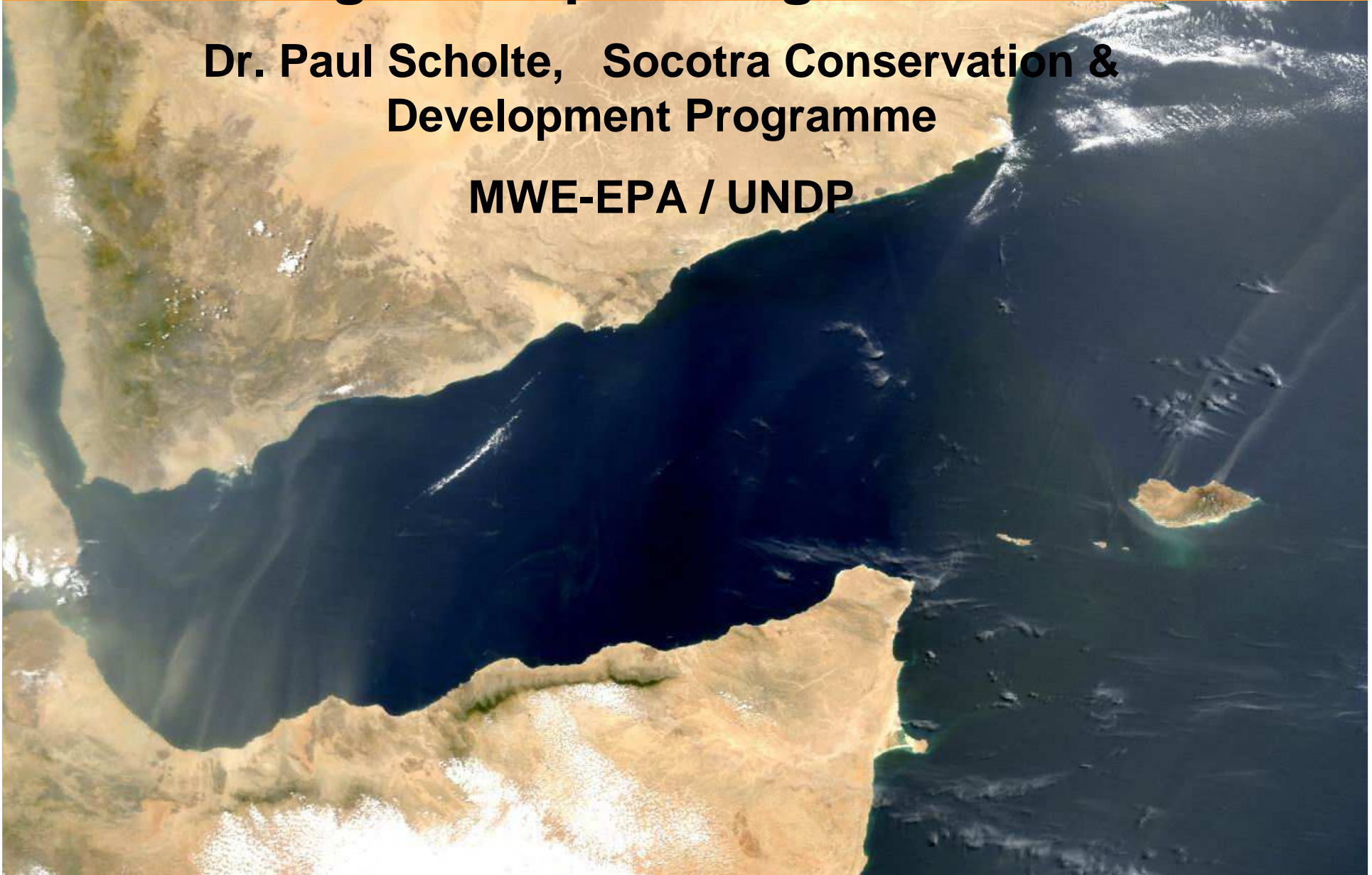


Experiences with biodiversity management planning of Socotra

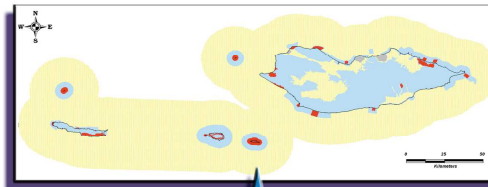
**Dr. Paul Scholte, Socotra Conservation &
Development Programme**

MWE-EPA / UNDP



THE MAKING OF THE ZONING PLAN

THE ZONING PLAN FOR THE CONSERVATION AND SUSTAINABLE USE OF THE BIODIVERSITY AND NATURAL RESOURCES OF THE SOCOTRA ARCHIPELAGO



Review of the Draft Zoning Plan by local authorities and directors



Broad Based Public Consultation and Revision of the Draft Zoning Plan



Review of the Draft Zoning Plan by local villagers and community leaders



Workshop in Sana'a to incorporate zoning plan proposals from scientists and the local team to produce the Draft Zoning Plan

Integration of the Scientific and Social Information to Formulate the Draft Zoning Plan



Preparation of a Zoning Plan by the local team, based on community views

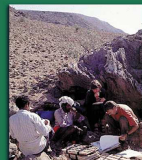
Scientific Biodiversity Inventory and Studies



Terrestrial zoological surveys



Seabird and landbird surveys



Terrestrial botanical surveys



Mapping marine and terrestrial habitats using satellite imagery and GIS



Marine turtle surveys and tagging program



Marine biodiversity and habitat surveys



Coastal biodiversity and habitat surveys

Environmental Education and Awareness Campaigns

Village meetings to promote biodiversity conservation and sustainable resource use concepts



School visits to develop environmental awareness from a young age

Training course on Zoning Plan for environmental extension officers



Dialogues with high level government officials to seek understanding and support for the zoning plan process



Regular directors meeting to brief and update local authorities on project activities

Expert visits to villages to raise awareness of specific issues (e.g. problems of lobster fisheries)



Presentation on ecotourism and relevant guidelines

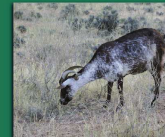
Documentation of Traditional Resource Uses and Development Needs



Identifying ways to improve the water supply



Traditional plant use practices



Management of livestock grazing



Planning road construction to minimise environmental impact



Recording of fisheries activities



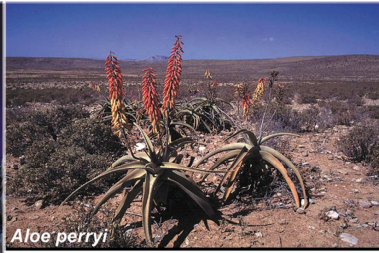
Potential Impact of port development and marine tourism



Assessing the need to collect fire wood



Euphorbia abdalkuri



Aloe perryi



Euphorbia abdalkuri



Eragrostis caeruleum



Punica protopunica



Boswellia ameera



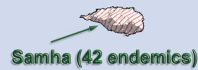
Boswellia ameera

Location	Area (km ²)	Area (km ²)	Percentage (%)	No. of Endemics	% of Endemics	Local Endemics	
Abd al Kuri	133	34	100	35	12.03	14	
Santha	41	35	100	1	14.43	7	
W Socotra	293	91	7.8	75	108	36.43	7
N Socotra	241	80	6.8	64	201	89.07	86
NE Socotra	83	62	2.3	22	95	32.65	8
SW Socotra	235	74	6.5	62	54	18.56	7
Total	1073	426	26.6			129	

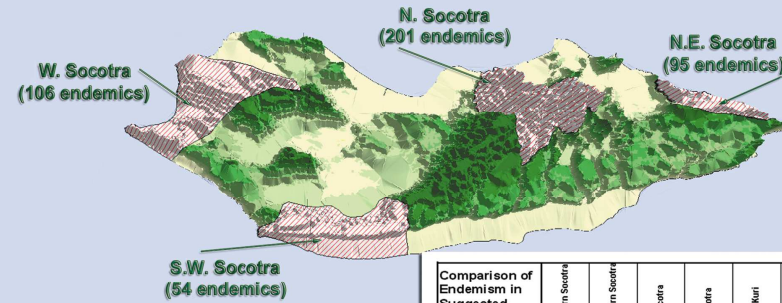
Table to show the area and number of endemic species within the suggested conservation areas



Abd El Kuri (35 endemics)

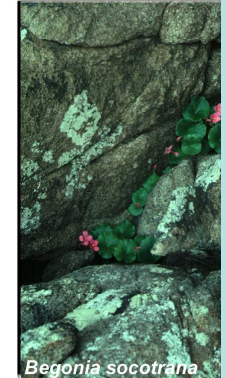


Samha (42 endemics)



Comparison of Endemism in Suggested Areas	Western Socotra	Northern Socotra	SW Socotra	NE Socotra	Abd al Kuri	Samha
Western Socotra	67	41	68	12	26	26
Northern Socotra	29.50	14.09	47	80	12	21
SW Socotra	14.09	16.15	37	3	1.03	1.03
NE Socotra	23.27	37.46	12.71	11	17	17
Abd al Kuri	4.12	4.12	1.03	3.78	1.03	1.03
Samha	8.93	7.22	4.47	5.84	4.12	4.12

Table comparing the number of endemic species within the suggested conservation areas



Begonia socotrana



Acridocarpus socotranus



Adenium obesum



Acridocarpus socotranus



Graderia fruticosa



Dracaena cinnabari



Begonia socotrana



Graderia fruticosa

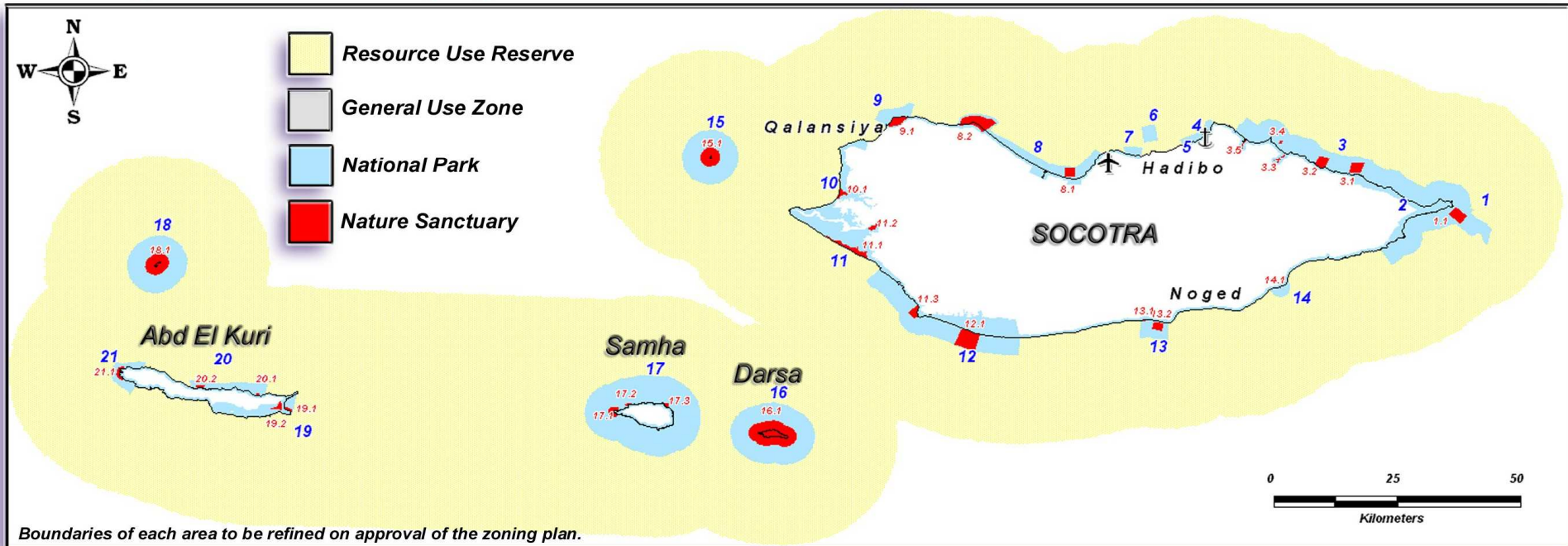


Dorstenia gigas

ENDEMIC PLANTS AND SUGGESTED CONSERVATION AREAS AROUND THE SOCOTRA ARCHIPELAGO











Zoning Plan for Socotra Archipelago for the Conservation and Sustainable Use of Biodiversity and Natural Resources



The Zoning Plan is aimed towards maximizing **conservation effectiveness**, by emphasizing **community based management** & integrating **development needs** at the **planning** stage, thus minimizing user conflicts in the future.

**SUMMARY ACTIVITY GUIDE
FOR THE MARINE ZONING
PLAN**

Management guidelines will be developed specifically for each area on approval of the zoning plan.

		Resource Use Reserve	General Use Zone	National Park	Nature Sanctuary
Sea Port		✓	✓	✗	✗
Ballast disposal		✗	✗	✗	✗
Trawling		✗	✗	✗	✗
Shark fishing by net		✓	✓	✗	✗
Hook and line		✓	✓	✓	✗
Turtle exploitation		✗	✗	✗	✗
Managed ecotourism		✓	✓	✓	✓
Research and Education		✓	✓	✓	✓

•Detailed activity guidelines developed by the local team & reviewed by scientists.

•Detailed site specific management plans to be prepared.

Table prepared by Rebecca Klaus.



Resource Use Reserve

Definition

Areas managed to ensure long-term protection of the unique biological diversity of Socotra Archipelago while providing, at the same time, a sustainable flow of natural products and services to meet community needs. Within the Resource Use Reserve, traditional practices are in place, for the sustainable use of natural resources. Such practices are effectively implemented by the community itself, and will be supported by the establishment of the Reserves. These areas are large enough to absorb natural resource uses without detriment to its overall long-term natural values. For the marine component, all waters within the 12 nautical miles around all the islands of the archipelago, form the Resource Use Zone.

Approximate area covered: 890 square km
Percentage of Total Land Area: 23.5%

Objectives

- To protect and maintain the unique biological diversity of Socotra Archipelago, as well as other natural, cultural and landscape values of the area in the long term.

- To maintain and, where appropriate, enhance the existing traditional management practices for the sustainable use of natural resources.

- To protect the natural resource base from being alienated for other land and resource use purposes that would be detrimental to the unique biological diversity, and to the subsistence of the local community who rely on it.

General Use Zone

Definition

Within the Resource Use Reserve, the General Use Zone include sites where a significant level of habitat modification and/or resource exploitation has already occurred, or is required to support some essential social and economic interests of the community of the archipelago.

Approximate Area Covered: 55 square km
Percentage of Resource Use Reserve: 6.14%
Percentage of Total Land Area: 1.4%

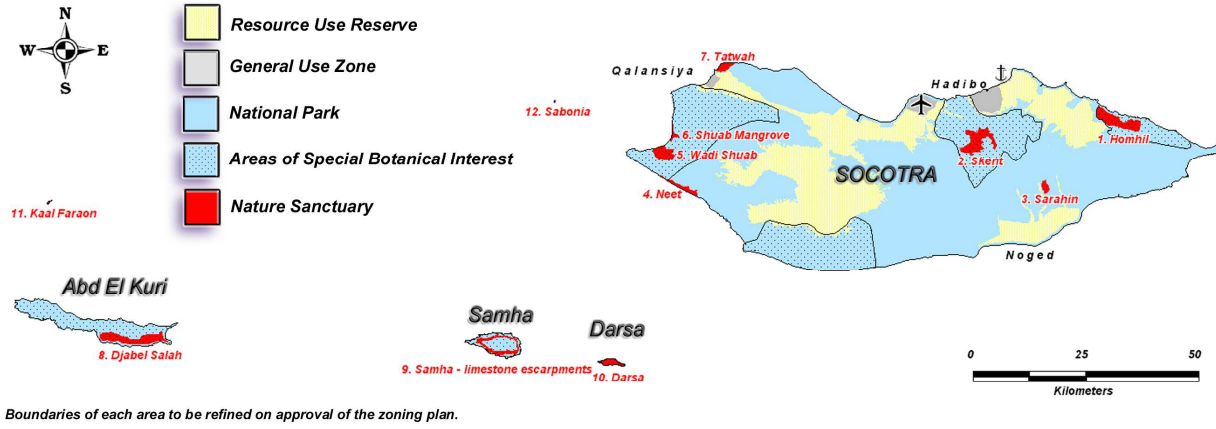
Objectives

- To allow for the development of essential infrastructure required to improve the standard of living of the local community (i.e. roads, power lines, transportation & health facilities etc.)

- To focus infrastructure & commercial development efforts to suitable areas, thus limiting damage to the environment to an acceptable level.

- To regulate and guide infrastructure and commercial development, so as to minimize environmental damage to neighboring protected areas and natural landscapes and to minimize negative impact on natural terrestrial and marine habitats (i.e. compulsory Environmental Impact Assessment, Coastal Zone development guidelines)

This poster was produced by Rebecca Klaus, on behalf of UNDP-GEF, October 1999 (c)



Boundaries of each area to be refined on approval of the zoning plan.

SUMMARY ACTIVITY GUIDE FOR THE TERRESTRIAL ZONING PLAN

Management guidelines will be developed specifically for each area on approval of the zoning plan.

	Resource Use Reserve	General Use Zone	National Park	Nature Sanctuary
Industrial development	✓	✓	✗	✗
Airport	✗	✓	✗	✗
Hospital	✓	✓	✓	✗
Road construction	✓	✓	✓	✗
Intensive agriculture	✗	✓	✗	✗
Controlled grazing	✓	✓	✓	✗
Traditional plant use	✓	✓	✓	✗
Ecotourism infrastructure	✓	✓	✓	✗
Research and education	✓	✓	✓	✓

TERRESTRIAL CRITERIA FOR SELECTION

	Diversity	Rarity	Fragility	Endemic plants	Endemic animals	Flagship species	Important Birds Areas	Intrinsic appeal/Landscape	Naturalness	Typicalness	Research / Study	Possibility for effective management	Proposed by locals
N.S Nature Sanctuary	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
1 Homhil	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Sarahin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 Neet	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4 Wadi Shuab	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5 Shuab Mangrove	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Tatwah	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7 Djabel Salah	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8 Samha - limestone escarpments	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9 Darsa	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10 Kaal Faraon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11 Sabonia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

National Park

Definition

Natural areas of land and sea, des (a) protect the ecological integrity of Socotra Archipelago for present (b) exclude exploitation or occupation of conservation of biodiversity and natural landscapes, and (c) provide foundation for scientific and physical opportunities, all of w environmentally and culturally com

Approximate Area Cover Percentage of Total Land

Objectives

- To protect the unique natural habi Socotra Archipelago, which are of national significance for scientific, t or ecotourism development purpos

- To support the needs of the local subsistence resource users in part not adversely affect the objectives conservation.

- To perpetuate, in as natural a stat representative examples of the uni genetic resources, and species, for Archipelago, and to provide ecolog biodiversity.

- To manage visitor use for educat recreational purposes, at a level w in the current natural or near-natur

Areas of Special Botanical Interest

These areas fall within the Nat highest concentration of rare at archipelago. General Mensopn those of the National Park, now be paid to the conservation of t assigning priority to the manag these areas. Other areas of hig for key zoological groups fall w National Park, and will be map

Nature Sanctuary

Definition

These are areas of unmodified or sea, retaining their natural charact permanent or significant habitalior and managed so as to preserve n condition. These sites are strateg recruitment of plants and animals, the dispersal of seeds, eggs and li and host important breeding areas susceptible to degradation by natu people, and the risk of irreversibl high, unless the site is strictly prot

Approximate Area Cove Percentage of Total Land

Objectives

- To preserve rare and fragil habit and unique landscapes in as undi

- To ensure that future generations experience understanding and enj been largely undisturbed by huma time.

- To maintain the essential natural environment over the long tem

- To enable the existing local com and in balance with the availabl r lifestyle.

Zoning plan

- Zoning plan was approved by presidential decree 275, of year 2000
- Most of the activities of EPA / SCDP have been centered around this zoning plan (presentation earlier today, management of core zones)
- But did it work over these six years ? Is the zoning plan still valid ? What are the lessons learnt ?



Did it work ?

Yes

In having a tool with which to steer (unwanted) developments

E.g. in diverting the road to Qualansiya, where it threatened to pass the lagoon (core zone). This only took place after a long struggle

Did it work ?

No

- In negotiating environmentally friendly roads in other sensitive places (Dixam, Hale,), all of them national parks / areas of special botanic interest (buffer zones). Note, however, that this was not foreseen in the zoning plan.
- It did not improve spatial planning on the island, that remains on an ad-hoc base so far (master plan not functional)

Is the zoning plan still valid ?

- Yes, but there is little information on the functioning of the ecosystem, in the core as well buffer zones, with which to measure its relevance, also in relation to future developments (global warming)
- Increasing knowledge (new botanical studies) show the importance of the buffer zones, parts of which merit being part of the core zone

What are the lessons learnt ?

- Very high expectations of the zoning plan: Is the glass half full or half empty ?
- Conservation – Development is a dynamic process, new experiences (e.g. road construction) are difficult to integrate into the zoning plan

Who implements the zoning plan ?

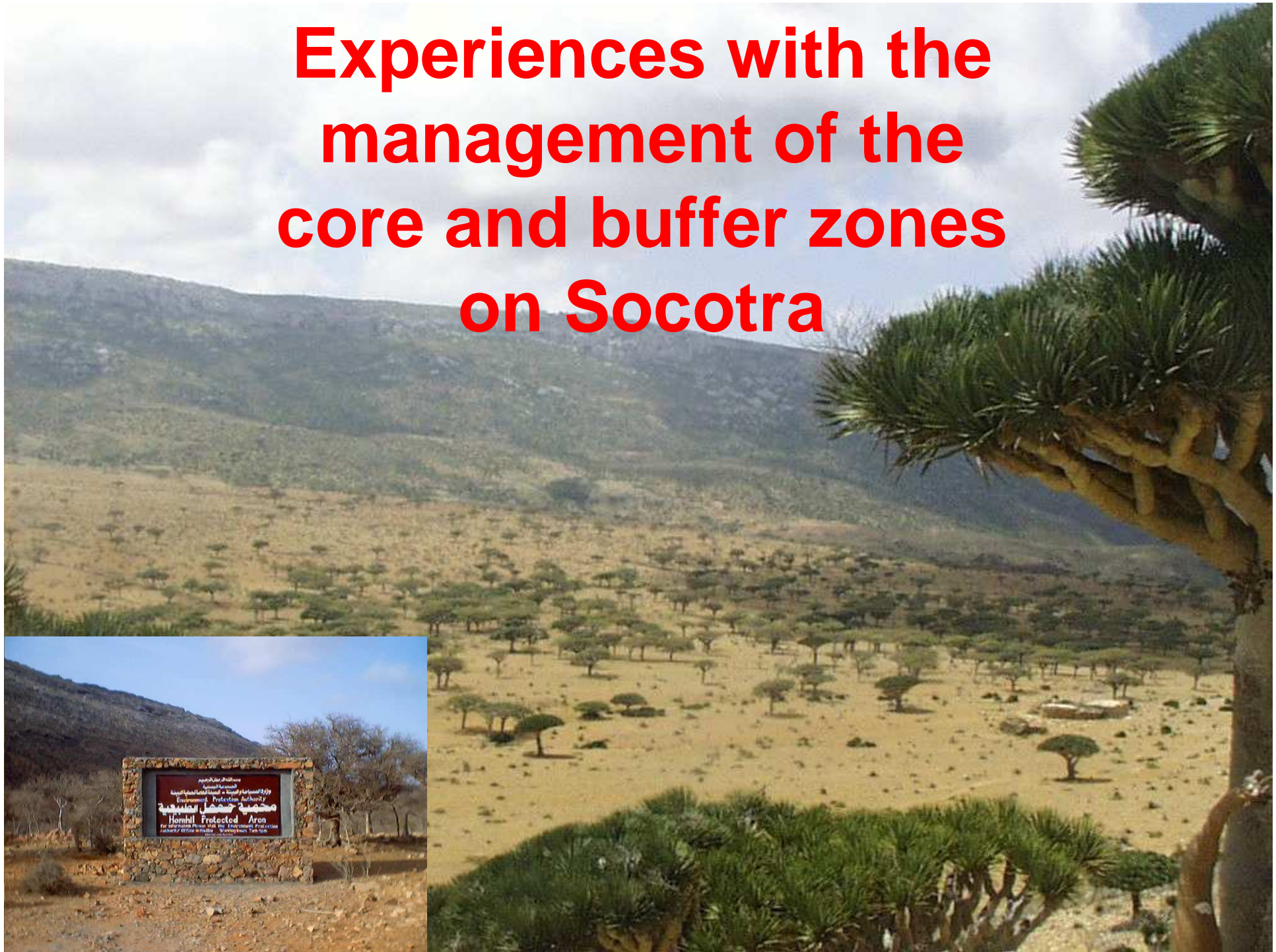
- Till now, its responsibility has been with the Environmental Protection Authority, supported by SCDP. Although the zoning plan is signed by the president, none of the other ministries / local authorities feels responsible for its implementation.
- Initiatives under way to make the local authorities more responsible, through a spatial planning unit at its level (MSP-GEF-project)



How to continue ?

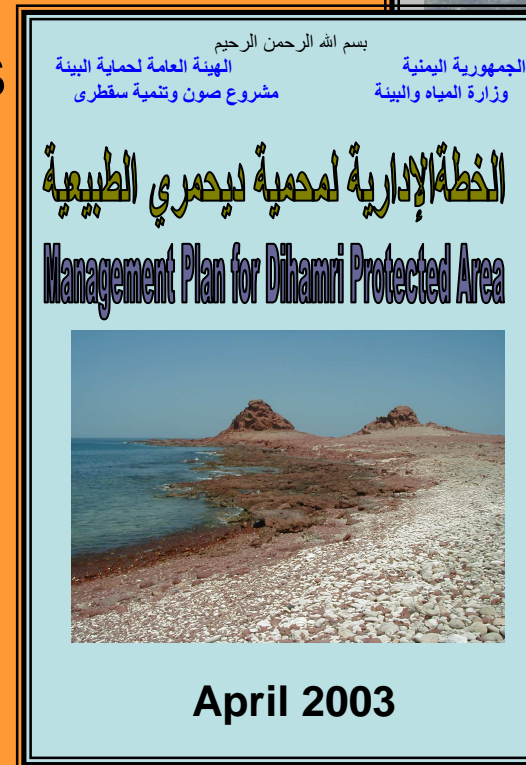
- A revision of the zoning plan by 2008 ? (i.e. 5 yrs after MAB-nomination), with new definitions of the buffer zones
- Development of operational guidelines of the zoning plan by local authorities (with support of EPA-SCDP)
- Development of a Decision Support System, especially with regard to ecosystem functions

Experiences with the management of the core and buffer zones on Socotra

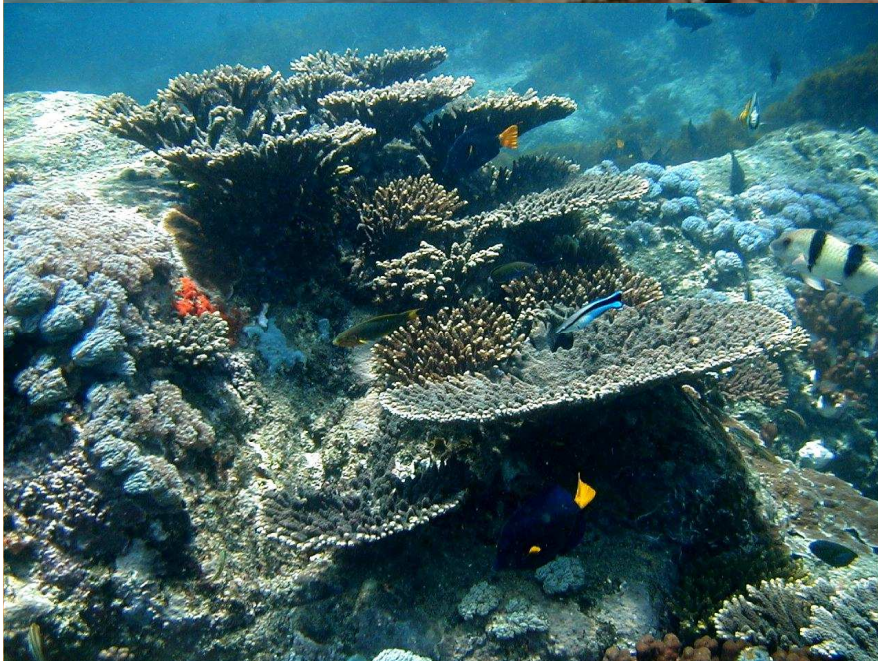


- Formulation of management plans of the main Nature Sanctuaries (core zones), plus increasingly selected national parks (buffer zones)

- Conservation information
- Management guidelines
- Local community needs
- Eco-tourism (including infrastructures)
- Education



Evaluation of the management plans of the core zones (2006)



General achievements

- The nature sanctuary was conserved
- Campsites established and functioning
 - benefits for local people
 - experiences for local people
 - local people organized
 - good example for the others
- More experiences for PA team
- Increased knowledge on the area

New realities - developments, to be integrated in revised plans

- Research
 - impact of tourism on environment
 - ecosystem functioning (re: lack of regeneration of flagship species)
 - land tenure
- Increase number of people and buildings
 - Waste collection
 - New technologies (Solar lamps, Solar pump)
- New activities, income and life style of local communities

Future work plan for nature sanctuaries and national parks

- Based on evaluation of impact training
 - Intensive training for PA managers
 - Other capacity building initiatives ?
- Continue with small projects to improve local income
- Supervision of eco-tourism
- Zoning plan of nature sanctuary plus environs
- More emphasis on conservation
- Operational role of PA-section as coordination body to be developed

Opportunities

- Upcoming World Heritage Site nomination
- Importance of pilot / nursery function of SCDP, a major justification for continued donor support (Hawf – Bura'a PA → MAB?)

