

'Vision 2020'

**Ex-situ Conservation, Planning and Improvement
of Zoos**

2010-2020



Central Zoo Authority
(Ministry of Environment, Forests & Climate Change)
Government of India
New Delhi

@ Central Zoo Authority, 2014

Prepared by:

B. S. Bonal, Member Secretary, CZA

S. C. Sharma, Founder Member Secretary, CZA

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Central Zoo Authority
(Ministry of Environment, Forests & Climate Change)
Government of India



Preface

The Central Zoo Authority has done commendable work in the last 22 years by way of pursuing the various zoos of the country to modernize themselves and has also provided requisite technical and financial assistance for the purpose. The assistance has been provided by the Central Zoo Authority to zoos to upgrade the animal housing, veterinary healthcare, upkeep facilities, improved signage, interpretation facilities and other supporting infrastructures.

To achieve the assigned roles under the National Zoo Policy, 1998, the zoos need to have physically, genetically and behaviourally healthy, self sustaining captive populations of desirable wild animal species for display (education/ awareness) and as insurance for future exigencies and release/ introduction/ re-introduction in the wild if required. Rehabilitation of orphaned, injured or sick rescued wild animals caused by man animal conflicts, rescue/ seized from miscreants is an additional role, which zoos in India also need to play. All these wild animal collections also provide excellent opportunities for conducting research/ studies for conservation of wildlife.

To play all these roles, we need to manage our zoos more scientifically, based on sound management practices and keeping wildlife conservation and animal welfare in mind. Thus is needed to achieve the vision "Our zoos will have healthy animals in ecosystem based naturalistic enclosures, supportive to in-situ wildlife conservation with competent staff, good educational and interpretative facilities, the support of people and be self sufficient" by 2020. In this regard a detailed document has been prepared. The Vision 2020 envisages to bring Zoos in India to standards as laid by the Central Zoo Authority.

The Vision 2020 was approved by the Central Zoo Authority (CZA), MoEF & CC, GoI, Delhi in 2010. The document was of great help in preparation of EFC Schedules for 12th Five Year Plan and will also be useful in preparation of future plans for development / improvement of zoos in the country.

(B. S. Bonal)
Member Secretary

'Vision 2020'

Ex situ conservation, Planning and Improvement of Zoos

II. Introduction

Zoos as they are functioning in India are the product of the 19th century and represent an era when our knowledge about biological behaviour of various species of wild animals was quite meager and people were struggling to get control over powerful animals. Since then the mankind have traveled a long way. We have very reliable data about the biology, behaviour and upkeep of various species of wild animals. The strategies for their planned breeding have also been developed. All this has been achieved by the co-operative efforts of eminent zoos across globe.

As there has been increase in human population and its needs and greeds, resulting in large scale destruction of wild animals and their habitats. More and more wild animal and plant species becoming endangered, even extinct. In this changed scenario, the zoos have to reverse their role from the takers from the wild to givers or collaborator to conserve the wild. To do that, the zoos need to play many roles and link up with in-situ managers for conservation of wildlife and its habitat.

Government of India recognized the importance of ex-situ wildlife conservation after independence which resulted in establishment of many modern zoos in major Indian cities. The Wild Life (Protection) Act, 1972 was amended and Central Zoo Authority was established in the year 1992 to control mushrooming of unplanned zoos in the country, overseeing the functioning of recognized zoos and to provide them technical and other assistance for their improvement. The Recognition of Zoo Rules, 1992 were formulated to fix standards and norms for the functioning of zoos. Guidelines and directives were issued by the Central Zoo Authority for proper and scientific management of recognized zoos in the country. The National Zoo Policy, 1998 was formulated to give clear directions for the functioning of zoos. As per the National Zoo Policy, 1998, the main objective of zoos shall be to compliment and strengthen the national efforts in conservation of the rich biodiversity of the country, particularly the wild fauna. The objective can be achieved through the following protocol:

- (i) Supporting the conservation of endangered species by giving species, which have no chance of survival in wild, a last chance of survival through coordinated breeding under ex-situ conditions and raise stocks for rehabilitating them in wild as and when it is appropriate and desirable.

- (ii) To inspire empathy amongst zoo visitors for wild animals, an understanding and awareness about the need for conservation of natural resources and for maintaining the ecological balance.
- (iii) Providing opportunities for scientific studies useful for conservation in general and creation of database for sharing between the agencies involved in in-situ and ex-situ conservation.
- (iv) Besides the aforesaid objective, the zoos shall continue to function as rescue centres for orphaned wild animals, subject to availability of appropriate housing and upkeep infrastructure. Where appropriate housing and upkeep is not available, State Governments and the Central Government would ascertain setting up of rescue facilities in off display areas of the zoos, subject to the availability of land.

To play the assigned roles under the National Zoo Policy, 1998, the zoos need to have physically, genetically and behaviourally healthy, self sustaining captive populations of desirable wild animal species for display (education/ awareness) and as insurance for future exigencies and release/ introduction/ re-introduction in the wild if required. Rehabilitation of orphaned, injured or sick rescued wild animals caused by man animal conflicts, rescue/ seized from miscreants is an additional role, which zoos in India also need to play. All these wild animal collections also provide excellent opportunities for conducting research/ studies for conservation of wildlife.

To play all these roles, we need to manage our zoos more scientifically, based on sound management practices and keeping animal welfare in mind. This is needed to achieve the vision "Our zoos will have healthy animals in ecosystem based naturalistic enclosures, supportive to in-situ wildlife conservation with competent staff, good educational and interpretative facilities, the support of people and be self sufficient" by 2020. For doing the same, we need to take following steps:-

1. Preparation of Master Plan for the long term development of zoos.

Most of zoos in India were initiated as menageries of captive wild animals for display and recreation of visiting public. Such unplanned and ill conceived facilities can not play the roles assigned to them under the present National Zoo Policy. So, there is an immediate need to prepare well considered/ thought long term Master Plans for their development and short term management plans for execution of the approved master plans and their management. Guidelines and format for preparation of Master Plan have been prepared and circulated to all the zoos. In the Recognition of Zoo Rules, 2009, it has been mandatory for the all the zoos to prepare their master plan for the long term development of zoos and get the same approved from the Central Zoo Authority. The Central Zoo Authority has already started receiving (around 130 Nos.) of the Master Plans,

which are being scrutinized by an Expert Group on Zoo Designing constituted for the purpose. The Central Zoo Authority had also communicated approval of master (layout) plans of 34 zoos. To achieve the preparation of master plan of all the zoos will require financial expenditure of about 3.00 Crores.

Funds Required: Rs. 3.00 Crores

2. Construction of appropriate animal housings in zoos

There are 198 recognized zoos in the country. Many animal housings/ enclosures have been constructed/ improved in these zoos in last 18 years as per prescribed standards and norms (under the Recognition of Zoo Rules, 2002). Many zoos have been relocated to bigger campuses or been recreated de novo on the same sites. But, there are still many more animal enclosures in zoos which need improvements. Creation/ improvement of animal housings is a continuous process. Better and bigger naturalistic enclosures, which are properly furnished/ enriched as per the biological needs of the animals housed there, are needed to have behaviorally healthy captive stock. In order to achieve the said goals it is desired to categorize the zoos in the following six categories:-

- I. To strengthen the National Zoological Park, New Delhi as National Centre for Excellence.
- II. To strengthen the existing zoos as 'Centres of Excellence'
- III. To strengthen the existing zoos as 'Model Zoos' (one in each State/UT)
- IV. To strengthen the existing Zoos which have 'potential to become model zoos'
- V. Other recognized zoos
- VI. Relocation of old zoos to the new sites

The details with regard to financial implication (for the period upto 2020) to achieve the above objective are given below:

I. Financial assistance to strengthen the National Zoological Park, Delhi as 'National Centre of Excellence'

It was desired by the Ministry of Environment & Forests Authority to strengthen the National Zoological Park, Delhi (NZN) as Centre of Excellence various bio-geographic regions of the country as per the details given below.

As a National Centre of Excellence, the NZN shall have professional excellence of international standard in all aspect of zoo management and have the capability to provide highest standard of housing, upkeep, healthcare and genetic management not only to the animals in their collection but also provide guidance & technical support to the zoos in the country for their development.

These zoos shall also be responsible of monitoring studbooks for the endangered species in the region.

II. Financial assistance to strengthen the existing zoos as 'Centres of Excellence'

It is desired that the Central Zoo Authority should strengthen the following identified seven zoos as Centre of Excellence covering various bio-geographic regions of the country as per the details given below.

The Centres of Excellence will be of those zoos having professional excellence of international standard in all aspect of zoo management and have the capability to provide highest standard of housing, upkeep, healthcare and genetic management not only to the animals in their collection but also provide guidance & technical support to the zoos of the region for their development. These zoos shall also be responsible of monitoring studbooks for the endangered species in the region.

Zoos identified for Centres of Excellence are:

S. No.	Name of the zoo	Biogeography reasons to be covered	Species of focus
1.	Assam State Zoo, Guwahati (Assam)	North-East	Rhino, Golden langur, Capped langur, Hoolock gibbon, Clouded leopard, Golden cat, Leopard cat, Wild buffalo, hornbill.
2.	Padmaja Naidu Himalayan Zoological Park, Darjeeling (West Bengal)	Himalayan Region	Snow leopard, Red panda, Tibetan wolf, Himalayan salamander etc.
3.	Nandankanan Zoological Park, Bhubaneswar (Orissa)	Eastern coastal plains	Water monitor Tortoises, Terrapins, Fishing cat, Pangolin and others
4.	Van Vihar National Park, Bhopal (Madhya Pradesh)	Central India	Tiger, Panther, Hard land Swamp deer, Bear, Otters, Chowsingha, Chinkara, Jungle cat, Vulture, and other birds of prey, monitor lizard
5.	Arignar Anna Zoological Park, Vandalur, Chennai	Western Ghats	(South Peninsular Fauna), Wild dog, Lion tailed macaque, Nilgiri langur, Sea birds, Star tortoise
6.	Rajiv Gandhi Zoo, Pune	Deccan Plateau	Rusty spotted cat, Giant squirrel and others
7.	M. C. Zoological Park, Chhatbir	Northern India	Falcons & birds of Prey, Pheasants and Jungle fowl, Otters, Turtles

Financial support is proposed to these zoos for capital cost, building, equipment, animal enclosures etc. @ Rs. 1.00 Crore/year and for operational cost by deploying technical personnel @ RS. 1.00 Crore/year i.e. @ RS. 2.00 Crores for 10 years to each zoo which works out to be 14.00 Crores

Funds Required (for 10 years): Rs. 2.00 Crores & 7 nos. zoos x 10 years = 140.00 Crores
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III. Financial assistance to the existing zoos to strengthen as 'Model Zoos' (one in each State/UT):-

It has been desired that the each State and Union Territory shall develop an existing zoo as 'model zoo' or 'centre of excellence' as above and strengthen its infrastructure, facilities, animals housing as per the standards and norms laid under Recognition of Zoo Rules, 2009. A total of 24 nos. of zoos have been identified & requirement of fund to achieve the objectives comes out to be Rs. 180.00 Crores @ Rs. 0.75 Crores/Year per zoo for 10 years.

The model zoo shall be of those zoos which conform with all the standards and norms laid under Recognition of Zoo Rules, 2009 and other rules and regulations of Central Zoo Authority and as defined under the Wild Life (Protection) Act, 1972. These zoos should also have sustainable population of endangered species and maintain the highest standard of upkeep & health.

The detail on the zoos and funds required to achieve the objective is given below:

List of Zoos identified for 'Model Zoo'

S. No.	State/UT Name	Establishment Name
1.	Andaman & Nicobar Islands	Biological Park, Chidiyatapu, Port Blair
2.	Andhra Pradesh	Nehru Zoological Park, Hyderabad
3.	Arunachal Pradesh	Biological Park, Itanagar
4.	Bihar	Sanjay Gandhi Biological Park, Patna
5.	Chhattisgarh	Kanan Pandari Zoo, Bilaspur
6.	Dadra & Nagar Haveli	Lion Safari, Vasona
7.	Goa	Bondla Zoo, Usgao
8.	Gujarat	Sakkarbaug Zoo, Junagarh
9.	Haryana	Rohtak Zoo, Rohtak
10.	Himachal Pradesh	Himalayan Nature Park, Kufri

S. No.	State/UT Name	Establishment Name
11.	Jammu & Kashmir	Jammu Zoo, Jammu
12.	Jharkhand	Bhagwan Birsa Biological Park, Ranchi
13.	Karnataka	Sri Chamarajendra Zoological Gardens, Mysore
14.	Kerala	Thiruvananthapuram Zoo, Thiruvananthapuram
15.	Manipur	Manipur Zoological Garden, Imphal
16.	Meghalaya	Lady Hydari Park Animal Land, Shillong
17.	Mizoram	Aizawl Zoo, Aizwal
18.	Nagaland	Nagaland Zoological Park, Dimapur
19.	Rajasthan	Jaipur Zoo, Jaipur
20.	Sikkim	Himalayan Zoological Park, Gangtok
21.	Tripura	Sepahijala Zoological Park, Sepahijala
22.	Uttar Pradesh	Kanpur Zoological Park, Kanpur
23.	Uttarakhand	Pt. Govind Ballabh Pant High Altitude Zoo, Nainital

Funds Required (for 10 years): 23 Zoos @ Rs. 0.75 Crores /Year x 10 years = Rs. 179.25 Crores

IV. Financial assistance to strengthen the other model potential zoos:

The Central Zoo Authority shall provide the financial assistance to the following eleven nos. of zoos for improving/creation of animal housing and veterinary care during the period of next ten years. The model potential zoos shall be of those who shall come up as model zoo in next ten years of time. The Central Zoo Authority with limited funds shall pursue these zoos to improve upon.

List of Zoos identified as potential for model zoo

S. No.	State Name	Establishment Name	City Name
1	Andhra Pradesh	Indira Gandhi Zoological Park	Visakhapatnam
2		Sri Venkateswara Zoological Park	Tirupati
3	Gujarat	Indroda Nature Park	Gandhi Nagar
4	Himachal Pradesh	Sarahan Pheantry	Sarahan
5	Karnataka	Dr. K.Shivarma Karanth Pililkula Biological Park	Mangalore
6		Bannerghatta Biological Park	Bangalore
7	Madhya Pradesh	Gandhi Zoological Park	Gwalior
8	Uttar Pradesh	Lucknow Zoological Park	Lucknow
9	Uttarkhand	Malsi Deer Park	Dehradun
10	West Bengal	Zoological Garden, Alipore	Kolkata

The request of funds works out to be for 10 zoos @ Rs. 0.45 Crores/Year.

Funds Required (for 10 years): 10 Zoos @ 4.5 Crores = Rs. 45.00 Crores

V. Financial assistance to the other recognized zoos

There are 124 of remaining zoos, most belong to the category of mini zoos/deer parks and rescue centres required to be strengthened as per the norms laid under Recognition of Zoo Rules, 2009 during the period of next 10 years.

In this category of zoos, the zoos where not much scope to develop them either as an ideal zoo or potential zoos shall fall, however these zoos should provide congenial environment to the animals for the proper upkeep and healthcare of the animals.

The requirement of fund works out to be of such 124 zoos @ 0.15 Crores/Year for 10 years and details are given below. The allotment of funds to the zoos shall depend upon the compliance of conditions stipulated by the Central Zoo Authority during the grant of recognition & proposal submitted by the concerned zoos.

Funds Required (for 10 years): 124 Zoos @ Rs. 0.15 Crores X10 years= Rs. 184.50 Crores

VI. Relocation of old zoos to the new sites

The Central Zoo Authority while evaluating the zoos for the grant of recognition have recommended the State Govt. to relocate the zoos to newer sites since the existing sites of the such zoos does not have any scope for any extension and the animals housed therein needs to be provided larger space for their housing as per the standard and norms laid under Recognition of Zoo Rules, 2009. Following ten zoos are in process of relocation to the new sites. The details on the zoos and financial requirement are given below:

List of old zoos to be relocated to new site

S. No.	Name of the Zoo
1.	Thrissur Zoo, Thrissur, Kerala
2.	VOC Park Zoo, Coimbatore, Tamil Nadu
3.	Jodhpur Zoo, Jodhpur, Rajasthan
4.	Jaipur Zoo, Jaipur, Rajasthan
5.	Udaipur Zoo, Udaipur, Rajasthan

6.	Kota Zoo, Kota, Rajasthan
7.	Rajkot Zoo, Rajkot, Gujarat
8.	Sayajibaug Zoo, Vadodara, Gujarat
9.	Chidiyatapu Biological Park, Port Blair, A & N Islands
10.	Bijni Park, Kokrajhar, Assam
11.	State Zoo at Umtrew, Meghalaya

The required fund works out to be Rs. 20.00 Crores @ Rs. 0.20 Crore/Year for 10 zoos for 11 years.

Funds Required: 11 zoos @ Rs. 0.20 Crores/year x 10 years = Rs. 22.00 Crores

3. Conservation Breeding Programme:

Co-ordinated planned conservation breeding of critically endangered wild animal species is the main objective of zoos as per the National Zoo Policy, 1998. Central Zoo Authority has identified 73 such critically endangered wild animal species for planned conservation breeding in India. Coordinating and participating zoos in conservation breeding programme of each identified species have also been identified. Central Zoo Authority is providing funds for creation of off display conservation breeding centres in co-ordinating zoo of each identified species on 100% basis. Funds are also being provided for proper display enclosures in participating zoos of each identified species. The Central Zoo Authority is also providing funds to co-ordinating zoos for preparation of Conservation Breeding Management Plan (CBMP) of the identified species. Target is to have atleast 250 planned bred and physically, genetically and behaviourally healthy individuals of each identified critically endangered wild animal species of Indian origin in captivity in the world of which at least 100 must be in India of each identified species with less than few hundred/thousands (or say less than 2500) individuals left in the wild.

An amount of Rupees 126.00 Crores is expected to be needed for the above works in next 10 years (upto 2020) under the programme. Following 33 number of species have been identified for the conservation breeding at present which has been launched wither by States or with the assistance of Central Zoo Authority.

List of species identified for conservation breeding:

S. No.	Species	Scientific Name	Name of the Zoo/place
1.	Mouse Deer	<i>Tragulus meminna</i>	Nehru Zoological Park, Hyderabad, Andhra Pradesh
2.	Western	<i>Tragopan</i>	Pheasantry at Sarahan,

	Tragopan	<i>melanocephalus</i>	Himachal Pradesh
3.	Himalayan monal	<i>Lophophorus impejanus</i>	Nature Park Manali, Himachal Pradesh
4.	Cheer Pheasant	<i>Catreus wallichi</i>	Himalayan Nature Park Kufri, Himachal Pradesh
5.	Grey jungle fowl	<i>Gallus sonnerati</i>	S. V. Zoological Park, Tirupati, Andhra Pradesh
6.	Indian pangolin	<i>Manis crassicaudata</i>	Nandankanan Zoological Park, Bhubaneshwar, Orissa
7.	Lion tailed monkey	<i>Macaca silenus</i>	Arignar Anna Zoological Park, Chennai, Tamil Nadu
8.	Red panda	<i>Ailurus fulgens</i>	Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal
9.	Hangul	<i>Cervus elaphus hanglu</i>	Shikargah, Traal, South Kashmir Wildlife Protection department, Jammu & Kashmir
10.	Shaheen Falcon		M.C. Zoological Park, Chhatbir, Punjab
11.	Vultures (White backed vulture, Slender billed vulture and Long billed vulture)		Zoos at Bhopal (Madhya Pradesh), Hyderabad (Andhra Pradesh), Junagarh (Gujarat), Jharkhand, and Nandankanan (Orissa)
12.	Hoolock gibbon	<i>Hoolock leuconedys</i>	Biological Park, Itanagar, Arunachal Pradesh
13.	King cobra	<i>Ophiophagus Hannah</i>	Dr. Shivram Karanth Pilikula Biological Park, Mangalore, Karnataka
14.	Brow antlered deer	<i>Cervus eldii</i>	Keibuil Lamzo WLS/Manipur Zoo, Manipur

15.	Asiatic lion	<i>Panthera leo</i>	Kunopalpur Wildlife Sanctuary, Madhya Pradesh
16.	Pygmy hog	<i>Sus salvanius</i>	Assam State Zoo, Guwahati/Pygmy Hog Conservation Programme, Basistha, Guwahati, Assam
17	One horned rhinoceros	<i>Rhinoceros unicornis</i>	Assam State Zoo, Guwahati, Assam
18	Golden langur	<i>Trachypithecus geei</i>	Assam State Zoo, Guwahati, Assam
19	Wild buffalo	<i>Buballus bubalis</i>	Udanti Wildlife Sanctuary, Assam
20	Wild ass	<i>Equus hemionus khur</i>	Sakkarbaug Zoo, Junagarh, Gujarat
21	Chinkara	<i>Gazella bennettii</i>	Chinkara Breeding Centre, Kairu, Bhiwani, Haryana
22	Red jungle fowl	<i>Gallus gallus gallus</i>	Pheasant Breeding Centre, Morni, Ambala, Haryana
23	Hume's pheasant	<i>Syrmaticus humiae humiae</i>	Aizawl Zoo, Aizawl, Mizoram
24	Blyth's tragopan	<i>Tragopan blythii</i>	Kohima Zoo, Kohima, Nagaland
25	Bustards		Jaisalmer, Rajasthan
26	Blue sheep	<i>Pseudois nayaur</i>	Himalayan Zoological Park, Bulbuley, Gangtok, Sikkim
27	Nilgiri tahr	<i>Nilgiritragus hylocrius</i>	Udhagamandalam, Tamil Nadu
28	Clouded leopard	<i>Panthera nebulosa</i>	Sepahijala Zoological Park, Agartala, Tripura
29	Swamp deer	<i>Cervus duvauceli</i>	Lucknow Zoological Gardens, Lucknow, Uttar Pradesh
30	Turtles	<i>Kachuga kachuga</i>	Endangered Species Breeding Centre, Kukrail, Uttar Pradesh
31	Musk deer	<i>Moschus chrysogaster</i>	Musk Deer Breeding Centre, Bagheswar, Uttarakhand
32	Snow leopard	<i>Panthera uncia</i>	Padmaja Naidu Himalayan Zoological

			Park, Darjeeling, West Bengal
33	Himalayan salamander	<i>Tyletrotiton verrucosus</i>	Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal

The financial requirement for the programme works out to be Rs. 123.75 Crores @ Rs. 0.75 Crores/Year for creation of facilities (one time expenditure) and @ Rs. 0.30 Crores /year for maintenance, feed, veterinary care, hiring of technical personnel's etc.

Funds Required: 33 Nos. of species = Rs. 123.75 Crores or say Rs. 124.00 Crores for 10 years

The above financial assistance involves engagement of a scientist, one biological assistant and one field assistant at every conservation breeding centre.

4. Rescue and Rehabilitation:

a. Creation of Rescue & Rehabilitation Centres

Around 23% of the geographical area of the country is under forest. There are more than 600 protected areas in the country including tiger reserves, national parks and sanctuaries dedicated to in-situ wild life conservation. Because of ever increasing human population, the incidences of man animal conflicts are increasing day by day. The in-situ managers have to rescue stray animals coming out of their habitats and entering into human habitations.

The concerned Govt. departments have to rescue/ seize such wild animals under different provisions of the Wildlife (Protection) Act,1972. The Indian zoos continuously receive such animals for immediate housing. That put additional burden on the zoos which are already over stressed. Display of sick, injured, infirm and young animals has been prohibited in the zoos. So, off display housing facilities for rehabilitation of such animals need to be created either as separate identities or in specified corners in existing zoos. Tiger, lions, leopards, bears, monkeys, elephants, vultures and star tortoises are the main wild animal species which need life time care facilities in the form of rescue centres in different corners of the country. A total of forty zoos to be identified for construction of off-display rescue centres or life time care facilities for rehabilitation of these rescued/ seized/ orphaned wild animals.

An amount of 20.00 Crores would be required for establishment of rescue centres for the purpose.

S. No.	Number of Rescue centre to be established	Amount required one time creation of the facility	Total amount required (in crores)
1.	Forty	0.25 crores	40 @ 0.50= 20.50 crores
	Grant total		Rs. 20.00 crores

b. Feeding and upkeep of animals surrendered by the circuses

There are seven life time rescue centres created to house the animals (lion, tigers, panthers, monkeys and bears) banned from performance in circuses in off exhibit areas of zoos at Nahargarh (Jaipur), Vishakahapatnam, Tirupati, Vandalur in Tamil Nadu, Bannerghatta, Bhopal, South Khairabari in West Bengal. The lions, tigers, panthers, bear and monkeys are housed at present in these rescue centres. The objective behind the creation of these rescue centres was to provide life time care in large, naturalistic enclosures. Since then it is liability of Government of India to feed these animals and take care their upkeep till their life. Therefore the following amount is desired by the Central Zoo Authority over the period of next year 10 years to feed the animals.

S. No.	Number of Rescue centre	Amount required in crores per annum	Total amount required in crores (for ten years)
1.	Seven numbers	0.30 crores	0.30 x 7 x10= 21.00 crores
	Grant total		Rs. 21.00 crores

Funds Required: Rs. 21.00 Crores

5. Record keeping

The Recognition of Zoo Rules, 2009 prescribe maintaining detailed records of observations of biological and social behaviour and health status of animals including feeding intake, medication and treatment provided in the keeper's diaries, zoo daily reports, animal history sheets, treatment cards, Postmortem reports, inventory of animals etc. as per guidelines of Central Zoo Authority. Central Zoo Authority is sponsoring and co-ordinated joining of all the major Indian Zoos (57 Nos.) and related organizations (4 Nos.) to International Species Information System (ISIS) and Zoological Information Management System (ZIMS) software for observation recording and record keeping in zoos.

An amount of Rupees 4.00 crores is needed in next ten years under this activity.

S. No.	Number of zoos	Amount required in crores per annum	Total amount required in crores (for ten years)
1.	Sixty numbers	0.40 Crores	0.40x10= Rs. 4.00 crores
	Grant total		Rs. 4.0 Crores

Funds Required: Rs. 4.00 Crores

6. Ex-situ research programmes

Providing opportunities for scientific studies for conservation of wildlife in general and creation of database for sharing the same between the agencies involved in in-situ and ex-situ conservation is one of the main objective of management of zoos in the country. Unfortunately, zoos are lagging behind in this activity, may be because of lack of scientific/ technical manpower in the zoos. There is no institution/ organization in the country presently directly dealing with the zoos related research/ studies. The Central Zoo Authority has signed MoUs with some National institutions working on related field of activities. Indian Veterinary Research Institute (IVRI), Izatnagar, Bareilly, U.P. has been assigned studies on "animal diseases, health care and cure in zoos" and "diet and nutrition of wild animals in captive conditions". Centre for Environmental Education, Ahmedabad has been requested to work on preparation of "National Zoo Education Master Plan" whereas School of Planning and Architecture, New Delhi, has been sponsored studying and surveying "Zoo Architecture and enclosure design in Indian zoo". A Laboratory for Conservation of Endangered Species (LaCONES) has been established as a satellite facility of Centre for Cellular and Molecular Biology (CCMB), Hyderabad to work on biotechnological interventions in conservation of wildlife. The facility has started working on genetic finger printing of captive stock in Indian zoos, to act as frozen zoo and experimenting on Assisted Reproduction (AR) in wild animals in captive conditions.

The Central Zoo Authority is also providing funds to the recognized zoos to conduct studies/ research to deal with the local issues/ problems under small grant fellowships. There are many such ongoing fellowships in different zoos at the moment.

Total expenditure on ex situ conservation research in the next 10 years in the field of ex-situ wild life conservation and zoos works out to be is Rupees 20.00 Crores @ 0.20 Crores/Year..

7. Human resource development – organizing Training programmes, workshops, seminars and international co-operation

Having qualified and trained scientific and technical personnel is pre-requisite to scientific management of zoos in modern times. Training of in-service zoo personnel is always a priority with the Central Zoo Authority and Indian Zoos. The Central Zoo Authority organize short term training programmes for Zoo Directors, Veterinarians, Biologists, Curators, Educators in alternate years. Trainings for zoo keepers and other lower level zoo personnel are organized at regional level every year. 5-6 such trainings are organized annually in regional languages.

Zoo Directors, Veterinarians and other senior level zoo personnel are also deputed to international level institutions outside India for trainings and attachments every year. The Central Zoo Authority regularly organizes national/international workshops/ conferences where international experts are also invited for interaction with Indian zoo personnel.

Zoos from SAARC countries shall also be invited to the training programmes and workshops organized by the Central Zoo Authority. The Central Zoo Authority shall continue to sponsor officer-in-charge, Director and Veterinary Officers from recognized zoos to attend training programmes at Durrell Wildlife Conservation Trust and on attachment to zoos at Singapore.

The World Zoos & Aquariums Association (WAZA) has very recently decided to have its annual conference at New Delhi in India during October-November, 2014. The conference shall be preceded by three days annual meeting of Conservation Breeding Specialist Group of Species Survival Commission (SSC)/International Union for Conservation of Nature and Natural Resources (IUCN). It is expected that during the conference more than 400 zoo directors, zoo experts, zoo biologists, scientist and business corporate shall participate, therefore the Central Zoo Authority shall also strengthen the facilities related to visitor facilitation, signages, infrastructure, enrichment of animal enclosures and others. An amount of Rupees 32.00 Crores is needed in next ten years under this activity.

S. No.	Proposed works	Amount required in Crores per annum	Total amount required in Crores (for tentative years)
1.	10 numbers training, workshop & seminars	0.50	10 @ Rs. 0.50 Crores x 10 = Rs. 25.00 Crores
2.	Strengthening of international co-operation amount SAARC and South East Asian Countries	0.10	10 @ Rs. 0.25 Crore = Rs. 2.50 Crore
3.	Strengthening of visitor facilities at National		Rs. 9.00 Crores

	Zoological Park, New Delhi annual conference of WAZA		
	Grant total		Rs. 36. 50 Crores

Funds Required = Rs. 32.00 Crores

III. Summary of financial requirement:-

S. No.	Details	Amount (in Crores) for 10 Years	Amount required/ Year
1.	Preparation of Master Plan for the long term development of zoos	3.00	0.30
2.	Construction of appropriate animal housings in zoos		
	I. Financial assistance to strengthen the National Zoological Park, Delhi to function as 'National Centre of Excellence'	0.75	0.75
	II. Financial assistance to strengthen the existing zoos as 'Centres of Excellence'	140.00	14.00
	III. Financial assistance to the existing zoos to strengthen as 'Model Zoos' (one in each State/UT)	179.25	17.92
	IV. Financial assistance to strengthen the other potential zoos	45.00	0.45
	V. Financial assistance to the other recognized zoos	184.50	18.45
	VI. Relocation of old zoos to the new sites	22.00	0.22
3.	Conservation Breeding Programme	124.00	12.40
4.	Rescue and Rehabilitation:		
	a) Creation of Rescue & Rehabilitation Centres	20.00	0.20
	b) Feeding and upkeep of animals surrendered by the circuses	21.00	0.21
5	Record keeping	4.00	0.40
6	Ex-situ research programmes	20.00	0.20
7	Human resource development – organizing Training programmes, workshops, seminars and international co-operation	36.50	3.65
	Grand Total	800.00	80.00
Total Funds Required (for 10 years): Rs. 800.00 Crores i.e. Annual requirement of Rs. 80.00 Crores			

