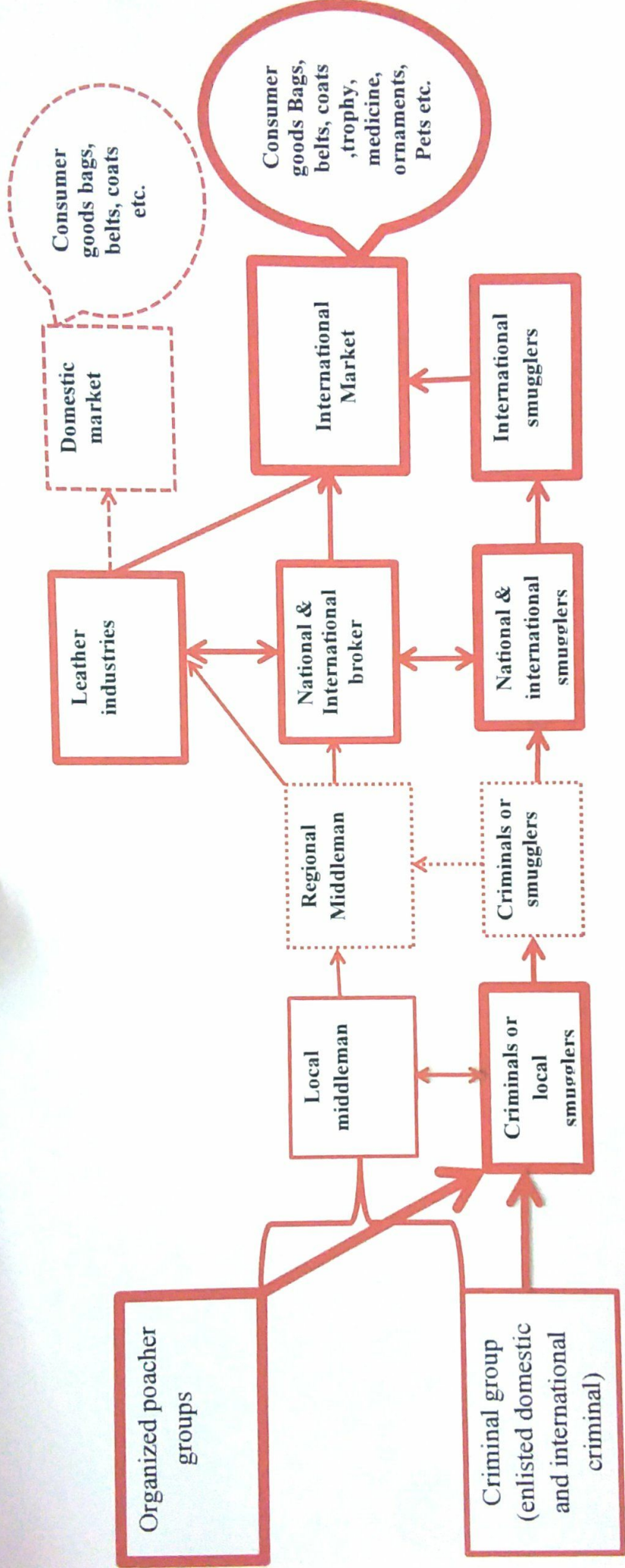


Fig: 4.12 Deer hide and venison poaching and trafficking chain from Sundarbans



N.B: Line weight indicates contribution

Fig: 4.13 Wild tiger hide and other body parts trafficking chain from Sundarbans

4.7 Wildlife trafficking route analysis

Mostly venison was consumed by countrymen; opportunistic poachers don't sell venison. These wild products are transported with fishing boat to forest adjacent small town (Shamnagar, Koira, Dakope, Mongla, Sharankhola, Bhandaria and Patharghata) hiding under the ice of fishing drum, box of fishing boat and under the fish basket. Then they handle to the local courier or broker. Local couriers transport this wild product through district city (Jessore, Khulna, Bagerhat and Barisal). Couriers uses special vehicle with hidden compartment or chamber. Sometimes they use water transport in Bangladesh because it is less risky than road. Most of the venison is traded locally, and the few of nationally (that is within the political borders of Bangladesh); sometimes venison and skins are smuggled to West Bengal, India through Shamnagar border but its volume is very low.

Large volume of deer hides are traded within political border and rest is exported mixing with other legal animals' leather products or raw leather. Most of the cases deer poachers don't have interest on deer skin so they bury the skin inside the forest to vanish the evidence. Most of the tiger hide is traded internationally. Traffickers illegally carry with luggage in their suitcase. Without intelligence information is impossible to identify a tiger hide from luggage with an x-ray checking in airport. Most probably traffickers use sea port to transport bone, skull and other parts to cross international border. See Fig: 4.14



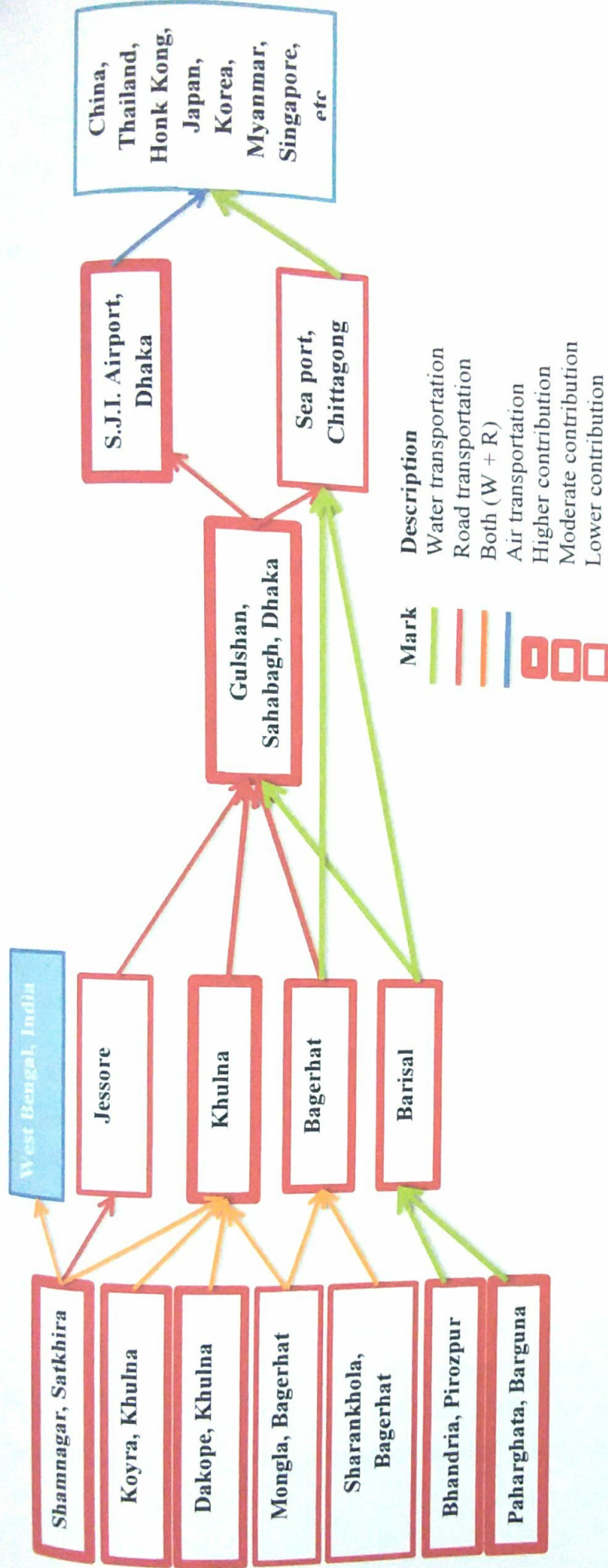


Fig: 4.14 Tiger and deer trafficking route from Sundarbans, Bangladesh

4.8 Analysis of causes of wildlife poaching and trafficking from Sundarbans

It found some causes of poaching and trafficking of wildlife and wild products from Sundarbans.

Table: 4.2 Causes of deer and tiger poaching and trafficking from Sundarbans

Mark	Causes
A	Poverty
B	Inter-agency coordination gap
C	Lack of intelligence unit of forest department and equipment to combat against poacher
D	Implementation gap and bottleneck of wildlife act
E	Inadequate sentence of wild crime
F	High profit business and greed
G	Unskilled manpower in customs and lack of modern technologies in ports
H	Domestic and international demand of wild product
I	Effect of religious festival (Rashmela)
J	Corruption
K	Political reluctance
L	Lack of awareness

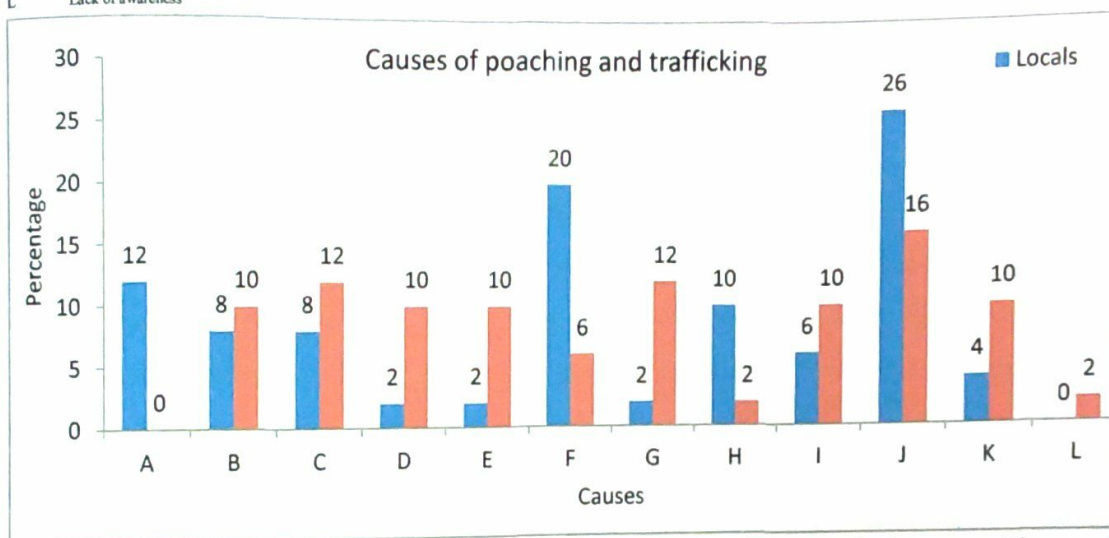


Fig: 4.15 Perceptions of different stakeholders on causes of deer and tiger poaching and trafficking

4.8.1 Poverty

Poachers are driven by poverty, or are exploited by criminal organizations seeking to recruit hunters with knowledge of the local terrain. Poverty and inadequate bureaucracy enable criminal groups to corrupt poorly paid or facilitated enforcement authorities. Most of the resource users are very poor, it easy to provoke them to hunt deer. Poacher groups recruit poor resource user to poach wild animal and to transport wild product with their legally harvested product. Sometimes they eagerly or by force help in these heinous activities. Sometimes local agents or social elites patronize resource collector to hunt deer. Actually they use their economic crisis. It found 12% local respondents stated poverty might be the cause of poaching and trafficking but professionals didn't agree with locals.

4.8.2 Inter-agency coordination gap

Forest department has very few armed guard and no intelligence unit. So most of the cases it need to request other law enforcing unit to help. Forest officials stated when they seek help to the other authorities, it take a lot of time to take decision. 27 living deer were confiscated from a farm house in Narayanganj near Dhaka last year is an example of inter-agency coordination gap. It also indicates the weakness of forest department as well as other agencies. It found 8% local respondents 10% professionals thought poacher groups use the co-ordination gap among the agencies as an opportunity.

4.8.3 Lack of intelligence unit of forest department and equipment to combat against poacher

Lack of man power and intelligence unit is one of the main causes of wildlife poaching. Forest department need to seek police or other agencies to combat with forest offender; need more time and lack of information; most of the operation has become fail. Forest department use traditional arms or back dated fire arms but organized poacher groups and pirate groups are decorated with modern heavy fire arms. Sometimes organized poacher groups and pirate groups attack on forest guard or patrol group with heavy fire arms. Truly forest department become hostage to the criminal. It found 8% local respondents and 12% professionals thought forest administration didn't have expertise to cope with poacher groups.

4.8.4 Implementation gap and bottleneck of wildlife act

Wildlife act has some bottleneck like forest department has no authority to interrogate the miscreant. Forest department handle the offender to the law enforcing agencies then they send to magistrate and pursue remand for interrogation. Forest personnel stated that Wildlife act, 2012, section 42 (1) (2) is the main bottleneck to implementation of act as well as stop wildlife crime. Forest officers are not interested to launch cases to the court. It found 10% professional respondents stated that section (42) discourage the forest officers to launch the cases against the miscreant.

4.8.5 Inadequate sentence of wild crime

Penalties of tiger/elephant killing are severe then killing/capturing of other wild animal. Penalty of spotted deer hunting is not specified in present wildlife act. The punishments associated with trafficking wild products are not aligned to its value; poachers convicted under the wildlife act in Bangladesh may get away with a 50000-700000 BDT fine or six month to three year jail or with both, while trafficking up to narcotic product is sentenced



with not less than seven to fourteen years in jail. It found 10% professional respondents stated low sentencing might encourage the poachers.

4.8.6 High profit business and greed

The wild product trade has become a money-spinning business for criminal syndicates. The risk involved is low compared to drug trafficking, and high profits can be generated. The price of a tiger parts has increased to around 2 million to 20 million BDT in international black market is same the value of gold and it is now more valuable on the black market than narcotic product. Greed can also lure poachers to a trade that is supposedly low-risk and high-profit. The profits to be made are very high, with the value of the products increasing by multiples of 25 to 50 along the commodity chain. It found 22% local respondents thought greed and high profit; only 6% professionals agreed with them and others thought fat profit get international smugglers but poachers and domestic trafficker get little.

4.8.7 Unskilled manpower in customs and lack of modern technologies in ports

Inadequate skilled intelligence and lack of technical knowledge of custom officials, who cannot identify whether or not the animals/parts being traded are prohibited or restricted by wildlife act. Primordial technologies are used in our ports, traffickers get advantages from this. Forest department and law enforcing agencies don't have expert as well as meat test lab in this Sundarbans circle. It found 12% professional respondent didn't have confidence on our customs intelligence and their technologies.

4.8.8 Domestic and international demand of wild product

Deer poaching may occur due to illicit domestic demand for flesh from deer for consumption of deer flesh as a luxury food or Raj Mangsho and national and international demand for hide from deer for luxurious uses like coats, belts, vanity bags, wallets etc. are the reason for the unrelenting poaching pressure on deer in Sundarbans. Forest user or forest adjacent people take venison due to protein demand and also they felicitate venison to guest. Social elites make him proud with taking venison or felicitating to other. Found 10% locals respondents believed deer flesh might have local demands but not on its hide and any tiger parts, but deer hide have a national demand. All of my respondents believed tiger parts only have international demand.

4.8.9 Effect of religious festival (Rashmela)

During this festival more than fifty thousand people enter into the forest to celebrate. Though forest division, civil administration and law enforcing agencies take several to control deer hunting and define some route for transportation. But it's a tuff job to control the crowd and



to examine their activities. Some seasonal poachers become active during this festival to earn huge money. It found 10% professional and 6% local respondents thought religious festival (Rashmela) have effect on deer poaching but not in tiger poaching. National daily news named Daily Sangram reported in 30, November, 2015 about thousand deer hunt in period of celebrating Rushmela. They interrogated 50 tourist boats and found 30-35 tourist boats where they (tourist) confessed about eating venison in Rushmela period also added few boats got more than 10 deer.

4.8.10 Corruption

Corruption is the most critical factors facilitating illicit wildlife trafficking. It found 26% local respondents and 16% professional respondents considered the main obstacles to effective law enforcement. They believed corruption comprises a variety of actors; forest officers, villagers, police, customs, traders and brokers, and expedite each phases of the crimes along the wildlife trade route, from poaching (e.g. illegal payments to issue resource harvesting permit, bribery of forest patrol officers), to domestic transport (e.g. illegal payments may be offered to control officials to turn a blind eye to fraudulent documents), to trafficking (e.g. bribery of customs officials, illegal payments to issue export certificates etc.), to law enforcement (e.g. bribery of police officers and prosecutors to avoid investigations; illegal payments to manipulate court decisions). Corruption begins from recruitment procedure of any government officer. In Bangladesh approximately 4-5 lakh BDT is bribed to get recruited a forest guard.

4.8.11 Political reluctance

Most the respondents believed that our local and national politicians are highly corrupted and few of them might have direct or indirect connection with evil group like poacher and trafficker. They also believed that national brokers are social elites; have good relation with politicians and law enforcing agencies. Due to political reluctance, law enforcing agencies can't do their job willingly. Sometimes law enforcing agencies need to set free the offenders who have done heinous wild offence. It found 10% professional respondents stated poacher and trafficked might use political reluctance.

4.8.12 Lack of awareness

Without awareness raising it is impossible to stop wildlife poaching and trafficking. Most of the countryman know the wildlife act; but absence of forest department they always break the



rules and commit offence. It is highly true opportunity makes a man thief. Only 2% professional respondents thought lack awareness to enhance crime tendency.

4.9 Discussion:

Wildlife crime embraces a chain of diverse and often overlapping offences which range from illegal hunting, processing, exporting and importing, trafficking, supplying, to receiving, possessing and consuming parts of wild animals (UNODC.2010). The international stream shackle for tiger parts (hide, teeth, nail, bones, eye etc.) trafficking involves organized criminal groups that are attracted to the availability of huge profits and the low-risk nature of the crime, including the absence of trustworthy enforcement, trial, penalties and other restrictions (TRAFFIC. 2008). Poaching of tigers is generally considered to be a threat to the persistence of tigers (e.g. Miller et al. 2011), but Karanth & Stith (1999) and Karanth et al. (2004) have clearly demonstrated that prey depletion can be an equal threat. Poaching of deer is going on unabated in the Sundarbans, the world's largest mangrove forest, largely because of government inaction. Locals around the forest allege that a section of poachers aided by local leaders and activists of political parties and representatives of local government bodies with the connivance of some corrupt forest officials and staff are poaching deer in the forest throughout the year (The Daily Star. 2009). It found 13 hotspot villages in Burigoalini forest rane and total 46 in Sundarbans east and west forest division; 15-20 deer poacher groups active in Burigoalini forest range and total 60-70 deer poacher groups active in Sundarbans. Forest department told BSS (October,2015) that they listed 475 tiger and deer poachers: 150 of suspected poachers were already accused in different cases and added that most of the poachers were detected in Khulna and Burigoalini Range of the forest department while the rests were found to be active in the Bagerhat Range (The Independent.2015). It found approximately 1061-1124 deer consumed in this year in Burigoalini forest range, this poaching intensity must have great impact on wild tiger population (CITES.2008). It found approximately 4224-4496 deer were consumed by the forest adjacent people in whole Sundarbans and most of them occurred in winter and in annual religious festival period. National daily news named Daily Sangram reported in 30, November, 2015 about thousand deer hunt in period of celebrating Rushmela. They interrogated 50 tourist boats and found 30-35 tourist boats where they (tourist) confessed about eating venison in Rushmela period also added few boats got more than 10 deer. Most of the cases resource collectors are opportunistic poacher; they enter into the forest for a week to a month then they hunt deer with nylon rope/net trap for their food but most probably they are not tiger hunter. Most of



the cases when come to the villages, they have venison (fresh or dried formed) for their family members and neighbor. Seizure of venison and deer and tiger is very common, in last five year more than hundreds of deer skin and at least 15 tiger skin seized by law enforcing agent (FD.2016). Most of the case venison traded locally sometimes regionally. Deer skin and tiger skin have national and international market but tiger bones are not used in Bangladesh. China is the destination of tiger bones since Chinese people use those to make medicine (CITES.2008). FD and intelligence have little idea about smuggling these products. A common method for smuggling includes fraudulent paperwork or mixing protected species with legal shipments of look-alike species (CITES.2012).

Needless to say that corruption has spread its tentacles far and wide and is eating our socio-economic growth (TIB.2012). Corruption is the most critical factors facilitating illicit wildlife trafficking; main obstacles to effective law enforcement (UNODC.2012). However, corruption is not the only means used by criminal groups to poach and trade wildlife. Trafficker groups get advantages of the economic condition of the forest dependent communities to pay villagers to poach animals, inadequate forest department manpower, inadequate infrastructure and technologies of forest department, as well as low sentences (TRAFFIC.2008, Miller, C.S., Petrunenko, Y.K., Goodrich, J.M., Hebble white, M., Seryodkin, I.V. & Miquelle, D.G. 2011). Inadequate implementation of law and the support of public officials and institutions, criminal groups involved in illegal trade manage to launder the proceeds of crime. Very few accused are convicted in wild crime lack of evidence and improper investigation is disappointing. To make matter even worse, most of the wild offences that the police conducts are not completed in due time. The police are simply too busy with other issues. Although six tiger poachers were shot by RAB in last year, in order to send a strong signal against poaching but still we don't know about the master minder. Sometimes venison traded illegally in this area has even been transported mixing other meat or in vehicles carrying VIPs (Hui Min Neo. 2009, CITES. 2009). Without illegal connection among poachers, traffickers and forest officers is impossible to transport live deer from Sundarbans to Narayanganj near Dhaka city. It is impossible for traffickers to smuggle live animals without the help of officials at the scanning section," said a journalist, seeking anonymity. It is the time for serious introspection to find out the causes that have led wildlife poaching and trafficking. Forest department should focus on capacity building, especially in skills and logistics. It must invigorate the process of inter-agency coordination and draw out specific plan to combat against wildlife poaching and trafficking syndicate.



Chapter Five

Recommendations and Conclusion

5.1 Recommendations:

- i. Long term investigation on wildlife poaching and trafficking in Bangladesh has not been done so far; it should carry out as immediately as possible.
- ii. Forest department should establish lab to test wild meat in each range as immediately as possible.
- iii. We don't know the actual density of tigers' prey in Sundarbans and demanding density of prey to support remaining tiger population; FD should conduct intensive prey population census in Sundarbans as immediately as possible.
- iv. Address illicit wildlife trafficking at an inter-ministerial level and focus on enhancing the rule of law, and strengthening custom controls and other international enforcement mechanisms.
- v. Detect the threat posed by illicit wildlife trafficking to our own sovereignty and the need to treat this crime equally and in coordination with efforts to stop other forms of illegal trafficking, corruption and money laundering. The issue must be addressed by multiple ministries in a coordinated manner.
- vi. Collaborate with social elites and the private sector (NGOs) to drive behavioral change efforts to reduce the incentives to consume venison and skin, in particular in domestic demand.
- vii. Change the approach to illicit wildlife trafficking in recognition of the altered, organized criminal nature of the trade.
- viii. Governments should execute modern intelligence-led investigative techniques to detect and prosecute the criminals at the heart of the trade and apply sentences severe enough to create the restrictive required discouraging criminal participation.
- ix. Government should adopt risk allowance and reward mechanisms for enforcement officers to raise detection rates for wildlife crimes and also to reduce the influence of corruption.
- x. Customs and intelligence agencies should execute modern technologies to detect the wild as product alive or dead.
- xi. The creation of transparent enrollment processes which are based on merit and professional qualifications may also reduce the opportunities for corruption and nepotism, raising integrity in law enforcement agencies. The involvement of civil



- society groups or professional associations in the process could help to increase transparency.
- xii. Government should arrange various investigative training and other capacity building and raising awareness activities across government agencies; targeting officials ranging from forest officers to frontline enforcement officers (customs and police), investigators, members of the judiciary (senior judges and prosecutors) and border security officers.
 - xiii. Government should arrange training program to the magistrates on environmental crime as well as on anti-corruption issues. Magistrates should also have access to relevant legislation and cases and court procedures.
 - xiv. Government should establish the National Biodiversity Investigation Forum. This combined with the purchase of an information management tool and the support of the prosecutor's office, the asset forfeiture unit, and the National Defense Force has helped to double the arrest rates for those involved in wildlife poaching and trafficking in future in comparison to present.

5.2 Conclusion:

Studies on tiger and tigers' prey poaching and trafficking are primarily conducted incidental to other research projects. Long term investigation on wildlife poaching and trafficking in Bangladesh has not been done so far. To conserve this flagship species as well as biodiversity we must find out root of this poaching and trafficking system. Intensive poaching of deer, evidenced by the frequency at which traps are found inside the forest and sized skin from different place, must be controlled if the tiger population is to survive.



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A case study on tigers' prey (deer) poaching from Sundarbans: main threat to wild tiger conservation in Bangladeshi Sundarbans

Hello, I'm **Anwarul Islam Rana**, MS student of Khulna University. I'm currently working for my research on deer poaching. Now I'm conducting survey to assess the knowledge of local communities and different stakeholders about the deer poaching and its effect on biodiversity. Your participation is completely voluntary and confidential. This information will be used only for research purpose.

Survey Questionnaires 1

Basic information of the respondent

Name Age Sex: Male Female

Address: Range Thana

Union Village

Respondents belong to

Stakeholder type

- Gollpata collector (Bowali) Honey collector (Mowali) Shrimp collector
 Fishermen (Jella) Businessman Day labor
 Other profession (specify)

Leader

- Traditional leader (imam, purohit, modal, teacher) Political leader

Law enforcing agencies member

- FD officer Police officer BGB officer DB officer RAB officer
 Coast guard officer Administrative officer (DC, UNO)

Research group/Researcher with institution

Designation Institution

Media

- Print (Local National) Electronic (.....)

Web based media:

Online newspaper (.....) Blog (.....) Social media (Facebook)



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1. Do you know the role of prey (deer) in Sundarbans?
 Yes No
2. If yes, what it is?
 Food for tiger's Natural beauty Maintain ecosystem
 Human food
3. Do you believe is the same amount of prey (deer) remaining in Sundarbans as previous?
 Yes No
4. If no, what are the reasons? Please rank.
 Poaching Calamities changes Natural depilation
 Lack of food Lack of space Human disturbances
 Others (specify).....
5. Why do you/they kill prey animal (deer)?
 Become local hero Livelihood Food (flesh)
 Medicine Skin/hide or other body parts Local demand
 Others (specify).....
6. When poaching (deer) activities are higher all year round?
 Winter (Nov-Feb) Summer (Mar-Jun) Monson (Jul-Oct)
7. Annual festival (Rashmela) has any effect on deer poaching?
 Yes No
8. If yes, what type of effect?
 High Low Moderate
9. Have you ever eaten the deer flesh in this year?
 Yes No
10. If yes, how many times ate this year?
 One Two More
11. From where do you collect this flesh?
 Direct poacher Neighbour Local market
 Black market Others (specify).....
12. Have you ever taken part in illegal poaching?
 Yes No



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13. How do you feel about wildlife poaching?
 Slightly agree Agree Slightly disagree Disagree
14. Do you know poaching is a crime/offence?
 Yes No
15. Do you have any idea about the penalties for this job?
 Yes No
16. What type of penalties?
 One year jail Two year jail Three year jail
 Four year jail Five year jail Seven year jail
17. Is this penalty enough to stop this type of crime?
 Yes No
18. Tiger poacher, deer poacher, illicit feller, pirates and intruder of forest dependent people are same person?
 Yes No
19. If no, please specifies the group who involves the deer poaching?
 Forest adjacent community Resource collector People from outside
 Specialist gang Tiger poacher Illicit feller
 Political group Pirate group FD or Administration
20. Have any idea or information, how many poacher groups are active in Sundarbans?
 1-5 6-10 11-15
 16-20 21-25 26-30
21. What types of weapon they use to hunt this animal?
 Fire arms like rifles Traditional arms like arrow Agricultural tools
 Rope for trap Digging hole
22. Poachers and body parts smugglers are same or different?
 Yes No
23. If no, who are the body parts (hide, horns, flesh and skull) smugglers? Specifies please.

	Poachers	Local business parties	International parties	
Flesh				
Hide				
Horn				
Skull				



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24. How they do that, please tell step wise.....

For flesh (Smuggling channel)

1..... → 2..... → 3..... → 4.....

For hide (Smuggling channel)

1..... → 2..... → 3..... → 4.....

For horn and skull (Smuggling channel)

1..... → 2..... → 3..... → 4.....

25. What do the law enforcing agencies do?

- | | | |
|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

26. Are you satisfied on law enforcing agencies?

- Yes No

27. Do you believe law enforcing agencies including FD are partially responsible for the poaching?

- Yes No

28. If yes, by how they involve in this activities?

- | | | |
|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

29. I believe social elites and local politician are fully or partially involved in any part of these poaching activities, do you agree with me?

- Yes No

30. If yes, by how they involve in these activities?

- | | | |
|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

31. What do you expectations o from the agencies?

- | | | |
|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



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32. Forest department thinks; stop going to Sundarbans to harvest resources might be the solution to control tiger poaching as well as deer poaching; do you agree with them?
 Yes No

33. What should be the first initiative to stop or minimize prey poaching? Please rank.....

34. Do you think; if poaching continues to happen, that it will have a negative impact on the world's ecosystem?
 Yes No

35. If yes, what are the effects on world ecosystem as well as wild tiger conservation?

36. Do you believe, over harvesting/poaching of deer is the main cause of decreasing Tiger population?
 Yes No

37. Do you know, poaching deer from Sundarbans may raise human-tiger conflict?
 Yes No

.....
.....
.....
.....



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Questionnaire 2

1. Do you believe, poaching deer is the main threat to conserve Tiger population? How?
2. Why do poachers kill (Tiger, Deer)? For livelihood/food/hide/other??
3. Have you any idea about the market value of tiger hide, bone, skull, teeth, deer hide, deer meat, deer antler? Specifically tell please....
4. What types of weapon they use to hunt Tiger and Deer specifically?
5. Tiger poacher, deer poacher, illicit feller, pirate group, forest robber or forest dependent people (resource collector) are same person?
6. When poaching (Tiger, Deer) activities are higher all year round specifically?
7. Annual festival (Rashmela) has any effect on deer poaching?
8. During annual festival huge numbers of people enter the forest to celebrate this; to control this crowd is possible with a limited man power?
9. What should be the first initiative to stop or minimize Tiger and Deer poaching specifically?
10. FD wants to stop (resource collectors) going to Sundarbans to stop poaching, is it reliable? If yes, how?
11. Do you believe intelligence gap among the law enforcing agencies and information leakage is the main problem in our agencies? If yes, what type of gap and what should be the tonic? If no, without intelligence gap 27 (alive) deer found in Narayanganj, is this possible?
12. Local people believe law enforcing agencies including FD are partially responsible for the poaching, do you agree with them? If yes, by how they involve in these activities?
13. Locals believe social elites and local politician are fully or partially involved in any part of these poaching activities, do you agree with me? If yes, by how they involve in these activities?
14. Locals believe pirate/robber group patronize the resource collector to hunt deer/tiger. If it is true, what should we have to protect them as well as wildlife?
15. Do you feel any limitation on Wildlife conservation act, 2012 or on its implementation? If yes, what type of limitation?
16. Have FD ((law enforcing agent)) faced any political pressure in implementing this law? If yes, what type of pressure?
17. I believe corruption at each stage of state is the main threat to conserve wildlife, do you agree? If yes how it involve in wildlife poaching and trafficking???
18. What are the initiatives are initiated by FD and others law enforcing agencies to stop this? Is this enough? If no, what should be included?
19. Have any idea or information, how many poacher groups are active in Sundarbans?
20. What do you know about poaching and trafficking channel/route? Please tell me step wise (poaching to end-user)....



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Questionnaire 3

সিরিয়াল নং-----স্কুল-----স্থান-----

১. হরিণের মাংসের স্বাদ কেমন? (খুবই সুস্বাদু/সুস্বাদু/ছাগলের মাংসের মত/গরুর মাংসের মত)
উত্তর:.....

২. হরিণের মাংসের বিশেষত্ব কি? স্বাস্থ্যের জন্য উপকারী/ঔষধি গুণ আছে/
উত্তর:.....

৩. মাংস খাওয়ার কি উপলক্ষ ছিল? (ঈদ/পূজা/আল্লীয় সমাগম/কোন উপলক্ষ ছাড়াই)
উত্তর:

৪. তুমি এই বছর (জুলাই, ২০১৫ থেকে জুলাই, ২০১৬) কয়বার হরিণের মাংস খেয়েছ? (যদি পরিমাণ জানা থাকে)
উত্তর:.....

৫. বছরের কোন সময়ে খেয়েছ? শীতকাল/গ্রীষ্মকাল/বর্ষাকাল
উত্তর:.....

৬. কোথা থেকে এই মাংস আনা হয়েছে? (স্থানীয় বাজার/যারা শিকার করে তাদের/প্রতিবেশী/বন্দুবান্ধব)
উত্তর:.....

৭. তুমি কখনও হরিণ জবাই করতে দেখেছ? দেখলে কোথায় দেখেছ? (নিজেদের বাড়িতে/প্রতিবেশীদের বাড়িতে/শিকারীদের বাড়িতে)
উত্তর:.....

