

*IAIA Pre-Meeting
23-24, April, 2004
Vancouver - Canada*

Capacity Building Project
The Integration of Biodiversity
Considerations into EIA Process



Introduction To Yemen

Location of Yemen:

- Yemen lies in the Southwestern part of the Arabian Peninsula, between latitude $12^{\circ} 40'$ and $19^{\circ} 00'$ North and $42^{\circ} 30'$ to $53^{\circ} 05'$ East longitude.



Introduction To Yemen

AREA OF YEMEN

- The area of Yemen is about 550 square km, excluding Rub Al-Khali Des.
- It has more than 2,500 km of coastline along the Red Sea and Gulf of Aden/Arabian Sea.
- It has more than 130 islands located in the Red Sea and Gulf of Aden/Arabian Sea.



Introduction To Yemen

POPULATION

- The population is approximately 18.3 million.
- The annual population growth rate is 3.5%
- The total geographical populated area is 2% of about 45 million.
- 76% of the total population lives in the rural area.
- 45% of the population are under 15 years of age.



Introduction To Yemen

Climate

- Yemen lies within the Northern stretches of the Tropical Climatic Zone and its border with Sub-Tropical Zone.
- Mean annual temperature ranges from less than 15°C in the highlands to more than 30°C in the coastal plain.

Rainfall varies:

- From less than 50mm in the coastal plains and 120mm in the Western mountainous highland region.



Cultural History

Arabia Felix or Happy Arabia

- Ancient Civilization existed - Tenth Century BC:
- The Kingdom of Ausan
- The Kingdom of Karaban Maian
- The Kingdom of Hadramout and
- The Kingdom of Sheba



Status of Biodiversity in Yemen

- Yemen has diverse geographical and topographical features.
- The flora of Yemen is a mixture of:
 - The East African Highlands
 - Sahara - Arabian Regions
 - The Mediterranean Region
 - Its own endemic flora



Status of Biodiversity in Yemen

Status of Flora

Natural Habitats

- The natural habitats and vegetation areas are:
- Coastal plains
- Low altitude mountains
- Medium altitude mountains
- Highland plains
- Eastern/Northeast mountains
- Eastern desert
- Socotra Islands group



Status of Biodiversity in Yemen

Status of Flora

- Over 3,000 plant species can be found
- 900 species recorded in Socotra Islands
- 300 species are endemic to Socotra
- 224 medicinal and aromatic species are recorded
- 18 species are endangered
- 10 endangered species exist in Socotra



Status of Biodiversity in Yemen

Status of Fauna

Terrestrial Fauna Land Mammals

- 71 land mammal species are recorded
- one third of them are relatively large:
 - -Arabian Mountain Gazelle (*Gazelle gazelle*)
 - -Ibex (*Capra ibex nubian*)
 - -Baboon (*Papio hamadryads*)
 - -Arabian Leopard (*Panthera pardus nimr*)
 - -Arabian Red Fox (*Vulpes vulpes arabicus*)
 - -Striped Hyaena (*Hyaena hyaena*)
 - -Arabian Wolf (*Canis lupus arabs*)
 - -Sand Fox (*Vulpes rueppelli*)
 - -Cheetah (*Acinonyx jubatus*)



Status of Biodiversity in Yemen

Status of Fauna

Terrestrial Fauna

Bird Life

- 363 bird species are recorded
- 13 species are endemic or near-endemic
- 7 species are internationally endangered:
 - Greater Spotted Eagle, Imperial Eagle, Ferruginous Duck, Socotra Cormorant, Socotra Bunting, Lesser Kestrel, Northern Bald Ibis, White-eyed Gull, Socotra Starling, Yemen Warbler, Yemen Thrush.
- 190 species are recorded in Socotra
- 7-12 species are endemic



Status of Biodiversity in Yemen

Status of Fauna

SEA BIRDS:

- Red-billed Tropicbird
 - Masked Booby
 - Brown Booby
 - Sooty Gull
- White-cheeked Tern



Status of Biodiversity in Yemen

Status Invertebrates

- Terrestrial Arthropods
- 5 classes are recorded
 - 313 families
 - 1,833 genera
 - 3,372 species



MARINE FAUNA

Fish

1,350 species are known in the Red Sea and Gulf of Aden (non-use value & use value)

- 416 species of big fish recorded
- 680 species of fish recorded in Socotra
 - 625 species of invertebrates



MARINE FLORA

- Algae
 - 485 species of Algae in the RED SEA
- 39 species of Algae recorded on the Yemeni RED SEA coast
- 53 species of Algae recorded on the Yemeni Eastern coast of the Arabian Sea
- 24 species of Algae recorded in Socotra Island



MARINE FAUNA

Coral Reefs

- Soft and hard reefs exist
- Of coral reefs recorded:
 - 240 hard reefs recorded in Socotra
 - 30 soft reefs recorded in Socotra
 - 4 of coral reefs recorded in Socotra



MARINE FAUNA

- Turtles
- 4 species of endangered turtles recoded on the Eastern Coast of Yemen:
 - Green Turtle (*Chelonia mydas*)
 - Hawksbill Turtle (*Eretmochelys imbricata*)
 - Loggerhead Turtle (*Caretta caretta*)
 - Leathery Turtle (*Dermochelys coriacea*)



Status of EIA In Yemen

Institutional Framework

The key institutions for EIA/SEA

1 - At policy level

- The Ministry of Water & Environment is responsible for:
 - Policy development
 - Laws and Regulation
 - Coordination



Status of EIA In Yemen

Institutional Framework

2 - At project level

- The Environment Protection Authority is responsible for:
 - Scoping
 - Monitoring
- Review of EIA study reports
 - Follow up



Status of EIA In Yemen

Legal Framework

- EIA regulated by two types of legislation:
 - 1-Environmental Legislation
 - Environment Protection Law (No. 26) of 1995
 - Executive Regulations - Cabinet Decree (No. 148) for 2000
 - Cabinet Decree (No. 89) for 1993



Legal Framework

2 - Specific Sector Legislations: (Indirect Regulatory)

- Water Law
- Investment Law
- Oil & Exploitation Law
- Urban Planning Law
- Marine Environment (Protection from Pollution) Law



Status of EIA In Yemen

EIA Procedures

- *There are no specific procedures in the existing regulation*
- *At scoping stage, depends on:*
- *Who is the developer or funding agency*
 - *Type of project*
 - *Location of the project*
 - *Government or Private Client*



Integration of EIA into Biodiversity

International Context:

- Article 14 of CBD
 - Agenda 21
- Johannesburg Declaration
- CBD Conference of the Parties
 - IAIA Declaration



Integration of EIA into Biodiversity

National Context:

- National Constitution
- Environment Protection Law
 - Executive Regulations
 - NBSAP



Integration of Biodiversity into EIA

Gaps and driving forces affecting integration of biodiversity considerations into EIA:

- Lack of information
- Lack of qualified personnel & human resources
 - Lack of coordination
 - Gaps in the institutional framework
 - Gaps in the legal framework
 - Lack of awareness and commitment



Integration of Biodiversity into EIA

From change to impact

- Biophysical changes:

- Climate change
- Drought and less rainfall
 - Desertification
 - Over-grazing
 - Over-fishing
- Lowering water tables



Integration of Biodiversity into EIA

- From change to impact
 - Social changes:
 - Life patterns change
- Consumption patterns change
 - Low production
- Water abstraction and demand
 - Intensified use of soil
 - Misuse of chemicals
 - Urbanization



Integration of Biodiversity into EIA

Biophysical Impacts

- Water scarcity
 - Soil erosion
- Land degradation
 - Water erosion
- Environmental pollution
- Flora and fauna endangered
 - Habitat degradation



Integration of Biodiversity into EIA

- Social impacts:
 - Low income
 - Poverty
 - Health problems
 - Economic problems
- Loss of job opportunities



Experience From Yemen

- *The enforcement of the EIA process could be implemented gradually*
- *We found that EIA is a good planning tool*
- *The integration of BD into EIA is a very essential and important approach for BD conservation*
- *The consideration of BD in EIAs conducted varies from moderate to high*
- *Skills and knowledge are very essential*



Experience From Yemen

- *Clear legal framework and guidelines are an essential basis*
- *Awareness is rising amongst the decision makers, and the public should be part of the integration process*
- *Community participation in the EIA process has advantages for BD conservation*

Conclusions

- Capacity building & training
- National policy for EIA/SEA
- Updating of EPL and its regulations
 - Special bye-law for EIA/SEA
 - Raising awareness
 - Institutional reform

