الأمانة العامة لصون المها العربي
General Secretariat for the Conservation of the ARABIAN ORYX

Proceedings of the National Workshop on

Standardizing Herd Management of Arabian Oryx Collections in UAE

31 May 2016, Abu Dhabi, UAE

هيئة البيئة - أبوظبي
Environment Agency - ABU DHABI

الأمـــانة العامـــة لـصـــون
المـهـــا العـربـــي
General Secretariat for
the Conservation of the
ARABIAN ORYX

The General Secretariat for the Conservation of the Arabian Oryx (GSCAO) is a regional initiative with a key role of supporting all efforts to protect and conserve the Arabian Oryx, to agree regional criteria and standards, and to coordinate efforts between range states. GSCAO is hosted by the Environment Agency-Abu Dhabi

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Acknowledgments

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Figure 1. Participants of the National Workshop on Standardizing Herd Management Practices of Arabian Oryx Collections in UAE, 31st May 2016. © EAD.

Executive Summary

The General Secretariat for the Conservation of the Arabian Oryx (GSCAO), in collaboration with the Environment Agency - Abu Dhabi (EAD), organized a National Workshop on **Standardizing Herd Management of Arabian Oryx Collections in the UAE**. The workshop was held on 31st May 2016 at Al Mamoura Building, EAD, in Abu Dhabi, UAE. The principal aim of this workshop was to provide collections and experts the opportunity to present and discuss daily practices in herd management of the Arabian Oryx at the national level and investigate how these practices can be promoted to meet the minimum requirements as set out in international animal husbandry standards. The topic of Arabian Oryx wilderness in the reserves was also discussed. The workshop format was based on oral presentations in the morning, followed by oral discussions in the afternoon. The afternoon sessions was also dedicated to carrying out a comparative analysis between open access and fenced reserves. At the end of the workshop, participants recommended the establishment of a working group for developing technical guidelines on herd management practices for Arabian Oryx collections.

Figure 2. An Arabian Oryx herd in Al Ain Zoo, UAE. © Al Ain Zoo

1 Introduction

The United Arab Emirates (UAE) hosts the world's largest collection of Arabian Oryx (*Oryx leucoryx*) with more than 6,000 individuals (as per 2016 population estimates). Most of these individuals are managed in captive facilities. Unfortunately, current measures of Oryx conservation success in the UAE are mostly based on breeding and numbers with herd quantity being valued over its quality (i.e. health, genetic diversity, resilience, etc...). At the recent National Workshop on Arabian Oryx collections in the UAE, held in Dubai in November 2015, it was concluded that basic guidelines of herd management need to be developed so that conservation managers have a checklist of key practices that their collections should follow. Once these key practices are implemented, they can significantly raise the standards of herd management of Arabian Oryx collections at the national level and hence better prepare and assist collections in implementing international standards of animal care and husbandry (e.g. studbook, professional record keeping, etc.).

2 Workshop objectives

The workshop was attended by a total of 33 conservation managers representing 16 Arabian Oryx Collections in the UAE (Annex I). The one-day technical meeting gathered these specialists, veterinarians and collection managers from across the UAE in order to:

- Provide collections and experts with the opportunity to present their daily practices, issues and challenges in herd management of the Arabian Oryx at the national level

- Develop a checklist of minimum husbandry and management requirements which must be met in order to standardize the herd management of Arabian Oryx collections in the UAE
- Discuss a proposed position paper on the status of wilderness of Arabian Oryx populations in protected areas in the range states
- Complete the national reporting template of Arabian Oryx conservation efforts in the UAE.

The following husbandry and management requirements of Arabian Oryx herds were covered during the workshop:

1. **Husbandry requirements:**
    - Space
    - Enclosure design
    - Type of substrate (flooring)
    - Shade
    - Shelter
    - Typical hazards that can cause injuries to animals
    - Individual identification (durability and suitability of marks)
    - Tagging new-born calves (pros and cons)
    - Feed and water
    - Veterinary care
    - Capture methods
    - Availability of qualified technical staff and keepers
    - Reproduction (random, control)

2. **Management requirements discussed include:**
    - Management objectives of the collection (display, reintroduction, breeding purposes or trading with other collections)
    - Herd size in relation to fenced area
    - Sex and age structure
    - Ability to remove surplus individuals (e.g. males) and also the appropriate mechanism of removal
    - How to promote natural behavior of captive animals particularly those individuals planned for release into protected areas.

Figure 3. The Workshop was attended by representatives of 16 Arabian Oryx collections in the UAE. © EAD.

3 Workshop agenda

Table 1. Agenda of the National Workshop on Standardizing Herd Management of Arabian Oryx Collections in UAE

Agenda	Time
Registration	09:00-09:30
Welcome speech, Dr. Shaikha Al Dhaheri (Executive Director of TMBS- EAD)	09:30-09:35
Overview talk about the workshop, objectives, expected outputs and forward actions Nessrine Alzahlawi, Terrestrial Biodiversity Policy, EAD	09:35-09:45
Presentations by collection managers on herd management practices of Oryx collections in UAE (15 minutes each) **Al Ain Zoo** (Myyas Al Qarqaz)	09:45-10:00
Coffee Break	10:00-10:15
Al Bustan Zoological Centre (Meyer De Kock) **EAD Forestry** (Malik) **Sir Bani Yas Island** (Abid Mehmood) **Al Marmoum Reserve, Dubai** (Jaber Sultan) **Wadi Al Safa Wildlife** (Declan O'Donovan) **EAD *Ex*-situ** (Justin Chuven) **Breeding Centre for Endangered Arabian Wildlife** (Callum Chase)	10:15-12:15
Lunch	12:15-13:15
Discussing minimum standards and best practices on Arabian Oryx herd management (facilitated by Yassir Al Kharusi)	13:15-14:30
Discussing a proposed position paper on Arabian Oryx Wilderness (facilitated by Yassir Al Kharusi)	14:30-15:30
Completing the UAE national reporting template (facilitated by Yassir Al Kharusi)	15:30-16:15
Feedback survey & Closing remarks, Nessrine Alzahlawi	16:15-16:30

4 Welcome speech

Delivered by Dr. Shaikha Al Dhaheri (Executive Director of Terrestrial & Marine Biodiversity Sector- EAD)

Good Morning,

It is my pleasure and honor to welcome you today to the ***National Workshop for Standardizing Herd Management of Arabian Oryx Collections in the UAE****. It's also my duty to thank you all for all the excellent work you have done in the past on disease survey, management of Arabian Oryx in captivity and for your regular input to the Secretariat*

The General Secretariat for the Conservation of the Arabian Oryx (GSCAO) has been actively working on several regional and national initiatives that mainly aim at facilitating the sharing of information and supporting capacity building in the range states. Last November we met with several of you at the Dubai Desert Conservation Reserve to discuss and share common issues and challenges related to managing Arabian Oryx in captivity, and this workshop today is the second step in our journey, allowing us to explore together in even more detail actual management practices and agree on a national standard for herd management.

The Five Year Strategic Work Plan (2015-2019) of the GSCAO recognizes herd management as a priority issue for the conservation managers of Arabian Oryx collections in the range states. Issues such as space limitation, enclosure designs, herd size and structure in relation to available space and others represent serious daily challenges to zoological institutions and conservation organisations.

This workshop aims to explore current practices in herd management of Arabian Oryx collections in the UAE and hopefully we would be able develop identify husbandry and management requirements in order to standardize herd management of Arabian Oryx collections in the UAE.

I am sure you would also be able to work on the proposed position paper about the status of Arabian Oryx within protected areas in the range states and the UAE National reporting template. The reporting template is important as it facilitates communication and information sharing at both national and international levels and allows us to monitor progress towards implementing the regional strategy developed in 2010.

Before I conclude, I would like to thank you all for attending the workshop and I hope you will enjoy, benefit and continue to participate in supporting this regional initiative and all conservation efforts for the species, so that we can achieve our common goals together.

Thank you

Figure 4. Arabian Oryx at Sir Bani Yas Island, Abu Dhabi, UAE © The Tourism Development & Investment Company (TDIC).

5 Abstracts of oral Presentations

- **Management of Arabian Oryx at Al Ain Zoo,** *Myyass Al Qarqaz , Al Ain Zoo*

Over the 47 years since the establishment of the Arabian Oryx population in Al Ain Zoo, plenty of development and conservation initiatives have been carried out, and significantly the latest ten years have witnessed diverse improvements in all aspects of the species management aiming to improve animal welfare and standardize the practices of both animal husbandry and veterinary management regimes up to the international levels. This presentation briefly shed the light on the current husbandry management (i.e. housing, nutrition, identification, breeding, etc.) & health care systems that Al Ain Zoo is implementing to manage all the herds/individuals with particular focus on the Arabian Oryx collection. Finally, the presentation illustrated some results of the genetic research carried out on the Arabian Oryx collection of al Ain Zoo in comparison to other local and regional collections.

- **Why good record keeping?,** *Meyer de Kock, Al Bustan Zoological Gardens*

Population management tools need accurate individual data of the species to ensure the correct projections and management strategy. The Arabian Oryx (*Oryx leucoryx*) are possibly more sensitive to data accuracy because of the lack of data capture on a large scale and the low numbers of founders, of the species, in captivity. ZIMS (Zoological Information Management System) is an online global database for captive species management which only reflects an Arabian Oryx population of less than 2000 animals. This global record is far below the total population of the UAE and therefore provides limited information to national and international institutions weighed down with the task to plan and develop strategies for this species. ZIMS is a resourceful platform that is able to link institutional databases to a global perspective. This platform also provides analysis of data in a lesser extent. Software features include pedigree analysis,

regional tools for species management, and a communication platform for exchange of individuals. This data base is online with immediate availability of data, after it was entered. Registered studbook keepers can export global species data from ZIMS and import it directly into population management software like PMx or PM200. This free software provide the user with the best practice strategy for the species and output practical information to the user with recommendations for the individual animals place within the Global / Regional Conservation Breeding Program.

- **Husbandry and Management Practices of Arabian Oryx in EAD Managed forests,** *Malik Rapaie, Barari*

Barari Forest Management (BFM) is assigned for a long term contract with the Environment Agency Abu Dhabi (EAD), Tourism Development and Investment Company (TDIC) & other private organizations to manage and conserve more than 63,000 animals of 25 species occurring in 34 forests, holding facilities & islands. A total of 1574 individuals of Arabian Oryx are currently managed by Barari Forests Management Company. Out of these total numbers, 489 Arabian Oryx are distributed in five afforested sites, 861 are in Sir Bani Yas Island and 224 are in holding facilities as private collections. The sex ratio varies, as in forest sites there are 60% male and 40% female while in Sir Bani Yas Island 33% male and 67% female. The birth rate during 2016 in five forest sites was recorded as 44 heads. Wildlife conservation services ensure the provision of best husbandry practices and quality veterinary care by qualified veterinarians and biologists. Guided by the EAD forests management, Barari have developed and implemented a comprehensive wildlife management plan. The company has also put well documented standard operating procedures in practices to ensure keeping the population healthy, viable and sustainable through eradicating the possibilities of infectious and genetic diseases. In general, the management and

husbandry of Arabian Oryx must encompass a long term strategic and scientific approach. For the wellbeing and care of animals either in captivity or in semi wild / free ranging conditions, Barari follows various necessary approaches such as the establishment of feeding stations (monitoring method for free roaming and semi wild animals), feeding regimes (minerals, vitamins, proteins and fiber), water supply, population monitoring, bio-security measures , health monitoring, veterinary services, habitat enrichment, and hygiene.

- **Arabian Oryx Conservation in Sir Bani Yas Island, Abu Dhabi,** *Abid Mehmood, TDIC & Barari Forest Management*

In 2013, Barari entered into a contract with the Tourism Development and Investment Company (TDIC), the (Custodians of Sir Bani Yas island) to provide all-round services for the management and conservation of flora & fauna on Sir Bani Yas Island. The island is a well-renowned eco-tourism destination in the UAE, having a collection of more than 15,000 animals of 19 ungulate, 3 ratite and 4 carnivore species. The objective is "to have a genetically healthy population of Arabian Oryx; that can serve future conservation initiatives and can be a part of any in-situ and ex-situ conservation programme in the region". There are 4 separate populations of Arabian Oryx at Sir Bani Yas Island with a total of 886 individuals. The animals are separated into three breeding groups and one free-ranging group of surplus males in the Arabian Wildlife Park. The animals are provided with supplementary feed consisting of concentrate pellets and roughages as per 3% of their body weight. Moreover, to promote natural feeding behavior, grass pastures are opened to the animals on a rotational basis. The monitoring of animals involves recording new births, mortalities, patrolling for injured or sick animals and any hazardous structure in the habitat. Animals are ear-tagged for individual identification purposes. To improve the gene pool a breeding program is

currently administered resulting in 18 new-born calves from males imported to the herd. Holistic treatment and prophylactic measures are administered at all times for disease management; a dedicated veterinary team is deployed on the island with a veterinary clinic, diagnostic lab, and quarantine units. Strict biosecurity measures are implemented to avoid any introduction of a pathogen onto the island. The animals are also vaccinated for immunity against prevailing diseases in the region such as FMD, PPR, Pasteurella, Pox virus, and clostridium. The company's future strategy is to have controlled breeding and go for quality of gene pool rather than just increasing the numbers.

- **Arabian Oryx Conservation in Marmoum Reserve, Dubai,** *Jaber Sultan Al Mutaiwei, Al Marmoom Reserve, Dubai*

Al Marmoom reserve in Dubai was initially established in 1999. The key objective of the reserve is to protect wildlife species and the desert ecosystem of Dubai Emirate. The first Arabian Oryx group consisting of 27 individuals was released into this unfenced reserve in 2008, followed by another release of 75 individuals in 2009. Currently, the Oryx population in Al Marmoom reserve is estimated at 3,500. Oryx are provided with feed (hay and dry lucerne) and water at different feeding stations throughout the reserve. Oryx breeding is kept natural and the population is reported healthy.

- **Twenty years of Arabian Oryx (*Oryx leucoryx*) management at Wadi Al Safa Wildlife Centre, Dubai, UAE,** *Declan O'Donovan, Wadi Al Safa Wildlife Centre, Dubai*

Wadi Al Safa Wildlife Centre is a private facility located in the Emirate of Dubai UAE. It was officially established in 1997 but already had a small population of 12 (2:10) Arabian oryx. Initial issues involved intraspecific aggression between the males in the group as well as a lack of identification. Permission to physically identify the animals was obtained in 2002 and since then, each animal is individually identified with a plastic ear tag as well as a Trovan RFID transponder. Management includes the routine restraint (yearly), check-up and vaccination of the whole herd since 2002. During a recent post graduate project, the time to process each animal was recorded. With all the normal veterinary checks and vaccinations, together with the collection of various morphometric parameters, the average time per animal was estimated to be 6 minutes. Currently the population stands at 273 animals (88:185) and a number of population control methods have been employed to control these numbers. These have included the removal of all breeding males (2014 to 2015), the use of banding to castrate young calves, surgical castration, culling and movements. Recruitment to the population is usually through imports and exchanges with animals having been sourced from many locations including, EAZA collections in Europe, Jordan, and a number of collections within the UAE. As part of any Collection Management Plan, research should be a fundamental part of the plan. In conjunction with Dubai Falcon Hospital, there have been a number of important research projects completed. These include the assessment of FMD and PPR vaccine efficacy over time, a Vitamin and Mineral survey, age specific biological normals and the establishment of a regression equation to estimate the weight of an animal based on a number of morphometric parameters while the animal is anaesthetized if no other accurate weight is available.

- **Arabian Oryx (*Oryx leucoryx*) Husbandry and Herd Management,** *Justin Chuven, Environment Agency- Abu Dhabi (EAD)*

The Environment Agency Abu Dhabi (EAD) is dedicated to the conservation of the Arabian Oryx and a description of the husbandry practices employed and facility design utilized were presented. Adhering to the highest animal welfare standards always takes a precedent in EAD operations, therefore the details of every procedure are carefully planned out. Always taking into account the extreme temperatures possible in the UAE, a variety of capture, restraint, and transportation techniques have been developed and modified dependent on the conditions. These techniques were explained and evaluated in addition to discussing some of the common challenges experienced in the management of this species.

- **Management of Arabian Oryx at the Breeding Centre for Endangered Arabian Wildlife (BCEAW),** *Callum Chase, BCEAW*

The Breeding Centre for Endangered Arabian Wildlife is found in the Sharjah Desert. The center currently houses a total of 44 (12.32) Arabian Oryx of mixed ages in 3 separate enclosures; 33 (1.32) in our main display camp (21 hectares), 8 (8.0) in our museum camp bachelor herd (5.4 hectares) and 3 (3.0) in a fenced protected area (Dhulaima, 1 km²/100 hectares). The main objective is display and education however the centre has reintroduced Oryx into a fenced protected area (Dhulaima). Exchanges with national and international facilities are a part of the European Endangered Species Programme (EEP) from EAZA and the Arabian Oryx breeding programs. All of the Oryx are tagged and micro-chipped at birth and are caught twice a year for vaccinations and an overall external health check. Surplus animals are also removed during catching time.

6 Afternoon discussions

The afternoon session provided the opportunity to engage with all participants and allow an open discussion with all collections on the different requirements for best practice in managing Arabian Oryx in captivity. The session also included a discussion of the proposed Arabian Oryx position paper on defining wilderness and a compilation of information and updates from the collections for the UAE National Report. The details of these discussions are presented in sections 6.1, 6.2 and 6.3 below.

6.1 Minimum standards and best practices in Arabian Oryx herd management: discussion outcomes

- **Space.** The space allocated for the Oryx herd is usually determined by several factors including the purpose of the collection (e.g. breeding, conservation, display, education, research…etc.). There is a need to establish a unified classification of Oryx collections in the UAE as well as their objectives.
- **Enclosure design and fencing.** The enclosure design will depend on the available space to the collection and its geographical and climatic features, sex ratio, resources, the purpose of the collection, nearby domestic farms. One important aspect of fencing Oryx herds is to keep other unwanted animals out such as predators and domestic livestock and hence protect your collection from disease as well. In some facilities it was reported that foxes attacked Oryx calves. Participants debated on the efficiency of electric fences with some advocating their use and others remaining doubtful. However, participants agreed that it is difficult to define enclosure design standards only for Oryx herds when collections usually have many other species too in the same collection.

- **Substrate.** The flooring of Oryx enclosures should be compacted and requires regular maintenance. In some cases, gravel must be brought in to reduce the problem of hoof growth. Oryx need some amount of abrasive paving which can be provided by putting gravel around feeding points. In wild or semi-wild conditions, Oryx move across larger distances, so substrate intervention may not be needed. For overgrown hooves, once you start trimming you will need to continue doing so.
- **Shade.** It is preferred to have natural shade (e.g. trees) than artificial shade for reasons related to encouraging natural growth of trees as well as to reduce the cost of maintenance. Shading design also needs to consider the movement of the sun across the day and it requires regular maintenance and repair particularly in the case of extreme weather conditions such as storms and heavy rain. If made from raw materials, *barasti* can last up to 10 years but in some cases they need to be treated with insecticide. All participants agreed that there is no need for waterproofing to cover the top layer of the *barasti* as rain is rare and does not affect the Oryx. Some participants reported that they built shelters in their facilities to provide a place for Oryx to hide in case animals fight and also provide individuals with more shade space in case there is competition.
- **Visual barriers.** They help prevent males from fighting. When designing the enclosure landscaping, vegetation needs to be considered to create barriers such as dry moats or rocks which act as effective barriers.
- **Hazards.** Injuries occur often from poorly-designed feeders and drinkers (e.g. sharp edges). Enclosure posts need to be outside of fences to ensure animals do not injur themselves on the posts especially when fighting. Parallel feeders are better than horizontal ones. Whenever using contractors to install or build sections of enclosures, collection managers need to supervise service providers

on a regular basis, ensure that everything is built and installed appropriately, and that no waste or wires that may cause injury or mortality are left on the ground.

- **Tagging and identification.** The positive aspects of tagging Arabian Oryx is efficient individual identification, keeping breeding records and information on pedigree as well as helping identify mother / calf pairs. In some collections, different tagging systems are used including ear tags, collars, tattoos and microchips. Each one of these marking systems has its own positives and negatives. However, participants in general considered that ear tags are easier to see behind the ear and cheaper. One particular issue with this system is that ear notching may cause infection to individuals. Participants agreed that collections need to standardize tagging of males and females so that when exchange of individuals occurs amongst collections in the UAE, confusion can be avoided. Some collections tag newly born calves, while others expressed concern that this can cause the dam to reject its calf.
- **Feeding and watering.** The quantity of feed and water provided to an Oryx herd will depend on the weight of the animals. On average, one Oryx needs to eat 5% of its body weight daily. Participants indicated that the salinity of water is important as if it is too saline some individuals may not drink the water. Increased water salinity also requires that copper blocks be provided in order to increase levels of copper and compensate for the increased saline intake.
- **Vaccination.** Participants recommended that Oryx herds be vaccinated at least once a year for key diseases. However, vaccination of wild or semi-wild populations may not be necessary because of lower management intervention and less population density and crowding. The Ministry of Environment and

Climate Change (MoCCE) of the UAE should develop a national plan for wildlife disease prevention.

- **Capture methods.** Some participants reported that tranquilization drugs for immobilizing animals are difficult to obtain in the UAE due to customs laws and procedures. Keepers and staff need to be well-trained when using chemical immobilization for their own safety and safety of the animals.
- **Training.** The language barrier is often an issue with handling staff and keepers in the UAE. Regular training should be provided to animal keepers so that the time handling the animals for procedures is as short as possible and keepers are confident when handling the animals. Tamers are being used across the UAE and many collections have experience using them and can provide advice when needed.
- **Transfer and transport.** IATA minimum standards are followed for animal transport and crate sizes. It is important to ensure that the transport time is minimized, as animals get stressed particularly when the vehicle stops for long periods and especially in hot conditions.
- **Reproduction.** Participants recommend that breeding should be managed and controlled to ensure quality over quantity. There should be strategic planning to ensure breeding is intended for conservation purposes and ensure highest level of genetic diversity as well, while avoiding surplus populations.

Discussion output: Participants recommended that a working group be established to assist GSCAO in developing guidelines on herd management practices in the UAE. Below is a list of participants who expressed their willingness to be members of the working group; and the door was left open for other volunteers to join in.

Table 2. A list of participants who volunteered for developing the Arabian Oryx herd management guidelines.

Name	Organization	E-mail
Callum Chase	Breeding Centre for Endangered Arabian Wildlife	Callum.chase@bceaw.ae
Ricardo Pusey	Environment Agency-Abu Dhabi (EAD)	Ricardo.pusey@ead.ae
Declan O'Donovan	Wadi Al Safa Wildife Centre	Declan@shp.ae
Meyer de Kock	Al Bustan Zoological Centre	meyer@albustanzoo.ae
Greg Simkins	Dubai Desert Conservation Reserve	greg.simkins@emirates.com

6.2 Proposed position paper on the status of Arabian Oryx wilderness in the region

The issue of defining wilderness conditions for Arabian Oryx in modern terms was presented and discussed. Many participants agreed that achieving true wilderness in the traditional sense of the term may be too idealistic, due to the lack of suitable viable habitat for the species. Participants expressed the need to take into consideration the concepts of home range and carrying capacity when planning reintroduction and release programs. In order to examine the different levels of management interventions and their advantages and disadvantages, a comparative

analysis was carried out for open access versus fenced reserves. Participants indicated that open access reserves are the preferred situation for released Oryx. However, this is challenging to implement in the range states due to political and anthropogenic threats to released populations such as poaching, illegal offtake, habitat degradation and loss. The current trend in the region is to establish Oryx populations in fenced reserves. However, fenced reserves may require a larger budget for construction, maintenance and monitoring, to ensure their efficiency in keeping threats out including livestock, feral animals, diseases and poachers. Fencing could also introduce other problems to management such us overcrowding, fighting and may prevent the free movement of genes amongst individuals, the natural behavior of released herds. If a wild population is to be achieved, the level of management intervention needs to be carefully planned and the carrying capacity of reserves needs to be regularly assessed. Surplus populations that have low conservation value (low genetic diversity or disease carriers), may need to be managed and reduced as much as possible through separation, ethical population control, and in some cases, responsible hunting.

Discussion output: GSCAO is to send to participants a drafted position paper in July 2016 on the status of Arabian Oryx wilderness in the range states for their input and suggestions.

6.3 Completion of the UAE national reporting template

The template of the UAE national report was presented to participants. Participants were invited to provide the GSCAO with information on the sections related to new releases of Arabian Oryx in the UAE, assessment of vegetation cover in protected areas, demographic and genetic assessment of released populations, educational and awareness efforts of Oryx programme, ecotourism opportunities of Arabian Oryx projects in UAE as well as training conducted by Oryx conservation institutions in 2015.

Discussion output: GSCAO will contact participants to provide additional detailed information concerning the questions of the national reporting template, to ensure that the UAE Arabian Oryx 2015 National Report is completed before the end of 2016.

Figure 5. Participants during the afternoon session of the workshop. © EAD.

7 Closing remarks and workshop feedback

Nessrine Alzahlawi concluded the workshop by thanking participants for their discussions and urging them to collaborate more with the GSCAO. Specifically, participants were invited to join the working group for developing guidelines on Arabian Oryx herd management practices in the UAE as well as provide GSCAO with updated information on their collection activities in 2015 to be included into the UAE national report. Participants were asked to complete a workshop evaluation form and provide their feedback and suggestions. Twenty-five questionnaires were completed and received. The results indicate that the participants found the event to be useful and beneficial (Annexe II) with an average overall score of 4.5 out of 5 for the question asking whether attendees found the workshop successful.

Next steps include:

- Meeting with the national herd management guidelines working group members and preparing a first draft of these guidelines (September-December 2016)
- Completing the UAE National report with the needed missing information (end of July 2016)
- Sharing the draft position paper with collection managers and conservationists across the region for review and input (July-August 2016)
- Identifying ZIMS training opportunities at the national and regional level.

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Annex I List of participants

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Annex II Workshop feedback

Question	Average score (5= Strongly agree; 3= Neutral; 1= Strongly disagree)
1.Workshop objectives were stated and related to my job	4.7
2. The information presented and discussed was of value	4.5
3. I was given the opportunity for discussing and presenting my point of views related to the workshop topic	4.6
4. I will be able to transfer the workshop information to my job	4.6
5. The workshop materials and resources were of acceptable quality	4.4
6. The facilitators and presenters maintained my interest	4.5
7. The workshop venue was of a good standard.	4.6
8. Coffee breaks and food are of good standard and at adequate intervals	4.4
9. Overall I would rate the workshop as excellent and beneficial	4.5

What did you learn most from this workshop?

The following are examples of participant responses to this question:

"I learnt about herd management practices implemented by other institutions"

"Info sharing"

"A lot more Oryx in the region than originally thought"

"ZIMS"

"Refreshing my knowledge. I become surprised about the number of Oryx collections in UAE"

"Vaccination programme"

"What is the future of Arabian Oryx and what other collections need to do to manage?"

"Different ways of Oryx herd management"

"Oryx diet…substrate and the need to add enough texture for hooves"

"Problems other collections encounter in herd management"

Additional comments and suggestions?

"Interested in contributing on herd management in protected areas"

"Need to work on genetics to improve breeding"

"Topic is comprehensive but time was short to cover all aspects of herd management"