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BANGLADESH WILDLIFE: A CALL TO ARREST ITS DECLINATION THROUGH REMEDIAL POLICIES AND MANAGEMENT

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Abstract

Bangladesh, located between latitudes 20°34' to 26°38' north and longitudes 88°01' to 92°41' east, is the most densely populated country in the world with 1,252 people per one square kilometre; this is almost three times as dense as its neighbor, India, other than the island countries like Singapore, and others. So, Bangladesh is not likely to have a large array of wildlife, including both megafauna and macrofauna, and flora. However, because of its very zoo-geographic location in the Indo-Malayan realm of the Oriental Region, Bangladesh supports at least three major terrestrial habitats and similar number of aquatic environments. These have allowed the country to have astounding number of wildlife and plants, e.g., about 125 species of Mammals, 718 species of Birds, 2500 species of arthropods and 5700 species of vascular plants. However, it is not satisfied status because already lost few charismatic megafaunas such as, all three species of Asian rhinoceroses, water buffalo, swamp deer, two species of peafowls, swamp partridge, *Bhadi Hans* (white-winged duck), marsh crocodile, etc. Existing study posits that the country has already lost about 10% of its mammals, 3% birds and 4% of reptile species and an unknown number of amphibians, fishes, and invertebrates as well as plants. Another 14% of animal species are endangered. The same may very well be true for the plants. Currently the Forest Department, which has its own forestry policy from as early as 1979, has failed to develop such a policy for wildlife although it is trying to manage the wildlife of the country from the inception of Bangladesh in 1971.The department lacks in right workforce trained in wildlife with proper degree in relevant subjects. A few people that work there does not see progressions in their service carrier. The wildlife conservation policy followed round the world does not conform to the forestry policy of Bangladesh. So, Bangladesh must have a concrete wildlife and its sustainable management policy to conserve the wildlife wealth through creating a proper wildlife department to implement such a policy and save the wildlife from further killing or loss of wildlife through managerial failures or mismanagement.

Keywords: Wildlife, Bangladesh, conservation, policy, forest management

Introduction

Bangladesh is just half a century old South Asian nation but with past and long history of archaeological, cultural, national emancipation and freedom struggle footprints . It lies between the massive landmass of the Himalayas in the north and the vast body of water of the Bay of Bengal in the south (Figure 1). The land area of Bangladesh extends over 1, 47,570 sq. km., when the territorial water is limited to 12 nautical miles and the economic zone to 200 nautical miles measured from the base lines.'Bangladesh won in Arbitral Tribunal/PCA more than 1, 18,813 square kilometers of waters comprising territorial sea, and seabed extending as far as 354 Nautical Miles from Chattogram coast in the Bay of Bengal with all the living and non-living resources'(BBS 2020). Its west, north and south-east are bordered by Indian territories. Extreme southeast corner borders with Myanmar. Bangladesh is a deltaic flood plain lying at the junction of the river Ganges (Padma), Brahmaputra (Jamuna), and Meghna along with their tributaries. As a result, the country is rich in fertile alluvial soil. However, due to monsoonal climate, Bangladesh suffers from frequent flood and drought. The hill country lies in the Greater Districts of Sylhet and Chittagong in the north-east, east, and south-

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east of the country. There are few low undulating lands or hillocks in a few districts of Dhaka, Mymensingh, Rajshahi and Rangpur revenue divisions.

Being in the Tropic of Cancer, Bangladesh is heavily impacted by the south-western monsoonal rains, thunderstorms, and lightning followed by over flooding, high humidity, and warmer temperatures, usually lasting from June to September. The country does not have a uniform average rainfall, temperature and humidity that usually varies from drier north-western parts of the country to the moderate central, southern, north-eastern, and eastern sides. The average annual rainfall ranges from 1,329 mm in the north-west to 4,338 mm in the northeast. The annual temperature fluctuates from 17 to 20.6 ^{0}C during winter to 26.9 to 31.1 ^{0}C during summer (Shahid et al, 2005).

The hottest day temperature has been recorded as 45.1ºC on 30 May 1972 in Rajshahi and the lowest was 2.60 degrees in Tetulia, Panchagarh on January 8 in 2018(LGC, 2018).

Wildlife in Bangladesh lives in terrestrial forest ecosystems, man-made environments, including crop fields and homestead gardens, and aquatic ecosystems such as freshwater rivers, wetlands, and marine environment.

Wildlife Habitats

Grossly, there are seven major terrestrial and aquatic habitats available for all wildlife living within Bangladesh territory. These are-

Terrestrial Habitats

1.1 Mixed evergreen or evergreen forests
1.2 Mangrove forests
1.3 Moist deciduous Sal (Shal) Forest and
1.4 Man-altered areas, such as agricultural or crop fields, village groves and backyard vegetation in human habitations.

Habitats from 1.1 to 1.3 are the natural forests, managed by the government forest department with a few exceptions. Items under 1.4 are privately managed having little or no control from the government.

Aquatic Habitats

2.1 Marine environment, including coastal and estuarine areas.
2.2 Freshwater Rivers
2.3 Natural and man-made waterbodies such as haors, baors, beels, ponds, lakes, etc.

Terrestrial Habitats

1.1 **Mixed evergreen or evergreen forests-**These occur only in the revenue divisions of Chittagong and Sylhet that corresponds to hill countries of Bangladesh. These forests occur in the north-east, east, and south-east of the country. These are sometimes also called hill forests.

Table 1. Status of the state-owned forest land (in ha) vide Banglapedia (2021a)

Forest type	Reserve forest	Protected forest	Vested forest	Acquired forest	BWDB* and khas	Unclassed state forest	Total
Hill (Mixed evergreen forest)	594,383	32,303	2,636	11,004	---	721,344	1361,670
Inland (Shal Forest)	68,140	2,689	19,985	31,198	---	---	122,012
Littoral (Mangrove and coastal forest)	656,579	---	---	6	101,526	---	758,111
Total	13,19,102	34,992	22,621	42,208	101,526	721,344	22,41,793

BWDB- Bangladesh Water Development Board*

Condition of forests in Sylhet Division was always bad because all were nearby city centres from early 1950s first, and then after independence in 1971, when our nation became Bangladesh through 9-month long bloody guerrilla warfare.

The loss of government forests in the hill areas, under the administrative divisions of Chittagong and the Sylhet, are mentioned in a paper by the FAO that sometimes provide funds to forest department or NGOs, recognised by it, to perform forest related tasks. Based on such studies, the FAO (2006) evaluated that over a period of 10 years from 1990 to 2000 forest department has lost 21,19% of the forest that existed in 1990 to 27.67% by 2005.

FAO (2006) shows systematic loss of natural forest in the hilly regions of the Chittagong and Sylhet Revenue Divisions (Table-2).

Table-2. Area of forest in Hectares (square kilometres)

Location	Year		
	1990	2000	2005
Kassalong	55,010	46,070	41,600
Rankhiang	6,230	350	350
Sita Pahar	650	650	650
Chittagong	26,111	19,631	16,390
Cox's Bazar	29,081	25,391	23,547
Sylhet	3,060	2,597	2,366
	120,142	94,689	86908
	12,014km^2	9,489km^2	8,690km^2
		78.81%	72.33%
Forest lost between 1990 and 2005		21.19 % (10 years)	27.67% (15 years)

The deterioration of natural forests in Bangladesh is highlighted in other FAO projects related to Bangladesh forests that have been prepared by the former and current employees of the forest department. One such project resulted in this document by the FAO (Choudhury & Hossain 2011). In this paper, the authors have mentioned that 'the natural high forests all over the country have depleted alarmingly. The National Biodiversity Strategy & Action Plan for Bangladesh (October 2006) has pointed out that the forest cover has come down to 6% from 10% of the area of the country. The fact remains that depletion of forests is an ongoing process. The Global Environmental Outlook 3 (UNEP, 2002) has also highlighted the alarming rate of deforestation. Annual forest loss in Bangladesh is estimated at about 0.015 Mha (million hectares) (Chowdhury & Hossain, 2011) or 15,000 hectares or 150 km^2.

In an earlier report, the FAO mentioned that the forests were lost in the past too. 'Bangladesh's natural forests controlled by the Forest Department and fall under three classes: hill forests (48%), inland Sal forests (9%) and mangrove forests (43%). Rural inventories show an overall depletion in forest resources in all the major forests. For example, the growing stock in the Sundarbans fell from 20.3 million m^3 in 1960 to 13.2 million m^3 in 1984, a 35% decline over 25 years. In the reserved forests of Chittagong Hill Tracts, growing stock decreased from 23.8 million m^3 in 1964 to below 19.8 million m^3 in 1985' FAO (2011).

The present condition of the wildlife in the Hill forests is the most precarious. In the past, an array of wildlife lived in the mixed evergreen forests. Along with them also lived the most ethnic minorities of the country. But when the plain-dwelling Bangalees were settled in the hills, during the tenure of ex-president Mr. Ziaur Rahman, it triggered a major civil war between the Shanti Bahini of the ethnic groups and the government leading to a wholesale destruction of wildlife habitats and along with these, most megafaunas, and populations of major wildlife species.

Gone are the two species of rhinoceros, banteng, leopard, green or Javan peafowl or peacock and white-winged wood duck. Nearly extinct species are gaur, Bengal tiger, all three species of Asian bears, stump-tailed, dhole or wild dog, Assamese and pig-tailed macaques, clouded leopard, golden cat, marbled cat, hog deer, hornbills, brown hill tortoise, Malayan box turtle and many other species. These species are recorded from the border areas with Myanmar or India through camera-trap mechanism and do not represent any viable population.

Maximum number of species of amphibians and hill stream fishes used to be present in the mixed evergreen forests too. Although there are no concrete figures on the number of species of invertebrates, dominated by the insects and other arthropods, were or are likely to be present in the hill regions of the country.

However, most large mammals, birds, reptiles, amphibians, and hill fishes of the country are still present in the hilly areas, barring those that are already extinct, but none seemed to have a viable population to withstand the continuous loss of forest habitats that government is apparently failing in halting.

Invariably these forests have the highest number of plant diversity that is likely to range from 2000 to 2500 species of the 6000 species reported for Bangladesh in Banglapedia (2021b). Of course, these forests have been ruined

over the last few decades (Choudhury& Hossain, 2011: FAO 1998, 2011: Khan 2003, 2012) and there is no recent evaluation of the status of plant species in the CHT and Greater Sylhet areas.

1.2 Mangrove forests

Basically, mangrove forests are known largely as the Sundarban. It covers more than 6,000 km^2 or 91% of the mangroves present in the three south-western districts of Satkhira, Khulna and Bagherhut. It is contiguous with the Sundarban forest of the West Bengal state of India having 4000 km of mangroves (Hussain & Acharya, 1994). The remaining 8.6% include all coastal forests from the western coastal areas in Bagerhat District to the easternmost one in Saint Martin's Island in Cox's Bazar. The coastal forests are mainly man-made, as over the last half a century or so, Bangladesh forest department did not allow natural mangrove to grow in our coastal areas but planted such areas mainly with saplings of keora and baen (*Sonneratia apetala* and *Avicennia alba*).

Bangladesh Sundarban supports the highest number of plant species in the world. In 1903, scientist Prain published a list of 334 species of plants from the Sundarban (Prain,1903). Over the years, at least another 50 plant species have been added to the flora of the Sundarban of Bangladesh and India.

Despite loss of the largest megafaunas, such as Great Indian Rhinoceros, Javan Rhinoceros, Buffalo and Barasingha, Sundarban is still the finest natural forest of the country that supports the only viable population of Internationally Endangered Bengal Tiger, Threatened Masked Finfoot, Salt-water Crocodile, King Cobra and nearly a dozen species of kingfishers. Our popular deer, the Chitra Horin or spotted deer only survives in the Sundarban and nowhere else, barring introduced ones in coastal areas. It is the last refuge for the monkey- rhesus macaque, wild boar, barking deer, leopard cat, fishing cat, mangrove pitta, mangrove whistler, white-tailed sea eagle, mangrove snake, ring-tailed lizard, crab-eating frog, several species of fishes, and many species of invertebrates.

Sundarban is the largest mangrove forest in the world. As such, it is so in Bangladesh too and still the best forest as it has never seen the wholesale destruction of hill forests caused by the subsequent forest departments from 1860s to till date and by ruthless burning of primary forests by the ethnic people for ages and converting forest land into human dwellings by the settled Bangalees from the plains land over the last few decades.

1.3 Moist deciduous Sal forest or Inland Forest

Popularly known as the Madhupur Tract is the Sal or Shal forest that is present in the greater Dhaka, Mymensingh, Tangail and Jamalpur districts with bits and pieces in the Rajshahi and Rangpur revenue divisions. Of the three forest ecosystems, the Shal forest has suffered from the highest destruction as is evidenced from Rahman et al (2010). 'The anthropogenic impacts on Sal Forest have increased rapidly over past decades. The Food and Agricultural Organization (FAO) estimated that about 36% of the Sal Forest cover existed in 1985; while in 1990 only about 10% of the forest cover remained (Haque, 2007). It has been reported that central Sal forests are the most threatened ecosystem of Bangladesh (Alam et al., 2008). Currently, these important ecosystems are deteriorating due to anthropological and natural threats.

The Shal forest has lost the maximum number of wildlife, in addition to scores of plant species. There is not a single century old Shal tree anywhere in Bangladesh. The current day Shal forests contain Shal saplings planted by forest department and others as well as some grown from the old stumps.

Of the megafaunas- the Great Indian one-horned rhinoceros is the first to become extinct, followed by the elephant and gaur. Subsequently lost are the Bengal tiger, leopard, sambar, hoolock gibbon, stump-tailed and pig-tailed macaques, slow Loris, pangolin or scaly anteater, Indian peafowl or peacock, hornbills, hill myna, reticulated python, Burmese python, tree-snake and other species of reptiles and amphibians.

The remnant populations of elephants occurring along the Indian border with Mymensingh, Netrokona, Jamalpur and Sherpur districts have stuck inside Bangladesh border due to the electric fence erected all along the border line by India. This is preventing free movements of elephants between forested lands in Meghalaya, Assam and Tripura States of India and Bangladesh. As a result, there is serious casualty on both the elephants and the humans, and their properties.

1.4 Man-altered areas, such as agricultural or crop fields, village groves and backyard vegetation in human habitations.

Considering that the country is about 147,570km2, of which 116,727 km2 (79.1%) is floodplain,12,248 km2 (8.3%) is terraced land and 18,593 km2 (12.6%) is hilly area (Biswas et al., 2004). So, man-made areas are within the floodplain

region of the country, where most human activities are restricted. These include human habitations in towns and villages, major human activity centres, administration, education, culture, business, and commercial operations.

As is known to all, in the olden days, at least up to the 1950s, that I can recollect, all villages and towns, agricultural fields, fallow lands, abandoned houses, dilapidated buildings, prayer places, etc., supported some kinds of wildlife and many species of plants providing food and shelter to them. Each house, from the tiniest hamlet, thatched house to the compound of village head or a zamindar, everybody had a backyard garden of several to dozens of fruit trees, timber trees and many unwanted or untilised species of plants that grew naturally. Most trees in the compound of mosques, temples, other prayer places, schools, madrasas, and others used to remain as 'sacred' and people will usually not cut those trees.

As far as my memory goes, we used to see jungle cat, fishing cat, jackal, Bengal fox, civets, mongoose,100s of fruit bats hanging from banyan, fig and other large trees, insect bats, rodents, c. 100 species of birds, 40-50 species of reptiles, nearly a dozen species of amphibians and at least 50 species of freshwater fishes in the countryside, outside the major forest ecosystems. The moths, butterflies, beetles, bugs, grasshopper, flies, bees, ants, and other invertebrates occurred as 100s of species.

However, things have changed so drastically that there is literally no fallow land in the country now. All such lands are occupied by human habitations, used for agriculture and infrastructural developmental activities. Cropping patterns have changed too. So, all lands around a house are used for growing crops, vegetables, fruits, or timber trees, and all for commerce only.

Thus, we now encounter only the commonest species of mammals, birds, reptiles, and amphibians that are generalists and can thrive in the company of humans. Example being mongoose, jackal, rats-mice, and bats among mammals, sparrows, crows, bulbuls, mynas, kites, drongo, koel, herons and egrets among birds. The house geckos, garden lizard, monitors, checkered keelback snake among reptiles, and few frogs and toad among amphibians. Among fishes, only those that are cultivated may be present in the countryside. Of course, there will be no dearth of obnoxious, harmful, pests and parasites of crops and fruits and those invertebrates that can thrive at the cost of agricultural resources.

So, overall, the countryside does not hold good as a compact habitat for any important or threatened species of wildlife or plants.

Aquatic Habitats

2.1 Marine environment, including coastal and estuarine areas.

Marine areas of the country, estuaries and coastal areas are within the perimeters of the Bay of Bengal that covered the whole of the southern portion of Bangladesh, starting from the Sundarban in the west to the Saint Martin's Island in the east. Bangladesh has immense coastal and marine resources along its south edge at the northernmost part of the Bay of Bengal. The country has a coastline of about 710 km and 121,110 sq. km of Exclusive Economic Zone (EEZ) (Habib & Islam, 2020).

Most dolphins, whales, and porpoise are restricted to the marine ecosystem with extension of some of their ranges into the southern segments of the Sundarban. Only Ganges Susu does not occur in the marine area but northern parts of the Sundarban that are connected to freshwater rivers.

Of the baleen whales, only Bryde's Whale is still present in the Bangladesh portion of the Swatch of No Ground in the Bay of Bengal. All others have disappeared or there is no available information on them such as the Blue Whale. Out of 13 species of toothed whales or dolphins and porpoises mentioned in the red list of the IUCN (IUCN, 2015) most are data deficient, and few have better populations in the Sundarban than that in other parts of the world.

Of the birds, only gulls and terns are common when rest of the oceanic birds are rare.

Among reptiles, all the five species of marine turtles and ten species of sea snakes are in Endangered and Vulnerable categories.

An updated checklist of Marine Fishes of Bangladesh by Habib & Islam (2020) covers a total of 740 species belonging to 389 Genera of 145 Families and 30 Orders. Among the fish species, 53.38% exclusively marine and 46.62% found in both brackish and marine water. Besides, 296 species of fish are reef associated and 204 of these are recorded from the Saint Martin's Island. Further, 271 species of brackish water and/or marine fishes are commonly observed in the Sundarbans mangrove ecosystem and its adjacent sea area. About 7% of the total marine fishes of Bangladesh are identified as threatened as per global IUCN Red List.

This vast area although supported hundreds of species of marine fishes and marine animals during the early 1970s, the fish stock has declined severely due to overfishing by Bangladeshi fishers and those that overseas fishing trawlers that pirated our fish stocks from the Bay of Bengal parts within our territory.

2.2 Freshwater Rivers

The freshwater river systems with their tributaries and distributaries comprise 8,300 km or 5.76% of the area of the country (Table 3).

Table 3. Major physiographic areas of Bangladesh (Hoq, 2009)

Description	Area (km²)	% Of total area
Rivers, canals, streams	8,300	5.76
Estuaries, brackish- waterbodies	1,828	1.27
Floodplains	112,010	77.76
Wetlands	2,930	2.03
Freshwater ponds and tanks	794	0.55
Artificial lakes	906	0.63
Hill areas	17,286	12
Total Bangladesh	144,054*	100

**BBS (2020) mentioned the total area of the country as 1, 47,570.*

Of all the aquatic ecosystems, the freshwater rivers have suffered the highest loss of biodiversity. This is because major countryside rivers have become completely silted up or not navigable. Logically when there is no water, there will be no water loving wildlife there too.

From my early childhood in the 1950s to late 1960s I lived in remote areas in greater Dhaka District under Dhamrai and Manikganj police stations. There was Bangshi River in Dhamrai and two mighty rivers the Dhaleshwari and Kaliganga in Manikganj. At the current time, all these rivers are virtually dead getting only little water during monsoonal rainy season, from June to September. This is mainly because all these three rivers have originated at certain points in the Jamuna River that has become silted up due to millions of tons of silt carried by it from its upstream in the Indian States of Meghalaya and Assam where this river is known as the Brahmaputra. The Jamuna has a major tributary as Tista, and both enter Bangladesh from India.

The other two major rivers, the Padma in the west and the Meghna in the east have also originated from India before entering the Bangladesh Territory. All three rivers have originated in the high hills of China and India.

Most popular and widely known hill rivers are the Sangu-Matamuhuri, Karnaphully, Surma and Kushiyara, etc.

From Karnaphully in the east to the Padma in the west, the only fully aquatic mammal Ganges Susu or Ganges Dolphin that used to live in great numbers in the 1950s to early 1970s has become a Critically Endangered species in Bangladesh. It disappeared from most of the river systems. Current populations are disjunct and devoid of any intermingling of genetic materials between different populations.

Of all the known aquatic megafaunas, we have completely lost the Marsh Crocodile from our freshwater river systems. There is no resident or breeding population of its cousin the Gharial that used to be common in the Padma and the Jumna even during 1970s and early 1980s.

Most turtle-tortoise and fish species have either disappeared or those that are present are represented by dwindling populations in our river systems.

As per the IUCN Bangladesh Red List of 2015 (IUCN, 2015), of the 253 species of freshwater fish species assessed, 64 or 25.3% were assigned to Threatened Category. In addition, nine species are evaluated as Critically Endangered, 30 Endangered, and 25 vulnerable.

2.3 Natural and man-made waterbodies such as haors, baors, beels, ponds, lakes, etc.

Bangladesh used to be known as the country of rivers, beels, baors, haors, ponds, tanks, and ditches. However, at the current time, most of the naturally occurring wetlands such as beels, baors and ponds have disappeared barring a few that are still present in Greater Sylhet and Mymensingh Districts in the North and North-East of the country. These freshwater bodies are represented only by 3.21 % of the total area of the country (Table). Excepting the haors in the above two regions the ponds, village tanks and ditches are all used for fish culture or rather farming monoculture of indigenous and exotic species of fishes. To do these, farmers use poison to kill all animals and plants that naturally used to occur in these pre-1970 freshwater wetlands. Another emerging problem is the introduction of the exotic species of fishes, some of which are so aggressive and voracious eaters that they are not allowing natural breeding and population increase of our indigenous freshwater fishes.

IUCN has listed 253 species of freshwater fishes from the rivers and the other freshwater bodies, be that man-made or natural (IUCN 2015). Of these, nine species are Critically Endangered, 30 are Endangered and 25 are Vulnerable amounting to 25.3% of the fish species are under the Threatened Category. Also, 10.7% or 25 species are Near Threatened.

Nearly a dozen species of toads and frogs, all freshwater turtles and tortoises, and water snakes having rapid decline in populations due to overuse of the waterbodies and monoculture of indigenous and/or exotic fishes.

Larger haors in Sunamganj, Moulvibazar, Netrokona and Kishoreganj still support breeding populations of some local fishes and attract many migratory birds.

Ganges Susu and Otter are rarely found in the freshwater bodies.

BACKGROUND FOR A NATIONAL WILDLIFE POLICY FOR BANGLADESH

ENADNGERED WILDLIFE OF BANGLADESH

Bangladesh has lost 31 species or 2 % of its mammals, birds, reptiles, amphibians, fishes, butterflies, and crustaceans, mostly in the last century. About 4% or 56 species are Critically Endangered and can disappear at any time if conservation interventions are not being made on urgent basis. Another 11.18% or 181 species of animals are endangered also needing immediate conservation interventions. The third category among the Threated species is the Vulnerable group represented by 153 or 9.45% of the species evaluated (IUCN 2015, Table 4). It is conjectured that animals from Vulnerable Category soon likely to jump either to EN or CR, if proper management systems are not put in place sooner than later. We need to remember here that IUCN 2015 red listing is over 7 years old (Table 4).

Table 4. IUCN 2015 species red lists

Category		Number of Species	Percentage
Regionally Extinct		31	2 (1.91)
Critically Endangered	These three falls under the Threatened Category	56	3.45
Endangered		181	11.18
Vulnerable		153	9.45
Near Threatened		90	5.55
Least Concern		802	50 (49.53)
Data Deficient		278	17
Not Evaluated		28	2 (1.72)
Total species		1619	

CURRENT WILDLIFE SCENARIO

1. Based on the daily reports appearing in national news, print and electronic media as well as social media we see a very sad situation with our wildlife wealth, be that in nature or in captivity in safari parks, zoos, and private collections.

In this 21st millennium, nobody wants to see eight or more wild elephants die in a matter of fortnight that points to the inaction of the government bodies responsible to protect the wildlife.

A total of ninety elephants were killed in Bangladesh between 2001 and 2017. Meanwhile, around twenty-eight elephants were brutally killed in just 20 months from January 2020 to August 2021. Twenty-three of them were killed in Cox's Bazar alone (Dhaka Tribune, 2022; Prothom Alo, 2022).

2. None expects to see the majestic and intelligent elephants are tortured in the name of training following the practices of the 19th century that have long been discarded by the zoo and captive breeding organisations round the world.

Torture of Asian Elephant in Bangladesh- from a screenshot of the Daily Star- Dhaka (14 February 2022) that is too grisly a scene to be watched.

3. Dolphins are often brought ashore dead boring marks of injury when whales float to the shores of Bay of Bengal in Bangladesh.

At least fifteen dolphins have been found dead at various points along the coast of Cox's Bazar in the past one week, said local fishermen. The bodies of four turtles were also found on the beach. Among these fifteen dolphins, locals saw the bodies of four dead dolphins at Shaplapur beach in Teknaf, three dolphins at Dariya Nagar Point, three dolphins and two turtles at Sun Parachute Point. Locals said the dead dolphins had signs of injury on their bodies. Moreover, the bodies of these dolphins washed up on the shore were severely wounded (Bangladesh Post, 2020).

4. There is almost weekly confiscation of wild animals from animal sellers, shooters, trappers, etc.

All these are happening because there is virtually no authority to control and punish these law breakers. Even when punished, they get a 'rebuke' or just warnings from the authorities and very rarely monetary punishment or jail terms. So, law breakers take this as casual.

The current scenario presented above is sufficient to demonstrate that Bangladesh lacks a wildlife policy and proper management protocols. Also, the relevant existing acts, rules and regulations are not being implemented properly.

Before I propose an outline of a suitable wildlife policy for Bangladesh, let us take few examples from the existing wildlife policies of Sri Lanka, Tanzania, and FAO (Food and Agricultural Organization).

Wildlife policy of Sri Lanka

Sri Lankan wildlife policy revolves round the "Conservation of Wildlife Heritage for Present & Future Generation (DWLC, 2021) and when Kotagama (2021) gave the detailed policy having four main objectives-

1. Objectives of the National Wildlife Policy having seven elements., the number one of which is "To conserve wildlife resources, through protection, research, education, sustainable use, and benefit sharing, for the benefit of present and future generation".
2. Policy on Protected Area Management and wildlife Conservation that includes twelve elements.
3. Policy on institutional Support for Wildlife Conservation having 5 elements and
4. Policy on Inter-sectoral linkages covering four elements.

To implement all the wildlife related policies and for the sustainable management of the wildlife of Sri Lanka, the government has created an independent wildlife department with the following mission-"To conserve wildlife and nature by the sustainable utilization of men, material and land through participatory management, research, education and law enforcement and ensure the maintenance of biodiversity and forest cover as exist today" through a Biodiversity Conservation Action Plan, supported by such legislative measures as may be necessary to achieve harmony and success among all those who seek to promote conservation and sustainable development in Sri Lanka.

An excerpt from the Wildlife Policy of Tanzania is as follows:

The wildlife policy of Tanzania (TURT,1998) has twelve major elements that include

(a) to conserve areas with great biological diversity which are representative of the major habitats of Tanzania.

(b) to continue to support and where necessary, enlarge the PA network as the core of conservation activities.

(c) to promote involvement of local communities' participation in wildlife conservation in and outside the PA network, and others.

FAO has given a broad guideline for wildlife policy that stands as: -

"a policy should describe the status and role of wildlife in the country and articulate the variety of reasons for the regulation of its use. These should include food values, economic motivations, aesthetic and moral concerns and cultural and historical reasons such as the protection of national animals, human health, and the conservation of genetic resources", McHenry (1993).

Proposed outline of Bangladesh Wildlife Conservation and sustainable management policy.

1. Historically wildlife conservation is a part and parcel of the human society in Bangladesh vis-à-vis the Asian continent. As such, this wealth along with the ecosystems in which they live in, needs to be conserved in their entirety through a rational policy that will conserve all wildlife species and ecosystems as well as ensure their sustainable use and aesthetic values.
2. Like any other conservation conscious country, wildlife in Bangladesh indicates the health of its ecosystems. Thus, "the maintenance of viable natural populations of wildlife and ecological functions always takes precedence over any human use of wildlife", McHenry (1993).
3. The wildlife policy to cover aspects, such as wildlife habitats and ecosystems, wildlife populations, sustainable uses and values of wildlife, public access to wildlife, wild animals in captivity, partners in stewardship, wildlife research and education, public awareness, incorporating international wildlife and biodiversity protocols and conventions., developing wildlife study curricula for schools, colleges, universities, kindergartens, and madrasas, etc.
4. The proposed wildlife policy can be further modified taking elements mentioned in the Lankan, Tanzanian and FAO guidelines.

5. The implementation of the new wildlife policy and management of the wildlife wealth of the country will need a full-fledged wildlife organization, most likely a wildlife department or dividing the current forest department into a division of commercial forestry operations and a second one as the wildlife conservation department with proper professional progression of employees of both divisions to be ensured and be eligible for the highest position slated for the department.
6. This proposed wildlife policy needs to be further expanded by competent wildlife biologists of home and abroad.

Conclusion

Bangladesh does not have a wildlife policy although it has one for the forestry and the other for the environment. Even smaller countries like Sri Lanka have a wildlife Policy from the 1990s or so. In the absence of such a well-defined wildlife policy, the management of wildlife in the country is not moving in the right direction as every now and then either the land giant the elephant, wild cat or marine mammal gets killed. On the other hand, people get killed; crops and properties get damaged by the elephants. So, it is high time Bangladesh has its own wildlife policy, implement the same through a well-established wildlife department to save wildlife and lessen the human-wildlife conflicts, and manage this limited resource in a sustainable way.

Conflict of interest

No conflict of interest exists.

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