

**MASTER PLAN**  
**GARHCHUMAK DEER PARK (MINI ZOO)**  
**DISTRICT: HOWRAH**  
**FOR 2015-16 to 2035-36**



**GOVT. OF WEST BENGAL**  
**WEST BENGAL ZOO AUTHORITY**

**KB-19, SALT LAKE CITY**  
**SECTOR-II, KOLKATA-700098**

## Part – I

### Chapter 1

#### 1.1. Introduction:

Garchumuk is located in the district of Howrah in West Bengal at the confluence of River Damodar and River Hooghly i.e. Ganges, which enhances the scenic beauty of the location. It is the breathtaking natural beauty of the river Ganges and its surroundings that fascinate the visitors. Considering the scenic beauty of the locality, a man made forests has been created by Howrah Social Forestry Division, Forest Directorate, West Bengal under Social Forestry Scheme over an area of 13.04 ha at mouja Srirampur J.L.no.119 and Silampur J. L. No. 120 under P.S. Shyampur- 1 within Uluberia Sub-division of Howrah district. The spot offering the spectacular view of the Ganges is gradually emerging as a popular tourist destination-- ideal for a weekend outing. Garchumuk is an ideal picnic spot for the tourists amidst the natural splendour. There are also provisions of boat riding on the river Hooghly at Garchumuk. One can also explore the region, preferably in groups.

The prime attraction of Garchumuk is the beautiful barrage, popularly called **58 No. gate** or **Atanna Gate**, where 58 lock gates have been built. Visitors flock at the site to view this extensive barrage. One can also spot irrigational canals connecting the rivers Damodar and Hooghly. Above all, nearby attractions around Garchumuk is **Gadiara** – a beautiful place for attractions of tourists, located at a distance of 22 km from Garchumuk.

One can have an exotic picture of the Ganga-Damodar confluence, where the endless waters mingle at the distant horizon.

In the past the zoological parks throughout the world were established with an objective for providing entertainment to the visitors by exhibiting various wild animals in the captivity. But on introduction of National Zoo Policy, 1998, modern zoos / parks in India have undergone drastic changes in concept and objectives. More stress has been given on conservation breeding, conservation education and research for conservation than entertainment.

The Garchumuk Deer Park is the only deer park within the district of Howrah. It becomes very popular to the tourists and other nature lovers. It appraises visitors regarding deer's natural habitats and their conservation value

As per Rule of the Recognition of Zoo Rules, 2009 [Rule 103(1)], it is a mandatory to prepare a long term Master Plan and Master (Lay out) Plan for its development. Accordingly, Master Plan and Master (Lay out) Plan have been prepared as per the format developed by the Central Zoo Authority. The development programme in this master plan is designed only by following the well defined steps as enunciated in the guidelines formulated the by Central Zoo Authority (CZA) to cater the theme of coordinated development.

The Garchumuk Deer Park was recognized as Mini Zoo by the Central Zoo Authority vide letter no. F No. 23-3/97-CZA (382) (M) dated 18.03.2008 for a period up to 31.03.2011 subject to fulfillment of some conditions. Later recognition was extended up to 31<sup>st</sup> December, 2015 (**Annexure-VIII**).

## **1.2 History:**

The Garchumuk Deer Park was established on 31.01.1991 with the financial assistance of Howrah Zilla Parishad over an area of 13.04 ha at mouja Srirampur J.L.no.119 and Silampur J. L. No. 120 under P.S. Shyampur- 1 and within Uluberia Sub-division of Howrah district. The technical support was provided by the Howrah Social Forestry Division, Govt. of West Bengal. The land of this Park belongs to Howrah Zilla Parishad. A Man made forests have been created within the said area earlier under Social Forestry Scheme by Howrah Social Forestry Division, Forest Directorate, West Bengal.

The name of the district Howrah is possibly derived from a village named Harirah which was located in or about the site of modern day Howrah City which lies in between 22°48' N and 22°12' N latitudes and between 88°23' E and 87°50' E longitudes with an average elevation of 12 metres.

## **1.3 Vision:**

The Garchumuk Deer Park is to provide a glimpse of wild animals to the general public for developing a healthy relationship between animals and human beings and to promote conservation of our invaluable faunal resources through display, care and awareness. It is committed towards protection and conservation of species and strives for a peaceful co-existence of development and conservation.

## **1.4 Mission:**

- \* To develop amongst visitors empathy for wild animals and motivate them to support conservation of wildlife
- \* To create awareness education among the visitors towards role of wildlife in our environment.

## **1.5 Strategy**

The Garchumuk Deer Park is to display the animals to appraise the visitors regarding their natural habitats and their conservation values, to understand biology, ecology and behaviour of animals displayed. The strategies are:-

- To house and display of some broad representatives of diverse and endangered animals with emphasis on the fauna of lower Ganga basin
- To display animals in pleasant and aesthetic natural settings in accordance with their habit and habitat specifications
- To ensure standard animal health care and establish self sustaining populations of genetically and behaviorally viable animals

## **1.6 Objectives**

As per the National Zoo Policy 1998, in defining purpose of a zoo / park, stress was given on conservation education and for conservation research. Accordingly, the objectives of the Garchumuk Deer Park are being done as follows:

- Conservation and education
- Exhibit and display of wild animals in a naturalistic conditions

- Recreation and awareness for local visitors and tourist in the thematic settings of the Park contemplating safety of animals as well as visitors

## **1.7 Physical features**

### **1.7.1 Topography**

The topography of the land is almost flat alluvial plain. In majority of area in the district, water drainage is a problem. Uluberia sub-division is known as the humming place of agricultural activities. Topography and agro climatic characteristics hemmed in between the Hooghly (Bhagirathi) on the east and the Rupnarayan on the west, and intersected by the Damodar.

### **1.7.2 Geology**

Geologically, the Howrah district is located in the stable shelf on the south-western flank of the Bengal Basin.

### **1.7.3 Rock and Soil**

The Rock of this area lie buried under a thick basalt trap and tertiary sedimentary formation. The existence of older deposits of the Damodar, mainly brown coloured sands occurring below the present surface deposits.

The soil of this area commonly known as red sandy loam deep soils which is very fertile and availability of water is additional advantage. Due to clay soil, water stagnation is a major problem. Both organic matter and available nitrogen content in soil is low.

## **1.8 Surrounding of the Park:**

The park is bounded as follows:-

East	: Uluberia – Gadiara road
West	: Damodar River
North	: Kata Nadi (58 nos. gates)
South	: Gachumuk

## **1.9 Flora and Fauna in Zoo premises**

### **1.9.1 Flora (Existing):-**

The vegetation within the boundary of the Park is dominated by:-

Akashmoni (*Acacia auriculiformis*)

Sirish (*Albigia spp.*)

Arjun (*Terminalia arjuna*)

Mamgo ( *Mangifera indica*)

Neem (*Azaddirecta*)

Babla (*Acacia nelotica*) etc.

### **1.9.2 Fauna (free living):-**

The mammals, birds, reptiles and amphibians commonly encountered are small Indian Mongoose, Five-striped Squirrel, Bandicoot rat, Civet Cat, Fishing Cat, Languor,

Owls, Crow, Herons, Bulbuls, Kite, Kingfishers, Sunbird, Cuckoo, Sparrow, Water Hen, Parakeets, Woodpeckers, Common Myana and varieties of snakes etc.

### 1.9.3 Existing Fauna (in captivity) as on 31.03.2015 (Annexure-II):-

Sl. No	Common name	Scientific name	Total no.	Approved stock as per CZA	Remarks
1	Spotted Deer	<i>Axix axis</i> Erxleben,1777	94:57:0 9	10- 15	Excess to be translocated
2	Porcupine	<i>Hystrix indica</i> Kerr,1792	1:1	2- 4	Rest to be procured
3	Pea fowl	<i>Pavo cristatus</i> Linnaeus, 1758	2:2	2-6	Rest to be procured
4	Crocodile	<i>Crocodilus palustris</i> Lesson,1831	1♀	-	-
5	Indian Soft Shell Turtle	<i>Lissemys punctata</i> (Lacepede,1788)	476	-	-

### 1.10. Climate

Mainly three seasons appear in the area in a year. The dry season is March to June, the wet season is from June to September and winter starts from December to February. A highly humid atmosphere and abundant rains characterize the climate of this district.

### 1.11. Temperature

January is the coldest month with temperature dropping down to as low as 9°C. Temperature being seldom excessive during the period April- May and gradually



decreases. May is the hottest month with mean daily maximum temperature of 36°C and mean daily minimum of 12°C. Lowest temperature up to 9°C during the month of January.

### **1.12. Humidity**

The atmosphere is highly humid during May to August. Relative humidity ranges between 60 - 72%.

### **1.13. Seasons**

Summer season is observed during April to May. Heavy rainfall is observed from June to the beginning of October on the onset of south-west monsoon. October to November is observed as post-monsoon season. Winter is observed during December to March.

### **1.14. Rainfall**

Average annual rainfall is 1,200mm per annum (approx.) of which 70% is received during monsoonal months. The rainfall generally increases with the onset of south-west monsoon during June to September. North-east monsoon comes during October - December with an average rainfall recorded.

### **1.15. Approach**

The Garchumuk Deer Park is well connected with road and rail. One can avail a number of options to reach Garchumuk. Trains are available from Howrah, which takes around 45 minutes to reach Uluberia. From Uluberia, one will find jeep, bus, ambassador and trekker to reach Garchumuk at a distance of 15 km only. Garchumuk is at a distance of 60 kms from Esplanade and

takes around 2.5 hours on road to reach the destination. One can also avail a bus heading to Gadiara from Esplanade, and drop down at the 58 No gate stop through the Kolkata- Mumbai road, then by local transport to Park.

### **1.16. Demography**

There are two villages namely Sri Rampore and Silampore under Belari Gram Panchyat surrounding the Park. Population of those localities are 1090. Out of this, Male are – 538 and Female – 552. But according to 2011 census Howrah district has a population of 4,841,638 roughly. The district has a population density of 3,300 inhabitants per square kilometre (8,500/sq mi). Howrah has a sex ratio of 935 females for every 1000 males. Literacy rate is of 83.85%.

### **1.17. Legal Status of the land**

Land on which the Garchumuk Deer Park has been established belongs to the Howrah Zila Parishad.

### **1.18. Sources of pollution**

The Park area is situated in rural area far away from factories / industries. So there is no noticeable scope of threat from pollution to the park area. Occasional dumping of solid wastes like plastic pouches, water pouches, pan masala pouches etc. is evident. However, stringent enforcement of the rules like restriction in taking food items, plastic bottles, polythene bags etc. is implied. No other pollution sources have been identified, however composting of leftover food staffs is proposed.



## Chapter 2

### 2. APPRAISAL OF PRESENT ARRANGEMENT AND CONSTRAINTS

#### 2.1 Animal section:

At present the Garchumuk Deer Park has following enclosures in which different animals are kept.

##### 2.1.1 Crocodile enclosure

The pond in which the Crocodile is kept has a total area of 1030sqm. The pond is well fenced by wire net of 1.5 m height to arrest the running away of animal. Surrounding the first fence another wire net fencing of 1.5 m height is constructed to restrict the visitors to go near the enclosure. The shoreline of the pond is sandy and slope is maintained to enable crocodile to easily reach the shoreline. The sand bed is maintained for egg laying and basking of crocodile. No breeding has been observed till date in the park. Presently the Garchumuk Deer Park has one marsh crocodile as on 31.03.2015. The stainless standoff barrier is erected around the enclosure for the visitors. The crocodile pond is situated at the south-eastern side of the park near the rest house.

##### 2.1.2 Freshwater turtle enclosure

The freshwater turtle enclosure/ pond have a total area of 530 sqm. The pond is wellfenced by wire net of 1.5 m height to arrest the animals. Surrounding the first fence another wire net fencing of 1.5 m height is constructed to restrict visitors from animal proximity. The shoreline of the pond is sandy and slope is maintained to enable turtle to easily reach the shoreline. Within the enclosure sand bed is maintained for egg laying. No breeding has been observed till date in the park. Presently there are 476 turtle are in the pond. The stainless standoff barrier is erected along the enclosure for the visitors. The turtle pond is located at the south-eastern side of the park near the boundary of the rest house campus.

### **2.1.3 Peafowl Enclosure**

The total area of the peafowl enclosure is 430 sqm. The Garchumuk deer park has four (2♂, 2♀) peacocks as on 31.03.2015. The enclosure is at the north-eastern side of the park near the turtle pond.

### **2.1.4 Porcupine Enclosure**

The porcupine enclosure has a total area of 90 sqm. The enclosure consists of two (1♂, 1♀) porcupine as on 31.03.2015. The enclosure is at the north-eastern side of the park near the peacock enclosure.

### **2.1.5 Deer Enclosure**

The total area of the deer enclosure is 47,425 sqm. There are three night shelters cum cemented feeding troughs for the deer inside the enclosure. The chain-link fencing with iron post encircles the total enclosure with a height of 2.75 m. There is a large iron gate for the keepers to supply the foods to the deer. Three fresh water ponds are also

created within the enclosure for the deer. Presently there are 94♂ 57♀ 09 unsexed deer in the enclosure. The deer enclosure is at the western side of the park.

Presently following total numbers of mammals, birds and reptiles are exhibited at the Garchumuk Deer Park:-

Type of animal	No. of species	No. of specimens
Mammals	2	96
Birds	1	4
Reptiles	2	477

## **2.2 General appraisal of the facilities available in the Park**

- 1) One permanent water reservoir exists within the rest house campus. Water is stored in the reservoir from the tube well.
- 2) Veterinary facilities for the Park animals and birds are available through State Veterinary Deptt. Govt. of West Bengal as and when required
- 3) Zookeepers are there to take care of the animals and birds.
- 4) Entry gate with ticket counter as well as good network of road in the park are available.
- 5) Mobile network is available.

### **2.2.1 Constraints**

1. Running water supply is available for the animals as well as visitors
2. There is lacking of sanitary facilities for the visitors

3. No toilet is available for the visitors of the park
4. There is no sitting arrangement or rest sheds for the visitors
5. No standard cages for transportation of animals are available in the park
6. No trained staff for tranquilization of animals and transponder based animal marking devices available at the Park

### **2.2.2 Staff engaged:**

Divisional Forest Officer, Howrah Division is the Ex-officio Director of the Garchumuk Deer Park. One full time Zoo Supervisor assists the Director in the management of day to day affairs of the Park.

Animal section has been looked after by the following staff:

1. Zoo Keeper : Two
2. Animal Attendant : Two

Total : **Four**

**N.B. Manpower engaged in the Garchumuk Deer Park is shown in details at Chapter-V.**

### **2.3 Veterinary Section**

There is no veterinary section in the park. However, local Veterinary Surgeon is available on monthly honorarium basis to visit birds and animals of the park. The Veterinary Surgeon posted at Shyampore- I Block with Head Quarters at Uluberia is staying near to the Park. He is contacted at any time as and when required even at odd hours also.

There is a treatment room at the north-eastern side near the eastern boundary of the park. The post-mortem room is required to be constructed.

## **2.4 Store and Feed Supply Section**

This is the important section as far as animal diet is concerned. The clean and safe diet goes a long way in maintaining the health and upkeep of animals. However, storing of quality food, preparation and supply of food to all animals requires lot of logistics. Food store along with kitchen has recently been added in the zoo.

Outside agencies supply the food for the animals from time to time. The quality and specificity of the food is checked by the Zoo Supervisor and occasionally by the Veterinary Officer. To provide natural fodder to spotted deer, grass-like hybrid *Napier* sp. is planted in approx. 1 ha. Land provided by the Zilla Parishad outside of the park at northern side.

## **2.5 Sanitation Section**

A good zoo / park is certainly one, which has also made provisions for good sanitation facilities. Regular drainage or regular discharge of effluent is a must. Hygiene of the enclosures and park surroundings is ensured throughout, to prevent diseases to the animals. Better sanitation takes care of the health of the animals. This section is dealt with the sanitary attendant under the supervision of the Zoo Supervisor and other staff.

Well defined drainage system is not made in the different enclosure as well as in the park area. Lack of running water facility with sufficient overhead tanks makes the process cumbersome. Furthermore, permanent drains are needed for disposal of liquid waste.

### **2.5.1 Staff engaged ;**

1. Sanitation Attendant : **One**

## **2.6 Maintenance Section**

Various maintenance works in the Park are being looked after by the Zoo Supervisor along with other Zoo staff. If necessary, outside agency is engaged for specific purpose. The arrangement of water for staff, office and rest house is ensured by electric pumping system. Lighting arrangements are not made for the park. It is badly required for the security and safety of the park.

## **2.7 Security Section**

Barbed wire fencing is erected to stop the entry of cattle at strategic locations. There are four security guards for watch and duty in the park during day & night.

### **2.7.1 Staff engaged in this section:**

1. Security Personals : Four nos.

## **2.8 Water Supply Section**

For staffs, office and rest house, an overhead tank has been set up which draws water from tube well by electric and the pump is operated by generator during power failure. The supply of freshwater is bare necessity for maintenance of animal and public sanitation facilities.

## **2.9 Disposal of Solid and Liquid Waste**

The solid waste generated in the park is predominantly organic in nature and composed of grass, leaf litters and leftover food items. These are taken to the compost pit



near nursery. As food items and plastic are strictly restricted for the visitors, generation of non-biodegradable wastes is less; and if generated, the collected non-biodegradable items are transported outside the park and dumped.

## **2.10 Visitors' Amenities**

There are no toilets for public convenience in the zoo premises. Drinking water is also not available inside the park premises. But these facilities along with Food stuffs are available for visitors outside the premises of the park. The park lacks facilities like sitting arrangements near the ticket counter and appropriate location map at the entrance, distinct signage for directing visitors in the trail and showing the way to different enclosures. Furthermore, drinking water supply facilities are inadequate.

## **2.11 Gardens and Lawns**

Presently the park is lacking of planned gardens and lawns. However, the natural vegetations are retained inside the park premises. Only some gardens are set up in the rest house campus.

### **2.11.1 Staff engaged:**

Garden Attendant : **One**

## **2.12. Toilets**

There is no toilet for the visitors of the park. Constructions of toilets for the male and female visitors are badly felt in the park area.

### **2.13 Approach Road**

There is one approach metal road from the entrance at the north-eastern side to southern side of the park.

### **2.14 Entry gate & Ticket Counter**

Well built entry gate and ticket counter are at the northern side of the park adjacent to the main road for selling of entry ticket to the visitors.

#### **2.14.1 Staff engaged :**

Ticket Clerk : **One**

Gate Keeper : **One**

**Total : Two**

### **2.15 Restaurant, food stall and kiosk**

Presently there are no such facilities in the park.

### **2.16 Parking Area**

No such facility is available in the park. Visitors are parking their vehicle on the parking zone of the Zilla Parishad outside the park area.

### **2.17 Store House :**

In true sense there is no store house in the Park.

### **2.18 Treatment room :**

Treatment room for the sick animals is situated at the north-eastern side near the eastern boundary of the park. The room has two chambers, one for the visiting Veterinary Officer and another for treating the sick animal, as and when required.

### **2.19 Post-mortem room :**

The post-mortem room is required to be constructed for making post-mortem examination of the dead animals.

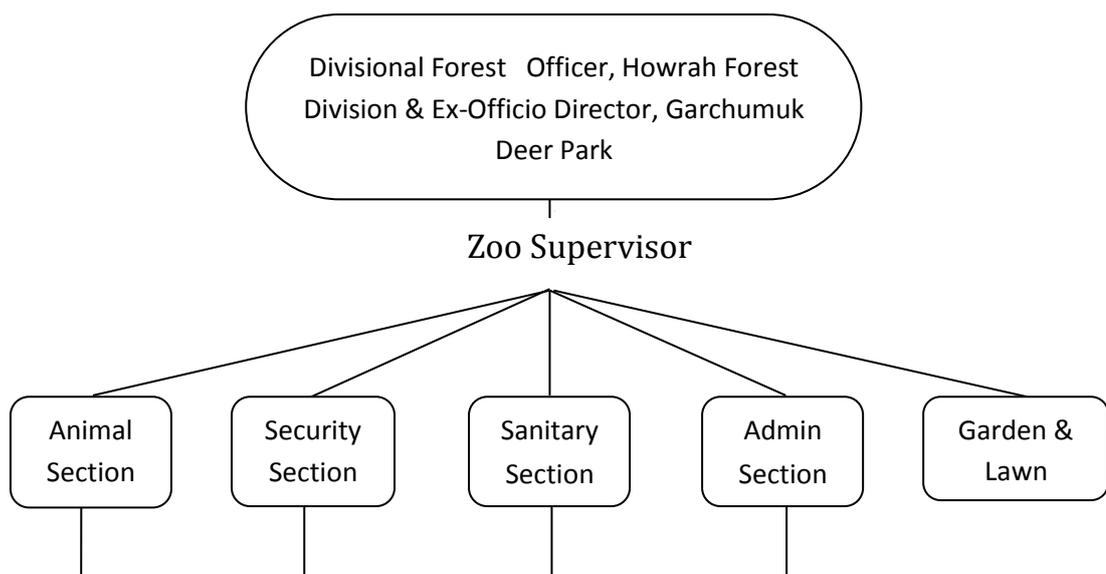
### **2.20 Animal Collection Plan:**

There is a fixed collection plan of animals for the Zoo as per CZA's approval and accordingly collection plan is drawn.

### **2.21 General Zoo Administration Section:**

The Divisional Forest Officer, Howrah Forest Division is the Ex-Officio Director, Garchumuk Deer Park. The Director is looking after all the administration of the Park and the Director is being assisted by the 13 nos. of Park staff.

The present organizational structure is as follows:-



1. Zoo Keeper :2  
2. Animal Attendant: 2

Garden Attendant : 1

Security Personal: 4

**Following staffs are engaged for smooth running the Park:**

- a. Zoo Supervisor 1
- b. Ticket Clerk 1
- c. Gate Keeper 1
- d. Zoo Keeper 2
- e. Animal Attendant 1
- f. Security Personnel 4
- g. Sanitation Attendant 1
- h. Garden Attendant 1

**Total: 13**

**2.22 Research:**

At present there is no research programme in the zoo. However, in future research programme may be undertaken in collaboration with the nearby colleges, if permitted. However, behavioural study of animals and water quality monitoring of Crocodile and turtle ponds are carried out routinely to observe any pollution load beyond tolerance limit of the inmates of the ponds.

**2.23 Conservation Breeding**

At Garchumuk Deer Park, the only breeding population is the Spotted Deer. As they are prolific breeding species, breeding and production of fawns are regular event in the Park. However, no planned conservation breeding programme is going on in the Park.

#### **2.24 Education and Awareness:**

The Garchumuk Deer Park was constructed with the main aim to educate the visitors about wildlife, besides providing amusement. Many students of different institutions like schools, colleges and universities visit this Park for study purposes. Zoo Supervisor and other staff also attend the study tours for explaining various information regarding wild animals, their habitat and need of conservation. The visitors are also taught about the deleterious effects of consumptive use of natural resources and how adoption of sustainable lifestyles and living in harmony with nature will maintain life on earth.

#### **2.25 Accommodation of Staff**

Accommodation for the zoo staff has been provided on South-eastern corner of the Deer Park and separated from the animals' area by 2.5mt height boundary wall.

#### **2.26 Rest House**

There is a rest house with all facilities at the corner of the rest house campus as depicted in the master lay out plan. Adjacent to the rest house, there is a one beautiful Orchid house for display of different orchids.

On the southern side of the rest house there is a rest shed near the deer enclosure to have the view of the deers by the boarder of the rest house.

#### **2.27 Administrative Office**

Dimistrative building with office chamber of the Zoo supervisor has been created in the zoo campus adjacent to the Rest House.

**2.27.1      Staff engaged :**

1. Ticket Clerk      : One

2. Gate Keeper      : One

**Total      : 2**

**2.28 Fodder cultivation**

Spotted deer enclosure is at about 47,425 sqm. It is divided as three parts. The extreme western part has been developed as fodder farm, central section is mainly act as off display Spotted deer enclosure. The 3<sup>rd</sup> compartment is used as on display for the visitors, so that the visitors can be able to observe the deers.

**2.29 Power supply**

Power supply is available for the rest house, staff and administrative office. But there is power supply to the different enclosures and for visitors in the park.



## **Part - I**

### **Chapter 3**

#### **3. Future objective including vision, mission statement/ theme and strategy**

In earlier days, the zoo / park was mainly established for the purpose of entertainment. But the concept of zoo has drastically changes. Now- a -days more stress has been given on conservation, education and research than entertainment. This has been made clear in the National Zoo Policy, 1998. Keeping this in view the objectives, theme and mission of the Garchumuk Deer Park has been framed as follows:-

### **3.1 Objectives**

- Exchange of the species with other zoological park by stringent adherence to the guidelines structured for the purpose
- Research on animal behavior, disease control, food & nutrition habitat and reproductive biology
- Promote nature education and interpretation for communicating the same to the common mass, especially to the younger generation to arouse interest and concern for wildlife
- To provide healthy wholesome recreation through wildlife education to the visiting public utilizing ambience setting of the park keeping in view the safety and upkeep the zoo inmates
- To gather knowledge and experience on management of captive animals by the staff handling the animals including veterinary officer

**N.B. Recreation may only be incidental and shall not be main objective at any point**

### **3.2 Theme**

Theme of the park is to apprise the visitors regarding their natural habitats and their conservation values and to facilitate the visitors to understand biology, ecology and behaviour of animals in display.

### **3.3 Mission statement**



- Communicating the message of conservation education through effusive and learning experiences without confronting the probable standards of display of wild animals under the existing policies and rules.
- To connect visitors and animals through best available animal welfare and care, best educational and inspirational experiences, fostering public appreciation and support for wild animals and conservation.

### **3.4 Strategies**

The strategies to achieve the goals will be :

- To house and display of broad representatives of diverse and endangered animals with emphasis on the Indian fauna.
- To display animals in pleasant and aesthetic natural settings in accordance with their habit and habitat specifications
- To ensure standard animal health care and establish self sustaining populations of genetically and behaviorally viable animals

### **3.5 Achieving the stated objectives**

The objectives as mentioned above are to be achieved by housing and display of broad representatives of diverse and endangered animals considering the climatic condition suitable to them. The animals are displayed in pleasant aesthetic natural settings in conformity with their almost natural habitat and their biological needs, to ensure standard animal health & hygiene and expert veterinary care, by providing sufficient space to the animals as per CZA guide lines.



## **Chapter 4**

### **4. Future action plan**

The aim of the future action plan is to provide suggestion for development of the Garchumuk Deer Park coming 2015-16 to 2035-36 with the provision to review the plan after every 10 years. Proposal is based on available resources and for convenience of the management. While formulating the proposal, recommendations and guide lines of the Central Zoo Authority have been taken into consideration. The development has been planned keeping in view the strategy to achieve the prescribed objectives. The Garchumuk Deer Park was established to provide a glimpse of wild animals to the general public for developing a healthy relationship between animals and human beings and to aware the

general public on sustainable conservation of wild fauna which are under severe threat due to biotic interference. The plan has been prepared on the basis of the site requirements, visitor's profile, availability of water and electricity, climate conditions and resources available with the available with the management.

#### **4.1 Animal section :**

##### **4.1.1 Display theme**

The park grew up haphazardly without any planning and at this point of time. For the convenience of the zoo management, "broad taxonomic display" of animal spp. is proposed to be adopted as far as feasible and the said display will be as follows:

##### A. Birds :-

- i. Peacock
- ii. Silver pheasant
- iii. Golden Pheasant
- iv. Red Jungle Fowl

##### B. Mammal :-

- i. Pholidota (Pocupine)
- ii. Ungulates (Spotted Deer)
- iii. Carnivora (Fishing Cat)

##### C. Reptile :-

- i. Crocodile
- ii. Indian soft shell turtle

##### **4.1.2 Proposed Animal collection Plan**

Keeping in view of the theme of the Garchumuk Deer Park, the collection plan is provided as follows:-

Sl. No	Common name	Scientific name	Proposal to keep animals	Present area / area proposed
1	Spotted Deer	<i>Axix axis</i> Erxleben,1777	10 to 20	47,425 sqm
2	Porcupine	<i>Hystrix indica</i> , Kerr, 1792	2:2	90 sqm
3	Fishing Cat	<i>Prionailurus viverrinus</i> (Bennett, 1833)	1:2	430 sqm
4	Golden Pheasant	<i>Chrysolophus pictus</i> (Linnaeus, 1758)	2:2	} 520sqm
5	Peacock	<i>Pavo cristatus</i> Linnaeus, 1758	2:2	
6	Red Jungle Fowl	<i>Gallus gallus</i> (Linnaeua, 1758)	2:2	
7	Silver Pheasant	<i>Lophura nycthemera</i> (Linnaeua, 1758)	2:2	
8	Indian soft shell turtle	<i>Lissemys punctata</i> (Lacepede, 1788)	-	530 sqm
9	Crocodile Marsh	<i>Crocodylus palustris</i> Lessen, 1831	4:5	1030sqm

**N. B. Keeping these above animals will make people aware about the need of conservation as well as to cater the need of the people to identify animals with their habit and habitat in the gradually waning of flora and fauna for bio-diversity reduction**

#### **4.1.2.1. Crocodile enclosure**

Presently the crocodile pond measuring about 1030sqm has one Marsh Crocodile.

It is proposed to keep 4:5 crocodile in this pond in future.

#### **4.1.2.2 Small carnivore enclosure**

It is proposed to keep 1:2 Fishing Cat in the renovated peacock enclosure measuring about 430 sqm , as the said enclosure is badly damaged. The existing stocks of peacock are to be shifted to the newly constructed pheasantry along with others pheasants.

#### **4.1.2.3 Pheasantry**

One pheasantry is under construction for keeping different pheasants, peacock as shown in the animal collection plan vide para no. 4.1.2. The total area of the pheasantry is 520 sqm (approx.). The enclosure is made up of iron enclosure fitted with wire net on the top and three sides. One side is kept for keeper's rest and store house for food grains. This is a rectangular enclosure with 40.75m X 12.725 m in length and breadth respectively. Height of the same is 3 m.

#### **4.1.2.4 Deer Enclosure**

The total area of the deer enclosure is 47,425 sqm. This total area is divided into three compartments. 1<sup>st</sup> compartment is for displaying 10-20 spotted deers. 2<sup>nd</sup> i.e. middle compartment is used for off display enclosure for keeping wounded and diseased deers. 3<sup>rd</sup> compartment in the extreme western side of the park may be kept for fodder plantation to provide natural food to them. When the plantation become fit for deer consumption, they will be released in this compartment and their existing compartment will also be taken for fodder plantation. In this way supply of outside foods will be minimised.

##### **4.1.2.4.1 Proposed plan for management of excess stock of Spotted Deer**

- The breeding males and females can be separated from each other by means of mechanical barriers in groups and maintained as off-display population, keeping a small group of non-breeding individuals like sub-adults and juveniles for display to the visitors. This will in turn control the probability of mating and population in long term.
- Release of the genetically viable and disease-free stock to the nearby protected areas of south Bengal or any other places on approval of the West Bengal Zoo Authority. However following steps as per guidelines of the Central Zoo Authority will be taken into consideration before release of the Spotted Deer:-
  - The deer for translocation should be clinically free from all contagious diseases
  - Sex ratio of 1:2 (M:F) should be maintained
  - A veterinary surgeon/doctor should always be present during the capture, loading-unloading of animals
  - The guidelines laid by Central Zoo Authority will be strictly adhered to
  - Delay in capture, loading-unloading of animals should be avoided
  - No surgical operation will be carried out on the day of relocation and injured animals will not be translocated
  - Proper feed should be provided before translocation so as to avoid stress to animals
  - Over-crowding should be avoided during translocation
  - Extreme care should be taken to avoid injury during translocation
  - The health of the translocating animals will be watched over during and after the process of translocation by veterinary doctors

#### **4.1.2.5 Porcupine Enclosure**

The present porcupine enclosure has a total area of 90 sqm. The enclosure needs some minor renovation to keep 2:2 porcupines for display to the visitors.

### **4.2 Master Layout plan of the Zoo**

The lay out map of the Garchumuk Deer Park has been drawn on a scale 1:1000, which is annexed as **Annexure-I**.

Features like water bodies, natural drainage, water channels for captive animals, pheasantry, different enclosures, cages etc. have been depicted in it. Entrance gate, ticket counter, store, treatment room, post mortem room, store house, night shelter feeding shed, toilets etc. are also shown in this plan. Electricity supply lines, solid and liquid waste disposal, and approach road to the park and inside paths are all there in the park area.

Details of contour are not depicted in the lay out map as it is not required as the land is a flat one. Ticket counter is there just at one side of the entry path.

### **4.3. Arrangement of Display**

Various specifically designed signages are required to be provided near each enclosure enabling visitors to gain more ecological, educative and conservative value. A directional signage is also important to guide the visitors in systematic manner.

#### **4.3.1 Modifications, re-arrangements of enclosures and construction of new enclosures**

- The development works would be carried out without affecting the movement of the visitors.
- The deer enclosure and the fencing are re-designed. The enclosure will also need good drainage, drinking water-hole and a squeeze chamber.

#### **4.3.2 Electronic marking of major fauna**

Insertion of micro-chip and other marking materials for identification of individual animal is suggested in future

### **4.4 Veterinary Section**

Though there is a treatment room in the park, but it requires following infrastructures:

- Tranquilising gadgets for tranquilise the animals for treatment.
- Doctor's chamber with minimum facilities
- Facility for storage of medicines in refrigerators

#### **4.4.1 Treatment Room**

Treatment room for the sick animals is situated at the eastern side of the park. It is to be upgraded with the above mentioned infrastructure. The room has two chamber- one for Doctor's Chamber another for treating the animal.

#### **4.4.2 Post- mortem Room**



One post-mortem room at the north-eastern side (as depicted in the MLP) adjacent to the eastern boundary of the park for carrying out post-mortem examination of the dead animals to find out the cause of the death is to be constructed.

#### **4.5. Lawns and garden- Landscape**

This section provides the natural aesthetic value of the park by maintaining natural flora. For aesthetic purpose, grasses and seasonal plants are required to be planted. Lawns and gardens along with a small children park are absolutely necessary and erection of the same is required to make the site of park more pleasurable. The landscape is very attractive and ample scope is there to develop it more by creating flower garden, Children Park and lawns. Open spaces would be utilized suitably for landscape gardening to add more curiosity and attraction amongst the visiting public of the park.

#### **4.6 Store and Feed supply Facility**

The food store room along with kitchen facility has been provided adjacent to the boundary near to the Treatment Room.

#### **4.7 Sanitation Section**

Well defined drainage system is not provided in animal night shelters. Lack of running water facility with sufficient overhead tanks makes the process cumbersome. It is proposed to make permanent drains for disposal of liquid waste. More numbers of dustbins strategically located are required. Daily cleaning, disposal of garbage and transportation to suitable location are required to be made by the sanitation section.

Composting of bio degradable waste is to be done and the resulting manure may be used for lawn gardens etc. Besides this, public toilets and toilets for staffs are to be cleaned regularly.

#### **4.8 Water Arrangements**

- Though there is provision for water supply for staffs and rest house including office, same arrangement may be extended to the animals also.
- Some drinking water points are needed for the visitors. Therefore, a number of deep tube wells with hand pumps are needed
- Running water facility should be developed in the enclosures of Spotted Deer, Porcupine, Pheasants, etc. for maintaining better hygienic condition.
- Running water facilities are to be provided to the treatment as well as post-mortem room

#### **4.9 Power Supply Section**

There are no electric supply lines at the park. Power lines are required to be installed at the park for safety and security. A generator is required for supply of power during power failure.

#### **4.10 Security Section**

The following facilities are required to be augmented to make the security tighter:

- Erection of stand-off barrier around the Pheasantry and spotted deers enclosures.
- Security Guards are to be provided with spot-light facility
- 2 sets of DBBL guns, sticks and tranquilization guns are required

- All the security guards should be in proper uniform
- Mobile connection for communication is needed

#### **4.11 Visitor's Amenities**

The following amenities shall be developed to make the Park more pleasant and comfortable for the visitors:

Trails – Beside the main entrance road, all the trails marked in the Master Layout Plan shall be developed in a phase-wise manner

- Main entrance to the park with proper landscape shall increase the appeal to the visitors
- Wheel chairs should be kept for disabled and old persons
- It is proposed that sheds with benches should be made at strategically placed resting locations.
- More toilets should be made with running water facility
- More drinking water sources are necessary
- A small garden away from enclosures, with sitting arrangements and playground for visitors and children

#### **4.12 Separate ticketing system**

Presently, entry fees are being collected by the Zilla Parishad. It is proposed to introduce separate ticketing system for the park itself. The well built entry gate with a posting of one ticket collector as well as gate attendant have already been posted at the park.

#### **4.13 Service road**

A service road at the southern side of the zoo adjacent to the on display compartment of the deer enclosure is required to be constructed, so that the zoo staff may easily enter the deer enclosure for supply of food and other required items. A service road is also to be constructed at the periphery of the deer enclosure at the southern boundary of the zoo.

#### **4.14 Education and Awareness**

It is the most important aspect of Parks that visitors after visiting the Park should return with empathy for wildlife and respect for nature in their heart. Moreover, proliferation of scientific knowledge should be a priority. The following steps shall be taken in phased manner.

- A sale counter is needed to be developed to sell souvenirs like picture postcards, posters, stickers relevant to the animals of the Park and their habitats
- Signage is the most educative material for visitors, thus attractive and interesting display of the scientific data regarding species and its habitat at strategic locations should be taken into consideration
- Specialist on animal behavior and ecology should be engaged to guide visiting students. Honorariums may be allocated to these resource persons.
- Different awareness campaigns like seminars, workshops and even Sit & Draw Competitions may be arranged
- Celebration of designated days in a year like World Environment Day, Biodiversity Day, Wildlife Week, Zoo Day, Aranya Saptaha , Earth Day and many more could be arranged to spread the global message of conservation.

- With the guidance of the West Bengal Zoo Authority, programme on education and Awareness for the visitors would be formulated so as to spread awareness to the Common public.

#### **4.15 Research**

There is always a greater scope for zoos/ parks to carry out research on animal behaviour in captivity. There are other issues like animal health care, biology, breeding, maintenance of genetically viable population.

The Park can establish network with University and other institutions to carry out collaborative Research works on the important issues as mentioned above on a regular basis. Priority can be given to the issues like Breeding, stress -related studies, effect of enrichments on improving natural behavior etc.

#### **4.16 Nature Interpretation Centre(NIC)**

No such facility is required for this deer park

#### **4.17 Rescue and Rehabilitation**

The deer park may not be permitted to be a rescue and rehabilitation centre.

#### **4.18 Administrative building**

An administrative building/ zoo office is essential for sitting arrangements for Zoo staff, to perform administrative and accounts works, to maintain different documents, to keep record of animal health, treatment provided, post mortem report and other

miscellaneous works. The said building/ zoo office is to be constructed at the south-eastern side of the zoo near the entry gate of the zoo staff.

#### **4.18.1 General Zoo administration**

The general administration of the park is being looked out by the Divisional Forest Officer, Howrah & Ex-officio Director who is assisted by the Zoo Supervisor, Zoo Keepers and other supporting staff for smooth running of the park. The Director is responsible to the State Government, West Bengal Zoo Authority and management committee.

#### **4.19 Staff Quarters**

One Zoo Supervisor and 2 nos. Zoo Keeper's quarters are proposed to be constructed at the south-eastern side of the zoo within rest house campus. One staff barrack is also to be constructed near the Zoo Supervisor quarter. Entrance & exit of staff members are separated from the main entrance of the Park and also separated from the park area by 2.5 mt height boundary wall.



## **Chapter 5**

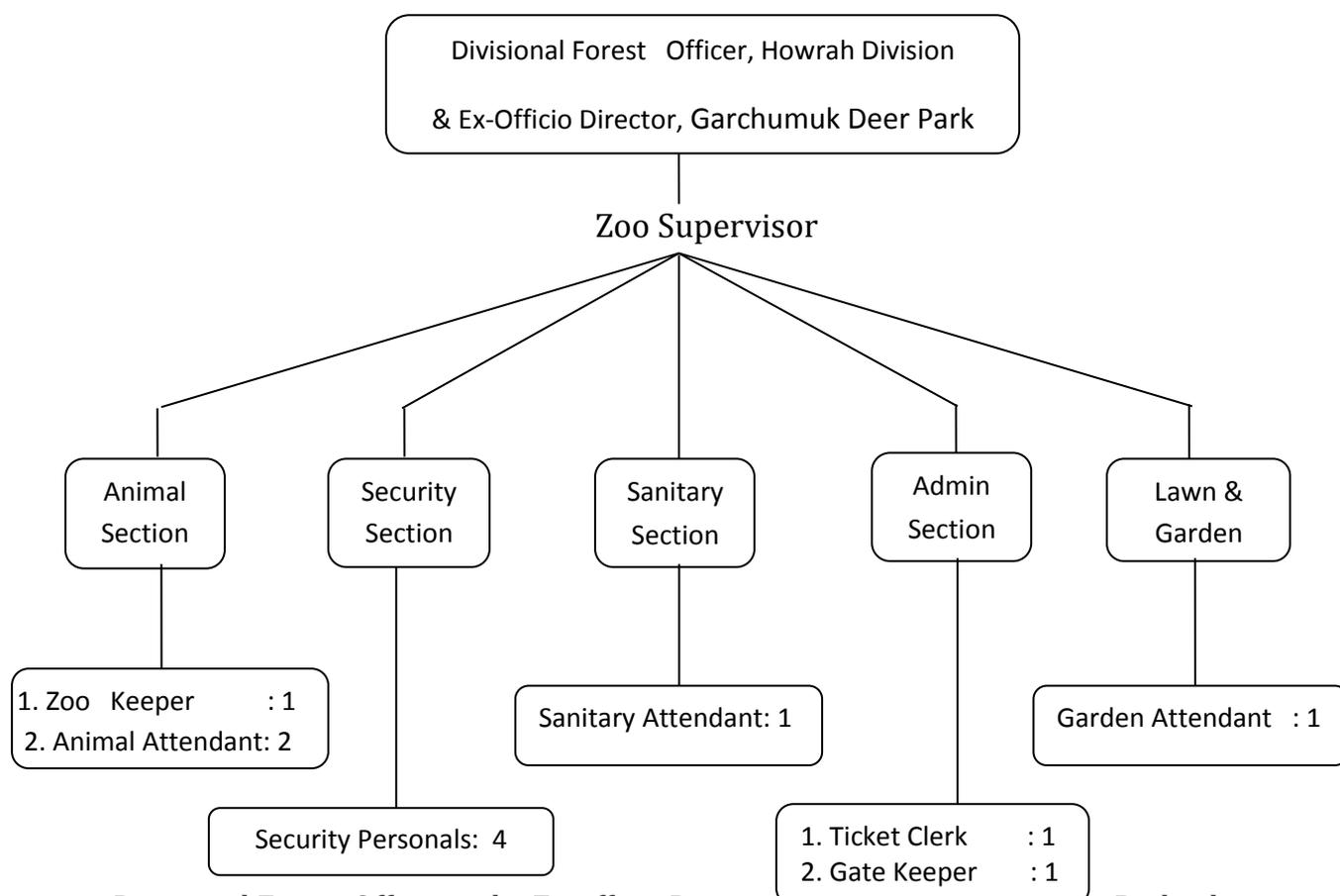
### **5. Personnel Planning**

At present there are 13 staffs that form the work force of the Garchumuk Deer Park. Divisional Forest Officer, Howrah Division is the Ex-Officio Director of the Garchumuk Deer Park. All the 13 different category staff is engaged for carrying out housekeeping and park related activities under the control of the Divisional Forest Officer, Howrah Division and Ex-Officio Director.

#### **5.1 Staff pattern in the Zoo**

DFO, Howrah Division is the Ex-Officio Director of the Park

### Staffing pattern of the Garchumuk Deer Park



Divisional Forest Officer is the Ex-officio Director of the Garchumuk Deer Park who controls the park. A whole time Zoo Supervisor is managing the zoo related affairs with the assistance of 12 zoo staff.

Zoo Supervisor	One	Rs.9,300-34,800 + Rs. 4,200 (GP)
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## 5.2 ANIMAL SECTION

Sl. No.	Post	No. of Post	Pay Scale
1	Zoo Keeper	Two	Rs. 5,200-20,200 + Rs. 1,600 (GP)



2	Animal Attendant	Two	On contract
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### 5.3 **VETERINARY SECTION**

Sl. No.	Name of the post	No. of the post	Scale of pay Against
1	Veterinary Officer	On demand	Against honorarium

### 5.4 **SANITATION SECTION**

Sl. No.	Post	No. of post	Pay Scale
1	Sanitation personnel	one	On contract

### 5.5 **SECURITY SECTION**

Sl. No.	Name of the post	No. of the post	Scale of pay
1	Security Personnel	Four	On contract

### 5.6 **LAWNS AND GARDEN SECTION**

Sl. No.	Post	No. of post	Pay Scale
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1	Garden Attendant	One	On contract
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## 5.7. ADMINISTRATIVE SECTION

Sl. No.	Post	No. of post	Pay Scale
1	Ticket Clerk	One	On contract
2	Gate Keeper	One	On contract



## Chapter 6

### 6. Disaster Management

Garchumuk Deer Park houses crocodile, Indian soft shell Tortoise, Black Buck, Porcupine, Peacock and rapidly proliferating herbivore like Spotted Deer. It is a necessity to have well documented and methodical emergency preparedness plans to

deal with disasters and urgent situations. The major disasters are mostly of natural calamities, which are identified hereunder:-

- Earthquake
- Heavy rains causing water logging
- Floods
- Massive fire
- Epidemics
- Law and Order break down
- Others

In such an event, the Park should be in a position to assess the damages through designated counter measures and chain of command. The counter measures should be compiled in a manual and it should be communicated vertically as well as horizontally among personnel.

For disaster preparedness and planning following points should be taken care of.

## **6.1 Assessment of risk**

### **6.1.1 Damages:**

Disasters like falling of trees, flooding of enclosures, snapping of power lines, breaking of water supply, breaking of enclosures barriers and escape of animals , in most cases may directly affect animals and causes damage to property.

### **6.1.2 Security System failure**

Security system adopted may be violated and animals may escape park thus resulting in panic among public. Security personnel are to be alerted and mobilized by wireless communication.

**6.1.3 Epidemics:**

1. To prevent spreading of epidemic after fire, flood scenarios and earthquakes, equipments are needed to speed up restoration measures.
2. Training to the staff to meet such exigencies and operation of such equipments are required to be provided.

**6.1.4 Fire Management:**

Inventorization of potential fire hazard should be evaluated. Trapping cages should be kept ready.

**6.1.5 Rescue Vehicle:**

1. Suitable vehicles to be kept ready for assistance.
2. Tranquilizing equipments and chemicals to be kept ready
3. Ambulance van should be requisitioned
4. First Aid arrangements to be ensured
5. Volunteers, Police personnel and other helping hands to be utilized.

**6.2. Training for Disaster Preparedness:**

1. Periodic mock drills to stimulate preparedness among staff and to test the working conditions of equipments which shall be kept maintained at all times.
2. Doctors and Hospitals need to be informed and the phone, fax, mail to be kept in easily available positions.

### 3. Equipments required

- Water tankers and hose pipes
- Diesel Pumping sets
- First Aid kits
- Generator sets
- Axes / Spades / Crowbars
- Ropes (Steel / Nylon)
- Saws
- Training equipments
- Torches and Batteries
- Barbed wire, chain-link fence, angular iron, poles, nut and bolts with tools for using them
- Hooters and whistle for alert and signaling

### **6.3 Fire Control**

Although fire outbreak has never been experienced in the Park, however during seasons the patch of grasses and shrub lands in and around the Park premises become dry and potential fire hazard. In such areas, as a precaution, fire tracing need to be done. Also the fire brigade force have been called for to demonstrate the fire fighting extinguishers, and to create awareness for the park staff members and security staff.

### **6.4 Flood Control**

The park is near to Damodar River and Kata Nadi (58 gates). During monsoonal months, the park experiences occasional heavy rainfall and flood scenarios could not be ruled out. Water logging inside the park premises, bank erosion and runoff as

well as flood water should be controlled through construction of storm water drain, cemented embankments and plantation of riparian vegetation along the river boundary.

#### **6.4 Law and order break down**

If there is break down due to law and order problem, alternative to be planned for supply of feeding articles, and strike by employees etc. as per the advice of the Police Commissioner. In order to evacuate the visitors in case of emergencies, a second gate should be constructed. This gate is being used as service gate apart from using as the exit gate for visitors.

#### **6.6 Feed Supply in case of strike**

For feeding the spotted deer, 1 hac (approx.) area is allotted to the park authority by Zilla Pasrishad outside the park area for plantation Napier grasses for the deers as emergency provisions. Fishes for Crocodile and tortoise are arranged from Damodar River in case of emergency. There is also a provision of constructing small concrete tank for supply of fishes in emergency.

## **Chapter 7**

### **7. Contingency Plan**

With the ultimate purpose of preventing and countering accidents like injuries, loss of life and in concern of safety to animals, visitors and staffs in the Zoo premises, a well defined and documented contingency plan is required.

The animal keepers, most of the times are vulnerable to accidents as animals are unpredictable. Safety equipments and even self-defending gears like sticks, bamboos etc. and presence of mind of the animal keepers could help them in preventing major mishaps. Regular inspection and thorough checking of all the enclosures in terms of safety with respect to animal escape, wear & tear of chain-link fences, condition of lock & bolt system, annual & periodic maintenance of enclosures and training of keepers, supervisors and other concerned should be taken up in a regular basis.

The following precautionary measures must be prepared for meeting the contingencies in a better way.

- Round the clock security must be provided
- Adequate numbers of cages are to be kept in handy for capturing animals
- A suitable vehicle in good condition for transportation of animals and injured to the Hospital must be available always.
- Tranquilizing equipment and chemicals along with the required drugs to be kept always ready.
- Non-supply of feed – To plan alternative arrangement.
- Disruption of power supply and consequent water supply – To plan alternative arrangement.

- Fire Brigade / Police control room telephone numbers to be kept ready
- Hose pipe with pressure pump and water jets.
- Siren / Loud speaker
- Life saving medicines for animals
- Fire fighting equipments like fire extinguishers, buckets, sand, etc.

### **7.1 Escape of animals from enclosures**

Animal Control authorities use chemical immobilization for capture purposes if animals escape from enclosure, although it must be used as last resort. There should be other options of capturing animals. The Park should have suitable tranquilization equipments and other logistics like net, cages, ramp, ropes etc., for recapturing of escaped animals.

### **7.2 Monkey and dog menace**

Garchumuk Deer Park though facing problems of monkey menace as they tend to steal food from deer enclosure, it is not a big problem and could be easily controlled. Moreover, deer enclosure has natural vegetation as fodder to the animals. All other enclosures are either closed or the food items do not match with monkeys. There are no stray dog problems with the Park.

### **7.3 Arrangement of food in case of strike (non -supply by contractor)**

There is fodder plantation outside the park which can serve as emergency provisions for feeding the deer. Fish for aquatic animals can be arranged from adjacent



water bodies. All the food materials should be checked for their quality, suitability and hygiene prior to feeding.

Storage of food items in separate storage units with cold-storage facility should be made. Stock could be retained for emergency situations. A log book could be made to note down the date of purchase and amount of food items. Food items should be utilized in a rotational basis.

#### **7.4 Snake bite**

There are plenty of chances of visitors and animal keepers getting snake bite. In order to prevent any casualties on account of snake bites, anti-venom serum stock has to be stored in the park hospital for any eventuality. To avoid the snake bite incidents dense undergrowths inside and outside enclosures and along the boundaries of park premises should be cleaned once in three months.

#### **7.5 Visitors getting injured/ visitors falling inside enclosure**

In peak visiting seasons and for time in general accidents may happen to the visitors especially children getting injured by falling. In order to attend to these injured visitors first aid kits are kept in important points of park like veterinary , office, near main entrance etc., places that could be visited easily.

As all the enclosures are barricaded by high fences and outwardly inclined galvanized sheet structures, falling into any enclosure or contact with animals are avoided in Garchumuk Deer Park. However, to avoid any such happening the ground staffs should be kept vigilant.

## **7.6 Fighting among animals**

In-fighting among Spotted Deer especially peafowls are common in Garchumuk Deer Park. To avoid such incidents, separation of mature males during mating season in separate enclosure, or alternate release of them from the separate enclosure to the group should be carried out during rutting or mating season.

There should be special enclosure for the animals injured in fighting. The injured ones should be subjected to prompt veterinary care in isolation and rest and all possible measures should be taken for recovery. Euthanasia should be kept as last option in case of terminally injured animals. In this case prior permission should be taken from the competent authority as per the Wildlife (Protection) Act, 1972.

## **7.7 Epidemics**

As the Park is located in Howrah which experienced pandemic of Avian Influenza in the year 2007 and there is river Damodar and Kata Nadi near the Zoo which is visited by migratory birds, these birds may act as carrier to the virus. Emergency provisions of checking and surveillance should be done periodically for any contagious diseases among the resident birds of the Park.

Surveillance should also be carried out for the Damodar and Kata Nadi where any mass mortality of migratory ducks if noticed, should be promptly communicated to the Park Authority.

## **7.8 Breakdown of power supply etc.**

A generator is needed to install at a far corner of the park area so that the sound created from that does not disturb the animals in the park to meet up the necessity of

power during the spell of massive power failure for a longer spell. It will help in smooth running of all the activities at the veterinary Unit. The generator will also be used, if needed, to supply power for the entrance complex, stores, office and exhibits.

### **7.9 Free ranging animals / Feral animal menace**

Feral cattle and dogs are rare in the park as it is surrounded by chain link fencing. However, problem of rodents and mongooses should be controlled as rodents could spoil the stored food staffs and mongooses may predate on Crocodile eggs.



## **Chapter 8**

### **8. Capacity Building**

To maintain and up-keep a park, skilled and knowledgeable man-power is essential. As time changes the new challenges will emerge and the staff is required to upgrade their skills and potential to handle any situation. Capacity Building of different

category of office staff and frontline personnel is very essential for better care of animals, providing better nature education and smooth function of the Park.

## **8.1 Keepers Training**

The keepers and lower formation staffs who are engaged with day-to-day handling and management of the Garchumuk Deer Park should be sent for short term training with neighbouring zoos and Rescue Centres to get training on,

- Feed preparation and sanitation
- Hand rearing of orphaned wildlife
- Tranquilization techniques

Any training program in PNHZP, Darjeeling and Zoological Gardens Alipore can be easily attended by the staffs of this Park.

## **8.2 Training of Zoo Management**

The Wildlife Institute of India and the Central Zoo Authority regularly conduct special and focused training and workshops on different aspects of wild life management and policy. Participation of top level management of zoo is must and essential to upgrade their knowledge and bring changes and adopt newer techniques as enunciated in national zoo policies and rules. Regular interaction and opportunity to visit other zoos would help to acquire suitable animals, enrichment of enclosure and other aspects of zoo management such as crowd management and initiation of better visitor facilities etc. it also provides an opportunity to interact with many experts in the field, who shall participate as faculty in the training programme. The park should take the benefit of the training to have trained officers in the management for better results.

### **8.3 Training for Veterinary officers and staffs**

The works of the veterinary officer and veterinary staff are very important from the point of view of the healthcare management of zoo/ park animals. As the Zoo/ park houses valuable animals, failure to diagnose and able to provide treatment in time may lead to lose the animals.



## **Chapter 9**

### **9. E-governance**

A complete system of hardware & software is felt needed to record all the data generated by veterinary and other related biological information. The office of the in-charge of the Park is provided with internet connection and connected with all other

zoos/ Parks as well as the zoo authority for exchange of information is done through this facility.

Necessary software to maintain the Park database and inventory suitable in Indian context should be availed and kept electronically as well as copies of the same should be circulated. E-ticketing for visitor's convenience and Close Circuit Cameras with TV monitors for important enclosures like Crocodiles and Spotted Deer should be kept for continuous monitoring.



## **Chapter 10**

### **10. Broad budget analysis for implementing the plan**

Details are focussed in the relevant annexure as stated below

**Broad Budget Estimate**

-

**Annexure V**

**Maintenance ( for the year 2015-16)**

-

**Annexure VI**



## **Chapter 11**

### **Annexure to the Master plan :**

Annexure – I : Layout plan depicting the present set up. (in separate sheet)

Annexure – II : Existing Animal Collection Plan

Annexure – III : Flora available in the zoo

Annexure – IV : Fauna freely available in the zoo

Annexure – V : List of Buildings other than animal enclosures.

Annexure – VI : Broad Budget Statement (Abstract).

Annexure— VII : Day to Day maintenance / Maintenance (for the year 2015-16)

Annexure—VIII : Recognition of Zoo of the Central Zoo Authority



## **Annexure - I**



# **MASTER LAYOUT PLAN**

## Annexure - II

### Animal Collection Plan for 2015-16

#### Annual Inventory Report of Garchumuk Deer Park, Howrah for the year 2014-15

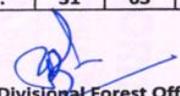
##### Endangered Species

Sl. No.	Animal Name	Scientific Name	Opening stock as on 01.04.14				Birth			Acquisition			Disposal			Death			Closing stock as on 31.03.2015					
			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T		
<b>Bird</b>																								
1	Peofowl	<i>Pavo Cristatus</i> <i>Linnaeus, 1758</i>	3	2	..	5	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	2	..	4
<b>Total</b>			<b>3</b>	<b>2</b>	<b>..</b>	<b>5</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>1</b>	<b>..</b>	<b>..</b>	<b>2</b>	<b>2</b>	<b>..</b>	<b>4</b>
<b>Mammal</b>																								
1	Black Buck	<i>Antelope Cervicapra</i> <i>(Linnaeus, 1758)</i>	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
2	Porcupine Brush Tailed /Bengal	<i>Hystrix indica kerr,</i> <i>1792</i>	3	1	..	4	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	1	..	2
3	Marsh Crocodile		..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1
<b>Total</b>			<b>4</b>	<b>1</b>	<b>..</b>	<b>5</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>1</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>2</b>	<b>..</b>	<b>..</b>	<b>2</b>	<b>2</b>	<b>..</b>	<b>4</b>

#### Annual Inventory Report of Garchumuk Deer Park, Howrah for the year 2014-2015

##### Other Species

Sl. No.	Animal Name	Scientific Name	Opening stock as on 01.04.14				Birth			Acquisition			Disposal			Death			Closing stock as on 31.03.2015					
			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T		
<b>Mammal</b>																								
2	Deer Spotted / Chital	<i>Asis asis Erxleben</i> <i>1777</i>	26	52	8	86	..	..	21	..	..	..	..	..	..	..	..	1	..	..	31	63	12	106
<b>Total</b>			<b>26</b>	<b>52</b>	<b>8</b>	<b>86</b>	<b>..</b>	<b>..</b>	<b>21</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>1</b>	<b>..</b>	<b>..</b>	<b>31</b>	<b>63</b>	<b>12</b>	<b>106</b>

  
 Divisional Forest Officer  
 Howrah Division  
 &  
 Ex-Officio Director  
 Garchumuk Deer Park



## **Annexure -III**

### **Naturally plant (Flora) species occurring in the Rasikbeel Mini Zoo Area**

#### **LIST OF MAJOR PLANTS**

<b>Common Name</b>	<b>Scientific Name</b>
Arjun	<i>Terminalia arjuna</i>
Amlaki	<i>Emblica officinalis</i>
Akhane	<i>Alangium chinense</i>
Amra	<i>Spondian magnifera</i>
Bahera	<i>Terminalia belerica</i>
Bakphul	<i>Sesbania grandiflora</i>
Bat	<i>Ficus bengalensis</i>
Chilaune	<i>Schima wallichii</i>
Champ	<i>Michelia champaca</i>
Chikrassi	<i>Chukrassia tabularis</i>
Chhatim	<i>Alstonia scholaris</i>
Dabdabe	<i>Garuga pinnata</i>
Goranim	<i>Melia azedarach</i>
Jam	<i>Syzigium cumini</i>
Jarul	<i>Lagerstroemia speciosa</i>
Jalpai	<i>Elaeocarpus floribundus</i>
Khair	<i>Acacia catechu</i>
Kumbhi	<i>Careya arborea</i>
Kanchan	<i>Bauhinia purpurea</i>

Kadam	<i>Anthocephalus chinensis</i>
Kul	<i>Zizyphus jayuba</i>
Lali	<i>Amoora wallichii</i>
Malata	<i>Macaranga denticulate</i>
Minjiri	<i>Cassia siamea</i>
Panisaj	<i>Terminalia myriocarpa</i>
Pakasaj	<i>Terminalia chitrina</i>
Pitali	<i>Trewia nudiflora</i>
Phalsa	<i>Grewia vestita</i>
Pipal	<i>Ficus religiosa</i>
Sal	<i>Shorea robusta</i>
Sidha	<i>Lagerstroemia parviflora</i>
Sissoo	<i>Dalbergia sissoo</i>
Sonalu	<i>Cassia fistula</i>
Simul	<i>Bombax ceiba</i>
Siris	<i>Albizia procera</i>
Teak	<i>Tectona grandis</i>
Tun	<i>Cadrela toona</i>

## Annexure -IV

### Free living animal (Fauna) species available in the Rasikbeel Mini Zoo Area

Common Name	Scientific Name
<b>MAMMALS</b>	
Rhesus Macaque	<i>Macaca mulatta</i>
Small Indian Civet	<i>Viverricula indica</i>
Fishing Cat	<i>Felis viverina</i>
Jungle Cat	<i>Felis chaus</i>
Indian Fox	<i>Vulpes bengalensis</i>
Red Fox	<i>Vulpes vulpes</i>
Common Flying Fox	<i>Pteropus giganteus</i>
Common Mongoose	<i>Herpestes auropunctatus</i>
Small Indian Mongoose	<i>Herpestes edwardsii</i>
Common Five striped Squirrel	<i>Funambulus pennatti</i>
Common Bandicoot	<i>Bandicota Bengalensis</i>
Bengal Mole	<i>Talpa spp.</i>
Common Indian Hare	<i>Lepus reticaudatus</i>
<b>BIRDS</b>	
Common Myna	<i>Acridotheres tristis</i>
Asian Pied Starling	<i>Sturnus contra</i>
House crow	<i>Corvus splendens</i>
Pond Heron	<i>Ardeola grayii</i>
Night Heron	<i>Nycticorax nycticorax</i>
Bronze winged Jacana	<i>Metopidius indicus</i>
Little Cormorant	<i>Phalacrocorax niger</i>

Cotton Pigmy goose	<i>Nettapuscoromandelianus</i>
Little grebe	<i>Tachybaptus ruficollis</i>
Red vented Bulbul	<i>Pycnotus cafer</i>
Jungle Babbler	<i>Turdoides striatus</i>
Jungle Myna	<i>Acridotheres fuscus</i>
Barn Owl	<i>Tytoalba</i>
Bengal Red Vented Bulbul	<i>Pycnonotus cafer</i>
Bengal Red Whiskered Bulbul	<i>Pycnonotus jocosus</i>
Blossom Headed Parakeet	<i>Psittacula cyanocephala</i>
Brown Leaf Warbler	<i>Phylloscopus collybita tristis</i>
Black Redstart	<i>Phoenicurus ochruses</i>
Blue Whistling Thrush	<i>Myiophonus carulous temmincki</i>
Bronze Winged Jacana	<i>Metopidius indicus</i>
Blue Throated Barbet	<i>Megalima asiatiea</i>
Brahminy Kite	<i>Haliastur Indus</i>
Black winged Kite	<i>Elaneus caeruleus</i>
Blue Rock Pigeon	<i>Columba livia</i>
Blue Eared Kingfisher	<i>Alcedo meninting</i>
Black breasted Sunbird	<i>Aethopyga saturate</i>
Common Sandpiper	<i>Actitis hypoleucos</i>
Common Wood Shrike	<i>Tephrodornis pondicerianus</i>
Chestnut Headed Bee eater	<i>Merops leschenaultia</i>
Coppersmith	<i>Megalima ha emacephala</i>
Common Swallow	<i>Hirundo rustica</i>
Common Hawk Cuckoo	<i>Cuculus vouis</i>
Cuckoo	<i>Cuculus canorus</i>

Cattle Egret	<i>Bubulcus ibis</i>
House Sparrow	<i>Passer domesticus</i>
Indian Ring Dove	<i>Streptopelia decaocta</i>
Lesser Whistling Teal	<i>Dendrocygna javanica</i>
Large Whistling Teal	<i>Dendrocygna bicolor</i>
Large Billed Crow	<i>Corvus macrorhynchos</i>
Grey Nightjar	<i>Caprimulgus indicus</i>
Magpie Robin	<i>Copsychus saularis</i>
Purple Moorhen	<i>Porphyrio porphyrio</i>
Palm swift	<i>Cypsiurus parvus</i>
Pintail	<i>Anas acuta</i>
Rose Ringed Parakeet	<i>Psittacula krameri</i>
Scarlet Minivet	<i>Pericrocotus flammeus</i>
Spotted Munia	<i>Lonchua punctulata</i>
Tailor Bird	<i>Orthotomus sutorius</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Common Moorhen	<i>Gallinula chloropus</i>
Indian Roller	<i>Coracias benghalensis</i>
Lesser pied Kingfisher	<i>Ceryle rudis</i>
Open -bill Stork	<i>Anastomus oscitans</i>
Spotted Owlet	<i>Athene brama</i>
Indian Tree pie	<i>Dendrocilla vagabunda</i>
White wagtail	<i>Motacilla alba</i>
White breasted Kingfisher	<i>Halcyn smyrensis</i>
White breasted water-hen	<i>Amaurornis phoeniurus</i>
Yellow wagtail	<i>Motacilla flava</i>

Honey Buzzard	<i>Pernis ptilorhyncus</i>
Fantail Snipe	<i>Gallinago gallinago</i>
Black Stork	<i>Ciconia nigra</i>
Baya	<i>Ploceus philippinus</i>
<b>REPTILES</b>	
Indian Soft Shelled Turtle	<i>Lissemys punctata punctata</i>
Bengal monitor Lizard	<i>Varanus bengalensis</i>
Spectacled Cobra	<i>Naja naja</i>
Monocled Cobra	<i>Naja kaoutia</i>
Common Krait	<i>Bungarus caeruleus</i>
Banded Krait	<i>Bungarus fasciatus</i>
Russell's Viper	<i>Daboia rasselii</i>
Rat Snake	<i>Ptyas mucosus</i>
Checkered Keelback	<i>Xenochrophis piscator</i>
Green Keelback	<i>Macropisthodon plumbicolor</i>
Striped Keelback	<i>Amphiesma stolatum</i>
Vine Snake	<i>Ahaetulla nasuta</i>
<b>AMPHIBIANS</b>	
Indian Bull Frog	<i>Rana tigrina</i>
Common Indian Toad	<i>Bufo melanostictus</i>



## **Annexure – V**

### **List of existing Building other than Animal Enclosures :**

1.	Entry gate	-	1 no.	
2.	Toilet	-	1no.	
3.	Store House	` -	1 no	
4.	Night shelter	-	3 nos.	
5.	Treatment room	-	1 no	
6.	Store	-	1 no	
7.	Staff rest room	-	3 nos.	
8.	Administrative / Zoo office	-	1 no.	
9.	Service gate	-	1 no.	-

## Annexure – VI

**Broad Budget Statement for the proposed work in the plan:**

Sl. No.	Particular of Work	Estimated cost
1	Renovation of old Aviary)	Rs. 8,00,000
2	Visitors Path /Road	Rs. 6,00,000
<b>Total</b>		<b>Rs. 14,00,000</b>

**Rupees Fourteen Lakhs only**

## **Annexure – VII**

### **Maintenance ( for the year 2015-16) :**

<b>(i) Salary and wages</b>	<b>:Rs. 20.30 lakhs</b>
<b>(ii) Maintenance of infrastructures and animal enclosure</b>	<b>:Rs. 6.00 lakhs</b>
<b>(iii) Nutrition and health care</b>	<b>:Rs. 10.00 lakhs</b>
<b>(iv) Office expenditure</b>	<b>Rs. 4.00 lakhs</b>
<b>(v) Education and awareness</b>	<b>Rs. 2.00lakh</b>
<b><u>Total : Rs. 42.30 Lakhs</u></b>	

**Rupees Forty two lakhs and thirty thousand only**

## Annexure-VIII



जहाँ है हरियाली।  
वहाँ है खुशहाली।।



सत्यमेव जयते

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT & FORESTS  
**Central Zoo Authority**

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28-46  
09/01/13

P-44  
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**THROUGH REGISTERED POST**

**F. No. 23-3/97-CZA(382)(M)/1958**      **DATE: 31.12.2012**  
L1 JAN 2013

To

The Divisional Forest Officer  
Howrah Social Forest Division,  
Dalmia Park, Stadium Complex,  
Howrah - 1 (West Bengal).

**Sub:- Renewal of recognition to Garchumuk Deer Park, Howrah beyond the period of 31.03.2011 under Section 38H of the Wild Life (Protection) Act, 1972.**

Sir,

The evaluation of the Garchumuk Deer Park, Howrah was carried out by Sh. R. S. Bhadauria on 27.06.2012. The evaluation report of the Garchumuk Deer Park, Howrah as submitted by the evaluating officer was considered by the Technical Committee in its 63<sup>rd</sup> Meeting held on 5<sup>th</sup> December 2012.

The Central Zoo Authority has decided to grant of recognition to Tungabhadra Dam Mini Zoo, Tungabhadra Dam, Hospet, District Bellary as "Mini Category Zoo" under Section 38H of the Wild Life (Protection) Act, for a period up to 31<sup>st</sup> December 2015 subject to the compliance of the following directives under the Recognition of Zoo Rules, 2009 and mid-term evaluation of the zoo:-

S. No.	Norm No.	Condition Stipulated	Time Period to Comply
<b>I. Administrative and Staffing Pattern</b>			
1.	2 (8)	On the eastern side the zoo property is common with Zila Parishad property having an inspection house and some other structure. The side needs to be fenced with chain-link, separating it from Zila Parishad property.	Within nine months
<b>II. Development and Planning</b>			
1.	3.1	The Master Plan should be submitted for its approval to CZA following the prescribed format.	Immediately
<b>III. Animal housing, display of animals and animal enclosures</b>			
1.	4.3	There is no standoff barrier on visitors' side in spotted deer enclosure. The same should be provided following the dimensions as prescribed by the Central Zoo Authority.	To be complied after making moat

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Bikaner House, Annexe VI, Shahjahan Road, New Delhi-110011  
Phone : 011-23381585, 23073072, 23070375 (EPABX), Fax : +91-11-23386012  
E-mail : cza@nic.in Website : http://www.cza.nic.in

4.	4.10	The zoo should provide signage with relevant information on biology, behavior and the population status of species in the wild at every display enclosure.	Immediately
<b>7. Post-mortem and disposal of carcasses of animals</b>			
5.	7 (15)	The spotted deer enclosure needs proper animal house and moat on viewer side.	Within one year
<b>12. Visitors facilities</b>			
6.	12.1	First aid kit and anti-venom drug should be kept for emergencies.	Immediately

A half yearly report regarding progress made in implementation of the aforesaid conditions should be submitted to the Central Zoo Authority.

Grant of recognition to Garchumuk Deer Park, Garchumuk beyond 31<sup>st</sup> December 2012 as "a Mini Category Zoo" would be considered on the basis of compliance of the conditions stated above and general performance of the zoo.

The recognition to the Garchumuk Deer Park, Garchumuk shall be revoked by the Central Zoo Authority, at any point of time if the Zoo Operator is found not complying with the stipulated conditions.

Yours faithfully,

(B. S. Bonal)

Member Secretary

Copy to:-

1. The Chief Wildlife Warden, Government of West Bengal, Kolkata for favour of information and with a request that the stipulated conditions may be got implemented.
2. Mr. Vivek Goel, DPA, CZA

No.	Condition Stipulated	Time Period to Comply
	<b>Staffing and Staffing Pattern</b> On the eastern side the zoo property is common with Zila Parishad property having an inspection house and some other structure. The side needs to be fenced with chain-link, separating it from Zila Parishad property.	Within nine months
	<b>Master Plan and Planning</b> The Master Plan should be submitted for its approval to CZA following the prescribed format.	Immediately
	<b>Display of animals and animal enclosures</b> There is no standoff barrier on visitors' side in spotted deer enclosure. The same should be approved following the dimensions as prescribed by the Central Zoo Authority.	To be complied after making moat.

(B. S. Bonal)  
Member Secretary