GLOBAL FOREST RESOURCES ASSESSMENT 2005
THEMATIC STUDY ON MANGROVES

BAHRAIN
COUNTRY PROFILE

DRAFT, JUNE 2005
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The purpose of this paper is to provide early information on on-going activities and programmes, to facilitate dialogue, and to stimulate discussion.

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INTRODUCTION

Mangroves are found along sheltered coastlines in the tropics and sub-tropics where they fulfil important functions in terms of providing wood and non-wood forest products, coastal protection, conservation of biological diversity and provision of habitat, spawning grounds and nutrients for a variety of fish and shellfish. High population pressure in coastal areas has led to the conversion of many mangrove areas to other uses and numerous case studies describe mangrove losses over time. However, information on status and trends at the global level is scarce. The first attempt at estimating the total mangrove area in the world was undertaken as part of the FAO/UNEP Tropical Forest Resources Assessment in 1980, where the world total was estimated as 15.6 million hectares. More recent estimates range from 12 to 20 million ha. For many of these studies, countries with small areas of mangroves were excluded due to lack of information and because their combined area of mangroves would not significantly affect the world total.

A recent initiative by FAO aimed at facilitating access to comprehensive information on the current and past extent of mangroves in 121 countries and areas (FAO, 2003). This built on the earlier FAO/UNEP assessment and on the recent FAO Global Forest Resources Assessment 2000 (FRA 2000). An extensive literature search yielded additional information. More than 2800 national and sub-national datasets were collected, with the earliest estimates dating back to 1918. One of the results was an updated list of the most reliable, recent estimate for each country, mostly based on inventories or analysis of remote sensing imagery. Regression analyses based on earlier data provided estimates for 1990 and 1980 and an extrapolated estimate for 2000 for each country.

The preliminary results of this initiative showed that mangrove deforestation continues, albeit on a slightly lower rate in the 1990s than in the 1980s. The relatively large mangrove deforestation rates in Asia, the Caribbean and Latin America in the 1980s reflect large-scale conversion of mangroves for aquaculture and tourism infrastructure. Most countries have now banned the conversion of mangroves for aquaculture purposes and require environmental impact assessments prior to large-scale conversion of mangroves areas for other uses.

In order to provide the most accurate and comprehensive evaluation of current mangrove status, FAO is presently updating the above cited preliminary results, which have been sent out to all countries and areas in which they exist (124) for information and validation. Additional literature search, active collaboration with national and international mangrove experts and the use of remote sensing imagery interpretation have further supported the preparation of the final report, which will be published in 2005.

Readers are strongly encouraged to provide feedback and additional information to help update and improve this database for the benefit of all those who may have an interest in mangroves.
Bahrain

Vegetation description
The state of Bahrain is made up of more than 33 islands, among which the main is known as Bahrain of Awal. The last remaining stand of mangrove forest is found at Tubli Bay (Ras Tubli), a sheltered and shallow bay with extensive intertidal mudflats on the northeast coast of the main island. Mangroves are found in the southern part of this bay, at Ras Sanad and they were designated nature reserve in 1988. *Avicennia marina* is the sole species found, the highest tree being approximately 3.5 m tall.

Uses and threats
Tubli Bay, location of the only remaining stand of mangroves in the country, is located in an urban and industrial area with high human pressure, such as land-fill and land reclamation for infrastructure development, uncontrolled fishing, sewage disposal and discharge. Oil spills, oil shipping and loading operations represent major threat to the wetlands. Ras Sanad mangroves were declared Wildlife Reserve in 1988 and reforestation activities were undertaken in order to restore former areas, but with limited success. This zone is an important resting and feeding area for several waterbird species during their migration periods in winter; the zone is also a very important nursery for commercial shrimp species such as *Penaeus semisulcatus* and *Metapenaeus stebbingi*. The entire Bay (around 1 600 ha) was designated Wetlands of International Importance (Ramsar site) in 1997, limiting land use within and around the site to small-scale commercial fishing, recreation and cultivation. Despite its protected status, the area is still under threat of damage.


National level mangrove estimates

In order to provide the whole range of the information currently available on mangrove area extent for this country, all the national level mangrove area estimates collected so far have been reported in the following table.

Differences in methodologies, classifications, mapping scales etc. may have led to discrepancies in figures. Only the estimates considered as the most accurate and reliable (marked in the Trend column in this table) have been used for the analysis of the area changes over time, the remaining have been reported but not used for the trend analysis.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (ha)</th>
<th>Source</th>
<th>Trend</th>
<th>Methodology/Comments</th>
</tr>
</thead>
</table>
Mangrove species checklist

Following Tomlinson 1987 classification, mangroves may be divided into three groups according to their features: major elements (strict or true mangroves), minor elements and mangrove associates. Tomlinson list of true mangrove species have been here modified by adding some species commonly found as exclusive mangrove species in Saenger et al. 1983.

In the context of this assessment, only true mangrove species found in this country will be reported:

Avicennia marina
The estimates for 1980, 1990, 2000 and 2005 are based on the qualitative information currently available.
Summary status of mangrove area extent over time

<table>
<thead>
<tr>
<th></th>
<th>Most reliable, recent mangrove area estimate</th>
<th>Mangrove area estimate 1980</th>
<th>Mangrove area estimate 1990</th>
<th>Mangrove area estimate 2000</th>
<th>Mangrove area estimate 2005</th>
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</thead>
<tbody>
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<td>Bahrain</td>
<td>100 year</td>
<td>150</td>
<td>100</td>
<td>90</td>
<td>90</td>
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</tbody>
</table>

References


Explanatory notes

Figures used for trends
The estimates used for the trend analysis has been marked with an “X” in the “Trend” column in the country specific table; it has been coloured in green - with no patterns - in the chart.

Most recent reliable figures
The figure chosen as the most recent reliable is underlined in the country specific table; in the chart it has been bolded.