

ANNUAL REPORT

(2016-2017)

SAKKARBAUG ZOOLOGICAL PARK

AND

SAKKARBAUG ZOO MANAGEMENT

ADVISORY SOCIETY, JUNAGADH





Director's Report

It is a matter of great pleasure to publish the second annual report of Sakkarbaug Zoological Park (SBZP) & Sakkarbaug Zoo Management Advisory Society (SBZMAS), Junagadh. I am feeling humble, privilege and enjoy a lot working with wild life and it is great opportunity for me to explore to see and understand the new zone of wilderness of wildlife. The SBZP is under the process of transformation from an old zoo to a modern zoo. There is always a scope for improvement, and we will working and moving step by step to ensure quality and the betterment of the zoo environment.

SBZP is the large zoo dedicated and engaged to the conservation breeding of Asiatic lion, Wild ass, four horned antelope, Indian grey wolf, Asiatic Cheetah and Vulture. SBZP has a mainly lion's share in ex-situ conservation of Asiatic Lion. The zoo has been the main source of genetically pure Asiatic Lions for the captive collection of zoos. Since the last 50 years, more than 200 Asiatic lions have been sent to different zoos across the country and abroad. This is perhaps a world record. SBZP also serves the purpose of referral centre for veterinary care in addition to providing rescue facilities for the wild animals.

The year 2015-16 was a remarkable one with many achievements. Number of animal exchange programs with Indian as well as foreign zoos were initiated/ implemented. The zoo received technical co-operation from Zoological Society of London.

The Zoological Park has always been an outstanding centre for conservation, education, research and re-creation.

Beside ex-situ conservation programs our zoo also actively funded and managing various in-situ conservation programs. SBZMAS also funded in-situ conservation project of Indian grey wolf in Gujarat state.

Zoo has also developed a special quarantine facility at Devbhoomi Dwarka division for effective quarantine of imported and seriously ill animals.

For strengthening healthcare of zoo animals zoo had started a project with local veterinary college for diagnostic & quarantine support at zoo is funded by SBZMAS.

The entire staff of the zoo worked as a team for better upkeep of animals and growth of the institution and deserves appreciation. The out-source co-ordinator also extended their full support in providing quality feed and fodder to the zoo animals.

I sincerely thank Shri. G.K. Sinha, IFS, Principal Chief Conservator of Forests, Wildlife, Gujarat State and Dr. A.P. Singh, IFS, Chief Conservator of Forests, Wildlife Circle, Junagadh for their valuable guidance and constant support. I also thank Dr.R.F.Kadivar, Veterinary Officer, Shri. Jagdish Sankaliya, Account Officer SBZMAS, Ms. Aarti Chavda, Zoo Trainee Biologists, Shri. Jyotirmay Buch, Education Officer in helping me preparing this report.



M.K. Vala

Director,

Sakkarbaug Zoological Park,
Junagadh.



Central Zoo Authority
केन्द्रीय चिड़ियाघर प्राधिकरण





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HISTORY & SALIENT FEATURES

The zoo was established in 1863, by the then Nawab of Junagadh, Mohabatkhanji Babi- II. The place of the zoo was named as Sakkarbaug, because it was a private garden of the Nawab, having a step well with sweet potable water. Initially, the zoo had a personal collection of animals of Nawab, which included Asiatic Lions, African Lions, Tigers, Cheetahs, Leopards, Ratel, etc. These animals were taken out as a procession in the town of Junagadh on some auspicious days like Eid for the purpose of display. Later on it was managed by Education department of the state Government before taking over by the State Forest Department in 1960. Earlier, the area of the zoo was only 6 ha. Later on, 78 ha. of land of Reserve Forest, under mining lease was handed over to the zoo following a strong protest by the local NGOs coordinated by the then Zoo Officer, Late Shri P.P.Rawal. Another 2 ha. land was allotted from the adjoining Fruit Trees Research Centre of Junagadh Agriculture University.



It is one of the oldest and largest zoos of India

- Total area: 86 ha.
- Total number of animals: 1383
- Total number of species: 112
- Total staff: 128



Conservation Breeding Programme

The Central Zoo Authority is coordinating a flagship programme of planned Conservation Breeding. Sakkarbaug Zoological Park has been allotted responsibility by the CZA for 7 conservation breeding programmes. SBZ is a coordinating zoo for Conservation Breeding Programme (CBP) for Asiatic Lion, Indian Wild Ass, Grey Wolf, Four horned Antelope and Asiatic Cheetah. It is a participating zoo for CBP of Chinkara and Vultures. Thus the zoo plays a vital and pivotal role in the conservation breeding of these endemic and endangered animals. There is a dedicated section of conservation breeding facilities.

Asiatic Lion



Asiatic Lion Conservation Breeding program has been the most successful programme and we are striving to achieve more precision in our management and healthcare to take it to the next level. The SBZ is also the main source of pure breed Asiatic Lions to the Indian & International Zoos. We have been able to establish links with national and international zoos for information exchange and technology sharing.

The state board for Wildlife of Gujarat has approved the proposal for “Long Term Conservation of Asiatic Lion in the year 2006. Among other measures proposed for the conservation of Asiatic Lions, it has been envisaged to establish an ex-situ gene pool population. Accordingly three gene pool centers are established by Gujarat Forest Department in SBZ, at Rampara Wildlife Sanctuary and Barda Wildlife Sanctuary.

Sakkarbaug Zoo is the nodal agency of this project.

Indian Wild Ass

The Indian Wild Ass is endemic to the Greater Rann and Little Rann of Kutch. SBZ has the largest captive population of Indian Wild Ass. It is noteworthy that captive Wild Ass is housed in SBZ and Madras Zoo and nowhere else in the world. There is a future plan to strengthen its captive breeding by procuring founder animals.



Vultures



The vulture breeding aviary was started in the zoo in April 2009. The vulture Conservation breeding Aviary and Hospital aviary are located far from the display area and is surrounded by vegetation to prevent any kind of disturbance.

SBZ has four species of Vultures in captivity under CBP, namely White-backed Vulture, Indian Vulture, Eurasian Griffon Vulture and Red-necked Vulture. We have created all the required facilities at the breeding center such as artificial nesting sites and trees. In a significant development for the conservation of the endangered vulture species, the Sakkarbaug zoo has succeeded in breeding vultures in captivity.

Chinkara

In the Chinakara CBP ideal climate, good housing facilities, expertise have contributed for successful breeding in the beginning. Later on we have maintained the population for several years. We have reached the stage where we can plan for reintroduction of this species in the wild.



Four horned Antelope (Chausingha):

Chausingha have been successfully reared and bred. We need more founder animals with different bloodline hence we need to procure more individuals for the Conservation Breeding Programme.



Indian Grey Wolf



In the beginning of this Breeding Programme we did not have sufficient founder population. In the last 2-3 years by the exchange programmes we have raised our founder population from Udaipur Zoo, Jodhpur Zoo, Lucknow Zoo and Jaipur Zoo. We are concentrating on this programme to get more animals with different blood line for the successful breeding of wolf. Now we are making attempts to procure the Indian Grey wolf.

Asiatic Cheetah

This particular breeding programme has not been initiated due to total lack of Founder population. It is immensely difficult to find a captive population of Asiatic Cheetah with any zoo or facility complexed with the fact that their population in the wild could be only between 50-70 individuals and found in a small area of Miandasht Wildlife Refuge, Iran.

Status of Conservation Breeding of last five years

| Sr. No | Species | Coordinating Zoo /Participating Zoo | No. of Birth |
|--------|-----------------------------------|-------------------------------------|--------------|
| 1 | Asiatic Lion | Coordinating Zoo | 22 |
| 2 | Indian Wild Ass | Coordinating Zoo | 05 |
| 3 | Chausingha / Four horned antelope | Coordinating Zoo | 18 |
| 4 | Vulture (WBV) | Participating Zoo | 19 |
| 5 | Chinkara | Participating Zoo | 48 |
| 6 | Indian Grey Wolf | Coordinating Zoo | 03 |
| 7 | Asiatic Cheetah | Coordinating Zoo | 00 |



Veterinary and Healthcare

1. **Veterinary Facilities:** Sakkarbaug Zoo has a well-equipped veterinary hospital. All kinds of basic diagnostic facilities like X-ray, Ultrasonography unit, Multipara monitor, Pulse Oxymeters, Gas anesthesia machine, Electro thermocautery are available. The Zoo Hospital also has three types of darting equipment like Daninject IM- JMSP, Distinject MOD45N & others. The hospital pharmacy has sufficient quantity of emergency and tranquilizing drugs available 24x7. The hospital has different wards like Isolation ward, Treatment ward & Recovery ward. The critically ill animals are monitored 24x7 by CCTV cameras. In addition, the zoo hospital serves as the referral hospital for wild animals. Many injured and sick rescued animals are referred from various Rescue and Care centre of PAs& Sanctuaries of Gujarat State for intensive care and treatment.



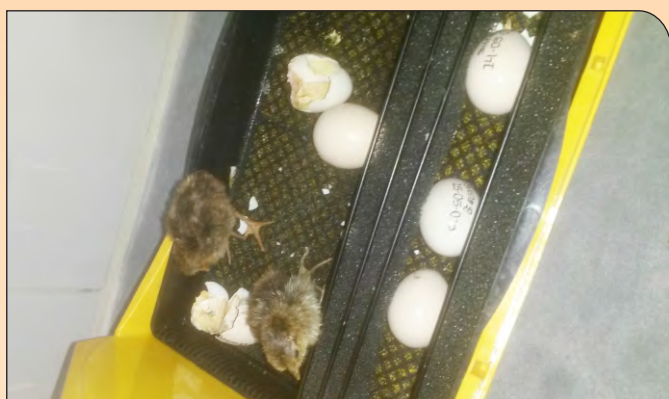
2. **Rescue & Rehabilitation:** The Zoo Rescue team provides rescue and relief services to areas like Gir, Girnar, Barda Sanctuaries & rest parts of Gujarat. The zoo rescue team is on stand-by 24x7 and includes a senior veterinarian.



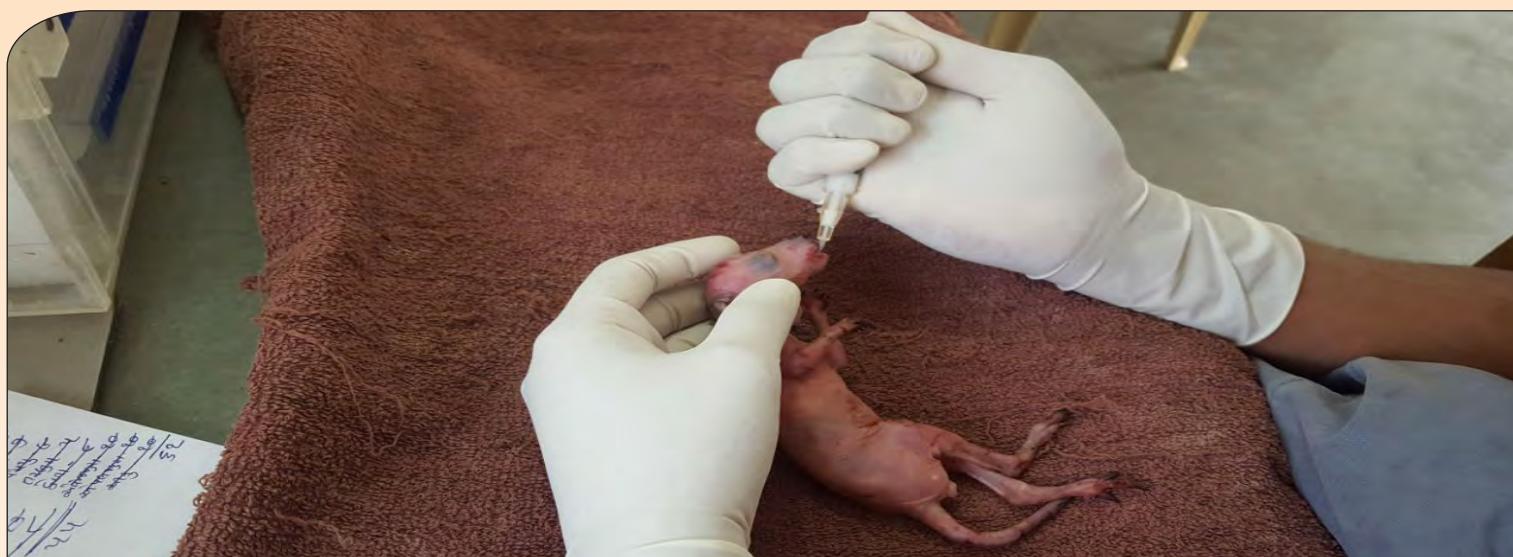
| | |
|--------------------|---------|
| Grey Parrot | 1 Nos. |
| Tortoise | 9 Nos. |
| Asiatic Lion | 7 Nos. |
| Red necked wallaby | 1 Nos. |
| Marsh Crocodile | 16 Nos. |



3. Artificial incubation & hand-rearing: This zoo is a participating zoo in Conservation Breeding Project of Vultures as assigned by the CZA. Many bird species are not good brooders hence we use artificial incubators (Brinsea, UK) to incubate the eggs of various species successfully.



| Species | Rescued | Released |
|--------------|------------|------------|
| Mammals | 40 | 12 |
| Reptiles | 46 | 39 |
| Birds | 97 | 60 |
| Total | 183 | 111 |



4. Laboratory: SBZ has established a laboratory for early diagnosis of diseases in animals. Automated Cell Counter (Nihon Coden), Biochemistry analyzer, IDEXX Vet Urine Analyzer, Trinocular Microscope, Laminar Flow, Microtome machine, various Snap Tests for Feline and Canine Viral Diseases, Deep freezer and Refrigerator for storing samples and reagents are a part of the laboratory setup. A full-time Lab technician (D.M.L.T) looks after the laboratory operations.



| Test | No. of samples tested |
|---------------------------|-----------------------|
| Blood Parameters | 250 |
| Food animal blood testing | 1252 |
| Faecal samples | 1627 |
| Urine & tissue samples | 50 |
| Swab | 524 |

5. Disease monitoring & Prevention: Random screening of animals is done for disease monitoring at least twice a year. Blood, urine and fecal samples are tested for various diseases at the zoo laboratory and if need be, are sent to state and national level laboratory for further analysis. Vaccination and Deworming are carried out in animals at regular intervals. A strict disinfection procedure of Chemical and Burning methods is employed for all enclosures and resting areas from time to time.

| During year 2015-16 | |
|---------------------|----------------|
| Deworming | > 3018 animals |
| Vaccination | > 655 animals |

6. Each year final year students of Veterinary Colleges of Gujarat State study at the zoo for a period of 1 week as a part of their internship

7. Successful treatments:

A] A 4 years old leopard female was rescued from arvalli district with fracture of right Radius ulna. It was successfully immobilized and bone plating surgery was performed by zoo vet. The leopard female recovered over period of 1.5 month.



Plating surgery under way

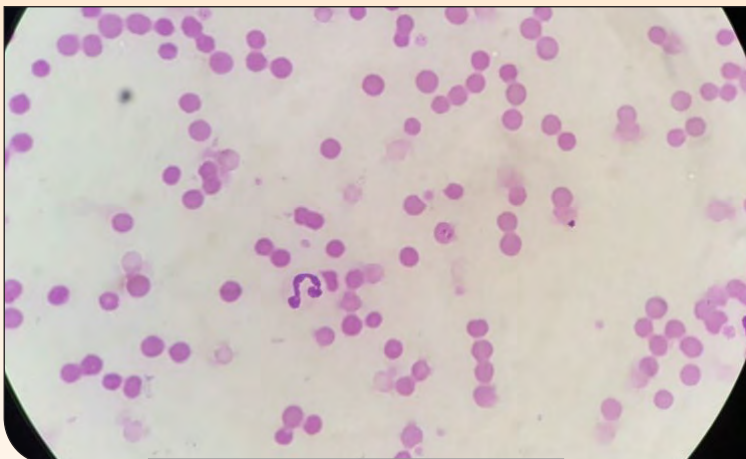


Plating of fractured bone

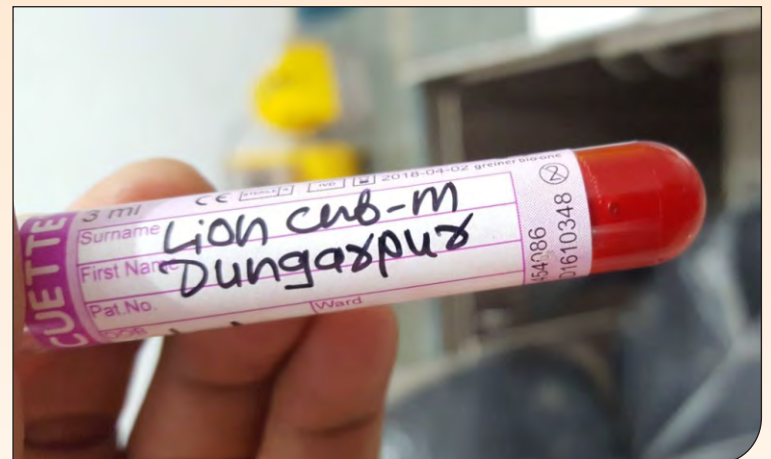


Compound fracture bone

B] Three lion cubs (Age 3-4 months) were rescued from Girnar Sanctuary with weakness. All 3 cubs were found positive for Babesia spp. By PCR method. Treated with imidocarb and Primaguin successfully and all 3 cubs were released back to wild after found negative for Babesia after one month.



Babesia in RBC



Anemic Blood

C] A Lion male Shiv was suffering from hind limb paralysis. It was treated intensively for 7 days and kept under quarantine and after successfully recovery released back to Ambardi Safari Park.

8. Liason with other institutes: The zoo has Liason with many institutes for disease diagnosis & veterinary expertise like IVRI, State Animal Husbandry Department, Veterinary College of Junagadh, Anand, S.K.Nagar, etc

Daily feed requirement

| Sr. No. | Feed | Quantity per day | Cost in Rupees |
|---------|-------------------------------------|------------------|----------------|
| 1 | Mixed vegetables | 42 kg | 1134 |
| 2 | Fruits | 49 kg | 1680 |
| 3 | Bread | 2 Loaves | 36 |
| 4 | Pulses & Cereals | 97.5 kg | 4514 |
| 5 | Eggs | 35 eggs | 158 |
| 6 | Meat(Carabeef, Veal, Fish, Chicken) | 562 kg | 72545 |
| 7 | Green fodder(Lucerne+Maize) | 1420 kg | 5295 |
| 8 | Amul Nutrigh Feed Pellets | 75 kg | 1875 |
| | Total | - | 87237 |



Wildlife Education and Awareness

Nature education camps were conducted for school students and professionals. In all 2086 participants were benefited by gaining information on wildlife conservation, biodiversity and climate change.

| Camps | Students | Teachers | Resource Persons | Total |
|-------|----------|----------|------------------|-------|
| 45 | 2202 | 198 | 289 | 2689 |

The Sakkarbaug Zoo Orientation Centre is visited by almost all the visitors to the zoo. This Orientation Centre displays various exhibits, charts, specimens and interactive kiosks.



Animal Collection

| Category | Number of Species | Number of Animals |
|----------|-------------------|-------------------|
| Mammals | 37 | 574 |
| Birds | 57 | 714 |
| Reptiles | 18 | 95 |
| Total | 112 | 1383 |



Layout map

Sakkarbaug Zoological Park સકકરબાગ પ્રાણી સંગ્રહાલય



Girnar Wildlife Sanctuary ગીરનાર વન્યપ્રાણી સમચારણ્ય



New area of Sakkarbaug Zoo (Zoo Jungle Safari Visit by Bus)

સકકરબાગ પ્રાણીસંગ્રહાલયનો નવો વિસ્તાર
(ઝુ જંગલ સફારીમાં બસ દ્વારા મુલાકાત)

Enrichment of collection by animal exchange program

| Sr. No. | Name of the Zoo | Animals offered from SBZ | Animals received / yet to be received |
|---------|-----------------|--------------------------|---|
| 1. | Mysore Zoo | Asiatic Lion (1:1) | Wolf (1:0) Black Swan (1:1) Eclectus Parrot (1:1) Sun conure (1:1) |
| 2. | Pune Zoo | Asiatic Lion (1:1) | Amazon Parrot (1:1) Rainbow lorikeet (1:0) Sulpher Crested cockatoo (1:0) Goffin cockatoo (1:1) |
| 3. | London Zoo | Asiatic Lion (1:1) | African Cheetah (1:1), Zebra (1:1) Ring Tailed Lamur (3:0) |
| 4. | Prague Zoo | Asiatic Lion (1:2) | Red-necked wallaby(2:3) African Caracal(1:2) Blue and yellow macaw(1:1) Scarlet Macaw(1:1) Green Peafowl(1:2) |



CELEBRATION OF WILDLIFE WEEK



Drawing Competition



Prize Ceremony



Zoo visit by students



Special Zoo visit for differently able students

Collage Competition



Essay Writing Competition



Drawing Competition



Past managers of SBZ

| Sr. No. | Name | Duration |
|---------|----------------------|---|
| 1. | Shri B.R. Pandya | 23.05.1986 - 22.09.1988 |
| 2. | Late Shri P.P. Rawal | 22.09.1988 - 24.11.1990 11.12.1990 - 20.07.1992 09.09.1992 - 06.08.1994 |
| 3. | Shri R. D. Katara | 13.09.1994 - 29.04.1999 11.06.2002 - 15.10.2007 |
| 4. | Shri I. M. Kaila | 03.06.1999 - 11.06.2002 |



Shri V.J. Rana
(15.10.2007 - 21.01.2015)



Shri S.J. Pandit
(02.02.2015 - 24.08.2017)



Shri M.K. Vala
(17.10.2017 - Cont.)

Past Veterinarians of SBZ



Dr.C.N. Bhuva
(01.05.1982-21.04-1987,
02.05.1998-21.08-2009)



Dr.Kadivar
(22.11.2010 - Cont.)

Human Resource

| Sr. No | Category of Post | Sanctioned Strength | Present Strength |
|--------------|----------------------------|---------------------|------------------|
| 1 | Director | 1 | 1 |
| 2 | Veterinary Officer | 1 | 1 |
| 3 | Range Forest Officer | 1 | 1 |
| 4 | Forester | 1 | 1 |
| 5 | Accountant | 1 | 1 |
| 6 | Accountant (Group-1) | 1 | 0 |
| 7 | Storekeeper Cum Supervisor | 1 | 1 |
| 8 | Clerk | 3 | 1 |
| 9 | Gardener Cum Mechanic | 1 | 0 |
| 10 | Driver | 1 | 1 |
| 11 | Forest Guard | 3 | 3 |
| 12 | Zoo Navak | 1 | 1 |
| 13 | Peon | 1 | 0 |
| 14 | Gardener | 1 | 0 |
| 15 | Watchman | 16 | 6 |
| 16 | Sweeper | 4 | 0 |
| Total | | 38 | 18 |



Contractual appointment/posts under SBZMAS

| Sr. No | Category of Post | Sanctioned Strength | Present Strength |
|--------|------------------------------|---------------------|------------------|
| 1 | Assistant Veterinary Officer | 2 | 0 |
| 2 | Zoo Trainee Biologists | 3 | 2 |
| 3 | Account Officer | 1 | 1 |
| 4 | Laboratory Technician | 1 | 1 |
| 5 | Storekeeper | 1 | 1 |
| 6 | Education Officer | 1 | 1 |
| 7 | Administrative Assistant | 1 | 1 |
| 8 | Data Entry Operator | 5 | 4 |
| 9 | Driver | 4 | 2 |
| 10 | Zoo Security Supervisor | 4 | 3 |
| 11 | Zoo Volunteers | 10 | 4 |



VISITORS AMENITIES



Kids play area



Safari Bus



Wheelchair



Orientation Center



Rest hut



Souvenir shop



Photo booth



Canteen

Number of Visitors

| Sr. No. | Year | No. Of Visitors | | | | |
|---------|---------|-----------------|----------|---------|-------------|----------------|
| | | Adult | Children | Student | Sr. Citizen | Total |
| 1 | 2012-13 | 774111 | 201436 | 220352 | 4700 | 1200599 |
| 2 | 2013-14 | 728065 | 167295 | 221238 | 3278 | 1119876 |
| 3 | 2014-15 | 817048 | 171272 | 209823 | 3163 | 1201306 |
| 4 | 2015-16 | 830007 | 168913 | 186318 | 3699 | 1188937 |
| 5 | 2016-17 | 830729 | 170872 | 168656 | 3442 | 1173699 |

Income

| Year | Visitors | Other | Total |
|---------|----------|---------|-----------------|
| 2012-13 | 19817915 | 1448488 | 21266403 |
| 2013-14 | 18429245 | 1617209 | 20046454 |
| 2014-15 | 20238010 | 2001987 | 22239997 |
| 2015-16 | 20280685 | 3702332 | 23983017 |
| 2016-17 | 20642165 | 2501980 | 23144145 |

| Sr. No. | Year | Amount of APO | Expenditure |
|---------|---------|---------------|-------------|
| 1 | 2012-13 | 12800000 | 6797590 |
| 2 | 2013-14 | 16360000 | 16090707 |
| 3 | 2014-15 | 27650000 | 16686369 |
| 4 | 2015-16 | 54000000 | 15068000 |
| 5 | 2016-17 | 65140000 | 36636751 |

Details of fixed deposits of SBZMAS

| Sr. No. | Receipt No. | Period | Rate of interest | Date of deposit | Amount | Date of maturity | Maturity amount Rs. | Bank / Institute |
|---------|-------------|----------|------------------|-----------------|----------|------------------|---------------------|----------------------------|
| 1 | 38330 | 366 Days | 7.75 % | 23-06-16 | 15000000 | 23-06-17 | 16077051 | Gujarat State Fin. Service |
| 2 | 38466 | 366 Days | 7.75 % | 30-06-16 | 10000000 | 01-07-17 | 10720085 | Gujarat State Fin. Service |
| 3 | 40156 | 366 Days | 7.75 % | 23-09-16 | 20000000 | 24-09-17 | 21438744 | Gujarat State Fin. Service |
| 4 | 40738 | 366 Days | 7.50 % | 09-11-16 | 10000000 | 10-11-17 | 10695191 | Gujarat State Fin. Service |
| 5 | 41000 | 365 Days | 7.00 % | 30-11-16 | 10000000 | 30-11-17 | 10645982 | Gujarat State Fin. Service |
| 6 | 41632 | 365 Days | 7.00 % | 01-01-17 | 10000000 | 01-01-18 | 10645898 | Gujarat State Fin. Service |
| 7 | 41677 | 365 Days | 7.00 % | 08-01-17 | 10000000 | 08-01-18 | 10645961 | Gujarat State Fin. Service |
| 8 | 43269 | 365 Days | 6.50 % | 31-03-17 | 10000000 | 31-03-18 | 19078932 | Gujarat State Fin. Service |
| 9 | 44886 | 365 Days | 6.50 % | 23-06-17 | 15000000 | 23-06-18 | 15899122 | Gujarat State Fin. Service |
| 10 | 45195 | 366 Days | 6.50 % | 01-07-17 | 18000000 | 02-07-18 | 10600393 | Gujarat State Fin. Service |
| 11 | 45266 | 365 Days | 6.50 % | 19-07-17 | 15000000 | 19-07-18 | 15898108 | Gujarat State Fin. Service |

Free Ranging animals and birds





Sakkarbaug Zoological Park

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