

Evaluate whether the Zoological Development & Welfare Fund is utilized for the benefit of Animal



Report No : PER/ZF/2017/08



National Audit Office
Performance Audit Division



Content		
No.	Particulars	Page Numbers
-----	-----	-----
1.	Executive Summary	1
2.	Introduction	3
2.1	Background	3
2.2	Authority for Audit	6
2.3	Reasons for the selection of topic for audit	7
2.4	Audit Approach	7
2.5	Audit Objective	7
2.6	Audit Criteria	8
2.7	Scope of Audit	8
2.8	Scope limitation	8
3.	Detailed audit findings, Recommendations and the comments of the Department	9
3.1	Zoological Gardens Act	9
3.2	Animal Welfare	13
3.3	Employees Welfare	34
3.4	Common Observations	35
4.	Recommendations	39
5.	Conclusion	43
	Annex I	44

01. Executive Summary

The Zoological Garden at Dehiwala commenced in the first part of 1920th decade acquired by the Government on 01 July 1936, keeping as a collection of Wildlives has been established as an independent Government Department in the year 1946. Thereafter, the functions of the Department of National Zoological Gardens are governed and managed under the provisions of the National Zoological Gardens Act No.41 of 1982. In addition, to the Dehiwala Zoological Garden which is an oldest Zoological Garden in Asia, the Department owns Pinnawala Elephant Orphanage, Pinnawala Zoological Garden, Hambantota Safari park and the Gonapola Animal Food Farm.

The objective of this audit is to evaluate whether the Zoological Development and Welfare Fund is utilized for the Welfare of Wildlives. The key observations of this audit include, non-supply of foods to the animals on due time, in most cases due to eating up foodstuff given to animals in the Zoo by animals coming outside, many animals do not get the full diet, as the quantity of foods ordered for animals, living in the elephant zone of the safari park and the world animal zone is not supplied by the suppliers; animals do not get the full diets, non-existence of a methodology to perfect the dearth of quantity of foods, the weight of elephants were not measured, eventhough the quantity of foods fed to elephants should have been changed according to their weights etc.

Observations made in respect of the Health of Animals include; lack of quarantine facilities to animals, death of 328 animals during the 2 years in 2016 and 2017 within the Zoological Gardens belong to the Department of National Zoological Gardens on the grounds of diseases and other causes, instances where medical instructions not followed when animals are transferred from one place to another, treatments to elephants and tuskers not regularly made, non-availability of animal crushes, enabling the easy treatments to animals etc. It was also observed that eventhough a habitat, enabling animals to desply their characteristic features has to be built, there was insufficient space to certain animals in the Dehiwala Zoological Garden and no adequate shade management is in existence, Beseides, instances where certain animals without partners were also observed.

In addition to the observations above, non-disposal of waste properly at Dehiwala and Pinnawala Zoological gardens and Pinnawala Elephant orphanage, dungs of elephants at Pinnawala elephant orphanage and rubbish being clustered within its premises are observed. Many cages in Dehiwala Zoological garden were battered and maintained having being remedied day today and there was no sufficient protection as well. Moreover, certain animal and employees welfare problems arisen due to detention of 18 elephants in the Pinnawala Elephant Orphanage on a court order were observed in audit.

Observations made in respect of Employees Welfare include; less than 3 per cent of the total income, earns by the Zoological garden was spent for the staff welfare, there may be opportunities in meeting accidents by employees, as a result of non-existing of crushes to retain animals at the time of treating them and non-existence of a sufficient insurance coverage for those accidents. Employees were also not trained as required.

In order to remedy the above situations, actions to be taken include; the formulation and tentative maintenance of detailed and specific guidelines covering all welfare activities of the employees and animals in Zoological gardens belong to the Department of National Zoological

gardens, taking steps to provide partners for animals for those which do not have partners, training the staff, enabling them to perform their duties efficiently and effectively, holding medical camps within a specific period of time and upgrading employees service productivity by providing a sufficient insurance coverage.

The Department of National Zoological Gardens had earned an income of about Rs.999 million in the year 2017, out of which 27 per cent for animal foods and drugs, 2.56 per cent for staff Welfare and training, 16 per cent for constructions had been spent. As the Department of National Zoological Gardens earns its entire income from demonstration of animals, it is therefore concluded that further attention on animals and Staff Welfare needs to be paid in considering the identified observations.

2. Introduction

2.1 Background

2.1.1 History of the Zoological Garden

The animal collection centre commenced in the first part of 1920 decade by John Hagenburg in a land 11 acres in extent at Dehiwala area for the retention of Wildlives caught from Sri Lanka until they were carried away to foreign zoological gardens had been established as “Ceylon Zoological Gardens Company” in the year 1926. The British Government which ruled Sri Lanka had taken over this on 03 July 1936 and denominated as “Ceylon Zoological Gardens”.

Major Oubri N Vayman had been appointed as the first Director of the Zoological garden and during his period of office from 1954 to 1962, the zoological garden had been developed by growing flowers and beautifying the garden premises and by introducing animal exchange programmes and adding many foreign animals including rhinoceros, hippopotamus, gorilla and chimpanzees (primates) to the Zoo. In the year 1962, the Zoological garden denominated as “Ceylon Zoological Gardens” has been named as the Department of National Zoological Garden. By adding up interior “Bird Aviary” in 1966, “Aquarium” with interior fish in 1973 “Butterfly Aviary” in 1981 and reptilian and a feature of amphibious in 1983, exhibits have been improved. Introducing “Free Animal Enclosure” concept during the period from 1962-1985, exhibition of Wildlives including Lions, Gorillas, Orang-Utan, Chimpanzees and Gibbons have been started.

2.1.2 Recent tendencies

In addition, to the operating units of Dehiwala Zoological Garden and Pinnawala Elephant Orphanage, the Department of National Zoological Gardens comprises operating units of Pinnawala Zoo, Hambantota Safari Park and Gnapola animal food farm, detaining 4,902 animals in all these operating units as at 31 December 2017.

Dehiwala Zoo Logical Garden consists of a land area of 23 acres and the number of animals belong to the types of mammalians, birds, raptilians and fish as at 31 December 2017 amounted to 4232. A part of the Zoo is opened for visitors till 10 pm in Fridays, Saturday and Sundays.

The elephants orphanage at Pinnawala, Rambukkana opened in the year 1975 with a land area of 25 acres under the Department of Wildlife Conservation, has been acquired by the Department of National Zoological Gardens in the year 1982 and the number of tuskers and elephants as at 31 December 2017 was 85.

The animal food farm has been commenced in the year 1997 with the objective of providing quality and fresh animal feed at Gonapola in a land, 15 acres in extent. In addition to cultivate animal feed, 93 surplus animals had existed in this farm. The extent of land of the Pinnawala Zoo the work of which had been commenced on 25 June 2008 for the purpose visitors attraction who come to view Pinnawala Elephant Orphanage is 44 acres and it was opened for viewers on 15 April 2015.

The Zoological Garden set up for the purpose of creating a freely living environment, in place of cages and a little space allocated for animals had a number of 190 animals belonging to various kinds of mammalians, birds, reptilians and fish as at 31 December 2017.

The Safari park at Rediyagama, Hambantota, Comprising a ground area of 500 acres in extent, the construction work of which was started on 20 December 2008 was open for spectators on 28 March 2016. Gardens established with special zones for carnivorous animals such as leopards and for the implementation of animal breeding programmes required for animal conservation in the Zoological Garden have been built as animal zones in accordance with international Zoological Garden concepts. The number of animals belongs to the kinds of mammalians, birds and reptilians owned by the Zoological Garden stands at 302 as at 31 December 2017.

2.1.3 Operating under the International Standards

The World Association of Zoological Gardens and Aquariums (WAZA) established in the year 1946, as a unity of Directors of Zoological Gardens in various countries in the World is presently an association with 220 members of Zoological Gardens and Aquiriums in various countries of the World. The WAZA is now gathering Zoological Gardens, aquariums, national and regional associations, organizations and individuals possessing similar opinions which express willingness to bind its by-laws, ethics and animal welfare, including other rules and regulations established by that organization at global level and Sri Lanka has also obtained its membership in the year 1965.

2.1.4 Animal Welfare

Other countries in the World defines the animal welfare as provision of facilities required for living without fear and tension that enables them to express their natural behavinoural patterns under the healthy nutritious, refreshing and safety conition. 'In addition, the animal welfare includes prevention of deseases, provision of veterinary treatments as required, shade management, nutrition and mercifull treatment to animals.'

2.1.5 Staff Welfare

Staff welfare means protection from casualties which might happen from animals to all employees and officers deal with animals, sanitary protection and the provision of required facilities appropriately. According to the Letter No.DZG/Dev/1/5/Pro-2016 dated 08 July 2016 of the Director General of the Department of National Zoological Gardens, in order to fulfilling the following functions of the Department of National Zoological Gardens, funds receive from every source are credited to the Zoological Garden Development and Welfare Fund established under the section 8, part 11 of the National Zoological Gardens Act No.41 of 1982.

- Ensuring animal conservation.
- Implementation of animal breeding programme for animal conservation.

- Implementation of Educational Programmes on animals under the broad concepts of animal conservation and to show compassion to animals.
- Conducting researches on animal conservation, breedings and other sectors relating to the Department.
- Exhibit animals with the objective of giving the compassion and conservation message.
- Provision of funny facilities for viewers attraction.
- Provision of veterinary protection for animal breeding, animal conservation and maintenance of good animal health.
- Supply of sufficient infrastructure facilities and other needs.
- Improvement of administrative system.
- Introduction of quality management methods.
- Improvement of income generating sources.
- Use of green management methodology.
- Establishment of new entities.

2.1.6 Zoological Garden Development and Welfare Fund

Cash receipts and payments of the Zoological Garden Development and Welfare fund during the period of 5 years from 2013 to 2017 are as follows.

Item	2013	2014	2015	2016	2017
Revenue (Rs)	727,149,211	911,518,926	1,038,323,207	1,098,522,091	999,126,643
Animal feed expenses (Rs.)	194,058,737	209,900,244	234,546,036	264,242,128	264,184,542
As a % of revenue %	26.68	23.03	22.59	24.05	26.44
Animal drugs and medical equipment (Rs.)	4,858,775	7,360,308	7,503,587	8,016,962	8,412,991
As a % of revenue	0.67	0.81	0.72	0.73	0.84
Staff welfare expenses (Rs) (Insurance, Medical, Incentives)	16,036,778	19,880,650	22,502,273	24,598,287	25,604,195
As a % of revenue	2.20	2.18	2.17	2.23	2.56
Staff training expenses (Rs.)	1,017,888	3,208,658	10,000	-	51,000
As a % of revenue	0.14	0.35	0.001	0	0.005
Construction expenses of zoological gardens (Rs.)	314,055,603	433,738,795	225,061,941	71,052,507	157,813,252
As a % of revenue	43.18	47	22	6.4	16
Purchase motor vehicles and other equipment	8,810,000	26,653,741	18,143,030	42,157,798	29,027,920
As a % of revenue	1.21	2.92	1.74	3.83	2.90
Other expenses	89,397,761	97,879,468	112,736,982	176,433,970	157,694,920
As a % of revenue	12.29	10.73	10.85	16.06	15.78
Total Expenses	628,235,542	798,621,864	620,503,849	586,501,652	642,788,820
As a % of revenue	86.39	87.6	59.76	53.39	64.33

According to the accounts of the Department of State Accounts, a balance of Rs.2,710,959,560 had existed in the Zoological Gardens Development and Welfare Fund as at 31 December 2017 under the Director, Zoological Gardens.

2.2 Authority for Audit

This performance audit has been carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka and in terms of sections 3(1)(d), 5(2) and 12(h) of the National Audit Act.

2.3 Reasons for the selection of topic for audit

The protocol, including the criticism arisen within the civil society in respect of whether, security, sanitation facilities and other requisits are supplied as required to animals living in the Dehiwala Zoological Garden is the cause for the selection of this topic.

2.4 Audit Approach

2.4.1 Compliance with prevailing laws and regulations

- (a) Study the National Zoological Gardens, Act No.41 of 1982.
- (b) Discussion with the officials of the Department of National Zoological Gardens and the analysis of procedures in respect of animal maintenance of the Department.

2.4.2 International Laws, Rules and Standards

Study the code of ethics and animal Welfare in the World Association of Zoological Gardens and Aquarium (WAZA)

2.4.3 Examination of documents and books and records maintained by the Department of National Zoological Gardens

- (a) Analyze the procedure manual of the Department of Zoological Gardens and study the flow charts
- (b) Examination of diaries maintained by each division for animals in the years 2016, 2017 and 2018.

2.4.4 Interviews

2.4.5 Physical Verifications

2.5 Audit Objective

The objective of this audit is to evaluate whether the Zoological Garden Development and Welfare Fund is utilized for the welfare of animals.

2.6 Audit Criteria

The following laws, regulations and standards have been considered.

- (a) National Zoological Gardens Act No.41 of 1982.
- (b) Procedure Manual prepared for the animal division bearing No.DZG/DRY/3/10/RO dated 02 April 2015 and the Procedure Manual (flow chart) prepared for the animal division on 17 September 2016.

- (c) Code of Ethics and animal welfare strategies used by the WAZA in respect of zoological gardens.
- (d) Murray E.Fowler and Susan K.Mikota's Biology, Medicine and Surgery of Elephants-Chapter 05
- (e) Environmental Act No.47 of 1980.

2.7 Scope of Audit

The audit was carried out in accordance with International Auditing Standards of Supreme Audit Institutions (ISSAI 3000-3200) by me. This performance audit has been limited for the examination of welfare of the animals living in the Dehiwala Zoological garden, Pinnawala Elephants Orphanage, Wagolla Zoological Garden, Hambantota Safari Park and Gonapola animal food seed farm and the staff welfare of those who serve in these places. Food and water supply, shade management and sanitation facilities of the animals living in these units have subjected to evaluation and the manner that performed the Department of Zoological Gardens in respect of those functions during the period from 2016 to 30 June 2018 has been examined.

2.8 Scope limitation

As the financial audit has covered the revenue aspect of the Zoo and the functions of the implementation of capital projects, in depth audit has not been carried out in that connection.

3. Detailed audit findings, Recommendations and the comments of the Department

3.1 Zoological Gardens Act

The Zoological Gardens Act is an act to administer and manage the national zoological gardens, the establishment of the Zoological Gardens Development and Welfare Fund and to make provision for matters connected therewith or incidental thereto. The following observations are made in respect of the provision of this Act.

3.1.1 Animal Welfare

Provision of Welfare for animals living in Zoological Gardens is a key function thereof but any where in of this Act does not define the term “animal welfare”.

3.1.2 Welfare of the employees

Section 8.3(b) of the Act states that all the money requires for the provision of welfare to the employees of the Zoo logical gardens and incentive schemes can be paid subject to the prior approval of the Ministry of Finance but the term “Employees Welfare” does not define in the Act as well.

3.1.3 National Zoological Gardens Act

Under the section 14 of the Act, the National Zoological Garden includes, government aquarium, Zoological farm at Ratmalana and the elephants orphanage at Pinnawala, Rambukkana. Nevertheless, apart from Zoological Garden at Dehiwala and Pinnawala elephants orphanage, Pinnawala Zoo (wagolla), Hambantota Safari Park and Gonapola Animal feed farm also currently are under the control of the Department of National Zoological Gardens and it is observed that the name “National Zoological Garden” therefor should be revised, as the Department of Zoological Gardens does not own a farm at Ratmalana.

3.1.4 Appointment of an advisory committee

Even though, an advisory committee for the purpose of giving instructions to the Director and making recommendations to the Minister needs to be appointed, such an advisory committee had not been appointed.

3.1.5 Code of guidelines

According to the code of ethics and law issued by the World Animal and Aquarium Association, every member should formulate a code of ethics of its own. Even though the Department of Zoological Gardens has prepared a code of guidelines and being implemented at present, it is observed that the formulation and implementation of the code of guidelines, including procedures in respect of emergencies, transport of animals, procedure needs to be followed, if an animal is trained for a specific purpose, research procedures on animals and aquarium staff training etc. is useful for the achievement of objectives of the Zoological Garden efficiently and effectively.

3.1.6 Environmental Impact

The environment safety licence, bearing No.4459 (R4) has been issued for the year 2017/2018 for the operation of Dehiwala Zoological Garden by the Central Environmental Authority. In terms of conditions of the licence, the following conditions need to be fulfilled but action had not been taken accordingly.

- (a) Waste water disposes from the Zoological Garden needs to be discharged to a place with pure water at least 8 times capacity of waste water in order to control water pollution, but it was observed in audit that waste water disposed of from the Zoo is discharged to the stone-quarry. Discharging waste water as such without being transformed may cause to become water sources dirty and badly affected the public health of the surrounding area.



- (b) In terms of section 2.3 of the environment safety licence issued to the Dehiwala Zoological Garden for the period 30 April 2017 to 29 April 2018, a project report prepared by an advisor qualified for the disposal of impured water after being purified needs to be forwarded to the Central Enviornmental Authority within one month after the licence is issued. Nevertheless, such a report had not been presented even up to 10 June 2018, the date of audit. The Zoological Garden had not followed an appropriate method of disposal of Solid Waste, though Solid Waste is not allowed to be discharged to the water sources.
- (c) Even though, the maximum parameters for gases emitted from the garbage burner is determined in section 4 of the licence issued by the Central Enviornmental Authority bearing No.04459 (R4), a methodology ensuring whether diviations therefrom has not been formulated. Observations in that connection include,

- I. Garbage needs to be burnt with a precise temperature. Riff-raff, pieces of branches, waste, dead bodies of animals are burnt from the burner but the quantity details of materials burn daily is not available with the Zoo. As constituents contain in smoke emitted from the burner is not measured it was unable to assess the bad effect caused to visitors, neighborhood, animals and environment.
 - II. It was observed that smoke emitted from the burner when burning garbage dums spreads over the surrounding environment and the Zoological Garden. Physical verification carried out on 17 November 2017 observed that the Butterfly Avairy had covered with full of smoke. Note in the diary of section 4 on 01 August 2017 clearly states that the smoke is a threat to butterflies.
 - III. Notes of the diary observed that about 350 butterflies of 20 kinds have been caught in 12 occasions in the years 2016 and 2017 from Labugama, Kithulgala, Nachchamale and Athweltota areas in order to exhibit in the Butterfly Avairy. Nevertheless, it was observed that the smoke encumbers the purpose of beautifying the Zoological Garden by propagating butterflies caught.
- (d) In terms of section 2.1 of the environmental safety licence bearing No.12185(R2) obtained for the Pinnawala Elephants Orphanage, filthy water and waste water should not be discharged to the water sources. Nevertheless, the water discharges while cleaning the elephants sheds, flows freely to the environment along with drains and no appropriate method has been set for flowing water. Filthy water discharges from the elephants orphanage to the Maoya, behind the orphanage may cause impure the water sources



- (e) All solid waste, consisting of riff-raff disposed of from the Pinnawala Elephant Orphanage, Coconut Branches, Kithul leaves, pieces of timber logs, elephants' drugs have been stacked here and there in the orphanage and no methodology has been introduced to make them compost fertilizer or for proper disposal.



3.2 Animal Welfare

3.2.1 Quarantine Functions

Particulars include.

- (a) In terms of paragraph 5 of ethics and Animal Welfare of the World Association of Zoological Gardens and Aquariums (WAZA), when animals are transferred from one place to another, a record containing dietary list of that animal, health, reproduction records, information about birth and other behaviours should be sent with the participation of qualified officers. This is important not only international exchange but also at the time of transferring animals from one place to another. The following observations are made in this regard.
- i. Twenty nine animals had been transferred from the Dehiwala Zoological Garden to another Zoological Gardens in the year 2016 and 2017 but it was observed that action had not been taken in accordance with the above guidelines.
 - ii. Two flying squirrels had been brought from the Hambantota Safari Park on 17 September 2017 and dumped in to the 8th section of the Dehiwala Zoo and one of them died on 27 September and the other died on 28 October.
- (b) There are instances that animals in the Dehiwala Zoo are often transferred between cages in each section but prior notice is not given to the Weterinary Division on these transferrs in certain ocations. As non-making aware of animal transferres accordingly, the following observations ensured that the veterinary Division deprive of the opportunity of giving instructions on health care methods to be followed and the necessary supervision. As animals are so transferred without making aware of the veterinary division, it may be a thereat to the animals's health and safety.
- (i) Three white swans lived in the 12th section and 17 drakes lived in the 2nd section have been transferred to the 2nd and the 5th sections respectively on 15 June 2016. The note of the veterinarian in the diary evidenced that the relevant veterinarian was not aware on this and as such he was unable to give instructions on methods need to be followed in respect of health care.

- (c) Certain occasions observed that animals caught and handed over by general public and animals living freely in the environment have also been caged. The Zoo does not have historical information on those, animals and as such they need to be retained in some other places and if no problems arise after putting them into quarantine they can be taken to the Zoo. However, the Dehiwala Zoo has not prepared an appropriate method thereon.

3.2.2 Animal Enclosure

Observations include;

- (a) According to the procedure manual issued by the Zoo, cages and enclosures live animals should be well cleaned and it may cause for the well being of animals. Cages of animals with caves should be washed out by using a high pressure machine and caves need to be cleaned by cutting grass. Similarly, ground should be covered with new sand as per Doctors' instructions. In the examination to ensure whether these functions are performed within the Zoological Garden revealed that the attention paid in this regard was insufficient as of the following issues.
- I. As dungs of the rhinoceros not appropriately disposed of on 01 January 2016 they had stagnated, resulting that it had suffered from fatal diseased condition being mixed up with forage. According to the Veterinarian's recommendations, faeces need to be cleaned regularly but the veterinarian had stated that it was not functioning well on the ground that the Animal Keeper changes regularly.
 - II. The Veterinarian had stated on 22 September 2017 that faeces of the female rhinoceros had stagnated since a period of about one month and non-removal of faeces appropriately may cause threat to animals health, as well.
 - III. The Assistant Director established that bear enclosure and chimpanzee enclosure were not properly cleaned on 22 May 2016.
 - IV. Greater Kudu Enclosure animal jungle was not pleasantly arranged and cages had become decayed. Physical verifications carried out on 16 November 2017 and 18 January 2018 observed that water pots were not cleaned.



- V. Ponds are seen within the Zoo and in certain animal cages. Physical verifications carried out on 22, 30 of December 2017 and 19 January 2018 observed that the pond in the lion island, the sump with full of water in the

orang-utan cages and the pond around the lemer cage have not been cleaned and water therein with full of leaves had become discoloured.



VI. The physical verification on 12 January 2018 observed that the small pond near the bear cage was full of leaves and existed mosquito worm as well. As the pond was not cleaned properly, water had become discoloured and it may be able to cause dengue worm infection.



VII. Physical verification of 15 November 2017 observed that cages living macaws were full of green slime and water pots were slimy.



VIII. According to the diary relating to the birds exhibition in the year 2017, the Veteriararian had noted on 07 February that the condition of bird nests was not favourable to health condition, waste was not properly disposed of.

(b) Animals need to be caged or stationed in a manner that protects their natural behavioural pattern and the environment provided for exhibition should conform thereto, as well. Observations on this appear below;

- I. In terms of paragraph 3 on exhibit standards of the declaration issued in the year 2003 by the World Association of Zoos and Aquariums in respect of ethics and animal welfare need to be followed its members, animal exhibition cells should be set up in a manner that enables animals to exhibition their natural behavioral pattern. Nevertheless, the physical verification observed that a large number of cages put up for animals in the Dehiwala Zoo were insufficient for animals' natural behavior.
- Particulars appear below.

Number of the animal Division	Name of Animal	Size of the animal cage (feet)			Number of animals
		Length	Width	Hight	
24	<i>Guwanako</i>	50	30	08	04
01	<i>Owl</i>	15	10	10	09

- II. In terms of paragraph 3 on exhibit standards issued in the year 2003 by the World Association of Zoos and Aquiriums in respect of code of Ethics and Animal Welfare, the environment for natural behavior needs to be set up for animals. Accordingly, a suitable accommodation to live in and existence of a suitable environment to maintain livelihood of animals satisfactorily are biological needs. Nevertheless, it was observed that 22 kinds of mammalians and 8 kinds of birds in the Dehiwala Zoo subjected to our examination did not have partners.

3.2.3 Safety of animals and visitors

Observations on the safety of animals and visitors, which is the essential factor needs to be existed in maintaining the zoo appear below.

- (a) According to the parapragh 3 on exhibit standards of the WAZA Code of Ethics and Animal Welfare presented in the year 2003, animals need to be exhibited in a manner ensuring animals safety. Nevertheless, the rotten parts of cages put up for animal exhibition and parts destroyed by animals were not repaired soon and as a result, untraceable animals in 3 occasions, eaten by predators in 5 occasions, animals injured in 6 occations were reported. The Department was unable to reveal that what happened to untraceable animals up to date.
- (b) Safety of the cages of animals can not be satisfied as cages being decayed and the Animal Keeper does not wait near the cage. There were occasions that animals had come out of the cages. On 18 March 2016 the squirrel monkey had come out of the cage in consequence of being removed a net from the cage and caught subsequently. At this time, the Animal Keeper was not near the cage and an employee in another section had informed that the creature had come out.

- (c) Even though, the physical verification on 17 November 2017 observed that the wall of the lion Island was cracked, it had not been repaired even up to 09 June 2018. Audit observed that watching lions by visitors resting on the wall is insecure.



- (d) Notes in the diary on 08 July 2016 had reported that slumbered birds were bothered from the viewers.

3.2.4 Provision of feed and water to animals

A balanced nutritious meal needs to be supplied to the animals living in the Zoo. Accordingly, a recipe needs to be prepared by qualified Veterinarians being identified the weight of each animal, age and other special circumstances (eg: pregnant, diseased animals). Moreover, that recipe has to be revised when necessary, according to the changes cause to the animals. Observations in this regard include;

- (a) Even though, the Veterinarian recommends the quantity of food to the nearest grams for each animal, in observing the preparation of foods by cooks, revealed that they used to put vegetables, fruits and various flash into pots and send then to the cages without weighing and measuring but on their experience. Consequently, it could not be established in audit whether the quantity of food recommended by the Medical Officer is received or not to that animal.
- (b) Instances where food has not been given to animals, enabling them to eat it conveniently were observed.
- I. Even though, leaves are fed to Giraffe they need to be hung in an elevated place, enabling them to eat easily but according to the note in the diary on 24 May 2016 it had not been so done. Physical verifications carried out on 17 November 2017 and 21 November 2017 observed that leaves not hung so that the animal eat it conveniently.
- II. The physical verification carried out on 17 November 2017 observed that, the place in which food is fed to donkeys has been put up with a height, that unables the animals to eat food.



- (c) As the animal keeper does not wait near the cell after keeping the food provided by the Supplies Division in front of the relevant cell there were impulsion opportunities that such food had been given to animals living in another cells by visitors. It indicated in the diary notes on 07 September 2016 in sections 17 and 18.
- (d) According to the procedure manual of the Zoo, breakfast needs to be supplied before 8.30 am but non-supply of meals at that time is regularly observed. The physical verification observed that many animals receive breakfast between 9.00 am to 9.30 am. In addition, animal keepers have kept notes on this as well. Moreover, Diary notes on 24 May 2016 indicated that the animals in the 5th section of the Dehiwala Zoo receive food behind time. Furthermore, supply of meals to animals had got delayed in the months of January, February and March 2018 for 09, 15 and 10 days respectively and it was further observed that issue of meals from the kitchen to be transported to cages happened after 8.30 am.
- (e) As the animal keepers do not wait within the relevant section, dumping various eats to animals by visitors could be observed. As a result, health and nutrition of such animals may be adversely affected in getting unfavourable food. Observations in that regard include;
- I. Animals in the Pigmy hipopotamus section habitually request food from visitros and foods are given by visitors.



- II. Giving ice cream and other food to Chimpanzees and Oran Utan by visitors.
- III. The veterinarian has noted in the diary on 04 October 2016 that visitors have thrown away balloons to the bear cage and they have eaten them and emanated with faeces which may improve to a fatal condition.
- (f) According to the bid documents present for the selection of suppliers for providing animal foods require to animals living in Zoos of the Department of Zoological Gardens, the diameter of twig stick with new leaves and without dried and ripen leaves need not be more than 01 inch in supplying jack leaves and mixed leaves. Nevertheless, it was observed that jack leaves and mixed leaves with twig stick of diameter 1 ½ - 2 inches have been supplied. It was further observed that even though the bundles of leaves need to be existed only a few twigs, enabling them to hang easily, more twigs had existed. Moreover, the physical verifications carried out on 05 and 24 April 2018 observed that

when bundle up jack leaves by suppliers for transporting to each animal division and put into the scale for weighing, they had put pieces of jack bunches without leaves to the middle of the bundle. As such it was observed that a massive quantity of foods to be supplied to the animal division is reserved for the weight of branches, animals do not receive the sufficient quantity of food and need to be paid a large amount of money for substandard jack leaves. The physical verification further observed that an officer in the stores division and an officer in the Nutrition division had participated at the time of measuring jack leaves.



- (g) As states in the procedure manual prepared by the Director General of the Department of National Zoological Gardens on 17 September 2016 for the use of animal divisions, foods for ruminats need to be provided after 3.30 pm. It was observed that a part of leaves and grass have been retained and kept in both sides of the road by caretakers for the breakfast of the followed day, when they distribute leaves and grass to the animals. As an appropriate method has not been formulated by the management so as to keep those leaves and branches cleanly and safety until they provide to animals as food in the following day; the opportunity to provide, a fresh and clean meal to animals was deprived of.
- (h) Water as well as food is one of the basic needs of an animal. However, instances where those animals were not getting enough water were observed. Particulars appear below.
- I. The Veterinarian has kept a note in the diary on 17 September 2017, that a Gibbon in the 15th section had died of becoming dehydrated due to lack of water. The physical verification observed that sufficient drinking water was not supplied to young animal section.
 - II. The veterinarian had indicated in his note on 08 July 2016 that two cocktails lived in the foreign birds aviary at the 5th section had died due to tension and dehydration.
- (i) Under section 37 of the measurement units standards and services Act No.35 of 1995, the correctness of weight and measures equipment needs to be certified by an Inspector within a period of 12 months but it was observed that the correctness of two round spring-balances use in Pinnawala Elephants Orphanage belongs to the Department of National Zoological Gardens had not been checked in the years 2017 and 2018.

3.2.5 Animal Health

Action needs to be taken to keep a healthy animal collection living in the Zoos by checking the health condition and giving necessary treatments to animals daily by Veterinarians. Details of expenditure incurred on animal drugs and medical equipment during the 5 years from 2013 to 2017 by the Zoological Gardens Development and Welfare Fund appear below. The following observations are also made in respect of the health condition of animals Live Zoos.

Year	2013	2014	2015	2016	2017
Revenue (Rs.)	727,149,211	911,518,926	1,038,323,207	1,098,522,091	999,126,643
Expenditure on animal drugs and medical equipment	4,858,775	7,360,308	7,503,587	8,016,962	8,412,991
As a % of revenue	0.67	0.81	0.72	0.73	0.84

- (a) Section 23 of the Dehiwala National Zoo denotes as the cub division and the front side of the building is reserved for the cub division. Two items of equipment is available in the cub division in order to ascertain cubs by incubating birds' eggs. Feeding the cubs obtained by incubating through this equipment and releasing them to exhibit cells are carried out by this Division. Cubs refused by mother birds, cubs whose mother is dead and animal cubs hand over by external parties are nourished by this division. Nevertheless, it was observed in audit that a gang of unskilled employees was in service, eventhough skilled employees need to be served in this Division, which should come under day & night supervision.
- (b) When treating animals they should be crushed in order to check and give treatments in the proximity of animals by Veterinarians. In order to cage the animal easily when necessary a crush is needed. It should be made and makes the animal walk into that crush and normalized it. Thereafter, the Veterinarians can be able to treat easily, having being caged animals where necessary. However, such crushers for a large number of animals living in the Zoos belonging to the Department of National Zoological Gardens have not been made. The following issues were observed in respect of crushers.
- I. Crushers for wildhorse, greater kudu, guanako were not put up.
 - II. Even though, the crush of the lechway cage was put up, it was not confirmed to the requirements as it was larger in extent.
 - III. Even though, a crush was put up for sable antilop, they were not accustomed to walk though it.
 - IV. As putting up a crush is started for treatment after become ill of an animal, it would take much time and unable to accustom the animal.

- (c) In performing such functions as treatments to unwell animals, it was observed that spraying tick drugs to animals etc. it could not be safely done to animals, lives of animals and staff become risky and causing injuries to animals. A few such occasions observed in audit appear below.
- I. The Veterinarian has indicated on 03 June 2017 that at the time the female rhino has become ill, it could not be treated well as the animal was not properly crushed and there may be a risk of becoming worsen the injury by not giving necessary treatments. Even though, the Veterinarian has informed on 05 June that a proper new cell needs to be put up on the road, on which this animal normally walks, it had been put up only on 11 June.
 - II. The Veterinarians stated on 03 January 2017 that a crush is needed in order to check the brown bear well and it has been put up on 9 January. However, it was informed by Veterinarians that it was difficult to lock this animal in it and as such unable to treat it as the animal wriggles.
 - III. It was observed that there were not properly made crushes for donkeys, deers, pony and mouse deer at the Pinnwala Zoo and the crush put up in the cage existed at a dilapidated condition.
 - IV. Even though, easy adjustable crushes need to be existed to medicate animals living in the Pinnwala elephants orphanage, it was observed that without such crushes, medical officers and employees treat the diseased animals with a risky environment.
 - V. As a crusher is not available in relevant sections in order to treat and give vermicide to birds through the mouth, the Veterinarian had reported in the diary on 25 August 2017 that vermicide could not be given on due time as planned.
- (d) Of the animals living in the Zoos belong to the Department of National Zoological Gardens 328 died within the 2 years of 2016 and 2017. Seventy Seven animals had died on the ground of pheumonia, tension, quarrels between animals and eaten by predators, representing 23 per cent of the total deaths.

3.2.6 Shade Management

Observation include;

- (a) A shelter to protect from sunrise and rain needs to be provided to every animal lives in the Zoo. Even though, animals can use various means to protect from sunrise and rain in the jungle as necessary, animals in a Zoo cannot do so and as such the Zoo needs to provide shade management for not getting wet by rain and protect from sunrise when necessary. However, observations on such instances not so provided are as follows.

- I. Kadgens of the roof of the 17th section had rotten and the Zoo had not taken action to thatch the roof with new kadgens but temporary covered up with polythene sheets instead, as indicated in a note on 23 June 2017. It was established at the physical verification carried out on 22 December 2017 as well.



- II. The animal keepers have informed through the diary on 23 June 2017 maintained by them that the wound of the 'wallaby' is incurable and it is unable at least to feed it without getting wet as the roof is leaking. As a result, that animal died of a sickness, as observed in the note on 08 July 2017.
 - III. The Veterinarian had informed on 14 July 2016 that a shelter was not available to animals living in the 5th section in order to cover from sun light and to protect food and water pots from rain and sun light.
 - IV. The animal keepers have informed on 08 August 2016 through the diary maintained by them that food bowls of the animals living in the 5th section has got wet by rain and there was no shelter for peasants to protect from rain.
 - V. A sun rain shelter to protect from sun rain for animals in the Rhino enclosure was not existed and it was confirmed from the note on 10 August 2016 as well.
 - VI. Note in the diary of 20 May 2016 informed that the hombill lived in the 5th section and borne on 28 April 2016 was dead and it had unduly get wet.
- (b)** The deer enclosure in the Pinnawala Zoo has been put up in a separate locations partitioned from fence built by using G1 pipes and nets. The physical verification carried out on 15 May 2018 observed that 61 animals belong to a same strain comprising elk, barking deer, spotted deer, hog deer and mouse deer are exhibited in the deer enclosure. An environment with natural trees is provided to those animals live in this enclosure. By using natural materials the shade has been put up in order to wait the animals in rainy days for shade. However, it was observed that the security cells put up, in this enclosure is closed during day time. Hence, it was observed that animals are unable to enter the security cells during rainy time, when they feel afraid. Consequently,
- I. It would take much time to recover the injured animals as wounds of them are pecked by crows.

- II. Threat to animals' lives
- III. Eleven mouse deers 'died, being infected pneumonia due to getting wet.

3.2.7 Researches conducted on animals

According to the sub volume 9 of the declaration issued in the year 2003 on ethics and animal welfare by the World Association of Zoos and Aquariums need to be followed by its members, researches on animals need to be conducted and the results of such researches need to be distributed among the members of that Association.

It states that the design of animal exhibition templets, by conducting researches on animals' behaviours, management practices, nutrition of animals, livestock control, medical affairs, methods of generating animals' births, more contributions can be given to animal welfare. According to the paragraph 3.3.4 of the Development Plan prepared by the Department of National Zoological Gardens for 5 years from 2016 to 2020, conduct of these researches has been planned in the Dehiwala and Pinnawala Zoos, Hambantota Safari Park, and Pinnawala Elephants Orphanage but a formal research committee for approving researches and provides necessary instructions has not been appointed. Therefore, research activities were not started even up to 31 March 2018.

3.2.8 Elephants' Welfare

Observations in this regard include,

- (a) Elephants/ tuskers are exhibited in the operating units of the Dehiwala Zoo, Pinnawala Elephants Orphanage and Ridiyagama Safari Park belong to the Department and Elephants are treated in the Narambedda quarantine centre. It was observed that 102 elephants and tuskers were available in all these operating units as at 01 June 2018 as per details below.

Name of Zoo	Number of elephants/ tuskers		
	Female	Male	Total
Dehiwala	06	01	07
Pinnawala Elephants Orphanage	45	36	81
Safari Park	03	04	07
Narambedda quarantine centre			<u>07</u>
Total			<u>102</u>

- (b) The following observations are made in respect of the Hambantota REDIYAGAMA Safari Park.
 - I. Quantities of short supply of foods to animals in two animal zones, namely World animal zone and elephants zone were reported in the year 2017. The total quantity of foods continuously ordered during the period 01 to 08 December

2017 amounted to 11,664 kg but supplied only 8,805 kg and the short supply therefore was 2,859 kg. It was observed that an alternative method has not been applied to provide the quantity of short supply and the animals do not get required nutrition by feeding lesser quantity of food.

II. In supplying daily foods to animals the Veterinarian prepares menus as per nutritious needs of the animals and obtains food and external suppliers are selected for this purpose. Even though, about 6 varieties of food is ordered per day according to the Inventory Register the audit examination observed that 5-2 varieties of food indicated in the menu is not supplied per day. During the period of 4 months from January to April 2018, foods indicated in the menu were not supplied for periods 75 days to 22 days. Accordingly, it was not established in audit that animals would get required nutritious level.

(c) The Pinnawala Elephants Orphanage can be cited as a main location where elephants and tuskers of the Department of Zoological Gardens are stationed and there are 88 animals therein at present. Problems in respect of providing foods of elephants and tuskers live therein observed as follows.

I. According to the chapter 5 of the book on Biology of elephants, drugs and operations written by Maray E Foular and Susan K Mikato when elephants are fed, food need to be kept in an elevated place in a manner not to mix up with urine and faeces. Similarly, the quantity of food needs to be usually given to an elephant equal to 9 per cent of its weight. It was observed that several elephants are tied up in a shed nearby and fed them without weighting the food. As a result, each elephant does not get sufficient quantity of food and the food has mixed up with faeces and urine as well.

II. It was observed that in feeding elephants, live in the Zoo, foods are not given in accordance with their weights.

III. In certain periods there is a shortage of certain leaves in supplying daily foods. Foods of animals become dry during the periods with severe sun-shine.

IV. In feeding elephants it is better to feed them from time to time but it can not be done as dearth of employees for 88 elephants.

(d) According to the chapter 5 of the book on biology of elephants, drugs and operations of Maray & Foular and Susan K Miskata an elephant usually needs about 200 liters of water a day and the water pot be placed about 2 feet high from the ground level. Similarly, it needs to be a capacity of about 7.6 liters, enabling it to fill the trunk at a time. Furthermore, it needs to be put up in such a way that it automatically fills up within a period of 30 seconds. Nevertheless, the pots for elephants live in the Dehiwala Zoo have not been put up in a manner being automatically filled.

(e) **Maintenance of the elephant's health condition appropriately is very important and the particulars in that connection are as follows.**

- I. Even though, 5 of the elephants and tuskers lived in Pinnawala Elephant Orphanage suffered from tuberculosis, they could not be brought to the Narambedda Centre due to lack of accommodation and as a result, there was a risk of being infected other animals as well. Because they also live along with other animals.
- II. Due to lack of accommodation in the quarantine centre to put elephants in to by court orders bring quarantine out side, they mixed up with other elephants belong to the Zoo and as such there may be a risk that other elephants are able to cause infection.
- III. The Department of National Zoological Gardens takes the assistance of an Ayurvedic Medical practitioner in certain instances to treat elephants belong to the Zoo. Certain occasions observe that this Medical Officer does not come on due date and as such animals do not get drugs. Therefore, treatments are halted half way and restarted in certain occasions. It is therefore observed that it will be badly effected the prevalence of animals.
- IV. Elephants live in the Dehiwala Zoo are generally retained in one place. Audit examination carried out by us observed that elephant 'Bandula', 2 years in 2016 and 2017 and she elephants 'Khema', 'Devee' and 'Namalee' in the year 2017 were suffering from foot injuries. Audit examination on elephants in the Dehiwala Zoo observed that a footcare programme was not in existence.

3.2.9 Natural behavioural pattern and environment

Observations in this regard appear below.

- (a) Even though an area, about 15 acres in extent is reserved for animals in the Pinnawala Elephant Orphanage to live of their own, the physical verification carried out on 16 May 2018 observed that the extent of area available for other elephants to behave freely was only about 9 acres as the torut elephants and untamed elephants hve tied with a knot.
- (b) Nineteen of the elephants in the Pinnawala Elephant Orphanage have been retained on court orders. As those are untamed and aggressive elephants, most of the 77 mahouts work in the orphanage, need to be used to lookafter those elephants. Hence, the welfare activities of the elephants belong to the Pinnawala Elephant Orphanage have been under prioritized and as such it may badly affect the health, nutrition and independence of those animals.
- (c) Constructions of the Pinnawala Elephant Orphanage and retention of elephants on court orders limit the area available for elephants live independently. Hence, habitual patterns of the elephants living peacefully in the gang have changed, be haved bellgerently and attacked each other.
- (d) As those elephants given by the court are untamed and aggressive, they can not be brought for jogging and to the river for bathing, it may badly affect the health condition of the animal. It is also observed that limitation of space to move animals here and there

deprivation of breeding needs being enchained in one place for a long time may cause an animal harassment.

3.2.10 Keeping the Dehiwala Zoo open for night visitors

A part of the animal sections in the Dehiwala Zoo open day time for visitors are kept open till 10.00 pm effective from September 2017. It was expected to achieve the following objectives by opening the Dehiwala National Zoo at night.

- Minimise tension by providing leisure amusement to the public in the night who are busy during day time.
- Observe behavior of the nocturnal animals.
- Earn foreign exchange through foreign visitors

Observations on this include;

- (a) The Zoo is open up to 10 night on every Friday, Saturday and Sunday but approval of the Ministry or any other written approval has not been obtained to do so.
- (b) According to the night exhibition guideline map it was observed that 21 kinds of animals comprising Bengalle Tiger, African Lion, Sri Lanka Leopard, bear, fishing cat, Elephant, deer, elk, aquarium, reptilian garden and the museum are open for night exhibition.
- (c) Even though the electric bulbs use to illuminate the Zoo at night is suitable to lighten the visitors, it is observed that touch lights and mobile telephone lights aim to find the hidden animals encumber the animals' natural behavior, as a series of instructions has not been issued to the visitors who come to view the Zoo and the illumination spreads out on the animal jungle.
- (d) Even though, a map indicating the places which can be watched has been prepared for visitors who come at night, a methodology to make aware of the visitors and give it to all of them, has not been set. As such, the opportunity to get an understanding about watchable animals in the Zoo has deprived of.
- (e) As rules and regulations has not been introduced for night visitors and punishments are not determined for insubordination there is room for causing encumbrances to animals from visitors. It was therefore, observed that sufficient number of animal keepers have not been employed for each enclosure in order to protect those issues.
- (f) It was observed that as the boards indicate the name of the animal is not visible at night and the awareness programmes on each animal jungle for viewers are not conducted, the intended objective in opening the Zoo for visitors is not achieved.
- (g) Exhibit cages of night walkers of tiger – cat fishing cat, and offer are situated near the exhibit cages of mouse deer, giant squirrel, rodent, mongoose attach to section 8th of the Zoo and the road put up for night visitors is located to cover the animals as Pasbara,

Zebra and Guanako. As a methodology to separate animals exhibit at night from other animals has not been established, it was observed that animals may frighten by irradiating with joi by visitors and making noises.

(i) Gonapola animal food farm

The animal food farm commenced in the year 1997 for the purpose of providing fresh, nutrient and quality food to animals live in the Dehiwala Zoo, consists of a land area of 15 acres. Observations made at the physical verification carried out on 26 October 2018 in respect of the provision of animal foods to the Dehiwala Zoo by the Gonapola farm during the period of 03 years from 2016 to 2018 and the animal welfare appear below.

- (i) Even though the Gonapola farm has supplied about 28 varieties of foods required by the Dehiwala Zoo, apart from 'Kankung', sugar cane and grass, the farm has failed to supply a considerable quantity of other kind of foods during the period subjected to audit.
- (ii) Consumption of king coconuts during the period January to October 2018 by the Dehiwala Zoo was observed as 6611 nuts. However, in considering the quantity of king coconuts produced by the farm in the year 2017 and 5300 nuts plucked from 73 king coconut trees observed at the physical verification carried out on 26 October 2018, the zoo has purchased 5428 nuts of king coconut during that period and the expenditure of Rs.81,420 incurred thereon is observed as a loss to the farm.
- (iii) The cultivation well put up within the farm premises to supply water for farming has not been cleaned and reconstructed since a long period and as such the possibility of obtaining the quantity of water from the well has decreased. Consequently,
 - Water has to be taken from a stone-quarry nearby being used a bowser.
 - As there is no permanent driver with a driving licence in the farm for operating the bowser, an another employee in the farm needs to be used for this purpose and it may be a hazardous issue.
- (iv) Instead of purchasing more foods from private suppliers for the provision of fresh nutrient and quality foods to animals in the Dehiwala Zoo, the cultivation of the quantity of foods needs to be increased. Nevertheless, the attention for the development of Gonapola farm or the plantation of alternative animal foods for the period in the Corporate Plan prepared for the period 2016 to 2020 was not paid.
- (v) Two hundred and eighty one animals of 10 kinds live within the farm premises and 130 pigeons are retained in a small cage with a space of about 132 square feet. It was observed that the cage become very dirty.

- (vi) Even though, the Veterinarians mention that certain drugs of the animals need to be stored in a refrigerator, the farm did not have a refrigerator to store such drugs.

3.3 Employees Welfare

A large number of employees contribute for functions comprising, keeping the animals safety in a Zoo, Exhibition and conservation of animals, treatments to animals, provision of shelter and supply of foods to animals etc. Animal Keepers and veterinarians belong to the staff members those who spend more time with animals during their day today duties. They need to be provided necessary equipment with proper maintenance in order to perform their duties securely and satisfactorily. Audit examination carried out on welfare facilities provided to the staff of the Zoos observed the following matters.

3.3.1 Casualties happen to employees

When cleaning cages of 'greater kudu', 'Guwanako', 'donkey' live in the Dehiwala Zoo, it is appropriate that those cages need to be cleaned while being separated the animals in the same place. It is observed that it would be hazardous to employees and may pose risk to human life as well.

3.3.2 Disastrous situation that causes to employees

As there is no separate place to enchain elephants while being cleaned the elephant kraals employees clean the kraals in the 'Narambedda Quarantie Centre' despite the elephants are tied within the elephants kraals itself. This is a very dangerous situation.

3.3.3 Guidelines require to employee

Procedures need to be followed by the animal keepers for safety when clearing animal enclosures are not stated in the code of guidelines. Until the animal keepers clean the cages, without detaining the animals in a detainable place and without using the protective equipment they clean the cages being taken out the animal from the cage. As a result, animal keepers were wounded in the following occasions as observed in audit.

- (a) The hand of the animal keeper served in the pigmy hipo enclosure jungle had been bitten by the pigmy in the year 2017.
- (b) When cleaning the owls cage the keeper was wounded.

3.3.4 Welfare of the employees' families becoming inactive

A welfare scheme to settle additional expenses incur by the employees of the Zoo those who suffer casualties while in service and financial difficulties of their families has been implemented by the Zoological Gardens Development and Welfare Fund. According to the Departmental order No.2013/02 dated 15 January 2013, it was decided to pay a compensations

of 250,000 for a death, up to Rs.250,000 when become fully handicapped Rs.150,000 for semi handicapped and Rs.10,000 to Rs.50,000 when hospitalized for treatments, when accidents happen to employees while they are on duty. However, those compensations have not been periodically revised.

3.3.5 Training

According to the provisions stated in the guidelines and the code of ethics of the “WAZA” every staff member works closely with animals needs to be well trained. They should be able to recognize diseases, injuries, tensions etc. of the animals. Moreover, being a trained person, who is able to act in emergencies when escaping and attacking by animals, is important to maintain animal welfare appropriately. However, a methodology to train the staff such as animal keepers and controllers directly involve with animals in a manner to gain proficiency in the field, is not included in the procedure manual of the Department of Zoological Gardens. It was therefore observed in audit that such a training is not given to the relevant employees.

3.4 Common Observations

3.4.1 Maintenance of notes in the diaries

According to the procedure manual prepared by the Department of National Zoological Gardens notes on animals need to be kept daily in the diaries. The Department uses a diary to record day today functions and events happen in each animal section. All officials, comprising Animal Keepers, Assistant Controller, Assistant Director, Deputy Director, Director General, Veterinarians keep notes in that diary. Nevertheless, a proper control over the maintenance of this book is not in existence and occasions observed that daily notes in this book is not subjected supervise by any responsible officer.

3.4.2 Breeding young animals

It was observed that a formal system is not in existence in the Department to reproduce birds by identifying the requirement of birds need to be exhibited in Zoos. Even though, a large quantity of eggs from birds, exhibited and brought up by Dehiwala Zoo, Safari Park and Gonapola Farm receive to the young animal section annually, information reported in the animal diaries of 2016 and 2017 observed that the Department has failed to get a considerable number of young animals reproduced and to protect born birds.

Particulars appear in annexe 1

- (a) According to the note in the diary in which animal information of 2017 is included, only 22 eggs were received from ostrich, peahen, bantam and peasant, and there was no record to ensure whether the eggs were kept in the incubator or reproduced young animals.
- (b) The temperature needs to be maintained in an incubator to procreate a young animal requires about 98^{Fo} but the note in the diary of 31 March 2016 confirmed that the temperature in the incubator of birds at Dehiwala Zoo indicated as 106^{Fo}. It was noted in the diary on 09 August 2016 that a large number of eggs are deteriorated depending on

the change of temperature of the incubator. It is observed that the number of young animals reproduced by the incubator is an extremely small amount.

3.4.3 Revenue of the animal welfare fund

According to the Letter No.BA/BE/2017/01 dated 20 April 2018 and Letter No.BA/BE/2017/01 dated 22 May 2018 of the Director General of National Zoological Gardens, particulars of revenue, expenditure, remittances to treasury and the transfer of expenditure to the bank account of the Department of National Zoological Gardens of the Zoological Gardens Development and Welfare Fund during the period of 5 years from 2013 to 2017 are as follows.

Year	Total Receipts	Total Expenditure	Remittances to Treasury from the Zoological Garden Development and Welfare Fund	Transfer to Department bank account	Difference
	Rs.	Rs.	Rs.	Rs.	Rs.
2013	727,149,211	628,235,541	145,839	99,000,000	(232,169)
2014	911,518,926	798,621,864	59,416,514	65,000,000	(11,519,452)
2015	1,038,323,207	620,503,849	51,525,401	230,000,000	136,293,957
2016	1,098,522,091	586,501,652	106,444,969	395,000,000	10,575,470
2017	999,126,643	642,788,820	100,132,560	277,000,000	(20,794,737)
Total	4,774,640,078	3,276,651,726	317,665,283	1,066,000,000	114,323,069

Observations on this are as follows.

- (a) Of the sum of Rs.4,774,640,078 received from the Zoological Gardens Development Fund (A/C No.0007042658) during the period of 5 years from 2013 to 2017, a deficit of Rs.114,323,069 was observed after being deducted the expenditure of the Development Fund and fund transfers. The reasons for this difference, according to the letter No. BA/BE/2017/01 dated 22 May 2018 of the Director General of Zoological Gardens appear as follows.
 - I. Capital expenditure relating to the budget estimates incurred from the cash of the Development fund and only the expenditure transferred to the budget estimate without being transferred the cash.
 - II. Capital expenditure of the fund incurred from the cash of the budget estimates and only the expenditure transferred to the development fund without being transferred the cash.
 - III. Cash receipts and payments to the general deposit account relating to the development fund not included in the computation of income and expenditure.
- (b) Approval of the Department of Treasury operations had been granted on 10 December 2012, to transfer the money available in the animal welfare fund to meet the expenditure stated in the budget estimates of the Department of Zoological Gardens as required. Accordingly, the amount due from the Department of National Zoological Gardens to the animal welfare fund as at 31 December 2017 amounted to Rs.2,710,959,560.

04. Recommendations

4.1 Water and Food

- 4.1.1** Provision of food to every animal with the correct quantity at the correct time and the supervision of this process by a responsible officer (3.2.4 – (c), (d), (e), (f), (g), (h), (i))
- 4.1.2** Keep the food enabling the animals to eat conveniently and in a manner that protects the food from other external animals (3.2.4 – (b)(i)(ii))
- 4.1.3** In feeding elephants and tuskers, food need to be kept in a place with an appropriate height, enabling them to eat without being mixed up with excrement. (3.2.8 – (c)(i))
- 4.1.4** Establishment of a methodology to provide alternative food, when suppliers do not supply food as specified in accordance with the menus prepared by Medical Officers for animals, eat leaves. (3.2.8 – (b)(i)(ii))
- 4.1.5** Formulation of a formal methodology to supply potable water to every animal including elephants live in the Dehiwala Zoo when needed (3.2.8 – (d))

4.2 Health

- 4.2.1** Put up crushes, enabling to crush animals in order to treat and check them where necessary and to protect the employees security while they clean the cages and sells. (3.2.5 – (b))
 - 4.2.2** Set a programme in respect of foot protection of elephants and maintain treatment programmes accordingly. (3.2.8 – (e)(iv))
 - 4.2.3** Provide quarantine facilities for the Dehiwala Zoo and when animals are transferred from one section/ cage to another section/ cage, it needs to be done, after making awareness of veterinarians. (3.2.1 – (a), (b), (c))
 - 4.2.4** When animals are transported from one Zoo to another all information, comprising relevant food menus, health records etc. needs to be sent to the transferring Zoo and make opportunities to transport animals without any difficulties and tension that may cause them (3.2.1 – (a))
 - 4.2.5** Broaden the facilities of the Narambedda quarantine unit to treat diseased elephants and to put elephants bring outside into quarantine (3.2.8 – (e)(i)(ii))
 - 4.2.6** Employment of trained employees for the functions of the Young animal section (3.2.5(a))
- 4.3** Keep the animal cages, enclosures, ponds etc. clean and to set a systematic methodology enabling to keep records while being supervised it (3.2.2 – (a))

- 4.4** Put up casings for every animal in the Zoos when required enabling to protect from rain and sunlight and to keep food pots without getting wet. (3.2.6 – (a))
- 4.5 Environmental Laws**
- 4.5.1** Formulate and implement a system to dispose of waste water emitted from the Dehiwala Zoo and Pinnawala Elephants Orphanage in compliance with the environmental rules and regulations (3.1.6 – (a), (b), (c))
- 4.5.2** Formulation of a system to test whether adverse air constituents are contained in the gas emitted by burning litter, waste, dead bodies of animals of the Zoo. (3.1.6 – (c))
- 4.5.3** In burying waste in the burner, it needs to be done with the appropriate temperature and needs to be supervised by a responsible officer. (3.1.6(c)(i))
- 4.6** Take steps to provide required partners for animals without partners in the Dehiwala Zoo. (3.2.2 – (b)(ii))
- 4.7** Establish animals and visitors protection by putting up animal cages with sufficient room and in an attractive manner and making new cages in place of broken-down cages of the Dehiwala Zoo. (3.2.3 – (a), (b))
- 4.8** Take necessary steps to revise the National Zoological Gardens Act No.41 of 1982 in a manner that the Pinnawala Elephants Orphanage and the Safari Park subject to the control of the Department which are not under the control of the Department of National Zoological Gardens by the existing Act being defined the section animal and employees welfare. (3.1.1, 3.1.2, 3.1.3)
- 4.9** Expedite the handing over of elephants being retained in the Pinnawala Elephants Orphanage on court orders (3.2.9 – (b), (c), (d))
- 4.10** Take steps to conduct researches in relation to animal conservation, breeding and their behavior.
- 4.11** Maintain diaries introduced to record daily behaviours of animals by entering daily notes in an updated manner (3.4.1)
- 4.12** Provide necessary training to officers involve with animals live in the Zoo, Veterinarians, controller and keepers in order to performe their functions better and protectively. (3.3.1, 3.3.3, 3.3.5)
- 4.13** Install CC TV Camera System near the cages and significant places for the protection of animals and visitors security and harmful actions to animals and supervise to ensure whether employees performe their assigned duties. (3.2.4 – (e))
- 4.14** Prepare a detailed and specific guidelines for Zoos covering all welfare activities of animals and employees and maintain it in an updated manner (3.1.5)
- 4.15** Provision of a sufficient insurance coverage to employees (3.3.4)

- 4.16 Account correctly the income and expenditure of the Zoological Gardens Development and Welfare Fund, being correctly identified and use the funds available in the Development and welfare fund for the welfare functions need to be further fulfilled. (3.4.3)
- 4.17 Prepare a cultivation plan for the Gonapola Farm in a manner so as to get maximum utilization of the land and cultivate accordingly enabling to provide fresh food to the animals in the Dehiwala Zoo during the whole year and the provision of water supply and other equipment need to maintain such activities successfully. (3.2.10 – (h)
- 4.18 Take necessary steps to make a cage with sufficient room for pigeons live in Gonapola Farm and maintain it cleanly (3.2.10 – (h)(v)

5. Conclusion

Despite, the Department of National Zoological Gardens performs a special task as a public property, earning approximately a revenue of one billion to the government annually, by way of exhibiting animals thereby amusing visitors and gain knowledge, further attention needs to paid about the animal and employees welfare according to the observations identified.

Particulars of eggs existed in the incubator 2016

Name of animal	No.of eggs existed in the incubator	No.of births	No.of births as compared to eggs
-----	-----	-----	-----
Pheasant	756	12	1.5%
Duck	23	11	47.8%
Bantomi	104	03	2.8%
Kasowari	04	0	0
Halmahera	08	0	0
Peacock	08	0	0
Chinesepheasant	134	0	0
Emoo	05	05	0
Silver pheasant	27	0	0
Ostrich	36	03	2.7%