

South Asian Zoo Association for Regional Cooperation SAZARC

How many zoos ? The number of zoos in the world is not known actually, the number varying according to an individual's definition of what qualifies as a zoo. The size, quality and ethical behaviour of institutions which keep animals in captivity for public viewing varies enormously: size being from less than half an acre to more than 3000 acres; their quality varies from unconsciousable to excellent and the behaviour of their operators can range from disreputable to highly responsible.

If we limit the description of a zoo to "recognised" or "established" zoo, we have a better idea of the number because most recognised zoos are connected to a national or regional association and most "established" zoos are connected to a government. This description is not exact, however, so there is no precisely correct list or number even of established zoos. There are an estimated 1000 organised zoos in the world, most of which belong to a national or regional association.

Zoo Conservation : Virtually all effective zoo conservation activities today involves communication, collaboration and coordination at a national, regional or global or international level. We call these "C" words the "Three C's of Conservation", as they are so important.

There are 16 regional or national zoo associations which are members of the World Association of Zoos and Aquaria and a few which are not members. In WAZA, there are committees which facilitate the "Three C's of Conservation" including the Committee for Inter-regional Communication in Conservation (CIRCC) of which zoo associations may become members.

In the world today, a zoo is very much at a disadvantage unless it belongs to an active national or regional association which is involved with the World Zoo Association. Until 2000, South Asia was one of the only major regions without a zoo association. Now, South Asian Zoo Association for Regional Cooperation (SAZARC) is trying to fill that gap, and this new association held its 3rd annual meeting in October in Dhaka, Bangladesh. The following Report covers that meeting.

SAZARC



South Asian Zoo Association for Regional Cooperation

Pre-conference panic ! Last minute details of the 3rd SAZARC conference were discussed at the Curator's office, Dhaka Zoo where even the Director General, Dept. of Livestock Services took so much interest and discussed all aspects of the meeting so that all arrangements went very smoothly.



SAZARC members and resource persons seated together at the inaugural function from left to right first row: M.M. Qazi, Karachi Zoo; G.K. Dubey, Bhalai Zoo; Brig H.A.N.T. Perera, Colombo Zoo and R. K. Sahu, Ahmedabad Zoo.

Bangladesh officials and NGO's turned out in good numbers for the SAZARC inaugural. The Dhaka Zoo provided a very attractive folder and zoo guide for attendees to peruse while waiting for the inaugural function to begin. This event was a good publicity for the Bangladesh zoos.



Many Thanks to our Donors for Sponsorship of SAZARC meeting and Management Training !



Inaugural Ceremony of the 3rd Annual Meeting and Workshop of South Asian Zoo Association for Regional Cooperation (SAZARC) October 6-11, 2002

The Inaugural ceremony for the 3rd Annual SAZARC meeting was held in the lavish auditorium of the IDB Bhavan, Sher-E-Bangla Nagar, Dhaka, Bangladesh. The Curator, Mr. Omar Faruk opened the function with his remarks.



Curator, Mr. Omar Faruk

A Welcome Address was given by Md. Nurul Islam, Director General Department of Livestock Services, Bangladesh

Assalamu Alaikum

It is a privilege and great pleasure for me to welcome you all to the 3rd Annual Meeting and Workshop of South Asian Zoo Association for Regional Cooperation



**Md. Nurul Islam, Director General
Department of Livestock Services**

(SAZARC). I would like to offer my heartfelt gratitude & thanks to our honourable Minister and Chief Guest of the workshop for sparing some valuable time despite of



The officials and dignitaries on the dias at the inaugural function.

his busy state schedule. I heartily welcome all the Scientists, Resource Persons and Participants from home and abroad for joining and enriching the workshop. I also thank the Zoo Outreach Organisation, Coimbatore, India for their generous cooperation and assistance to organize the workshop. The Theme of the workshop "Zoo Management for Conservation & Welfare of Wildlife" has been chosen well.

Dhaka Zoo was developed from a small menagerie of 1940's through a series of transformations. A master plan was designed and approved in 1960's to establish a modern zoological garden at Mirpur located at the outskirts of Dhaka. Since inception, Dhaka Zoo has been one of the main centers of recreation and education of people from all walks of life. The Department of Livestock Services, Bangladesh has been entrusted with overall management and welfare of Dhaka Zoo. Besides, under this department there is another Zoo located at Rangpur. Zoological Gardens are generally thought to be the centre for recreation and learning about wildlife. But the traditional concepts and ideas about objectives of zoos are changing has been trying to reorient its programme and activities with the changed worldview toward zoos. Dhaka Zoo has successfully propagated two locally extinct species like common peafowl and nilgai, and a good number of threatened species like Royal Bengal Tiger, Rock Python, Sambar, Leopard and Common Langur. Moreover, Dhaka Zoo

has propagated some exotic species like Rhea, Indian Lion, Silver Pheasant, Water Buck, Baboon and Mandrill.

This new area of conservation and conservation breeding needs cooperation and collaboration among countries and agencies. Eminent experts from SAZARC will address this area in the next sessions. I firmly believe that Dhaka Zoo and zoo experts will be benefited from sharing experiences with a group of learned professionals. Besides Government Zoological Gardens, private organizations and persons run some zoos. We deeply feel the need of legislation and standard setting for zoo management. Introduction of legislation and standard setting will help the state owned and private zoological gardens to improve their situation.

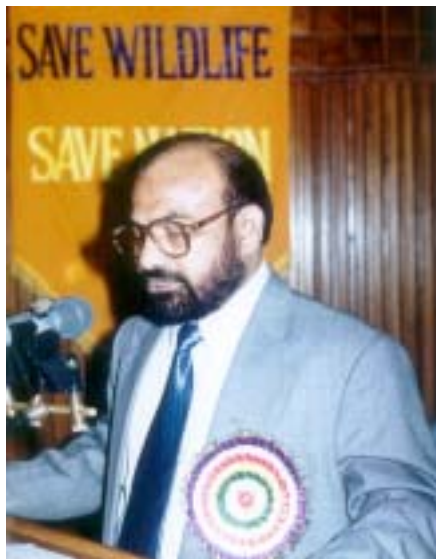
Here I would like to inform you that "Bangladesh Zoo Association (BZA)" has already been formed with the representatives of all zoos in Bangladesh. It is really a milestone for better cooperation and co-ordination among zoos of the country.

Dhaka Zoo, in addition to its management of captive animals is an excellent site for seasonal habitat of migratory birds. Dhaka Zoo is trying to develop a temporary sanctuary of migratory birds. We have to take concerted efforts and exchange of ideas regarding safety and welfare of these invaluable treasures of the globe. I once again thank you all for joining us from

home and abroad. I am particularly thankful to SAZARC and Ms. Sally Walker for her technical support to hold the workshop. I thank our honourable Secretary and Chairman of the session for his constant inspiration and guidance. I would like to express my sincere gratitude to our Honourable Minister and Mayor of Dhaka City Corporation for his keen interest in holding the workshop. It is really a great pleasure for all us and we have been very much delighted and encouraged by your kind presence. I wish you all a pleasant time at the workshop and outside the venue. I offer my best wishes to all for a successful and productive gathering at Dhaka Zoo. I wish the workshop a grand success.
Allah Hafez.

The Inaugural Address was given by Chief Guest Sadeque Hossain Khoka M.P. Hon'ble Minister, Ministry of Fisheries & Livestock, Government of the People's Republic of Bangladesh and Mayor, Dhaka City Corporation.

Assalamu Alaikum,



Sadeque Hossain Khoka M.P. Hon. Minister, Fisheries & Livestock

I take it as an honour for me to be with this learned audience here today at the SAZARC conference. I welcome you all and extend my heartfelt thanks to the organizers of this meet of great importance and particular relevance to the global concern for conservation of nature and bio-diversity.

The countries of the South Asian region take a justifiable pride in their richness in wildlife, and abundance that is attributable mainly to a favourable climate and a caring population. The variety and richness of wildlife habitat in South Asia for long have been attracting the attention of

conservationists and environmentalists the world over.

South Asia now faces the threat of a diminished glory in this respect. Population boom and the consequent pressure on land and natural resources, the gradual rise of sea levels and many other factors have been contributing to the depletion of wildlife in the region.

The focus on the expected role of zoos has therefore shifted, over the recent years, from the conventional practice of animal keeping for public exhibition to a more challenging task of wildlife conservation.

It is in this context that the conference we are attending now is of enormous significance. The government in Bangladesh, in its commitment to protect nature, save the ecosystem and conserve bio-diversity, has launched vigorous and well-meant programs covering the whole gamut of the sector.

Conservation of bio-diversity, as all of us know, is integral to protection of nature and environment. The role of Zoos in conserving the endangered species of wildlife is vital for a true accomplishment of the job.

The present SAZARC conference, I am sure, would broaden the scope of shared ideals and help guide the professionals, in the sector to better management and greater successes in their noble mission.

Technical cooperation among Zoos in South Asia is very important as the countries in the region share identical experiences and face identical problems and threats, both natural and otherwise.

I once again thank the organizers to give me an opportunity to be among you for some time. I wish you a nice stay at Dhaka. I declare the workshop open. Thank you all. Allah Hafez.

Dr. Zahurul Karim, Secretary, Ministry of



Dr. Zahurul Karim, Secretary, Ministry of Fisheries & Livestock

Fisheries & Livestock, also gave an excellent speech about the importance of zoos and the crying need for environmental alertness, which is not reproduced here.

Dr. Miranda Stevenson conveyed her pleasure to participate in the conference and her feelings about the importance of such gatherings and training for the future of wildlife and the quality of zoos.



Sally Walker spoke about the difficulties of running a scientific institution which keeps delicate wild animals,

hopes to breed them for conservation but employs illiterate workers to do the most important jobs and also allows the public to enter and see the animals daily. She asked if a space station or medical



laboratory could be run under such circumstances? She also commented on the fact that accidents of the type which occurred in Dhaka Zoo just before the conference, take place everywhere wild animals are kept in captivity. Accidents also occur on the road, she said, but there is no outcry to set up inquiry commission and transfer PWD officials! She hoped the regional meeting and training would give a kick start to national zoo legislation in Bangladesh.



South Asian Zoo Association for Regional Cooperation



After the inaugural, a lavish tea was served to all attendees. Officials and foreign delegates spoke with the press about SAZARC and various zoo issues in the region. After tea, participants and a few inaugural invitees returned to the inaugural hall where each participant introduced himself by name, profession and place. An interactive discussion was held in which participants were invited to tell what they expected from the workshop either by writing their feelings on a piece of paper or sharing it aloud with the group. Some of the expectations follow :

Ms. Uzma Khan, Education Officer, Zoological Gardens Lahore, Pakistan

- I expect that along with the exchange of animals, Zoos can just give their animals on loan to handle the problem of inbreeding and also because sometimes zoos only have one specimen of the species.
- Surplus, hybrid & inbred animals are also quite problematic, therefore, contraception of zoo animals needs to be highlighted especially for the felids (tigers & lions).
- I also expect to play an effective role in bringing about change in zoos in Pakistan by bringing together people to formulate a zoo legislation & association.



Director General, Department of Livestock Services relates his expectations

Md. Monwar Hussain, Assistant Professor, Department of Zoology, Jahangirnagar University, Dhaka, Bangladesh

- Spread up cooperation among zoo people, researchers, organization people and University teachers/researchers to prepare and formulate a very potential measure for the maximum benefit from SAZARC to this country.

M. A. Razzadul, Former Director-General, Department of Livestock Services, Dhaka, Bangladesh

- exchange of zoo personnel for better vision & sharing knowledge.
- formulate strategy for strengthening of 3 C's
- exchange of zoo animals among the regional zoos to avoid inbreeding hazards
- attract the donors to help financially to develop zoo's of the region since environmental aspects is taken care of conservation & educational to children about wildlife in very concerning the environmentalists.

Dr. M. Mujaffar Hussain, Professor, Department of Animal Science, Bangladesh Agricultural University, B.A.U., Mymensingh, Bangladesh

- To know the role of modern zoo for conservation of wildlife
- Wildlife education at school, college and university levels
- Constraints of zoo management
- Regional and international cooperation of wild animal resource persons and institution
- Execution of wild animal conservation Act.

Dr. Reza Khan, Head of Zoo section, Dubai Zoo, UAE

SAZARC should address:

- right of animals in Bangladesh zoos
- strict safety measures and protocols needed for these
- to develop a zoo management policy



Adit Pal, Resource Person, Landscape Architect talks about his hopes for the workshop

M. Anisuzzaman Khan, Head, Biodiversity Conservation Unit, IUCN-Bangladesh

- How the zoos could play more effective role in materializing the global zoo conservation strategy at national level?
- Guiding tools for linking *ex situ* & *in situ* programme at policy & project level.
- Enhancement of local capacity in re-organization towards integration of recreation & awareness for animal well-being.

Ali Akbar, Engr. , Dhaka Zoo

- How the structure of zoo is maintained in the SAZARC Region
- Whether they have any annual budget provision to maintain their cages?
- if there remain any engineering set-up in those zoos? It is a fact that Dhaka Zoo is lagging behind those.

R. K. Sahu, Kamala Nehru Zoo, Ahmedabad, India

- Exchange of techniques/technologies, ideas & cooperation of different countries of South Asian Zoos.

Dr. A.N.M. Aminoor Rahman, Assistant Professor (Vet. Med.), Bangladesh Open University, Bangladesh

- How we can improve/regional cooperation among the zoos in South Asia?
- How we can improve the condition of Dhaka zoo towards a conservation and wildlife breeding culture?

-- How we can educate general people about the role of modern zoo as a conservation education centre?

Dr. G.K. Dubey, Bhilai Zoo, India

- strengthening regional cooperation (ways & means)
- exchange the view on various managemental topics
- progressive rules and regulation help in wildlife or zoo management.
- conservation education programme in SAZARC countries.



Dr. A.K.M. Fazlul Huque, Professor, Department of Medicine Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh, Bangladesh.

-- Experience: Have been teaching zoo animal medicine (theory and practical) to the students of veterinary science leading to the degree of DVM (Doctor of Veterinary Medicine). Badly needed and desire for special training in the field of Zoo Management, Education and Research for Conservation and Welfare of Zoo and Wild Animals for quality teaching to veterinary students the future personnel's of zoo



Dr. Kazi Towsid Ali , P.S.O., L'R', Muhakhali, Dhaka.

I hope SAZARC's 3rd annual meeting & workshop on zoo management for conservation & welfare of wildlife



South Asian Zoo Association for Regional Cooperation

inaugurated on 6th Oct 2002 in IBD Bangladesh will be very much effective for a educating us for proper management of zoo animal for preserving wildlife for saving wildlife for saving environment.

A Zoo is not only essential for keen recreation for the persons of all ages but it is required for scientific research & biodiversification.

From the speech of Sally Walker & Dr. Miranda & from the discussion of the participants it is clear that some legislation may come in force & some other points will be made.

Brig. H.A.N.T. Perera, Director, National Zoological Gardens, Sri Lanka.

-- The SAZARC presently is behind the other national and regional zoo associations; should catch up with the developing world. Comparing to other regions the SAZARC countries are rich in natural resources. Hence I wish that the 3rd Annual meeting will enhance the bonding and cooperation between our Zoos.

- Help each other to improve the areas where we lack.
- Arrange good exchange programmes with the resources available.
- To arrange some keeper training exchange programmes (to see the feasibility of this aspect)
- Touch upon the techniques in the reintroduction programmes; main ingredients is a reintroduction set up



Muhammad Mansoor Qazi, Director, Karachi Zoo and Safari Park, Pakistan

- Modern tools and techniques for captive population management.
- Training of zoo personnel in different fields of zoo management.

Md. Shamsur Rahman

-- to learn how the threatened species can be brought back to Nature after captive breeding. It means reintroduction of animals.

Shrinia Khatun, DCF, Forest Department, Bangladesh

-- Private zoo & its management, Its merits & demerits.
Control of Government over private zoo.
-- Role of zoos to develop economy of the country
-- Need of co-ordination or relationship between rules & regulation if different organisation for ensuring wildlife.
-- Role of zoos to develop private Wildlife Farms.

R.K. Shrestha, Director, Central Zoo, Nepal

Interested to strengthen
-- Regional cooperation & understanding
-- Understanding issues (if any) and solutions
-- How to sustain SAZARC

Jayanthi Alahakoon, Veterinary Officer, National Zoological Gardens, Sri Lanka

-- to learn more on what should be introduced with regard to animal welfare for the zoo exhibits
-- ethics/policies/legislation supply to minimise the vandalism
-- strengthen the SAZARC for it to continue successfully
-- exchange of excess stock
-- to share the experience

Dammika Malsinghe, Asst. Director, National Zoological Gardens, Sri Lanka

Each country has its own legislation on animals. When regional cooperation is established, how it could affect legislation of each country especially animal exchange programmes.

Sally Walker, Zoo Outreach Organisation, Coimbatore, India

-- I hope SAZARC members would grow closer and become more aware of what they individually can do to forward the association. A mechanism for communication already exists with a Newsletter, email, etc. I hope after this third meeting our members would avail what is already available and make it work for themselves and the association.
-- I hope to get a good President this year who will keep his commitments, really work for the association, and take SAZARC to the next level towards independence.

Inaugural Lecture

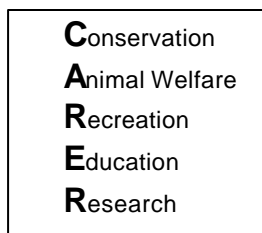
Dr. Miranda Stevenson, Principle Trainer, is a long time member of the zoo community of Great Britain and even the global zoo community. Dr. Stevenson started her career as a zookeeper at Marwell Zoo, having graduated from Trinity College, Dublin, Ireland, with a degree in Natural Sciences. Miranda's career in zoos progress straight up to Curator and Director as she earned a Masters and Ph.D. in biological sciences and then an MBA simultaneously. Miranda has served on numerous prestigious committees in the zoo, wildlife, and welfare community, including various legislative and inspection committees. Miranda promoted collection planning and species coordination many years ago, well before it was an accepted management strategy. Miranda began her teaching with an introductory talk 'Zoo Management for Conservation and Welfare'. This was intended as an overview to the areas that would be covered

in the conference, e.g., reference to the World Zoo Conservation Strategy and the evolution of zoos from menageries to conservation centres. She explained that it is essential that one takes nothing for granted in descriptions and is clear about what is unacceptable accommodation. Thus it is essential to make it clear that in the "living museum" type environment where the animals were displayed in small unsuitable cages as curiosities with the emphasis being on quantity of species displayed rather than quality of life. She explained that this was now simply not acceptable in today's zoo scenario.



Miranda began her teaching with the theme presentation 'Zoo Management for Conservation and Welfare'.

The concept of "C.A.R.E.R." (the five pillars on which the modern zoo stands: Conservation, Animal Welfare, Recreation, Education and Research) was introduced.



This was a major theme of the conference and attractive banners displaying the acronym had been prepared. The meaning of the five terms was briefly described. The concept of managed breeding programmes and their role in the *ex situ* conservation role of zoos was explained, using a simple diagram to explain self-supporting captive populations. The three Cs of Conservation (Cooperation, Communication and Coordination, a theme often used by Sally) were also introduced, in terms of managed cooperative breeding programmes.

The fact that animal welfare and conservation were inextricably linked was emphasised throughout the presentation. After this presentation and discussion, with people from the floor making interesting contributions, we set out for the Zoo tour.

The Zoo Tour

The participants were treated then to a visit to the Dhaka Zoo, which had been given a sprucing up in preparation for the conference, with fresh paint and plantings, a new guidebook and other fittings.

The first event in the tour was to take tea with Mr. Omar Faruk, Dhaka Zoo Curator in his office, at which time Brig, H.A.N.T. Perera, Director of the National Zoological Gardens, Sri Lanka presented a beautiful ornamental elephant ankus to the Curator and his immediate peers and staff. This gift was much appreciated and was hung in state above the desk of the curator.

Participants were then taken around the zoo for the whole of the afternoon. They were shown all enclosures, old and new, and told about the history and plans for the future of the Dhaka Zoo.

The foreign delegates very much appreciated the potential of the Dhaka Zoo with its lush vegetation, generous size, convenient location and enormous visitation.

A visit to the zoo was just the right touch to kick off the remainder of the conference, which consisted of zoo presentations from each and every zoo representative, technical presentations by invited resource persons, meetings of SAZARC with committee reports and discussions of SAZARC business and special working groups in subject areas of importance to the zoos of South Asia.



Director, National Zoo, Sri Lanka presents ornamental Ankus to Curator, Dhaka Zoo



Zoo tour



Participants of the 3rd SAZARC Meeting

Foreign Participants

India

Dr. Ganesh Kumar Dubey
Veterinary Officer, Maitri Baag Zoo
7A, South Park Avenue, Sector 9
Bhilai 490 006

Dr. R.K. Sahu
Zoo Superintendent
Kamala Nehru Zoological Garden
Kankaria, Ahmedabad 380 008

Dr. N.V.K. Ashraf, Coordinator-Wild Rescue
Wildlife Trust of India
C-644, II Floor, New Friends Colony
New Delhi 110 065

Ms. Sally Walker, Founder/Hon. Director
Zoo Outreach Organisation
29/1, First Cross, Bharathi Colony
P.Box 1683, Peelamedu, Coimbatore 641 004

Mr. Sanjay Molur, Deputy Director
Zoo Outreach Organisation
29/1, First Cross, Bharathi Colony
P.Box 1683, Peelamedu, Coimbatore 641 004

Mr. Adit Pal, Landscape architect
92, Nilgiri Apartments
New Delhi 110019

Dr. B.A. Daniel, Scientist
Zoo Outreach Organisation
29/1, Bharathi Colony
P.Box 1683, Peelamedu, Coimbatore 641 004

Nepal

Mr. R.K. Shreshta, Director
KMTC/Central Zoo, Jawalakhel,
P.O. Box 3712
Kathmandu

Pakistan

Mr. Mansoor Qazi
Director, Karachi Zoo and Safari Park
A-71 Block – 3, Gulshan-E-Iqbal
Karachi

Ms. Uzma Khan
Education Officer
Zoological Gardens Lahore
Shahrah-e-Quaid-e-Azam
Lahore 54000

Sri Lanka

Brig H.A.N.T. Perera
Director, National Zoological Gardens
Dehiwala, Colombo

Dr. Jayanthi Alahakoon
Deputy Director & Vety. Officer of National
Zoological Gardens
Dehiwala, Colombo

Mrs. Dammika Malsinghe
Assistant Director (General) of National
Zoological Gardens
Dehiwala, Colombo

United Arab Emirates

Dr. Reza Khan
Director, Dubai Zoo
Dubai, United Arab Emirates

United Kingdom

Miranda Stevenson, Retd Director
Zoo Consultant
Ashlea, DeanLane
Bishops Waltham SO32 1X, U.K.

Local Participants

Dr. Muhammad Salehaddin Khan,
Deputy Director,
Central Poultry farm, Mirpur, Dhaka

Dr. Feroz Md. Shafiqul Islam
Deputy Curator
Zoological Survey, Mirpur, Dhaka

Dhaka Zoo Personnel

A.K.M. Omar Faruq
Curator, Dhaka Zoo

Dr. Jatindra Nath Das
Deputy Curator

Dr. Khudesta Akter Begum
U.L.O. Shibaloy, Deputation Zoo

Dr. Md. Salim Iqbal
Veterinary Surgeon

Mr. Md. Waliur Rahman Akand,
Zoo Officer

Mr. Mohd. Liaquat Ali,
Officer In Charge, Museum

Mr. Md. Abu Syed Md. Kamal,
Publicity Officer

Mr. Md. Rafiqul Islam,
Zoo Officer

Mr. Ratan Kumar Mondal,
Zoo Officer

Dr. Ahmed Ziaur Rahman
Scientific Officer

Mr. Ali Akbar
Assistant Engineer

Mr. A.K.M Lutfur Rahman Siddique,
Fisheries Officer

Other Bangladesh Zoos

Dr. Arabinda Kumar Saha,
Deputy Curator,
Rangpur Zoo, Rangpur

Capt. Prakash Chandra Das
Jahanabad Cantonment Zoo
Jahanabad Cantonment, Khulna

Dr. A.K.M. Saifuddin, Associate Professor
Chittagong Govt. Veterinary College.
Chittagong

Mr. A.T.S. Fazleh Elahi, Zoo Supervisor,

Kurmitola Golf Club Mini Zoo.
Dhaka Cantonment, Dhaka.

Mr. S.M. Morshed, Secretary
District Council
Comilla Zoo, Comilla

Mr. Sheikh Abdul Gaffer (ADC)
Chief Revenue Officer
Rajshahi Zoo, Rajshahi

Dr. Mrinal Kanti Mitra
District Veterinary Officer
District Veterinary Hospital
(Rep. of Jahanabad cant- Zoo.)

Dr. Anisuzzaman Khan, Pgm Off.
IUCN Bangladesh Country Office
House -11, Road -138
Gulshan 1, Dhaka -1212.

Md. Abdul Baset, Asstt. Professor.
Government Veterinary College.
Tilagor, Sylhet.

Ms. Begum Shirina Khatun
Assistant Conservator of Forest (wildlife)
Department of Forest
Bon Vaban, Mohakhali, Dhaka.

Mr. Enam-ul Haque,
President, Bangladesh Birds Club.
M.D. GQ Group of Company
331/2 Tajuddin Road
Bara Mogbazar, Dhaka 1217.

Dr. A.N.M Aminoor Rahman, Asstt.
Professor, SARD, Bangladesh Open
University, Gajipur, 1705.

Dr. A.K.M. Fazlul Hoque
Department of Medicine
Faculty of Veterinary Medicine.
BAU. Mymensingh.

Prof. Dr. M. Mujaffar Hossain
Dept. of Animal Science
Faculty of Animal Husbandry
BAU.Mymensingh, Bangladesh

Md. Samsur Rahman, Director
National Botanical Garden
Mirpur, Dhaka

Md. Abdul Mannan. Asstt. Director, D.L.S.
Deputation-Chittagong Zoo, Chittagong

Dr. M. Motiur Rahman, Director
National Herbarium, Mirpur, Dhaka

Dr. Anwarul Islam, Professor
Department of Zoology,
Dhaka, University.

Dr. M.M. Feeroz, Associate Professor,
Department of Zoology.
Jahangirnagar University
Dhaka

The Third Meeting of the South Asian Zoo Association for Regional Cooperation, Dhaka October 6th–11th 2002 - Report

Miranda F. Stevenson*

The South Asian Zoo Association for Regional Cooperation was founded, with the help and support of the Zoo Outreach Organisation and CBSG, South Asia, for the purpose of enhancing communication, cooperation and coordination between the zoos of South Asia, both within their respective countries and in the region. The countries that comprise the South Asian region, as far as zoos are concerned, are India, Pakistan, Nepal, Sri Lanka, Bhutan and Bangladesh. The first meeting of SAZARC was held in Kathmandu Zoo, Nepal in 2000. By holding each meeting in a different country an opportunity is provided to have as many attendees from zoos in the host country as possible along with representatives from universities, NGOs, IUCN and the relevant government departments

It is generally agreed throughout the world that zoos have an important conservation role. Zoos of the western world are now progressing as genuine conservation bodies and a great deal of this progress is due to communication and cooperation, much of it facilitated through national and regional zoo associations. However, in the countries of particularly high biodiversity, zoos have a multiplicity of administrative, economic, political and technical problems. South Asia is a particularly complex region to work in and modern zoo management strategy is made even more difficult to communicate and implement due to the fact that high level zoo personnel are transferred frequently and new directors, veterinarians and curators start from the beginning, with little knowledge base, every few years. This is the result of most of the zoos in the region coming under national or state governments.

Therefore the zoos of the region have much in common and many of the difficulties can be addressed by meeting and discussing how each institution and country has addressed their problems and enhanced their potential. Only India, of all the South Asian countries, has an administrative policy and mechanism to develop its zoos along modern lines, including strong zoo legislation, and a Central Zoo Authority (CZA) to administer and coordinate inspections, funding and training. Whatever the set-up, due to a variety of difficulties, the zoos of South Asia find it difficult to make significant contributions to conservation breeding, research or education.

Another side-effect of the zoo structure in the region is that, with the exception of the Kathmandu Zoo which is run by a charitable trust, the zoos have scant funds or decision-making powers for attending or sending staff to meetings or to support meetings. Thus, funds for the SAZARC meetings are being raised on an annual basis by Zoo Outreach Organisation from foreign zoos. This is being done for a limited period to give the South Asian zoos a chance to experience and to demonstrate to their governments the positive effect of a regional association including meeting their colleagues and taking advantage of the training modules provided. It is envisioned that South Asian zoo directors will come to set up their own infrastructure for the association which will enable them to be self supporting

enabling them to organise and fund their own meetings in course of time. This will involve changing the mind-set of some of the bodies that control the region's zoos.

Other than India, Bangladesh and Pakistan have the most zoos; Bangladesh has six zoos (Dhaka, Rangpur, Chittagong, Comilla, Kurmitola and Rajshahi), of these Dhaka is by far the largest (187 acres) with the highest number of species and individuals; the other five range in size from 1-22 acres. The Dhaka zoo is administered by the Department of Livestock Services, Bangladesh. The Director General, Md. Nurul Islam, is in charge of the zoo with the day to day running and administration coming under the remit of the Curator, A.K.M. Omar Faruq. Mr. Faruq had only been in post for five months, his predecessor, Dr. Muhammad Salehuddin Khan, was now the Deputy Director of the Central Poultry Farm (which also comes under the Department of Livestock Services), but remained very involved in the conference and participated in all the sessions. Last year, SAZARC met with the South East Asian Zoo Association in Perak, Malaysia where Saluddin Khan represented Bangladesh. This enabled him approach his government and obtain permission to organise the meeting, which he did with his team in an exemplary manner.

As a result of SAZARC and SEAZA, the Bangladeshi zoos founded their own association, the Bangladesh Zoo Association (BZA) which was launched at the Dhaka meeting. This is a significant step for the zoos of the country and it was therefore very appropriate that the 2002 meeting was held in Dhaka. The recent meeting was geared specifically to help the zoos of Bangladesh a training theme for the conference was chosen, that of "zoo management for conservation and welfare".

The Dhaka zoo experienced a tragic incident on the Monday before the meeting when one of the keepers had been killed by a bear. The zoo had received a large amount of hostile press and adverse public opinion as a result of the incident. Participants were appreciative of how the staff managed to cope both with the repercussions of this incident and running the conference and Dhaka Zoo personnel appreciated the presence of other zoo personnel who could confirm that many other zoos and circuses in the world had had similar accidents, normally as a result of human error.

Zoo Management for the Conservation and welfare of Wildlife - Inaugural

The inaugural meeting was held in the IDB Auditorium, Sher-e-Bangla Nagar, Dhaka. It was attended by several dignitaries and many members of the press. After a recitation from the Quran an address of welcome was given by Mr. Sadeque Hossain Khoka M.P. Minister for Fisheries and Livestock and Mayor of Dhaka City Corporation. Addresses were also given by Dr. Zahurul Karim, the Secretary Ministry of Fisheries and Livestock, Nr. Md. Nurul

* Zoo Consultant, Winchester, United Kingdom

Islam the Director General Department of Livestock Services and A.K.M. Omar Faruq, the Curator (and person in -charge) of the zoo. I intimated how pleased and honoured I was to attend the meeting and share my experiences of working in zoos; Sally said how much she enjoyed helping and facilitating the zoos of the region and how this meeting was a another step in this direction. She also referred to the bear incident and how the people must not allow it to affect the potential work of the zoo. It was refreshing to that the Minister referred directly to the changing role of zoos in his speech. He endorsed the commitment of the government of Bangladesh to nature conservation and the vital role of zoos in this work.

The inaugural demonstrated the acknowledgement of the government to the changing role of zoos and the need for the zoos of the region to communicate more and to cooperate in order to establish their conservation role. Both the Minister and the Secretary attended a dinner with the group through the week and spoke to delegates from the region about the need from change and how this might be accomplished. The inaugural also attracted positive media coverage, both press and TV. This was especially useful for the Dhaka zoo, in the light of the bear incident, and we were able to inform the press, that tragic though the incident had been, accidents happen in every profession and in every region.

Meeting

After the lunch break the meeting proper started, with my introductory talk 'Zoo Management for Conservation and Welfare'. This was intended as an overview to the areas that we would be covering in the conference namely: Reference to the World Zoo Conservation Strategy and the evolution of zoos from menageries to conservation centres. It is essential that one takes nothing for granted in descriptions and is clear about what is unacceptable accommodation. Thus it was essential to make it clear that in the living museum type environment the animals were displayed in small unsuitable cages as curiosities with the emphasis being on quantity of species displayed rather than quality of life and that this was now simply not acceptable. Most zoos are currently at the Zoological Park stage with animals



Dr. Stevenson introducing the concept of C.A.R.E.R

displayed in naturalistic environments with enriched environments and natural groupings of animals. The concept of CARER (the five pillars on which the modern zoo stands: Conservation, Animal Welfare, Recreation, Education and Research) was introduced. This was a major theme of the conference and attractive banners displaying the acronym had been prepared. The meaning of the five terms was briefly described. The concept of managed breeding programmes and their role in the *ex situ* conservation role of zoos was explained, using a simple diagram to explain self-supporting captive populations. The three Cs of Conservation (Cooperation, Communication and Coordination, a theme often used by Sally) were also introduced, in terms of managed cooperative breeding programmes.

The fact that animal welfare and conservation were inextricably linked was emphasised throughout the presentation. After this presentation and discussion, with people from the floor making interesting contributions, we set out for the Zoo tour.

Dhaka Zoo

The Dhaka zoo was built in the 1970s, in Mirpur, a suburb of Dhaka. It is a 250 acre site, very attractive with many trees and lakes, the latter which attract significant numbers of migratory birds. The site has enormous potential and many of the enclosures are spacious. Unfortunately the zoo demonstrates many of the mistakes also made in western zoos, with too much concrete and use of steel, (which is a significant problem in a climate which guarantees instant rusting of steel) with unsuitable substrates for most species and little enclosure furnishings and no enrichment. The tour started with tea and welcome in the curator's office and the contingent from Sri Lanka presented the curator with an ornamental ankus. After the zoo visit the Dhaka zoo curatorial staff treated us to an excellent meal out which the Minister and the Secretary attended.

Meeting in the National Botanical Gardens

The second day we met at the National Herbarium situated in the Botanic Gardens adjacent to the zoo. We all registered, and received our smart conference bags and polo shirts. A really excellent briefing book had been prepared, containing not only all the information necessary for the meeting, but also a wealth of additional material that would continue to be of use to delegates long after the meeting was over.

My first presentation was 'No Zoo is an Island', the theme of which centred around the three Cs of conservation with a focus on how national and regional associations could help in this:

No zoo is an island; it cannot afford to work in isolation because no single zoo can save a species by itself and needs to cooperate in managing breeding programmes, sharing expertise and resources and forming conservation partnerships. Examples of the UK (which has its own national association) being part of the European Zoo Association, compared with individual countries in SAZARC being part of their own country organisation (where that exists) and under the umbrella of the wider regional

organisation. Examples of how more can be achieved through cooperation and communication, from *in situ* partnerships like the Madagascar Fauna Group to sharing information about breeding, rearing and nutrition of difficult species.

An acronym of (Mission, Annual Budget, Location, Collection Planning, Other, Legislation, Master Planning) was used to emphasize that within this system a zoo could, indeed must, retain its individuality, focused on its own particular mission. The zoo can retain its individuality, no matter what the size, while working together with others for conservation and welfare.

Jayanthi Alahakoon of the National Zoological Gardens Sri Lanka and Pinnawela Elephant Orphanage, gave a presentation on the remarkable elephant project at Pinnawela. The project, situated in 24 acres of old coconut plantation some 85 miles NE of Colombo, is unique. It was started some 20 years ago with the aim of providing homes for orphaned and injured animals. The herd now stands at 66 with some 22 being born in the herd. The first calf was born in 1984 and now second generation young are being born. The herd is guided by mahouts, tethered at night, and taken into the coconut plantation and to the river during the day. A number of research projects have been carried out on this unique herd of animals.

The Modern Zoo is a CARER : detailed examples surrounding the theme were given, focusing strongly on animal welfare, husbandry routine and cage environment, which must allow animals to express their natural behaviour. This provided an introduction to the session that contained some excellent talks.

Adit Pal is an architect who trained in zoo design in the United States. He now works in India. He gave an excellent presentation, using examples from our tour of the Dhaka Zoo. The talk focused on the problems faced in the climatic conditions of South Asia. He explained how the zoo could use materials such as treated wood, which would be better in the humid climate than steel and also provide a more attractive appearance to the cages. He also focused on visual barriers, animal friendly substrate, making sure draining could cope with the climate and generally making the enclosures more 'animal friendly'. His talk was followed by one from N.V.K Ashraf on Zoo Horticulture. He explained how the use of plants could improve the cage from both public and animal perspective and, especially in a country like Bangladesh with lush plant growth, how plants could be used as natural visual barriers. Both papers very much focused on the theme of enclosure versus cage, and how the natural vegetation of the country can be used to good effect. They also introduced the concept of sight-lines so that, when people viewed an enclosure through a viewing panel, they saw the animal against an attractive and natural looking backdrop. This greatly enhanced the educational potential of animals and enclosures.

After lunch the theme moved on to Zoos and Biodiversity Conservation. I gave the opening presentation which focused on: Information on the Convention of Biodiversity and how zoos could fulfil the *ex situ* obligations of this convention. However zoos could also support work in the

field which led into the Conservation part of CARER.

Examples of how zoos can form partnerships to help species and ecosystems were given, in particular the work of the Madagascar Fauna Group, which is funded and run by a consortium of zoos which carries out conservation work in Madagascar. Information on zoos support for tiger conservation projects through 21st Century Tiger was also given. All zoos, big and small, can help field conservation projects, for example zoos in England have joined forces with English Nature to help conserve species of month, by captive breeding and habitat protection.

Dr. Anisuzzaman Khan from IUCN Bangladesh presented a paper entitled "Capacity Enhancement and Good Governance of Dhaka Zoo for Biodiversity Conservation". This provided useful background information on IUCN Bangladesh and its goals and objectives. IUCN Bangladesh country office have been responsible for the production of a series of Red Books on the Threatened species of the country, a most useful collection of books. They are also responsible for the production of the Biodiversity Action Plan for the country. The national zoo has a link and synergy with the Action Plan especially through wildlife and awareness programmes.

It was interesting to me, that the focus of the role of zoos in conservation was very much based on education, with some captive breeding. There were few if any suggestions from the South Asian delegates that zoos could work in the wild. For example, the work monitoring the migratory birds in the Dhaka Zoo lakes was carried out by University people, with no links to the zoo staff.

Carrying on with the theme Sanjay Molur from Zoo Outreach Outreach and who also chairs the Declining Amphibians Population Task Force, South Asia (DAPTFSA) of the Amphibian Decline Specialist Group IUCN SSC, gave a presentation on amphibians, with particular reference to those in Bangladesh. B.A. Daniel, also from Zoo Outreach, spoke on the role of zoos in invertebrate conservation; 73% of life on earth consists of invertebrates; they have a huge impact on biodiversity and indeed on man. Both Sanjay and Daniel focused on the educational and awareness raising role of zoos in drawing the public's attention to some of the fascinating facts surrounding invertebrates and amphibians.

Representatives from the zoos of South Asia gave presentations on their own collections. This range of collections was fascinating, as was the great difference in awareness to the role of the modern zoo, shown in the different countries. Delegates from Indian zoos, with some ten years of communication between zoos and zoo legislation in force, gave talks about new enclosures, education programmes and species management that clearly showed the benefits of the three Cs. However, even in the short time since its inception, SAZARC is already showing results. Muhammad Mansoor Qazi from the Karachi Zoo explained some of concepts of a new safari park that was being built in Karachi and also of education programmes, instigated since the first SAZARC Meeting. Uzma Khan, who is employed by WWF as education officer at the Lahore zoo in Pakistan, gave information on that zoo including the education programme for schools now

successfully operating. R.K. Shreshta from Central Zoo, Nepal presented an overview of the recent improvements in the zoo, giving the larger animals more space, focusing on Nepalese animals, and their excellent education programme for schools.

The third day began with my lead presentation on the Five Freedoms of Animal Welfare. I used the new Manual of Zoological Parks in the UK and how the five freedoms can be used as a basis for assessing zoos and animal enclosures, e.g.:

- Freedom from Hunger and Thirst - Food and water, not just quality and quantity but presentation, enrichment methods of presenting food.
- Freedom from discomfort - Suitable environment, stressing that animals need shelter, the correct substrate, climbing materials, changes to the environment, what the captive environment means to the animal.
- Freedom from pain, injury or disease - Animal health care, it is essential that the zoo has a veterinarian with experience with exotic species.
- Freedom to express normal behaviour - try and simulate the time budgets shown in the wild, and simulate feeding methods, eg browse for giraffes should be tied up high, chimps can simulate termite dipping by dipping for yoghurt with sticks.
- Freedom from fear - Protection from fear and distress, mixed species exhibits, animals in adjacent cages, stress from public proximity and public feeding.

Adit Pal gave a presentation on how to design enclosures with good welfare in mind and Uzma on methods of enriching enclosures, and the abnormal behaviours that were observed in animals in poor enclosures; she stressed the importance of both physiological and psychological well-being, and the importance of giving animals choices within their enclosures. Uzma is an outstanding person. Her interest in zoos, zoo education and animal welfare resulted in her obtaining a scholarship to undertake the Animal Welfare M.Sc. run in Edinburgh University; as part of that course she carried out a project on nutrition in orang utans in UK collections.



Adit Pal giving a presentation on enclosure design based on welfare

The Indian zoos now operate within system of exchanging animals between zoos, and not taking from the wild. It was apparent, however, that the main suppliers of animals to many zoos in South Asia were animal dealers and that much of the stock was wild caught.

Research being one of the Rs in CARER, I gave background information on the topic, explaining that you could carry out research on many topics, stressing that you did not need to be a university graduate to carry out a lot of research. This could range from work on diets, to enclosure design, to methods of husbandry and handrearing. Animals' activity could be recorded by noting behaviour every 30 seconds, and the affect of changing enclosure design on an animal could be measured simply by carrying out this sort of observational work. Research could be carried out to ascertain if the public were getting the message from a zoo's interpretation. Research could also result in passing on knowledge and in information exchange. All zoos could do research, it could be carried out by staff, by training



Ashraf talks about research in zoos

volunteers and by cooperating with universities. N.V.K. Ashraf gave a presentation on the importance of research in zoos, stressing that it could be an aid to good management, e.g. recording the response of an animal to a change in its enclosure, like the provision of a shade spot, or some changes to encourage natural behaviour. Research could be carried out on animal records, this emphasised the need for good records (e.g. fecundity, mortality, age at sexual maturity, reproductive parameters). Research data could often solve a husbandry problem. A zoo could either create an inhouse team of researchers or simply collaborate with a local university and they are often grateful for the opportunities zoos offer for providing potentially interesting projects, he pointed out that many of the articles published in ZOOS' PRINT are the result of research projects.

M. M. Feeroz then gave a paper showing how work in the field could help us manage zoo animals more effectively. Dr. Feeroz is an Associate Professor in the Jahangirnagar University and has many students working in the field. He did his Ph.D. research with David Chivers (Cambridge) on the endangered Hoolock Gibbon in Bangladesh. He presented a fascinating paper giving much information on

the primates of Bangladesh, their behaviour and ecology. From this he proposed changes to the way the gibbons were kept at the Dhaka zoo.



Curator, Rangpur Zoo reporting on his zoo

Reza Khan, Bangladeshi but working as some sort of director in the Dubai Zoo, gave a most useful presentation on large carnivores, their status in the wild and how they should be managed in captivity.

After lunch we moved on to Legislation, with an introduction from Sally who stated this to be one of the main reasons for Zoo Outreach Organisation organising the first meeting of South Asian zoos. She said that Bangladesh officials were seriously considering creating zoo legislation for their country and there were also possibilities for Pakistan.

Sally has compiled a most comprehensive and useful dossier of zoo legislation world wide, which is (or soon will be) available on the Z.O.O.'s web site. I gave a talk on the Zoo Federation and the inception of the Zoo Licensing Act in the UK, with details of how it operated and what it had achieved in improving UK zoos and Animal Welfare. I outlined the inspection process and the importance of



Miranda discusses Zoo Problems with Dr. Khan, Former Curator

training inspectors and ensuring reasonable consistency across inspections. I emphasised the fact that the inspection, designed to be helpful and improve the collection, checked how good a CARER the zoo was. I stressed that the inspection was designed to help the zoo improve, but that it had teeth, and if the zoo did not comply with the conditions laid down it would be closed. Other presentations were given on the procedure in India and Sri Lanka and the need for zoo legislation in Bangladesh, e.g., Dr. R.K. Sahu on the Indian Zoo Act and Brig. H.A.N.T. Perera on the National Zoological Gardens of Sri Lanka Act. It was refreshing to hear our host colleagues calling for legislation to help them improve their zoos; a process very similar to that which resulted in the ZLA in the UK.

Sally had suggested going to the zoo and carrying out a 'mock' inspection. I did this assisted by Uzma and we decided to focus on the primates and large cats. I started on the baboon group (housed in a cage with concrete flooring



Miranda conducting a 'mock inspection' with participants

and little climbing materials). We examined the facilities and asked lots of questions particularly about diet. This highlighted the great need for training. As well as stressing the importance of balanced diets, Uzma and I explained how providing climbing materials (branches, easy to get) and softer substrates and interesting ways of providing food (this could be as simple as scattering it on the cage roof) the animals' lives would immediately become more interesting. The message that cleanliness was not necessarily next to godliness, however, was more difficult to get across, and the concept of bark flooring and deep litter is more than a mind step away. Some of the Indian Zoo people then provided helpful advice on how to prepare balanced diets, from easily available local produce. Uzma and I recommended moving the gibbons them to a larger and higher cage.

Wednesday was the fourth day and much of it was designated to working groups, designed to move things forward within the region. As the focus was SAZARC, zoo associations was the theme of the day and I explained the role of the Federation of Zoos:

The main aims of the Federation are to improve standards within zoos, to improve communications between zoos and to encourage the conservation role of zoos.

An explanation was given of how the Federation goes achieving these aims, and its advisory committees. I focused a lot on standards, husbandry guidelines etc. Focussed on the fact that the Federation has become the voice of zoos and is the body that the government turns to for advice and help. A good association raises zoos to a professional level within a country or region.

One area is responsible acquisition and deposition of animals. Zoos should not take animals from the wild, exchange between zoos, try not to use animal dealers, and make sure they know where their animals are going. Most of the rest of the day was taken up with SAZARC business. Committee reports were given and discussion centred around the topic of how to move the organisation forward.



Curator, Dhaka Zoo

R.K. Shrestha (who had been the host for the first meeting) provided a synopsis of his views on fundraising. Sally thanked Mr. Shrestha hosting the first meeting and suggested he be given the honorary post of SAZARC Convener. Later it was suggested that until a Constitution could be formulated suitable for South Asia and a method for electing a President decided, the Presidential position should be a rolling post, and would be held by the Director of the Zoo that would host the next meeting.

People then split into working groups as decided by an interactive discussion held earlier in the morning:

Veterinary and nutrition

Animal welfare, education and training

SAZARC constitution

Bangladesh group on BZA and legislation in Bangladesh.

Each group was asked to come up with objectives that were achievable over the next year.

The Bangladesh Zoo Association was formally announced; they worked on their constitution and methods for enacting zoo legislation within the country.

We finished the day by introducing the concept of Species Conservation. It had become apparent to me that this was going to be a tough one. As the concept had been difficult for some UK zoo directors to accept as recently as ten years ago, it was even more difficult in this region. So I gave the background information, stating what happened if you didn't have coordination (zoo populations became extinct, public

opinion went against you etc.) and explained how they worked, emphasising the benefits of managed populations, moving animals between zoos directly and the importance of good zoo records, especially on the origin of stock. This sort of planning was done regionally, but without the cooperation of individual collections, it was destined to fail. I gave some information on studbooks, their importance and how they worked.

The last working day (day five) was Thursday. We decided to devote it to working on species coordination and finalizing the work and reports of the working groups. It seemed to be a good time for a practical exercise which would help get the coordination message across. From the briefing book I picked a section which contained details of the threatened species of the region and the numbers held within the region's zoos. We started with the Himalayan Black Bear. Delegates were asked to work in groups of three and decide on moves using criteria such as: avoidance of inbreeding, space and suitable enclosures, climate, conservation need, educational value, logistics of moving sex ratio within collections etc. The exercise worked well, and both Sally and I were impressed at how well our messages had been adsorbed. I then moved on to sloth bears, the message in this one was that it should be managed as two separate populations, the Sri Lanka form being different from the mainland one. Then we moved on to tigers. This message was clearly put forward by some delegates, keep pure animals, identify them, make the studbook for the Bengal Tiger active and get a captive population managed. It was agreed that this was a challenge that should be undertaken. I then give some 'live' examples using a SPARKS studbook projected onto the screen.

Sally then gave a presentation on the role and work of CBSG South Asia and its continuing work and its future development within the South Asian region.

After lunch the Working Groups finished their meetings and presented reports. The working meeting concluded with the Sri Lankan contingent inviting delegates to the next meeting in Sri Lanka and giving a presentation on the country and its zoos, a lovely setting. They anticipate some more zoos opening in the country in the next few years. Brigadier Perera was officially made the President of SAZARC.

We then went back to the lecture theatre for the closing ceremony. This was very pleasant, with thanks being given by everyone, especially to Sally for all her wonderful work, and indeed her inspiration which resulted in the setting up of SAZARC. Sally was particular in thanking all the organizers from Bangladesh and the sponsors from Western countries, who had made the meeting possible. Brig. Perera, President of SAZARC, read out the Recommendations for Bangladesh Zoos by the experienced zoo personnel of South Asia, Sally Walker, and myself. Several participants expressed their thanks and satisfaction with the conference. We relaxed in the evening by going shopping, the next day seeing the sites of the city.

I am most grateful for being able to attend the meeting and I hope that the workshop plays a part in enabling the zoos of the region to move along the long hard road from menageries to conservation centres. I have made many new colleagues as a result of the meeting with whom I shall keep in touch.

SAZARC Committee Reports

Training Committee, Chaired by Dr. R. K. Sahu

Dr. R. K. Sahu gave a Report on the Keeper Training organized by his zoo on behalf of India's Central Zoo Authority for the western region of India. This could serve as a model for other countries in South Asia. Dr. Sahu and one of his keepers who speaks Hindi, a sort of universal South Asian language that many people understand, could be deputed to some zoos in South Asia to teach their keepers. It was also suggested that keepers could be sent from other countries to some Indian zoos which had organized such training.

Training for SAZARC this year was organized around the theme "Zoo Management for Conservation and Welfare of Wild Animals" and consisted of invited experts to the meeting, e.g.

- Dr. Miranda Stevenson, United Kingdom — Principle Trainer for overview and introduction of new material such as collection planning, species coordination, etc.
- Adit Pal, Landscape Architect, New Delhi – Zoo design for management and welfare
- N.V.K. Ashraf – Zoo horticulture as management for design and welfare of animals and Zoo research
- Dr. Reza Khan, Dubai Zoo – Management of Carnivores
- Dr. M.M. Feeroz - Field research as an aid to zoo management for conservation and welfare

These experts were reinforced by some participants who were asked to give presentations on relevant topics in which they had experience and expertise, e.g.

- Dr. R. K. Sahu, Ahmedabad Zoo – the Central Zoo Authority and Indian Zoo Act
- Brig. H.A.N.T. Perera – the National Zoological Gardens Act
- Jayanthi Alahakoon, Pinnewala Elephant Orphanage, Sri Lanka – Management of an Elephant Orphanage
- R. K. Shreshta, Central Zoo – Marketing for the zoo

-- Uzma Khan, Lahore Zoo – Animal Welfare and Environmental Enrichment

Veterinary Committee (for identifying new medicines and means for obtaining them) – Dr. G. K. Dubey

Dr. Dubey contributed a ten-page report on some new techniques and medicines which was included in the briefing book. He reported on these techniques and requested other South Asian zoos to contribute to this committee.

Nutrition Committee, Jayanthi Alahakoon, National Zoo, Colombo

Jayanthi reported on her association with Dr. Ellen Dierenfeld of the New York Zoological Society who has compiled nutrition handbooks for different regions of the world in association with experienced zoo vets from those regions. Jayanthi requested SAZARC members to send her their diet charts so that she can compile such material for a similar handbook for South Asia.

Database of species in South Asian zoos – M. M. Qazi, Karachi Zoo

M.M. Qazi had generated a current list of species and sex ratios held by South Asian zoo participants as well as some other South Asian zoos, which he sent for inclusion in the Briefing Book. Dr. Qazi gave a report on his method and experience in collecting this information and urged the zoos to continue sending their data to him for improving the database.

Conference Committee – M. S. Khan, Chairman, R.K. Shreshta (past organizer), R. K. Sahu, S. Walker (fundraiser and past organizer)

Conference Committee successfully organized Bangladesh meeting, thanks to M.S. Khan who, although transferred to another post, continued to coordinate and promote the SAZARC conference. The committee now needs re-constituting. Suggested: Brig. H.A.N.T. Perera as Chairman, Sally Walker as Programme/Training/foreign fund coordinator; R. K. Shreshta and R.K Sahu as regional fundraisers. Brig. Perera should appoint others from his team as the next conference will be in Sri Lanka at National Zoo.

Publicity and Communications, Zohare Shariff and Sally Walker

Zohare Shariff has taken leave from the zoo business for some years. In his absence, S. Walker reported the development of a logo for SAZARC based on decision of last meeting, a brochure for fundraising abroad, and the production of only one newsletter due to absence of contributions from SAZARC members. She reported having made presentations on SAZARC at several international meetings and contributing an essay on SAZARC for the Encyclopaedia of the World's Zoos which came out this year.

Conservation – Sally Walker

Walker was endorsed as Conservation Coordinator at last meeting on temporary basis due to her experience and role heading CBSG, South Asia. Walker reported on the updated List of Threatened Species in South Asian Zoos which had been included in the Briefing Book. She had included a substantial session on species coordination and collection planning in the Programme for this year which included a Working Group session. For the coming year, the information in the Threatened Species list will be enhanced with more information on individual animals which would make possible a systematic, scientific regional breeding programme for at least a few species.

Sustainability Committee – R. K. Shreshta

This is a new committee suggested and Chaired by R. K. Shreshta. Its purpose is to find ways and means for making SAZARC an economically viable entity.

Core Committee as of 2002 meeting

Bangladesh – M.S. Khan
Pakistan – M.M. Qazi
Sri Lanka – Jayanthi Alahakoon
India – R. K. Sahu
Nepal — R. K. Shreshta
Representing the region and the international zoo community – Sally Walker
No changes in the Core Committee were suggested but as Brig. H.A.N.T. Perera was endorsed as President, he may be considered to serve Chair of the Core Committee and look after the interests of all South Asian countries' zoos.



Committee & Working Group Reports -- Third Meeting of SAZARC, Dhaka

Bangladesh Zoo Association Working Group (Recommendations)

Members : S.M. Khan, A.K. Saha, Reza Khan, M.S. Khan, A.K.M. Omar Faruk, Jatindra Nath Das, Feroz Md. Shafique Islam, Khudesta Akter Begum, Md. Salim Iqbal Prakash Chadra Das, Md. Abdul Baset, Begum Shirina Khatun, Enam-ul Haque, A.T.S. Fazleh Elahi, S.M. Morshed, Sheikh Abdul Gaffer (ADC), Mrinal Kanti Mitra, A.K.M. Fazlul Hoque, M. Mujaffar Hossain, Md. Abdul Mannan and Sally Walker (observer).

A working group for the establishment of a Bangladesh Zoo Association met and reviewed a Draft Constitution of the Bangladesh Zoo Association. Copies of the Draft were handed out and attendees were asked to give their comments. The aims and objectives of the Association as stated in the Memorandum are:

Aims and Objectives

1. for better cooperation and functioning of zoos of Bangladesh
2. Generating support and making a start on national zoo legislation and standards for zoological gardens of Bangladesh
3. Wildlife welfare
4. Conservation breeding.
5. Forming a Bangladesh Network of the IUCN SSC CBSG, Conservation Breeding Specialist Group
6. Enhance activity between zoo, wildlife and academics of the country and even with other neighboring countries pertinent to raising the quality of management.



Bangladesh Zoo Legislation Group (Recommendations)

Members : Reza Khan, M.S. Khan, A.K.M. Omar Farouk, Jatindra Nath Das, Feroz Md. Shafique Islam, Khudesta Akter Begum, Md. Salim Iqbal

The Working Group began with an open forum for :

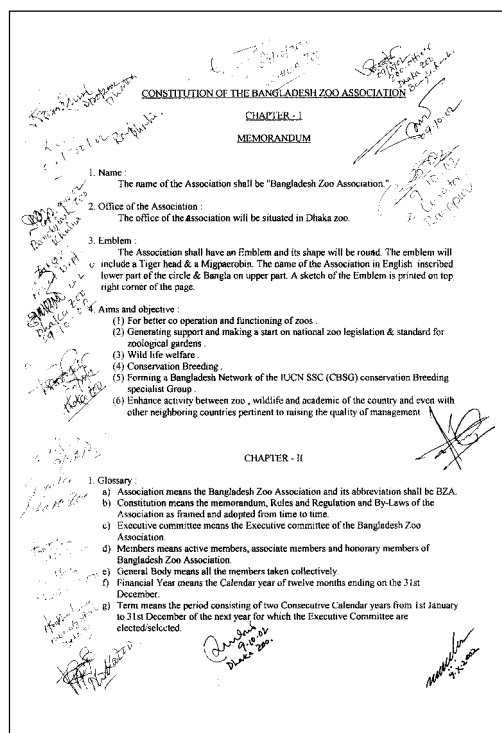
- * Sharing individual experiences
- * Need assesment
- * Issues identifications
- * Recommendations

A working process was developed to forward the task of creating zoo legislation for Bangladesh. Tasks were identified:

- * Collection of all related Legislations (National, Regional, Global)
- * Review and study of all relevant documents.
- * Preparation of Working Documents
- * Formation of a Zoo Legislation Committee
- * Preparation of a Project Proposal for Bangladesh Zoo Act
- * Formation of Bangladesh Zoo Authority (BAZA)

Representatives for Working Group to formulate and promote zoo legislation for Bangladesh :-

- a) Department of Livestock Services
- b) Department of Forest
- c) Department of Environment
- d) Law Ministry
- e) Planning Commission
- f) IUCN
- g) FEJB
- h) BELA
- i) BAU - 2
- j) Veterinary College
- k) Department of Zoology, University of Dhaka/CTG/ Rajshahi/Jahangirnagar
- l) A renowned Zoo Specialist
- m) Curator, Dhaka Zoo (Member-Secretary)



Recommendations:-

SAZARC co-operation sought for facilitating the Bangladesh National Legislation Formulation for Zoos
To establish Bangladesh Zoo Authority (BAZA)
Formation of National Network of all Zoos
Ensure the Provision of Appropriate Insurance, Packages for Zoo Personnel
Legal Adviser for each Zoo

Veterinary and Nutrition Working Group (Recommendations)

Members : A.K.M. Fazlul Huque, Bangladesh; G.K. Dubey India; Khudesta A. Begum, Bangladesh; Ahmed Ziaur Rahaman, Bangladesh; Mrinal Kanti Mitra, Bangladesh; R.K. Sahu, Bangladesh; Md. Salim Iqbal, Bangladesh; Jayanthi Alahakoon, Sri Lanka



Veterinary recommendations :

1. Vets should be appointed according to the size of zoos.
2. Vet Facilities should be available 24 hours a day
3. Vet Hospitals should be equipped with drugs, anaesthetic, antivenom etc.
4. Zoo must have a quarantine and isolation facilities.
5. Zoo hospital should have a O.T./P.M. Rooms, Indoor (Ward) facilities & laboratory facilities
6. Zoo must be equipped with squeeze-cage, tranquilizing guns and relevant drugs and antidotes for humans as well as animals.
7. Training to be provided on Zoo & Wildlife medicine. (Diagnostic, Preventive & Curative) to the Zoo veterinarians and relevant concerned teachers of universities & colleges.
8. Co-ordination should be organised between the universities & zoos
9. Zoo caretakers should be screened for zoonotic diseases for every six months.
10. Exchange of healthy animals to be carried out to maintain a viable population.
11. Power of purchase of medicine to be provided to the zoo veterinarian.
12. Laboratory should be equipped with modern equipment & trained laboratory personnel
13. Reference library and journals should be provided.
14. Internet and e-mail facilities should be available at the Zoo Hospital.
15. Legislation is needed to deal with zoo animals suffering from diseases like T.B., Anthrax, H.S etc.

16. Insurance/risk allowances for zoo vets.
17. Extra allowance for Zoo Vets. such as rent free accommodation for the veterinary staff who will be on duty
18. No sick, old or diseased animal should be exhibited.
19. Accommodation should be provided for the sick/ confiscated/rescued wild animals
20. Incinerator for the disposal of carcasses.
21. Pre-exposure vaccination for the Veterinary Staff.
22. Zoo vets. should be transferred only within zoos.
23. Incurable/suffering exhibits to be euthanized.
24. Standard operative practises eg. Disinfection of cages, deworming, de-ticking, vaccinations etc.



Nutrition recommendations:

1. Each animal should be fed with a balanced diet & clean water
2. Food of exhibits should be examined by a Veterinary Officer, and should have sufficient power to accept/reject.
3. Adequate vitamins & minerals should be provided for the exhibits.
4. Sufficient research is required to upgrade the feeding schedule.
5. Preparation/storage should be done under Hygienic conditions.
6. Extra nutrients for breeding/young growing/old & senile exhibits.

SAZARC Constitution Committee

Members : H.A.N.T. Perera, R. K. Sahu, M.M. Qazi and M.S. Khan

A SAZARC Committee was formed to review work done so far on the SAZARC Constitution. The Draft constitution in hand, prepared by R. K. Shreshta in 2001 for the 2nd meeting review, is an exact copy of the SEAZA Constitution. After discussion the Committee concluded that the matter of either revising the SEAZA constitution to fit South Asian conditions, or, of starting fresh with another Draft done only for South Asia, was too important and too complicated to finish in this meeting. Therefore it was agreed to continue review and communicate by email. An attempt to finalise the matter will be made at the next SAZARC meeting.

Animal Welfare, Education, Training Working Group (Recommendations)



Animal Welfare

- 1 How to create conditions that are natural? (Management, plantation)
- 2 Social grouping of animal (animal exchange)
- 3 Information about behaviour/habitat/requirements/hand rearing
- 4 Share the information e.g. enrichment/new techniques
- 5 Execution of the law
- 6 Highlight the value of wildlife
- 7 SAZARC can stress the need of local legislation for animal welfare.
- 8 Research work that can improve animal welfare (enrichment, nutrition barriers, sex ratio etc, social behavior, transportation of animal)
- 9 SAZARC can provide guidelines for enclosure design (visitor viewing area)
- 10 Holiday for animals
- 11 Non feeding day/welfare implication?
- 12 Standard for each species (minimum space requirement, temp, soil type etc.)

Education:

1. Good signage
2. Education material
3. Education Centre (posters, CD, Brochures, Video)
4. Education through media (local & foreign)
5. Ecological importance of species
6. Information on various species (status, threats)
7. How to get the information?
8. Include Wildlife/Conservation education in school syllabus
9. Resource persons for education
10. Utilize the local staff to educate people. Don't Wait !!
11. Use animals for education
12. Celebrate special day/special animal day/Senior animal day youngest/oldest animal
13. Zoo Museum

14. Library/Membership

Training:

Training of all zoo personnel's (Director, Curator, Veterinarian, Educationist, Supervisor & Keepers); Volunteers/teachers/NGOs; Fundraising; Workshop/ Seminars; Friends Of the Zoo club; Exposure to other zoos; Proposal writing skills; Training for effective signage's/ educational materials)

SWOT Analysis

Strengths

Skilled Staff; Cooperation; Resources (Natural); Diversity Wildlife, Climate, Habitats; Willingness; Availability of material education research; Formulate legislation; Good representation of Zoos; Courses; Networking

Weakness

Lack of legislation; Lack of awareness; Lack of Funds; Transfer of Zoo Staff; Political instability; Lack of SAZARC Constitution and Officials; No animal exchange (policy) (indiscriminate breeding)

Opportunities

WAZA, AZA, SEAZA, EAZA etc.; ZOO; Research; Exposure to other Asian Countries; Sharing/learning; Media

Practical Actions for individuals :

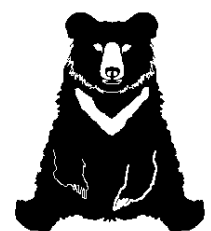
AKM Lutfer Rahman, at Dhaka Zoo: would provide education to visiting school groups.

Dammika Malsinghe (Sri Lanka): would work on zoo design for better welfare.

M. Mujaffar Hossain: would work on zoo research with the help of postgraduate students and also help with a zoo education programme.



SAZARC



South Asian Zoo Association for Regional Cooperation

Uzma Kahn: would start a studbook of the common leopard (most of which were wild caught), in Pakistan.
 Manzoor Qazi: would work on enrichment and education activities: focusing on signage and conservation interpretation.

Personal Commitment of Individual Participants — 3rd Meeting of SAZARC, Dhaka

A.K.M. Lutfur Rahman Siddique, Fisheries Officer and Deputy Curator, Dhaka Zoo will :
 — help visiting school children's about Zoo education
 — help to improve signage of Dhaka Zoo.
 — help to modernize aquarium

Dr. Feroz Md. Shafiqul Islam, Deputy Curator Zoological Survey, Dhaka Zoo :
 I have been working from 17 April 2000 in this field. Besides my job/duties, I am always associated with the function & activities of Dhaka Zoo. I have also engaged with 3rd SAZARC workshop for last 5 months. By doing this job I have gathered some experiences and make some coordination among the members of SAZARC member countries. I would like to continue my job in this field for long time. So, I hope that if the organiser of SAZARC give me the chance to work with them I will give you commitment that I do my best for SAZARC as well as welfare of wildlife and captive breeding of locally critically endangered species in zoos of Bangladesh.

Md. Ali Akbar, Engineer, Dhaka Zoo & Participant of 3rd annual meeting of SAZARC, Dhaka
 I would be very happy if there is a Zoo Architecture branch in SAZARC and I would work there as a member under your leadership and Adit Pal as Architect.

Dr. A.N.M. Aminoor Rahman, Assistant Professor (Vet. Medicine), School of Agriculture and Rural Development Bangladesh Open University
 i) Zoo education for school children and students through conventional and distance mode.
 ii) Research on endangered species with Zoo personnels.

Dr. G. K. Dubey, Director, Bhilai Zoo, India
 i) To provide information on new medicine relevant to wildlife Veterinary care.
 ii) Communication with SAZARC members on veterinary problem that you come across & get advice experienced information to be sent to the other members
 1. Successful treatment of a rare disease of an animal
 2. Hibernalia of Gavial etc

A.K.M. Fazlul Hoque, Department of Medicine, Faculty of Veterinary Medicine, Bangladesh Agricultural University, BAU. Mymensingh.
 The Department of Medicine, Faculty of Veterinary Science, at Bangladesh Agricultural University, Offers a course on "Zoo Animal Medicine" to the Veterinary Science. I have been teaching the course since 1990. I have, at present, two post graduate students. So, through my post graduate students I will be able to contribute in "The Management of Disease Problems" of Zoo Animals in the Dhaka Zoological Garden.

We have enough facilities in our faculty of veterinary science for diagnosis, treatment and prevention of diseases (bacterial, viral, parasitic, protozoan and non infectious diseases).

Dr. Khudesta A. Begum, U.L.O, Deputation, Dhaka Zoo Bangladesh
 I would try to practice three C's at "Dhaka Zoo" as well as within the SAZARC.

If I get adequate training on Zoo education & animal welfare by SAZARC resource persons then I could do better zoo education/research, animal welfare. (e.g. freedom from pain, injury & disease) well as enrichment practices for captive wildlife/animal in Dhaka Zoo.

Although, I have been doing these type of practices without any training. My tools were newsletters and person who visited different zoos of SAZARC & Zoo personnel who attended SAZARC last few years.



Recommendations of Visiting Zoo Personnel to Bangladesh for their zoos — Presented during Closing Ceremony of the South Asian Zoo Association for Regional Cooperation – 3rd Annual Meeting

Working Group : Brig. H.A.N.T. Perera, Director, National Zoo, Sri Lanka; Dr. M.M. Qazi, Director, Karachi Zoo and Safari Park, Pakistan; Dr. R. K. Sahu, Director, Ahmedabad Zoo, India ; Dr. Miranda Stevenson, U.K. Zoo Consultant, Great Britain ; Ms. Sally Walker, Founder, Zoo Outreach Organisation, India.

- 1) Government should formulate zoo legislation including standards of animal care for Bangladesh Zoos.
- 2) The financial powers of the Head of the Zoo (Curator) should be increased so that life-threatening animal emergency situations can be addressed immediately and the zoo can operate more efficiently.
- 3) Training in all aspects of zoo management should be organized for zoo personnel at all levels, both in country and abroad.
- 4) There should be continuity of service of zoo personnel, particularly Curator and Veterinarian, but (ideally) in zoo officers as well.
- 5) The public education potential of all zoos of Bangladesh is enormous; therefore, this function of zoos needs to be strengthened with an Education Wing, designated officer, assistants, and infrastructure provided.
- 6) Veterinary expertise to be more specialized for wild animals; equipment such as tranquilizer gun, blow pipe, etc. should be provided.
- 7) Exposure to modern zoos in other countries is highly advisable for in-charge and engineers and even others, for development of new ideas and expertise.
- 8) Nutrition for the animals needs immediate review and consultation with experienced zoos in collaboration with local universities.
- 9) The upcoming Bangladesh Zoo Association is much appreciated by the international zoo community and may be endorsed by the Government as a very positive step for creating cooperation, communication and collaboration between zoos.
- 10) The Bangladesh Zoos should cultivate a positive relationship with the media.
- 11) Powers of Curator to take action on Class 3 and 4 workers is strongly recommended.



Brig. H.A.N.T. Perera, newly elected President of SAZARC, reads Recommendations of South Asian Zoos for Bangladesh Zoos as requested by government officials. Photos by R.K. Sahu



Dignitaries on the dias for closing function, Curator, Dhaka Zoo; President, SAZARC, Jt. Secretary, Dept. of Livestock; Director General, Dept. of Livestock; Patron, SAZARC; Principle Trainer



Participants and guests at the closing ceremony, SAZARC meeting