

# TAYF

## the Soqatra Newsletter

Issued by **FRIENDS OF SOQOTRA**



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# NEWS

## **Independent Socotra Governorate: Paving the way for a federal Yemen or a hint at separation?**

**Modified from a report published on 29 October 2013 in Report Yemen Times by Ali Abulohoom**

In a trip to the main island on the occasion of Al-Adha Eid in mid-October President Abdu Rabu Mansour Hadi announced the administrative independence of the Socotra archipelago, which has been under the supervision of Hadramout governorate since 2004. "The future of Socotra archipelago will be promising," President Hadi said. He called on investors to capitalize on economic opportunities on the island for their own benefit and the benefit of the nation at large, promising that the central government will facilitate such investment projects.

Socotra's independent status, both financially and administratively, was one of the principal demands of Socotrans during the 2011 popular uprising. With roughly 55,000 inhabitants, and located around 380 km off the coast of mainland Yemen, Socotra is the largest of four islands that form the archipelago in the Indian Ocean.

Socotra is home to a unique variety of animals and plants, such as the dragon's blood trees, due to its extreme isolation. In addition to the geographical separation, being far away from the mainland's insecurities has turned Socotra into one of the safest parts of Yemen.

Fahd Saleem, one of three representatives of the island at the National Dialogue Conference (NDC), said it has been a long wait for Socotra to be declared as Yemen's 22nd governorate. Socotra was part of Aden governorate from unification until 2004, for 14 years. The central government annexed it to the Hadramout governorate because of its proximity, reducing expenses and hassle for residents who needed to access public services not available in Socotra.

Over the past few months, the NDC has hosted fierce debates about the future shape of the state. The number of regions in what will likely be a new federal system in Yemen is not decided yet. Although it is not clear how the NDC's decision will be affected by President Hadi's Socotra announcement, Saleem said Socotra, as an independent governorate, will be part of the Southern region if Yemen is a federal state.

In Yemen's post-revolution climate, the newly announced Socotra governorate is another issue in which some figures from the old regime are clashing with the new administration. Fadhl Al-Rabaei, a political analyst and the director of Madar Center for Studies, said at this point, the decision to form an independent Socotra has been considered a crucial step toward strengthening federalism in Yemen. According to Fadhl, a new governorate of Socotra would be part of the Southern region, also consisting of Lahj, Abyan and Aden. Adding the independent governorate of Socotra to the Southern region will strengthen the region, Al-Rabaei said, thus balancing out the power between this region and the other federal regions.

Politics aside, Fatima Huraibi, executive director of the Yemen Tourism Promotion Board, says what is important for Socotrans is that their lives will be positively affected. "Socially, politically, financially— Socotrans will benefit from an independent governorate," Huraibi said. "It is a suitable time for this to happen because there are now many qualified and educated Socotrans who can manage and rule their own lands," she said.

Khalid Bahaj is a native Socotran who says he will no longer need to travel to Hadramout in order to deal with bureaucratic paperwork. "Now that Socotra will be an independent governorate, all services will be available here," he said.

### **Law establishing Yemen's 22nd governorate issued 18 December 2013—Saba News**

SANA'A, Dec. 18 (Saba) - The Law No. 31 for 2013 was issued on Wednesday establishing the governorate No. 22 of the Socotra archipelago with Hadibo as its capital city. The governorate is divided administratively into two districts: 1- Hadibo and 2- Qlansiah and Abdel-Kori. Article (2) of the Law stipulates that the governorate consists of islands and rocks. The islands are Socotra, Darsa, Abdel-Kori, Sial Abdel-Kori, Samha and Sial Socotra. The rocks are Sira, Radad, Adlah, Karshah, Sihar, Thaen Thatal and Jals.

<http://www.sabanews.net/en/news335234.htm>

Cover Photo: *Dracaena* forest—article p. 12  
Photo by Hana Habrova

# NEWS

## FRIENDS OF SOQOTRA SYMPOSIUM AND 13TH ANNUAL GENERAL MEETING

19-20 September, Rome, Italy

The Friends of Soqotra Symposium and 13<sup>th</sup> Annual General Meeting will be held at the Botanical Garden of Rome from Friday 19 to Sunday 20 September 2014. All members of the Friends of Soqotra as well as those with an interest in the archipelago's biodiversity, conservation, development and culture are invited. The Friends of Soqotra AGM and Symposium traditionally provides a platform for researchers, conservation and development practitioners, and other interested persons to present their work and exchange ideas concerning Soqotra in a friendly and stimulating environment. This year's symposium, hosted by the Department of Environmental Biology – Sapienza University of Rome, seeks to explore a range of multidisciplinary topics related to Socotra's biodiversity and culture in the past, present and future.

The Venue is the Botanical Garden of Rome which occupies an area of 11 ha in the historic centre of Rome (Largo Cristina di Svevia 10). It is located in the garden of a 16th-century aristocratic palace making it a unique example of a historic garden with an important artistic heritage and several valuable plant species collections.

The scientific committee organising the conference is: Fabio Attorre – Sapienza University of Rome – Italy; Andrea Belluscio – Sapienza University of Rome; Kay van Damme – University of Birmingham – UK; Mauro Fasola – University of Pavia – Italy; Uwe Zajonz – Senckenberg Research Institute and Nature Museum Frankfurt – Germany; and Julian Jansen van Rensburg – Exeter University – UK.

If you would like to participate to the XIII Annual General FOS meeting, please register at: [http://www.fos2014rome.it/?page\\_id=116](http://www.fos2014rome.it/?page_id=116). The deadline for registration and abstract submission is July 15<sup>th</sup>, 2014. Abstracts of all accepted contributions will be published as posts on this site starting from August 2014. If you need further information or any help with the registration process, please contact: [info@fos2014rome.it](mailto:info@fos2014rome.it) or [luca.malatesta@unicam.it](mailto:luca.malatesta@unicam.it)

The registration fee for each participant is 60 Euros which covers lunches and coffee-breaks, workshop pack with programme and the conference dinner, which will be held at the Botanical Garden on Saturday March 20<sup>th</sup>. The **Social dinner** on September 19<sup>th</sup> will be held in a location to be determined by the number of participants.

Further information, circulars and application forms will be available on this website.

If you require an official letter of invitation to attend the Conference, please contact the Chairman of Organising Committee, Prof. Fabio Attorre, Department of Environmental Biology – Sapienza University of Rome, email: [fabio.attorre@uniroma1.it](mailto:fabio.attorre@uniroma1.it).



### C or Q?

*Spelling of the main island name in English is still controversial. Contributors to **Tayf** are welcome to use whichever spelling they prefer.*

# NEWS

## New Socotra Project at the Centre for Middle Eastern Plants, RBGE

Alan Forrest

The Royal Botanic Garden Edinburgh (RBGE), which was established in 1670 making it one of the oldest botanic gardens in the world, is an internationally renowned centre of excellence in plant biodiversity research and conservation. It is recognised as one of the world's top four botanic gardens. It is first and foremost a scientific institution, dedicated to discovering and describing plants and their evolution and conservation. This research is underpinned by internationally important collections of living and preserved plants alongside a world class library and research facilities.

As an integral part of RBGE, the Centre for Middle Eastern Plants (CMEP) was established to capitalize on over 150 years of institutional experience in the Middle East and South West Asia. It is regarded as one of the most important centres for the study of Middle Eastern plants in the world. CMEP works closely with governmental organisations, academic institutes and other local partners throughout the region. It is actively involved in botanical and conservation research and capacity development to tackle contemporary environmental challenges including biodiversity conservation and sustainable development. CMEP staff have a wealth of botanical and horticultural knowledge, developed through numerous research and consultancy projects.

Socotra has long been a focus for CMEP. The first major botanical expedition to Socotra culminated in the publication of Balfour's 'Botany of Socotra' in 1888, by which time he was Regius Keeper at RBGE. Both historical and more recent collections, mostly by Tony Miller, mean that RBGE holds by far the best collection of Socotran plants globally. RBGE has played a prominent role in surveying, conservation and capacity development on Socotra since 1985, and this research interest continues today with the project 'Conserving the Flora of Socotra: integrating evolution into conservation' funded by the Leverhulme Trust.

This project will use contemporary molecular and statistical approaches to (a) understand how and when the endemic plant species of Socotra evolved, and (b) incorporate evolutionary data alongside species distribution, functional traits and ethno-botanical use into a comprehensive Protected Areas network. It will also ensure plant species distribution data is collated and curated to a high standard and available for researchers globally.

[www.cmep.org.uk](http://www.cmep.org.uk)

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## Richard Porter—Member of Honour

Richard Porter, a founder member of FoS and frequent contributor to this Newsletter, was made a Member of Honour of BirdLife International at their Congress in Ottawa in June 2013. Held every four years, it's the largest voluntary conservation gathering in the world with over 600 delegates from about 120 countries.

HIH Princess Takamado of Japan (BirdLife's honorary president) made the presentation—the Socotra Buzzard is on the plaque! The citation is for his contribution to wildlife conservation in the Middle East, especially in Iraq, Jordan and Yemen, notably Socotra.



# LIFE ON THE ISLAND

## The Soqatra Language — an interview with Miranda Morris

2013 November by Ziad Ahmed for "MUKALLA TODAY" (abridged)

### ***When did you visit Socotra for the first time?***

I first visited Socotra in 1989 for the World Wide Fund for Nature.

### ***Few years ago, people knew only a little bit, whether in the country or abroad, about Socotra to the extent that it was called "the lost island". What led to break this isolation?***

Until recently, the island lacked air or sea transport facilities, and had no means of communicating with the rest of the world. It was further isolated by four months of monsoon gales in the summer and storms in the winter. The islanders who lived in the interior rather than along the northern coast - as well as the fauna and flora - were little influenced by the outside world. With the development of an airport and regular air services, improved sea communications, and above all with the arrival of mobile phone technology, the island has joined the rest of the modern world. The island's designation as a World Heritage Site, and increased publicity about the island, as a tourist destination as well as a place of natural wonder and scientific interest means that many more people around the world know about the island.

### ***Socotra has fascinating cultural legacy especially the language of the population which you know how to speak. Can you tell us about your experience with the Socotra language?***

The language of Socotra and its poetry and song embody the expertise and unique cultural identity of generations of islanders. We must remember that cultural diversity is as necessary for humankind as biodiversity is for nature, and that this is just as important as the flora and fauna. The language describes the island in minute detail before any of the current changes took place, and illustrates the islanders' approach towards the ecosystems which helped them manage their island with such skill: in earlier times it was 'conservation' that made survival possible.

### ***What family does the Socotra language belong to?***

It is one of a group of six, called the Modern South Arabian Languages (MSAL). The others are Mahri, BaḡHari, Hobyōt, H□ arsūsi and ṢHerət . They are Semitic languages spoken by minority populations in southern and eastern Yemen, western Oman and the fringes of southern Saudi Arabia. They belong to the South Semitic branch of the Semitic language family, which also includes Ethio-Semitic and Ancient South Arabian. This is distinguished from the Central Semitic branch, which includes the more widely known Arabic, Aramaic, and Hebrew.

### ***Do you have any concerns about the Socotra language and the danger of extinction?***

If the language does not develop a written form, it will certainly die out, as have so many oral languages of the world: there are some 7,800 mutually unintelligible languages spoken in the world today and it is estimated that half of these will disappear by the end of this century. Soqotri will be among them unless the islanders continue to speak the language to their children and agree on, and make use of, a system to write their language.

### ***Could the Socotra language become written?***

Indeed it could. I am involved in a project, funded by the Leverhulme Trust, whose title is "*Documentation and ethno-linguistic analysis of the Modern South Arabian languages*"; this project has involved devising, with colleagues from the language-speaking communities, a script which is a modified form of the Arabic alphabet. We have added only five new symbols for the majority of the languages, and eight additional symbols for one of them (ṢHerZt). At the end of the first year of the project, this new script has been tested on a variety of speakers and has already been used to transcribe some of the spoken texts we have so far recorded. A rolling sample of these will be displayed on our website ([http://www.leeds.ac.uk/arts/info/125219/modern\\_south\\_arabian\\_languages/](http://www.leeds.ac.uk/arts/info/125219/modern_south_arabian_languages/)), as well as on language-community websites.

### ***Finally, how does Dr. Miranda Morris see the future of Socotra?***

Socotra is a World Heritage Site, and as long as it succeeds in keeping this title (which can be withdrawn) it will continue to be of worldwide interest. It is essential that local knowledge and expertise, the traditions and systems for sustainable management are recognised and used to guide development – it is these that were largely responsible for protecting the island until recently. Today Socotra is a governorate in its own right, so it now has the chance to make many decisions itself about its governance, and can devise its own regulations to manage its environment, and to manage those who come to the island to visit, as tourists, traders or to carry out research. The new Governorate might also try to influence education, to teach the younger generation some of the lessons learned by earlier generations, and especially to encourage the use of the Soqotri language alongside Arabic. It can be more careful in planning the necessary infrastructure, managing water use, developing a strategy to control the rising number of disputes over rights to water and land, developing a market for Soqotran products and managing development so that it benefits all islanders. The island's greatest potential wealth is its people: it was the Soqotrans who managed their island so skilfully in the past and it is the Soqotrans alone who can ensure its future survival. However, there are matters which the islanders themselves will find it hard to manage on their own, such as climate change, world food-prices, the lack of appeal of the rural way of life to the younger generation, the current political instability and the apparent lack of political will or ability to tackle the many problems that face the islanders.

# LIFE ON THE ISLAND

## Livestock Husbandry and Adjusting to Change: Some perceptions of older islanders

Miranda Morris, University of St Andrews

Change is constant. There is no such thing as a truly static society. However, a great *number* of changes over a *short period of time* is bound to be confusing and disruptive, and especially so in the rather conservative sphere of livestock husbandry. I am aware that there have been significant changes in other fields of activity on the island, fishing and commerce, for example, and I know that many pastoralists also engaged seasonally in fishing and commerce, but here I intend to concentrate on change specifically as it has affected livestock husbandry.

*This article is abstracted from the full article available on the Friends of Soqotra website [www.friendsofsoqotra.org](http://www.friendsofsoqotra.org).*

### Resting the Rangeland

Earlier the decision to transhume was a joint one made at a tribal or clan meeting. All had to leave together and all had to return together. The upland areas are often inhospitable, and it was women who bore the brunt of such moves, often carrying all the food and water on their backs.

Now people tend to stay put in the lower grazings and only the livestock move. One person is usually enough to move the animals – the older animals know the way themselves. Thereafter people go up at intervals to check on the state of their animals, and to bring back any pregnant or lactating animals to be looked after in the settlement below. The main reason for staying put is the increasing reluctance of women to move. They are less prepared than their forebears to suffer the hardships entailed in such moves; they also have many more children and have become accustomed to accessible water, food and transport.

It might be thought that this change would have had the beneficial result of leaving the less-exploited upland grazings in excellent condition, but unfortunately in many parts of the island this is not the case. Rather they tend to be used for most of the year rather than only seasonally, grazed by livestock which have been turned loose and left to run free.

Nevertheless, some people feel that if there were good vehicle tracks up to the highland plateaus and better provision of water, they would transhume more - a change of air and environment is seen as desirable.

### Rotation of Grazing

In previous times the threat of livestock theft was a very real one, and during the long and hungry dry season stock had to be penned at night and closely herded during the day.

Rules to enforce transhumance, rotation of pastures and the proper use of water supplies are a recognised feature of pastoral societies, and in the past offenders were effectively deterred from repeating their offences by traditional institutions. However, in many areas of the world such traditional systems have broken down. This can be because the enforcement of sanctions depended on a mutual inter-dependence between pastoralists, so that no-one dared to go against public opinion and risk ostracism. Such inter-dependence has been destroyed by changes in technology, or in economic and political relations between the pastoral and surrounding non-pastoral worlds. This has enabled individual pastoralists to draw on the support of non-pastoralists when they get into disputes with their pastoral neighbours. Sometimes the breakdown of the effectiveness of a traditional control system has occurred because government, unintentionally or in ignorance of its usefulness, has replaced the traditional institutions with modern law courts.

Much of this is true for Soqotra. One of the consequences is that in many areas no regular herding of livestock takes place, unless lack of pasture at home forces the owners to seek permission from other stock-breeding families elsewhere to move their animals to join theirs – to transhume.

### Livestock Management: Management of breeding

Of necessity, Soqotran stock-breeders have developed strategies to cope with the phenomenon of rapid rise in livestock numbers in good years followed by steep crashes in bad ones. The availability of alternative (imported) supplementary feeds for livestock has certainly had an effect on livestock numbers. Even so, older livestock experts blame the rise in livestock numbers - and, in the absence of the skilled care formerly given livestock, the rise in *substandard* animals - on uncontrolled breeding. For all types of livestock it was customary to have only one breeding male for each flock or herd. This was herded with the females but only allowed to mate at specific times of year. Today there are large numbers of breeding males running free and mating with females whenever and wherever they can.

# LIFE ON THE ISLAND

## **The purpose of livestock rearing**

The main trade item which Soqotran herders could produce to trade or barter for necessities (such as cloth, metals, cereals) which they could not produce themselves was butter-oil or ghee. As a result livestock management concentrated on maximising milk production. The highly valued milk animals were managed to give birth in winter, which was when most of the butter was made. This was then carefully clarified and stored until the trade ships arrived. Now that butter has less value and meat a greater value, the care given to milk animals has lessened, and male as well as female young are raised to maturity.

## **Rearing livestock on rangeland alone**

Anyone who asks will be told that livestock numbers rose sharply once imported - and initially subsidised - cereals and flour became readily available, that is, from the mid- to late 1970s onwards. These foods were intended for human consumption of course, but pastoralists were quick to discern the beneficial effects they had on livestock, bringing the most valuable animals safely through the dry season. Expert stock breeders also discovered that females could be made ready for breeding, even in the absence of rain and rains grazing, by being fed on cereals.

## **The involvement of family members in livestock rearing**

Older livestock experts blame the poor state of many livestock on a lack of proper care, and say that there are simply not the numbers at home able or willing to look after them to make them healthy and productive. Even if there are younger family members at home, or where economic necessity forces them to stay and help look after the animals, they often do so reluctantly, and are rarely interested in learning the skills of their elders. More and more the older men and women who now look after the livestock worry about who will replace them, and how the next generation will manage when they lack the necessary knowledge and skills to do so successfully.

## **Water and livestock**

While rights to the water of man-made wells and rainwater catchments were tightly enforced and served to control over-exploitation, water sources that are publicly financed are open to all, breaking the age-old equilibrium between water and rangeland use. The rise in the number of small, personally-owned water catchments, called *karif* (as opposed to the earlier communally-owned rainwater catchments called *lim*) has been astonishing.

In general today, access to water, rather than access to pasture, has become the key requirement of a stockbreeding family. One other result of water being more available is that it has become possible to keep more animals at home, and especially more house-goats. The number of these has grown enormously over the last years: 2 or 3 milk goats kept for immediate household needs have become a home herd of up to 40 animals which graze around the settlement and are fed on household scraps.

## **Managing rangeland vegetation**

Changes in vegetation have been observed all over the island; livestock herders are acutely aware of the steady decline in nutritious grasses and herbs, and of the increase in weed- and unpalatable species. Such changes are especially noticeable in areas which were formerly used seasonally, but are now inhabited the year round.

All over Soqotra the area of rangeland is steadily decreasing: the making of new graded or tarmaced roads results in a proliferation of new tracks made to access those roads; and families moving to be close to water or roads build new accommodation for themselves and their animals. Indeed any attempt to judge the population of Soqotra by counting buildings alone would give a greatly inflated and inaccurate idea of the number of inhabitants, for whereas new houses, pens, folds and byres are constantly being built, old and disused ones are rarely dismantled.

**Positive Changes:** Security; Housing; Water; Diet; Health; Communications; Schooling; Opportunities for training, further education, employment and alternative livelihoods.

**Changes which cannot be 'managed' by Pastoralists:** Climate change, World food-prices, Increasing demands on fresh water, Control of land-disputes, Lack of appeal of stock-breeding and the rural way of life, Loss of traditional culture, expertise and the Soqotri language, Quality of education, Current political instability and the political will / ability to tackle the problems that face those rearing livestock on the island.

For further detail I recommend the following: "**Past and Present human impacts on the biodiversity of Socotra Island (Yemen): implications for future conservation**" by Kay Van Damme and Lisa Banfield in *Zoology in the Middle East*: Supplementum 3, 2011: 31-88.

# LIFE ON THE ISLAND

	<b>Traditional approaches</b>	<b>Today</b>	<b>Some consequences</b>
<b>Resting the rangeland</b>	Seasonal transhumance.	The system of regular vertical transhumance to exploit the short-lived flush of green that develops after the seasonal rains has collapsed.	Overgrazing in specific areas (especially the lower pastures); pastures not rested; soil erosion visible in certain areas of Soqatra (as in the 'protected' area of Homhil).
<b>Rotation of grazing</b>	Strict rotation of grazing with livestock herded to different areas of rangeland in an organised manner; animals penned at night for much of the year.	Rotation of grazing pastures no longer operates; livestock are rarely herded; most animals graze anywhere and everywhere; increased security means that few animals have to be penned at night.	Increased pressure on the rangeland, by night as well as by day.
<b>Different pastures for different livestock</b>	Specific areas reserved for specific livestock: sheep, cattle and camels restricted to certain types of rangeland; goats free to go anywhere; wild goats, and feral goats and donkeys running free.	All livestock graze everywhere; numbers of feral animals are on the increase, especially feral donkeys.	Increased pressure on the rangeland by all types of livestock.
<b>Management of breeding</b>	Breeding controlled in all livestock to ensure that young were born at fixed seasons; numbers of breeding males severely limited.	Breeding largely uncontrolled; high numbers of breeding males on the rangeland the year round.	Rise in livestock numbers with consequent pressure on rangeland and water; no predictable season of abundance for stock-breeding families.
<b>Purpose of livestock-rearing</b>	Livestock reared for subsistence and milk; majority of male young slaughtered soon after birth; seasonal glut of milk and meat.	Livestock reared for meat as well as for milk; male young reared to maturity.	Marked rise in livestock numbers with consequent pressure on rangeland and water.
<b>Rearing livestock on rangeland alone</b>	Livestock reared on natural pasture alone; in droughts large numbers of animals died of hunger as supplementary feed was limited to what the vegetation could offer.	In the dry season almost total reliance on imported feed, which must be paid for with cash.	Loss of self-sufficiency and impoverishment of the stock-breeding families.
<b>Sheep</b>	Sheep valued for their meat, milk and wool; largely managed by women.	Women are increasingly reluctant to undertake the considerable labour of rearing sheep; wool and woven sheepswool cloth are no longer of economic importance; in general, women have different expectations and priorities.	Marked drop in sheep numbers; loss of income; more reliance on goats; less meat and milk available to stock-breeding families.
<b>Involvement of family members in livestock rearing</b>	All members of the family involved in livestock rearing.	Children are at school, and other family members are away at work or in the coastal towns seeking work.	Greater pressure on the few remaining family members, and a consequent inability to look after livestock as carefully as before; older men and women bear the brunt of livestock work, and their expertise in rangeland and livestock management is no longer passed on to the younger generation.
<b>Water and livestock</b>	Livestock herded to water in rotation, often over distances that could not be accomplished in a single day.	The introduction of private and communal rainwater catchments and the piping of water from distant springs means that water (even if only in limited quantities) has become available in areas formerly without it; along the coast, the system of regular cleaning and flushing of lagoons has fallen into disuse and these are now of little use for watering stock.	The provision of water to hitherto under-utilised grazing lands stimulates herd growth, but also encourages more settled modes of production and reduces mobility; livestock tend to stay in the same part of the rangeland for long periods at a time and there is often severe overgrazing around watering points.

# LIFE ON THE ISLAND

	Traditional approaches	Today	Some consequences
<b>Livestock marketing</b>	The market was internal: livestock were sold or bartered for ceremonial feasts, weddings, religious and other celebrations; large numbers were slaughtered on the death of their owner.	The internal market has grown considerably with the influx of mainland Yemenis; Hadiboh and Qalansiyah have greatly expanded; small coastal settlements have developed into permanent villages and towns; cafés and restaurants have been opened, and hotels established to cater for the increasing numbers of tourists and visiting officials.	Stockbreeding families with good contacts living close to the main towns can expect to market a good number of their animals; others have to balance the cost of transporting their animals to market against the likelihood of making an advantageous sale.
<b>Managing rangeland vegetation</b>	Pastoralists have developed an extensive knowledge of the vegetation and also great skills in managing it; rangeland was rested seasonally; cutting timber, collecting fuelwood and exploiting food plants was controlled.	Traditional controls are largely meaningless; there is little resting of rangeland; wood is over-exploited as fodder, timber and fuel; in general a spirit of competition has replaced that of co-operation between pastoralist families.	Overgrazing, in the mountains leading to bush encroachment; land degradation; lack of timber and firewood (not helped by the lack of a regular supply of bottled gas); increase in species which are not palatable to livestock and decrease of useful grazing / browse species.
<b>Using plants</b>	Traditionally plants were used for food (for people and livestock); for medicinal and veterinary purposes; for pest control, as insecticides; for bedding, for fuel and timber; for tanning leather and removing hair from the skins; for cleansing, as cosmetics and aromatics; for making a variety of implements and different thicknesses of cordage.	Much of this former expertise is lost or disregarded; imported alternatives replace locally manufactured items.	Impoverishment of stockbreeding households as they purchase what they used to be able to produce for nothing or obtain by barter.
<b>Exploiting plants commercially</b>	Wood could be sold or bartered as firewood or as timber, and some fruits and lichens had a commercial value. The harvesting of plants of commercial value, especially aloes, incense-bearing trees and the <i>Dracaena</i> , was managed and controlled. Marketing was carried out by a handful of island merchants and by traders calling in at the island.	There is a sporadic but irregular demand for <i>Dracaena</i> products and aloes juice, but in general the economic value of plants has decreased; harvesting is largely uncontrolled; some plant products are sold to visitors or are marketed in al-Mukalla and San'a, and some plants are still harvested for medicinal use.	Plants are harvested only when there is a demand, or speculatively; loss of supplementary income for stockbreeding families.
<b>Cultivating plants</b>	In places where there was enough water, pastoralists cultivated date-palms and finger-millet for their personal use and for trade or barter; watering was done laboriously by hand.	Finger-millet has been replaced by imported rice and other cereals; date-palm gardens have multiplied, but often without adequate family labour or the skills necessary to make them productive; widespread but unskilled and inexperienced attempts to cultivate fruit and vegetables; uncontrolled sinking of wells and pump installation all over the island.	Loss of rangeland to date-gardens, but little increase in the production of dates as a result; increased pressure on limited water resources; kitchen gardens (with a few notable exception, such as tomatoes around Hadiboh) generally unproductive, and a high and potentially dangerous use of insecticides.



# LIFE ON THE ISLAND

## Vegetable Cook Book

Hana Habrova

Within the frame of Czech development assistance project, a simple cook book with 17 recipes about vegetable use in the kitchen, both in Arabic and English, was prepared. Interested people may ask for the cook book from any of Czech team members during their stay on Socotra between September and November 2014. People's favourite meal during cooking workshops held in autumn 2013 was zucchini-potato pancakes. Two example recipes are shown below.

### وصفة كعكة الشوفان - لنكا إهرنبرجروفا Oat cakes by Lenka Ehrenbergerova

#### المحتويات:

1-2 zucchini or eggplant or pumpkin, 1 cup of flour (approximately – depending on the density of dough), 1 cup of oat flakes, 2-3 eggs, salt, oil, spices: e.g. curry, chili etc.



1 Peel the zucchini and if necessary, remove the seeds (الشكل 1)



2 Shred the zucchini or cut to fine pieces (الشكل 2)

3 Add a cup of oat flakes and salt to the shredded zucchini (3), stir and leave for one hour to soak the oat flakes.

4 Add flour and eggs (depending

on the density of dough). Add spices. Make the cakes and fry them in the oil until golden brown at both sides (4, 5).

You can eat oat cakes as a main food or together with rice, "bambe" or bread.

تقشر الكوسة في حالة الضرورة وتزال البذور (الشكل 1)

2 تمزق الكوسة أو تقطعت إلى قطع صغيرة جدا (الشكل 2)

3 يضاف كوب من رقائق الشوفان مع الملح إلى القدر المحتوي على الكوسة الممزقة ثم تحرك وتوضع لمدة ساعة (الشكل 3)

4 يضاف الدقيق والبيض إلى القدر (ليصبح العجين كثيفا)، تضاف البهارات ومن العجين تصنع شرائح للكعك ثم تقلى بالزيت حتى تصبح بنية من كلا الجانبين (الشكل 4، 5)

بإمكانك تناول كعكة الشوفان



1



2



3

### Vegetable cook book



### الخضروات المطبوخة - لنكا إهرنبرجروفا

#### Cooked vegetables by Lenka Ehrenbergerova

#### المحتويات:

Onions, tomatoes, zucchini or eggplant or pumpkin, green beans (French beans), salt, spices: e.g. curry, coriander, chili etc.



بصل، طماطم، كوسة أو باذنجان أو قرع (دبه)، فاصوليا فرنسية (الفاصوليا الخضراء)، ملح، بهارات (مثل الكاري، الكزبرة والفلفل)

### كيفية طبخ الخضروات



1 Cut green beans (1) and boil them in salty water until they are tender.

تقطع الفاصوليا الخضراء وتغلى بما ملح حتى تكون رطبة (الشكل 1)



2 Peel the onions, chop them to small pieces and fry them in a pan (2).

تقطع البصل وقليها بالزيت (الشكل 2)



3 Cut the tomatoes to cubes and add to the onions (3). After a while, add the cooked green beans to the pan, too.

تقطع البصل وتوضع في القدر مع البصل (الشكل 3)

4 Peel the pumpkin (4), remove the seeds, cut it to cubes and add to the mixture (5).

إضافة الفاصوليا الخضراء المطبوخة إلى القدر أيضا (الشكل 4)

5 Add the spices (6). Stew the mixture for 30 minutes. Serve with rice, "bambe" or bread.

تتشير القرع والباذنجان والكوسة في حالة الضرورة وإزالة البذور ثم تقطع إلى قطع صغيرة وتوضع في القدر مع إضافة البهارات (الشكل 5)

الطهي لمدة نصف ساعة وتكون جاهزة. يمكن تناولها مع الرز أو الدخن أو الخبز.



1



2



3

# CONFERENCES

## 12<sup>th</sup> Annual General Meeting of Friends of Soqatra 2013 in Lednice, Czech Republic

Julian Jansen van Rensburg

The resounding success of FoS's 12<sup>th</sup> AGM and conference is a testament to the efforts of our hosts at Mendel University and the Biosphere Reservation Dolni Morava, who put together a wonderfully well organised schedule of events that kept us all extremely busy throughout the days and nights of our stay in Lednice.

This year we were fortunate enough to have a range of dignitaries attend, namely:- Abdo Razaz Khaled Minister of Water and Environment, Yemen; Irena Krasnická, Ministry of Foreign Affairs, Czech Republic; Zuzana Tollrianová, Ministry of the Environment, Czech Republic; and Dr Abdulrahman All-Eryani, Advisor to the President of Yemen. The presence of these dignitaries was matched by the range of speakers and visitors from Europe, Qatar, Soqatra and the mainland of Yemen, all of whom reflect the diversity of people that have been brought together by the Friends of Soqatra to share their interest in Soqatra archipelago. The topics addressed were as diverse as the speakers and included a wide range of subjects that included cultural heritage, fish biomass productivity, growth dynamics of the dragon's blood trees and many other superb and interesting talks.

The daily schedule of informative talks at the Faculty of Forestry and Wood Technology was interspersed by breaks, during which it was possible for the various attendees to enjoy some splendid cake and engage in lively discussions with the speakers. Due to the continued efforts of our hosts the evenings were even livelier, and I am sure that I am not alone in saying that we all greatly enjoyed our dinner in the wine cellar. The evening that was complemented by the folk music band that played for us, and which I have to report was danced to by many of our European and Soqotri colleagues. This was only matched by the conference dinner venue at the Židlochovice chateau, one of the best preserved hunting chateaus in Europe. The venue itself was, for those of a more adventurous disposition, certainly a unique experience, while the food was most memorable.

The post conference excursions to the UNESCO World Heritage site of the Lednice chateau's garden and the unique floodplain forests of the Lower Morava Biosphere Reserve was a truly unforgettable experience that was made even more so by the extensive knowledge of our guide, Petr Cupa, who provided us with an exceptional insight into the management and history of the areas visited.

On behalf of everyone at the 12<sup>th</sup> Annual General Meeting and conference of the Friends of Soqatra I would like to extend my heartfelt thanks and congratulations to our organisers, whose tireless efforts made this yearly event such a resounding success. A thousand thanks. Alf shukra.

*Abstracts of some of the talks are presented in the following pages.*



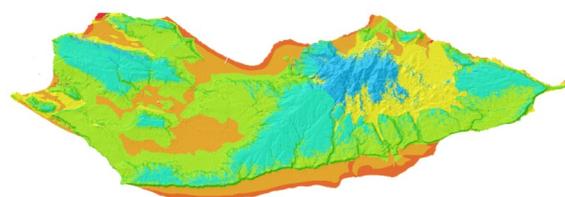
# RESEARCH

## Analyzing the Relationship between Land Units and Plant Communities: The Case of Soqotra

**Fabio Attore, Nadim Taleb, Luca Malatesta, Ahmed Adeeb, Michele De Sanctis,  
and Alessio Farcomeni**

Ecological Land Classification (ECL) allows the identification of homogenous land units, which are fundamental for further investigation and for management. ECL is particularly relevant to international programs of cooperation concerning areas about which there is scarce and scattered information. In this study, three techniques were compared to find the best classification of land units for Soqotra. These were: a Self-Organising Map neural network (SOM), the Clustering LARge Applications method (CLARA) and a Two Steps (TS) clustering algorithm. Three land unit maps of Soqotra were thereby produced and the relationships between land units and plant communities, as identified by phytosociological investigation, were analyzed.

Following evaluation, the TS method emerged as the best method for being able to discriminate between different plant communities, in the trade-off between classification complexity and class homogeneity. Although the identification of land units depends upon several factors, including the method and criteria of classification employed, the scale adopted, and the specific purpose being served - whether it is management or planning - this study contributes towards a standardisation of ecological classification in the context of the



## Geobiocoenological Typology of the Soqotra Island

**Hana Habrova and Antonin Bucek**  
Mendel University in Brno, Czech Republic

During the years 2001-2004, complex field observations on more than 250 localities of Soqotra Island were made. As a result, a geobiocoenological typological system describing vegetation of the island has been produced. Five altitudinal vegetation zones, 5 trophic ranges and 3 inter-ranges (expressing soil conditions), 5 hydric ranges (expressing water condition in soil), 26 groups of geobiocoene types and within them (with respect to their actual condition of vegetation) 39 biotope types were delimited. Classification of biotopes is based on differences in physiognomy, structure and species composition of the vegetation component of present biocoenoses. Biotope types are divided according to differences in the species composition of dominant species, groups of geobiocoene (biotope) types are divided according to physiognomy and vertical structure of vegetation. Biotope types are usually named according to key species of plants in the Soqotra language and English.

The method of classification and names of biotope types make it possible to add other new biotypes or to use more detailed classification of subtypes. Types of biotopes with natural and semi-natural conditions of the vegetation component of biocoenoses are most valuable from the viewpoint of preserving the biodiversity, and their fragments form the framework of ecological stability, a basis of the ecological network of Soqotra.

One of the most interesting types of biotopes is F.1 – Dragon's blood tree forest (ariob), which has been undergoing continuous investigation by Mendel University experts since 1999. It is a climax biotope within geobiocoene type 3-BD-D-3 (3 = third altitudinal vegetation zone, BD = mezotrophic-bazic trophic inter-range, D = bazic trophic range, 3 = normal hydric range) and it is characterized as a semideciduous forest on limestone bedrock with optimum conditions for *Dracaena cinnabari* (with min. 30 % of tree coverage). Among other tree species there are various Burseraceae such as *Boswellia dioscorides*, *Boswellia* sp. A, *Commiphora planifrons*, *Commiphora ornifolia*. Also *Euphorbia socotrana*; in the shrub layer, *Croton socotranus* and *Jatropha unicostata* dominate, common species are *Trichocalyx orbiculatus*, *Lycium socotranum*, *Cissus hamaderohensis*, *Buxanthus pedicellatus*, *Withania riebeckii*, *Heliotropium nigricans*, *Rhus thyrsoflora*, *Cryptolepis intricata*. As for herbs, *Aloe perryi* is a typical species. Nowadays, only limited area (Firmihin) is occupied by DC forests, the majority of this geobiocoene type is covered by various degradation stages of F.1, i.e. W.1. – Dragon's blood tree woodland, S.2.4. Low shrubland with *Croton socotranus* and/or *Buxanthus pedicellatus*, S.3.2. Dwarf shrubland, and G.2. Pastures.



# RESEARCH

## Second year of CZDA Project Implementation: Support of small-scale farmers and agricultural education on Soqotra Island

Hana Habrova and Petr Nemeč  
Mendel University in Brno, Czech Republic

In 2013, the Czech Republic Development Cooperation project came into its second year of implementation. After two years, positive results arose not only in the form of newly established or improved gardens, but also in the number and species diversity of crops produced in supported areas. More than 100 interested families were encouraged to establish or expand their home gardens. One of the supported crops was traditional "bambe" (*Eleusine coracana*), which nearly disappeared from the Soqotri diet but now is again of great interest of locals.

An inherent benefit of the project is the increased awareness of the target groups of the necessity of a nutritionally balanced diet for overall health and condition, as well as the cultivation and subsequent processing of staple crops. This was achieved by implementing a number of training programmes focused on human nutrition, cooking from crops grown (including distribution of simple cookbook created within the project) and basic agronomic methods and management practices in home gardens. In a number of municipalities and schools, a water source was brought, thereby permitting access to good quality and safe water.

Already seven bigger agroforestry objects were established and serve as practical examples and training centres; in some of these fenced areas, local endemic trees are supported to grow out of the reach of livestock – *Dracaena cinnabari* in Shibehon, *Boswellia elongata* in Homhil – Leeyeh, *Commiphora ornifolia* in Qariyah and *Boswellia socotrana* in Galelhan.

During 2013, 13 new schools were supported in establishing their own school garden:

Primary school Gisfo; Primary school and Secondary school Madahubo; Primary school Selmeen (Mori); Primary school Osama bin Zaeed; Primary school Saeed (Haif); Primary school and Secondary school Abu Bakar Asadik (Steroh); Primary school Zahag; Primary school and Secondary school Mohamed Mahmood Zubeiry (Noged Station); Primary school Da'arho; Primary school 7th July (Haaleh); Primary school Matiaf (Noged); Primary school Ashukani (Qariyah); and Primary school Salahadin (Hadiboh).

Thanks to its long history Czech activities on Soqotra Island are welcomed by the community and the cooperation with local people is pleasant and fruitful. It was also proven by obtaining two diplomas from local schools, expressing their gratitude to the Mendel University team in support of their school gardens.

One of the school gardens supported by the project (photo Irena Hubalkova)



#### Schools supported in 2012

- 1) Qalanisyah
- 2) Qalelhan
- 3) 30 November
- 4) Al Zahra
- 5) Chalet Bin
- 6) Hafeg
- 7) Manofa
- 8) Oam Alcora
- 9) Homhil
- 10) Mahfirhin
- 11) Rehen

#### Schools supported in 2013

- 1) Steroh
- 2) Noged Station
- 3) Saeed (Haif)
- 4) Zahag
- 5) Osama bin Zaeed
- 6) Madahubo
- 7) Gisfo
- 8) Darho
- 9) Mori
- 10) Quariah
- 11) Haaleh
- 12) Matiaf
- 13) Salahadin

# RESEARCH

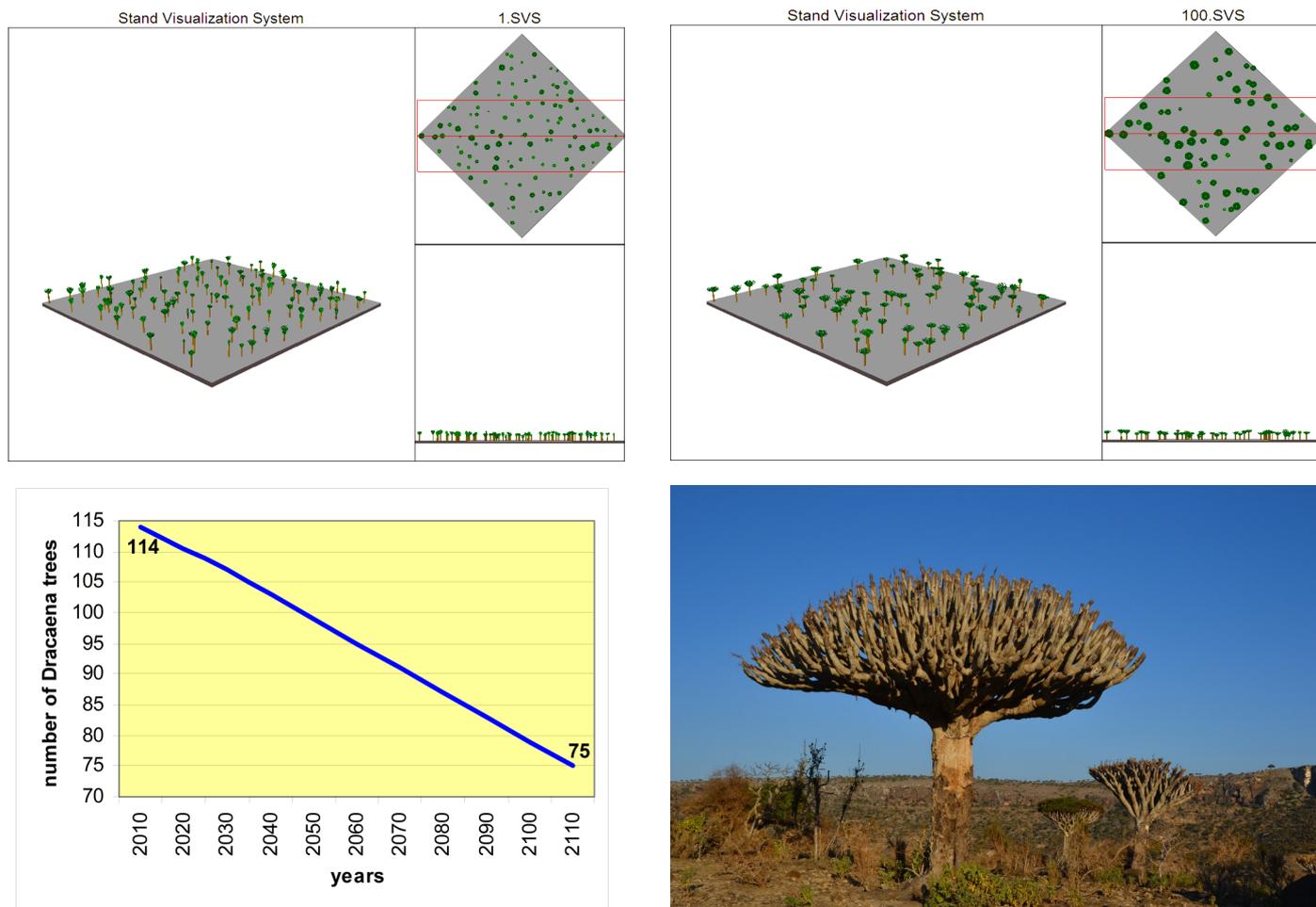
## Growth Dynamics of *Dracaena cinnabari*

Irena Hubalkova and Jindrich Pavlis

Department of Forest Botany, Dendrology and Geobiocoenology, Faculty of Forestry and Wood Technology, Mendel University in Brno, Brno, Czech Republic

*Dracaena cinnabari*, with its distinctive umbrella-shaped crowns, is a source of medicinally valuable sap as well as being the native tree that supplies the Soqotran landscape with an appearance that is almost mythical in spirit. However, the area of its past distribution was larger and with no natural regeneration occurring, except in inaccessible sites, this endemic plant has become endangered. Seedlings are threatened by goats grazing and mature trees are subject to sap extraction and to wood collection for fuel; and, in addition to these threats, the trees are also affected by climatic changes. Both the decreasing density of stands and their age structure indicate maturity and over-maturity of *Dracaena* populations.

The current study was based on a single 100 metre square plot randomly chosen on Firmihin, and the aim was to predict changes in tree numbers over the next 100 years. An inventory was made of all 114 trees within the plot with detailed records of the number of branch sections present in each tree. This allowed for modelling of the ages of the trees and for predictions of their likely lifespan. The crown of the oldest tree was estimated to be about 530 years old and had 28 branching sections. At the other extreme there were no seedlings without stems and only three young trees with un-branched stems. The results of the analysis were graphically represented in MATLAB and showed that only 73 of the original 114 trees will be likely to remain in 100 years time - which would be a decrease in the number of trees by 36%.



Clockwise from top left: Fig.1 *Dracaena* trees density in 2010; Fig.2 *Dracaena* trees density in 2110; Fig.3 The decrease in the number of trees in a hundred years; Fig.4 Dying *Dracaena* trees on Firmihin.

# RESEARCH

## The Cultural Heritage of Soqatra

Julian Jansen van Rensburg

Soqatra was inscribed into the World Heritage List in 2008 as being one of the most biodiverse islands in the world. However, it is not just this rich biodiversity that makes Soqatra distinct but also its unique tangible and intangible cultural heritage, which is as much a part of the distinctiveness of the island as its fauna and flora. Despite the richness of Soqatra's cultural heritage it has attracted little attention and remains largely ignored by tourist guides, who are driving hundreds of visitors past and over a multitude of sites. Moreover it is rarely even referred to in the management plans for the conservation of Soqatra. The exceptions to this are the ethnographic museum situated outside Hadiboh (Reqeleh in Momi) and Hoq cave (in Momi), both of which have become important touristic sites.

So what? These heritage sites have been on Soqatra for hundreds if not thousands of years, and surely they will remain there for many more? Unfortunately this is not the case, as it is not only increasing development, but also the changing natural environment that is causing their destruction. Furthermore, unlike the natural heritage, few studies of the richness of Soqatra's tangible cultural heritage have been undertaken, and those that have tend to concentrate on specific sites along the north coast. Consequently, there are a number of sites that have not received any scholarly attention and risk being destroyed, or looted and sold to the burgeoning tourist market. The question is what can we do about it, and how can we preserve this cultural heritage for future generations?

In order to effectively manage Soqatra's cultural heritage it is necessary for it to be identified, interpreted and assessed as to its importance both locally and internationally. This would require a detailed mapping program which, with local involvement, would allow for many of the sites seen as important both locally and internationally to be recognised. The importance of this is that it would provide the basis from which informed decisions concerning the protection of these sites could be integrated into existing natural heritage protection programmes. This is not to say that cultural heritage would fall within the remit of the protection of the natural heritage, but rather that it could be an additional consideration for conservation and development programs on Soqatra.

*See photos back page.*

## Vegetation Analysis of the Communities Harboursing *Cyphostemma digitatum* in Yemen as a Model for Community: Analysis in *Dracaena cinnabari* ecosystems in Soqatra

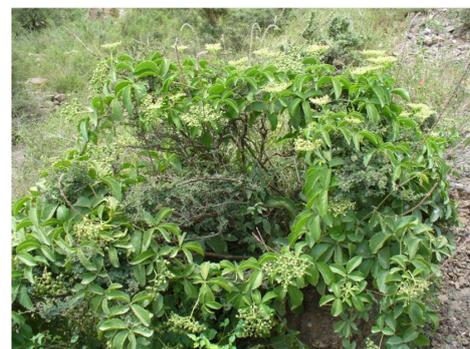
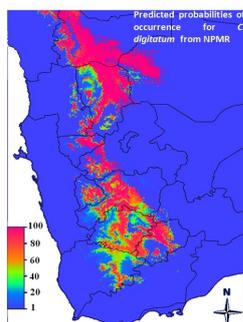
Mohammed Al-Duais and Gottfried Jetschke

Foundation for Endangered Wildlife, Sana'a, Republic of Yemen; Institute of Ecology, University of Jena, Jena, Germany

*Cyphostemma digitatum* (*Vitaceae*) is a perennial climbing succulent plant species, inhabiting the slopes in the south-western highlands in Yemen. Due to overexploitation the species is endangered and has been cleared from much of its natural habitat. The vegetation associated with *C. digitatum* was studied, along an altitudinal gradient on the south-western escarpment, and 467 species in total were analysed. Seven plant communities were able to be distinguished by their differing floristic compositions, with each community type being characterised by particular indicator species easily seen in the field. The possible relationships between community types and environmental gradients were analysed and revealed good separation for the seven communities. Altitude explained much of the distribution pattern, mainly through a gradient of temperature (especially frost) and precipitation. Other influences included the effect of exposure, surface water, soil type and soil moisture and superimposed on all these influences were the effects of human impact. It was felt that the techniques employed in this study had a particular relevance for the study of *Dracaena cinnabari* on Soqatra.



*Cyphostemma digitatum* main product form, many other methods of use were recorded in different regions.



# RESEARCH

## Biogeographical division of the Socotra Archipelago

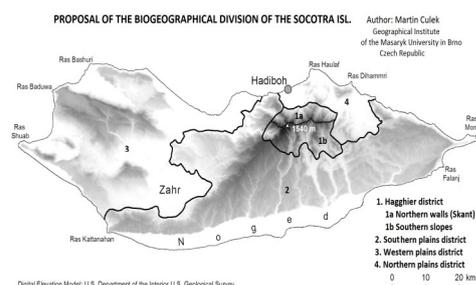
Martin Culek

The Socotra Archipelago, according to A. Takhtajan (1986), is a separate biogeographical province (No. 75) of the Sudano-Zambezian Region as a part of the Paleotropical Kingdom. The Archipelago consists of four islands and two large rocks, total area being ca 3700 km<sup>2</sup>; with Socotra Island itself being ca 3500 km<sup>2</sup>.

The Archipelago is proposed to be biogeographically subdivided in first level due to species immigration and migration possibilities that were restricted by the deeper Brother basin between Abd al-Kuri and the other islands of the Archipelago. Thus, species composition of Abd al-Kuri is relatively different and this island represents one biogeographical subprovince and the other islands the second one. Socotra island itself is proposed to be divided in four biogeographical districts. The most important and the richest is the Haggier one (1), crucial for phylogenesis and survival of the majority of biological species during climate changes. Two subdistricts were proposed: Northern walls (Skant)(1a), green in "winter", with frequent fogs and broad-leaf bushes such as *Trichodesma scottii*. The subdistrict Southern Slopes (1b) is dryer and warmer with common *Commiphora planifrons*, frequent pastures bushes and rare *Dracaena*.

South and east of the Haggier Mountains stretches the Southern plains district (2), relatively rich in species, with some montane species in valleys (e.g. *Hibiscus diriffan*), and with *Dracaena cinnabari*. Dry and relatively poor in species is the Western plains district (3), almost without montane species and without *Dracaena*, but with some endemic species and with biota of wet gypsum sabkha.

The hotspot of biodiversity lies on rocks and escarpments south of Qalansiah village. Very dry and warm, especially in the summer period, is the small Northern plains district (4) to the north and northeast of the Haggier Mts., probably with natural absence of *Dracaena*, with vegetation being green in winter and with some specific flora. During discussions at the FoS meeting in September 2013 in the Czech Republic, existence of the fifth biogeographical district (the Noged Plain) was in question. As this area is distinguished almost negatively, Noged Plain is proposed to remain a part of Southern plains district.



See photos back page.

## *Hemidactylus homoeolepis* – one more endemic gecko species for Socotra

Raquel Vasconcelos

The genus *Hemidactylus* currently consists of 122 species of geckos within four phylogenetically divergent clades: the African-Atlantic, the *H. angulatus*, the tropical, and the arid clade. Recent phylogenetic studies, as well as field investigations carried out in previously unsampled regions of the Arabian Peninsula, including the Socotra archipelago, indicate that the diversity of the arid clade is still largely underestimated, with several new species having been described in past years. One of the smallest species of the arid clade is *Hemidactylus homoeolepis* Blanford, 1881, which was initially reported from Socotra and more recently from coastal areas of Oman, and also from Southeast Yemen and Saudi Arabia, although the specimens from the latter two areas presented clear morphological differences. Previous works has supported genetic and morphological differentiation between Socotra and mainland Arabia populations, however few individuals from Socotra were included in the analyses. In our recent work (see below\*), morphology, mtDNA and nDNA data of more than 80 gecko specimens from the entire distribution range were used to revise the taxonomy of *H. homoeolepis* species complex. Differences between Socotra and mainland Arabia populations were confirmed: larger snout-vent length, lower number of preanal pores, and higher number of lamellas under first and fourth hind toes; around 11% of divergence in two mitochondrial genes; and non-shared haplotypes in two nuclear genes. It is suggested that up to three new gecko species may be present in mainland Arabia, one of which is described by us, and that *H. homoeolepis* binomial is restricted to Socotra. As a result, all Socotran native reptiles are endemic species and the area of occupancy and extent of occurrence of *H. homoeolepis* have changed dramatically and thus its conservation status should be updated.

Photo: *H. homoeolepis* by Raquel Casconcelos



\*Vasconcelos R, Carranza, S (in press). Systematics and biogeography of *Hemidactylus homoeolepis* Blanford, 1881, with the description of a new species from Arabia. Zootaxa, in press.

# RESEARCH

## Karst Management of Geopark Soqotra

Peter de Geest

The Soqotra Karst Project, Destelbergen, Belgium

In 2003 Soqotra was designated a Man and Biosphere Reserve and in 2008 it was awarded World Heritage status; both were primarily because of its unique biodiversity. This biodiversity is underpinned by geo-diversity and understanding the latter is crucial for effective ecosystem management and for geo-conservation.

UNESCO's concept of a Geopark is of an area with well-defined limits, which is large enough to serve local economic development, and which comprises geological heritage sites of special scientific importance, rarity or beauty. In addition to this geological significance it may also be of archaeological, ecological, historical and cultural value. The Soqotran Archipelago potentially fits this definition but to achieve this status there needs to be an evaluation of Soqotra's geo-heritage, with development of strategies for geo-conservation and geo-tourism.

The islands are mainly sedimentary rock, of which limestone formed in the Paleocene-Eocene represents the majority. Over long time scales, the dissolving action of water on this soluble bedrock, combined with the interplay of many factors, has led to the distinctive topography that is karst. This is characterised by fluted and pitted rock surfaces, vertical shafts, sinkholes, sinking streams, springs, subsurface drainage systems and caves. Karst represents a unique, non-renewable resource of significant value - biological, hydrological, mineralogical, scientific, cultural, recreational and economic. The management of karst requires professional and site-specific knowledge and karst terrains need to be carefully inventoried and assessed for their vulnerability to proposed land uses.

In 2000 the Soqotra Karst Project (SKP) began mapping and studying the karstic underground of Soqotra by direct exploration. A multidisciplinary approach has led to inventories of caves, studies on the island's palaeo-climate, the provision of fresh water to local communities, the discovery of new endemic cave fauna and also of archaeological artefacts and petro glyphs. This database provides a significant and important starting point for the development and implementation of sustainable strategies which would be needed to create a Geopark on Soqotra.



# RESEARCH

## Climate Change Vulnerability of the Soqotri Fisher Folk

Marie Martin

Climate change is an additional stressor for marine and coastal ecosystems which already suffer from pollution, habitat degradation and negative impacts of fishing activities. By changing the conditions of ecosystems, climate change also affects people who are dependent on the provided ecosystem goods, like fish and other living marine resources. To analyze such negative impacts of climate change the vulnerability approach is useful. According to the IPCC vulnerability is defined by the exposure, sensitivity and the adaptive capacity of the observed system (IPCC 2007). In this underlying vulnerability study the focused system is the Soqotri fishery, which is conceptualized as an integrative social-ecological system (SES). This concept of a SES "Fishery" is helpful for identifying the different interrelations of the ecological and societal sphere, which are described by types of demand, institutions, practices/technology, knowledge and further underlying structures and processes.

For the empirical research the focus was on the sensitivity and the adaptive capacity of the SES by using a broad set of methods. The sensitivity is described by fish biomass assessments (natural scientific) which are a proxy for the health of the ecosystem and the status of the fish stocks. Those assessments are part of a long-term research, established by U. Zajonz in 2007, and so it is possible to show temporal developments. For studying the societal aspects of sensitivity, household surveys (social scientific) in five coastal villages at the north-east coast of Soqatra were conducted to describe the fisher folk dependency on living marine resources. The research on the adaptive capacity of the SES is again based on household surveys but also on different types of interviews with stakeholders, like fishermen, their wives, politicians and employees of several ministries and authorities. Those interviews were needed to find out, which accesses (education, information, money, infrastructure) and structures (politics, participation, gender relations) influence the adaption capacities of the local population.

The preliminary findings of the study show a high climate change vulnerability of the Soqotri fisher folk in reference to sensitivity and adaptive capacity. The project highlights capacities and barriers which have an influence on the adaption of the local population.

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## Mubarak's Garden: Land improvement on a dry tropical island in the Arabian Sea

D. Pietsch<sup>1</sup>, P. Kühn<sup>1</sup>, M. Morris<sup>2</sup>

1 Eberhard Karls University of Tübingen, Rümelinstraße 19-23, 72070 Tübingen, GERMANY. 2 School of History, St. Andrews University, St. Andrews, Fife, KY16 9AL, UK

Inhabited dry tropical regions are principally seen as vulnerable areas, especially if people have limited access to suitable land, fresh water and crop seeds. From the traditional, but also from the scientific point of view in some cases, it might be considered to be exceptional, indeed pointless, for people to try to improve land in such an arid environment. But for people living directly on a hypersaline coastline, experiments in crop cultivation are necessary to produce additional fruits and vegetables, using either traditional or adapted techniques of land cultivation. Soil investigations in the kitchen-garden of Mubarak Walid Eesa, situated at the northern coast of Soqatra Island, Yemen, show that one year of cultivation increased  $C_{org}$  contents from 0 up to 0.7%, and  $P_{av}$  contents from 100 mg kg<sup>-1</sup> up to 230 mg kg<sup>-1</sup> in the garden beds. A general decrease in readily soluble salts – explained by irrigation with fresh water – is already obvious after only one year: from 6.7% salt in marine sand to 0.3% in cultivated beds. A vertical increase of clay content in sediments and soils, but also an inland increase of clay contents was observed. It is hoped that this example will encourage future research on kitchen-gardens, since they have a beneficial effect on society as well as having positive environmental consequences, as seen in the present case of land improvement on an island in the Arabian Sea.

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## Towards a Re-launch of the Flora of the Arabian Peninsula and Socotra

Sabina Knees, Stuart Lindsay, Sophie Neale and Anthony Miller

Centre for Middle Eastern Plants at the Royal Botanic Garden Edinburgh, 20a Inverleith Row, Edinburgh EH3 5LR  
New developments in biodiversity informatics and a re-organisation of the management framework of the *Flora of the Arabian Peninsula and Socotra* have led to a radical re-thinking of the way the Flora is published leading to the decision to re-launch the Flora in the autumn of 2013. A new flexible approach to writing and publishing the Flora will make it accessible to a wider audience, be more relevant to the needs of the region whilst maintaining the high taxonomic and research standards found in the existing volumes. This exciting new programme will incorporate recent developments in biodiversity informatics being pioneered at the RBGE. A web-based e-flora, using the successful interface developed at RBGE for the *Flora of Nepal* but modified to take into account regional requirements will be central to the proposed re-launch.

# CONTACTS

## FRIENDS OF SOQOTRA

Friends of Soqotra (UK Charity Number 1097546) was formed in 2001. Its distinctive rationale is to bring together people with backgrounds in scientific research and those with a more general interest and develops the synergies between them in order to:

- Promote the sustainable use and conservation of the natural environment of the Soqotra island group
- Raise awareness of the archipelago's biodiversity and the unique culture and language of the islanders
- Help improve the quality of life of the island communities and support their traditional land management practices.



## Contacting FoS

info@friendsofsoqotra.org  
<https://www.facebook.com/FriendsOfSoqotra>

**General Correspondence (Secretary):**  
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## Friends of Soqotra Website

<http://www.friendsofsoqotra.org>

The Friends of Soqotra website is managed by Dana Pietsch. It website provides information on completed and ongoing scientific research on the Soqotra archipelago including data, bibliographies and contacts of institutions and research teams. The structure and layout also includes a page in the Arabic language which gives some general information about FOS. If you would like to submit content for the website, please contact Dana:  
[dana.pietsch@uni-tuebingen.de](mailto:dana.pietsch@uni-tuebingen.de)

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Sabina Knees, RBGE, Edinburgh, Scotland

Bohdana Rambouskova, Czech Republic

Rowan Salim

## WEBSITES

[www.FriendsofSoqotra.org](http://www.FriendsofSoqotra.org)  
[www.Socotraisland.org/fund](http://www.Socotraisland.org/fund)

The following websites also provide information on the island:

<http://rbgesun1.rbge.org.uk/Arabia/Soqotra/home/page01.html> Royal Botanic Garden Edinburgh. Plants, panoramas and ethnobotany.

[www.uni-rostock.de/fakult/manafak/biologie/wranik/socotra](http://www.uni-rostock.de/fakult/manafak/biologie/wranik/socotra). University of Rostock (Animals)

[www.sogotra.info](http://www.sogotra.info) A personal view by John Farrar.

[www.yemen-protectedareas.org](http://www.yemen-protectedareas.org)

[www.socotraproject.org](http://www.socotraproject.org) – SGBP website

<http://www.sogotra.com>; <http://www.sogotra.org/int/>

<http://www.sogotra.com/vb/showthread.php?p=39668>

<http://socotra.info/socotra-news.php?start=20>

## TAYF

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Photos Martin Culek See article p. 16  
Socotra Northern Walls subdistrict (Wadi Dysfey)  
Socotra Northern walls biogeographical subdistrict (pinnacles of Dysfey)



Photos Julian  
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See article page 15

