



# The importance of terrestrial environmental resources for urban ecosystem development in the Gulf

by Benno Böer 9<sup>th</sup> of December 2009

Mövenpick-Hotel, Doha



## Presentation:

1. What are terrestrial resources ?
2. What are urban ecosystems ?
3. Why are they important and how can we best manage them ?
4. UNESCO Doha's activities



## What are terrestrial resources ? (a)

Terra = the Earth

We differentiate between terrestrial, coastal, and marine resources

- a. Marine are in the Oceans (Loughland's presentation)
- b. Coastal is where marine meets terrestrial: inter-tidal zone with mangroves, salt marshes: dry at low tide, and inundated at high tide
- c. Terrestrial resources are those above the high tide line

Between these zones are significant inter-actions, for example climate

(Cyclone Gonu as an example)



## What are terrestrial resources ? (b)

In Qatar this includes material for mining of materials, groundwater, agricultural land, desert rangeland, natural plants and wildlife, recreational places, places of importance for education and heritage conservation, products such as drinking water, food, fibre, pharmaceuticals, cosmetics etc. , and land for settlements, industry, and waste-disposal

It includes places of traditional Arab and Islamic conservation (Hema, Samakhiya)

It is also linked to air quality, dust and human health



## What are urban ecosystems ?

Settlements: places where people live and interact with their living and non-living environment.

Living environment: People, animals, plants, microbes, bacteria, fungi...

Non-living: soils, water, air, climate, man-made structures

Doha is an urban ecosystem



## Why are terrestrial resources important ?

They are important because cities do not produce enough food, water, and products that we need in our daily lives.

When living in cities we depend on external supply of water, food, clean air, products, and areas for recreation, education and conservation.



## How can we best manage terrestrial resources ?

We depend on them in our daily lives so we need to manage them with great care

This can be done via awareness, education, science, technology, and application of knowledge, and participation in global networks



## UNESCO Doha's activities on terrestrial resources management

**Doha's  
focus**

**Ecosystems  
and water**

**Doha's priorities:  
Build capacity into**

**Management of  
terrestrial, coastal and  
marine resources:**

**Biosphere Reserves  
World Heritage Sites,  
Geoparks, TDA,  
GNALE, IOCINDIO**

**Management of  
saline ecosystems  
and utilisation of  
halophytes**

**Management of urban  
ecosystems:**

**Recycling, Water  
management, Renewable  
energy**

**Doha Green Conference**



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## Case study: Cyclone Gone, Oman 2007



Was Gonu caused by climate change ? We don't know.

Does it impact terrestrial resources in Qatar ? Most certainly yes.



Was Qatar affected ?

The seawater rose > 1 m above high tide mark – horizontal intrusion: several kilometers



## Natural and man-made disasters in the Gulf and UNESCO's contribution combating them:

- Biodiversity loss – does anybody really care ? We did a lot but what has really been achieved ?
- Freshwater crisis – imagine a closure of the major desalinsation unit for a week.....
- Marine pollution – this is where our drinking water comes from.....
- Desertification – linked to food security
- Road traffic situation – greatest cause of death and injury of young people



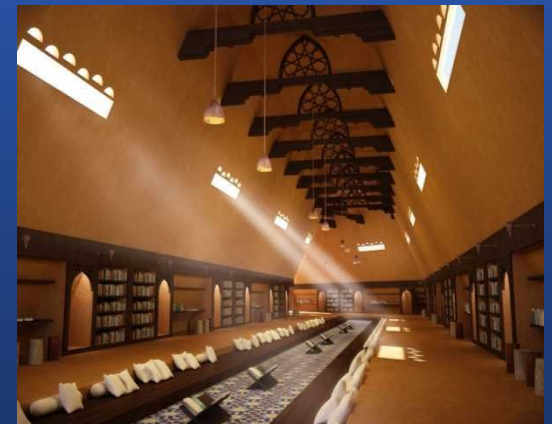
## Biodiversity loss

- Identify and establish and manage Biosphere Reserves, World Natural Heritage Sites, Geoparks
- Initiate a network of Botanic Gardens including a world halophyte garden
- Support GNALE

## Freshwater-, energy-, and waste-crisis

*Better Buildings*: enhancement of urban ecosystems regarding water-, energy-, and waste-management to be launched during: *Doha Green Conference*, 9-10 DEC 2009

*The Arab Recycling Initiative* [www.rashid-and-dana.org](http://www.rashid-and-dana.org)





## Environmental Pollution

- Preservation of the Gulf's marine ecosystems from pollution
- TDA workshops
- The Arab Recycling Initiative

## Desertification

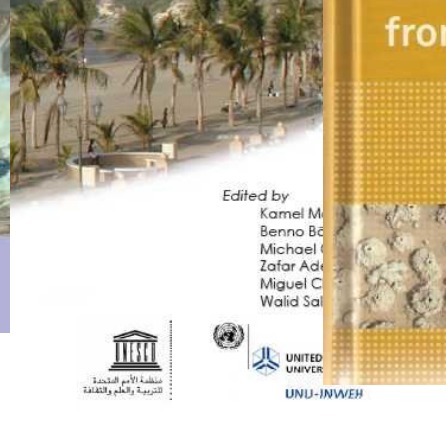
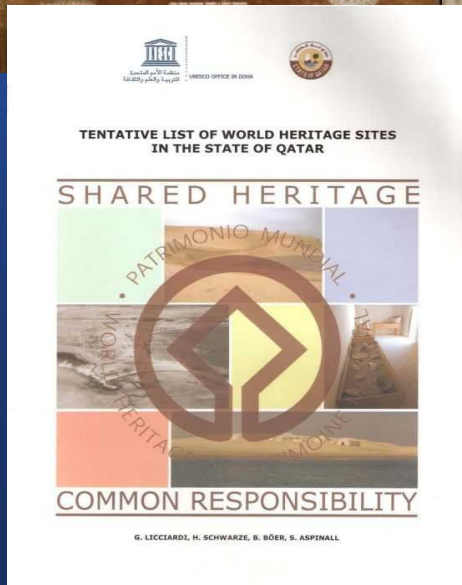
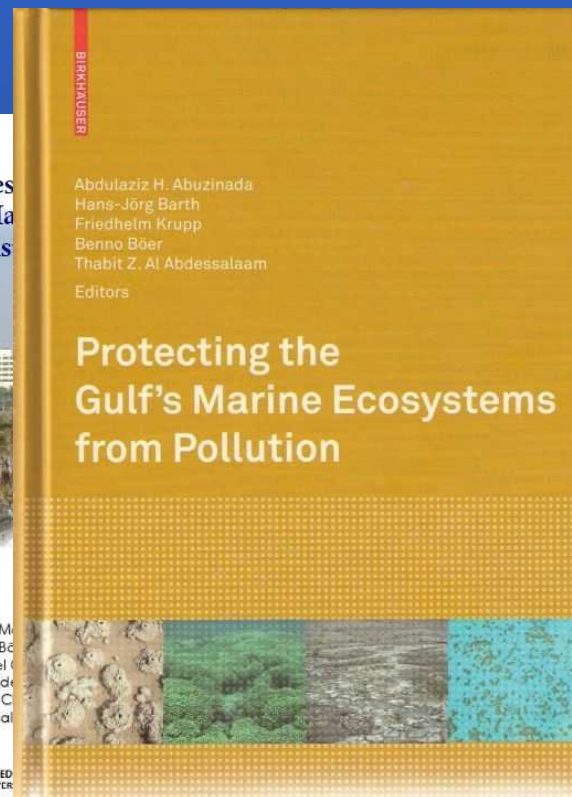
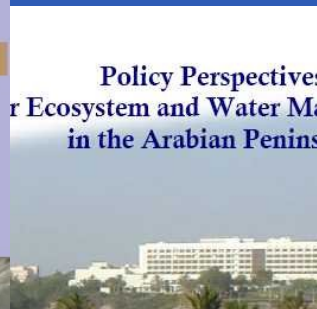
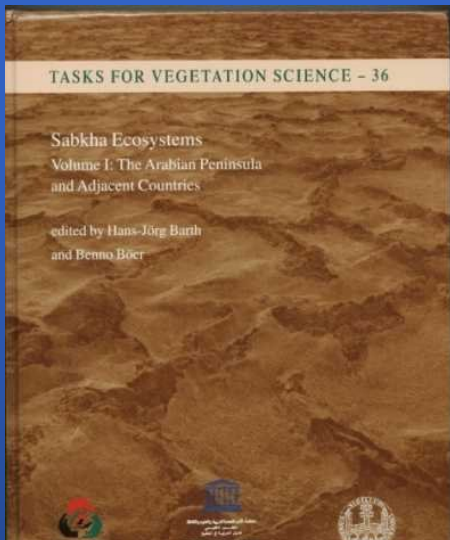
- Camel farms: from tradition to modern times
- Science-based book series: Sabkha ecosystems (contain chapters on seagrass)
- Halophyte Conference in Tunisia (seagrass expert Milchakova invited)

## Human safety and city environment (extra-budgetary & inter-sectoral)

- Project document into urban environment: Human safety and environmental aspects – followed by partnership agreements and studies and training courses etc.



## Publications based on member states' requests



## Plant species checklist of Qatar



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## QBG

QUR'ANIC BOTANIC GARDENS PROJECT

SUMMARY OF THE PROJECT PROPOSAL

مكتب اليونسكو في الدوحة

## QBG

حدائق النباتات القرآنية

موجز للمشروع

UNESCO OFFICE IN DOHA

منظمة الأمم المتحدة للتربية والعلم والثقافة

## QURANIC BOTANIC GARDENS PROJECT

PROJECT PROPOSAL TO ESTABLISH A NETWORK OF BOTANIC GARDENS IN THE ARAB REGION INFLUENCED BY SCIENTIFIC AND AESTHETIC CONCEPTS FROM THE ISLAMIC GARDEN CULTURE AND FROM THE HOLY QURAN

GUIDO LICCIARDI, BENNO BÖER, L. ANATHEA BROOKS, RASHID IDRIS, SHAUKHAT ALI CHAUDHARY, GRANT DONALD, MOHAMED AL-FAROOQ



### QUR'ANIC BOTANIC GARDEN IN SHARJAH (UAE)

GUIDO LICCIARDI  
BENNO BÖER  
L. ANATHEA BROOKS  
MARGHERITA AZZI VENTURA  
SHAHKAT ALI CHAUDHARY  
LIVE HEERN  
HABIB FLUKA

CENTRE OF EXCELLENCE FOR BOTANIC RESEARCH, ED AND CONSERVATION OF THE ARABIAN FLORA

DONOR: HIS HIGHNESS DR. SHEIKH SULTAN BIN MOHAMMED AL QASSIMI

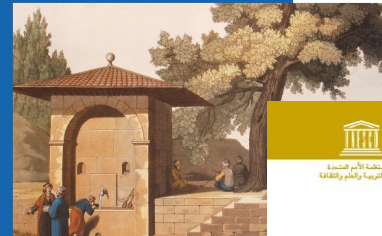
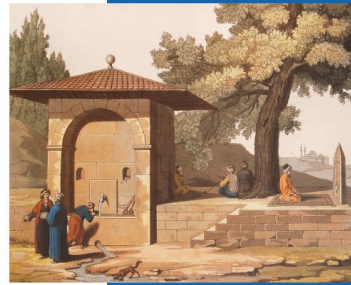
GUIDELINES FOR DEVELOPING THE MASTI

### حدائق النباتات القرآنية في الشارقة (إ.ع.م)

مركز الامتياز للإبحاث النباتية و التعليم و الحفاظ على نباتات المنطقة العربية

للمنج: جلالة الدكتور الشيخ سلطان بن محمود القاسمي

المخطوط العريضة لتطوير المخطط الرئيسي



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## THE CAMEL FROM TRADITION TO MODERN TIMES

الإبل من التقاليد إلى

A PROPOSAL TOWARDS COMBATING DESERTIFICATION VIA THE ESTABLISHMENT OF CAMEL FARMS BASED ON FODDER PRODUCTION FROM INDIGENOUS PLANTS AND HALOPHYTES

مشروع بحث مقترح من أجل لإبيل يُعتمد على إنتاج أعلاف من النباتات المحلية والعلف

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Marc Romualdano, Benno Böer, Ulrich Wernery, Senate Wernery, Hassan Al Shari, Ghaleb Alsharimi, David Galatzer, John Peacock, Shaikat Ali Chaudhary, Gary Brown, John Thomson

يؤيد: غلثاش، غلاف الحضرمي، حسن الشاري، سيدة ورنيري، جورج ورنيري، جون برون، غاري برون، هاسان الشاري، غلاب الشاريمي، جون تومسون، جون بياكوك، جون بياكوك، جون بياكوك، جون بياكوك

UNESCO Doha Office

United Nations Educational, Scientific and Cultural Organization

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Case Study: Al Reem, Qatar

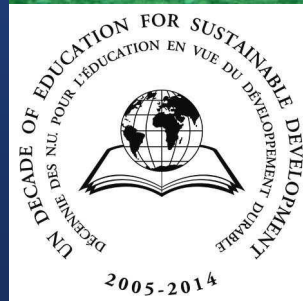
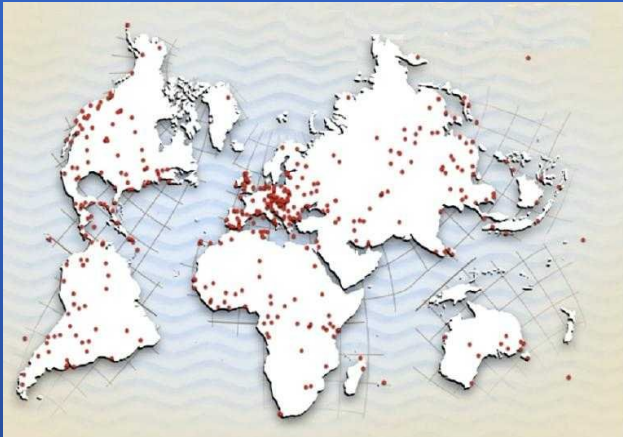
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Is desertification going on ?  
Do we conserve air and soils and plants and wildlife enough ?  
Are there enough and good areas for recreation ?



## Biosphere Reserves, Geoparks, World Heritage Sites: models for sustainable human living and conservation





## Biosphere Reserves, Geoparks, World Heritage Sites: models for sustainable human living and conservation

UNESCO invested a lot of effort, hard work, funds, and raised funds into BR, Geopark, and World Natural Heritage Site development:, studies, training and documents:

1. Bahrain: Hawar nomination file for BR and WHS Hawar Islands
2. Oman: BR nomination file for Jebel Samhan.
3. Yemen: BR Soqatra.
4. UAE: BR Merawah, study into Khor Kalba
5. Qatar: BR Al Reem, nomination file WHS Khor al Udayd



## Cooperation with the private sector and UN, IGO and NGO

Qatar Airways, QAFCO, QP, Exxon Mobile, Dubal, Qatar Gas, Oxy, Tetrapak, Shell GTL Qatar, Maersk, HSBC, Gulf Air, ADNOC, RECSO, Ford Middle East, Oryx Publishing, QTA, Sanaya Dive Centre, Arabian Adventures, Waagner Biro. Total Fina Elf, Total, Doha Bank, OITE, and many others...

One UN:

UNEP, UNU, FAO, UNDP, UNODC, UNIC, ROPME, MEMAC, WTO others

NGO: cooperation with NGO in each Arab country

## Our greatest challenges in view of our work:

- Rapid urban development is faster than measures to manage them
- Handling urban ecosystem encroachment and social transformation
- Demonstrate human dependency of natural ecosystems for water, food and health security
- Assist authorities developing more capacity and political will for BR and WHS



Bahrain World Trade Centre – an inspiration



## What we plan doing:

- Assist the authorities to identify and establish and manage efficient Biosphere Reserves
- Green Schools
- Develop sustainable human living with a view to establish Qatar as the first country in the world as a nation-wide Biosphere Reserve with the full support of authorities, and the private and public sector.



People loved and cared for their land in the past – today in view of environmental crisis we should do a lot more and much faster. 2010: International Year of Biodiversity

Your support and comments are invited