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The Integration of Biodiversity  
Consideration into EIA

Experience From Yemen  
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# Introduction To Yemen

## Location of Yemen:

- Yemen is lies in the Southwestern part of the Arabian Peninsula between latitude 12 40 and 19 00 North and 42 30to 53 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 2500 Km of Coastline along the Red Sea and Gulf of Aden/Arabian Sea.
- It has more than 130 islands located in 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 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 15c in the high lands to more than 30c 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 Flex or Happy Arabia

- Ancient Civilization were 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 a diverse of geographical and topographical features.
- The Flora of Yemen is a mixture of :
- The East African Highlands, Sahara-Arabian Regions;
- The Mediterranean Region;
- Its own Yemen 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 Groups.





# Status of Biodiversity in Yemen

## Status of Flora

- Over 3000 plant species can be found
- 900 species recorded in Socotra Islands;
- 300 species are endemic in Socotra;
- 224 are medicinal and aromatic species are recorded;
- 18 species are endangered;
- 10 endangered species are exist in Socotra



# Status of Biodiversity in Yemen

## Status of Fauna

### Terrestrial Fauna

#### Land Mammals

- 71 of land mammals are recorded;
- one third of them are relatively large;
- -Arabian Mountain Gazelle ( *Gazelle gazelle*).
- -Ibex (*Capra Ibex Nubian*).
- -Baboon (*Papio hamadryads*).
- -Arabian Leopard (*Panther a pardus nimr*).
- -Arabian Red Fox (*Vulpus vulpus Arabic us*).
- -Striped Hyena (*Hyena* ).
- -Arabian Wolf (*Canis lupus Arabs*).
- -Sand Fox (*Vulpus ruppelli*).
- -Cheetah (*Acinonyx jubatus*).



# Status of Biodiversity in Yemen

## Status of Fauna

### Terrestrial Fauna

#### Bird Life

- 363 bird life are recorded;
- 13 species are endemic or sub-endemic;
- 7 species are internationally endangered:
  - Greater Spotted Eagle, -Imperial Eagle, -Ferruginous Duck, -Comerica , -Socotra Bunting, -Lesser Kestrel, -Northern Bald Ibis, -White-eyed Gulf, -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 ;
  - 1833 genera;
  - 3372 species.



# MARINE FAUNA

## Fish

1350 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 FAUNA

- Algae
  - 485 species of Algae in the RED SEA;
- 39 species of Algae recorded In the Yemeni RED SEA Coast;
- 53 species of Algae recorded in the Yemeni Eastern Coast of Arabian SEA;
- 24 species of Algae recorded in Socotra Island.



# MARINE FAUNA

## Coral Reefs

- Soft and Hard Reefs are 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 in the Eastern Coast of Yemen:
  - Green Turtles (*Chelonia Mydas*;
  - Hawksbill Turtle(*Eretmochyles Imricata*);
  - Loggerhead Turtle (*Carreta Carreta*);
  - Leatherbacks Turtle);



# 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 Legislations;
- Environment Protection Law No.(26) for 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 Protecting 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, funding agency;*
  - *Type of the 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 EIA into Biodiversity

## Gaps and Driving Forces Affecting Integration of Biodiversity Consideration into EIA:

- Lack of information's;
- Lack of qualified persons & Human Resources;
  - Lack of Coordination;
  - A gap in Institutional Framework;
  - A gap in Legal Framework;
- Lack of Awareness and Commitment.



# Integration of EIA into Biodiversity

## From The Change To Impact

### -Biophysical Changes:

- Climate change;
- Drought and Less Rainfall;
  - Desertification;
  - Over grassing;
  - Over fishing;
- Down of Water Tables.



# Integration of EIA into Biodiversity

- From The Change To The Impact
  - Social Change:
    - Life Patterns Change;
  - Consumption Patterns Change;
    - Low Production;
  - Water Abstraction and Demand;
    - Intensification use of Soil;
    - Misuse of Chemical;
    - Urbanization.



# Integration of EIA into Biodiversity

## Biophysical Impact

- Water Scarcity
- Soil Erosion;
- Land Degradation;
- Water Erosion;
- Environmental Pollution;
- Endanger of Flora and Fauna;
- Habitat Degradation;



# Integration of EIA into Biodiversity

- Social Impacts
  - Low Income;
  - Poverty;
- Health Problems;
- Economic Problems;
- Loss of Job Opportunity;



# Experience From Yemen

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



# Experience From Yemen

- *Clear legal framework and guidelines are essential basis ;*
- *Awareness rising among the decision makers and public should be part of the integration process;*
- *Community participation in the EIA process has advantage to conserve the BD.*



# Conclusions

- Capacity Building & Training;
  - National Policy for EIA/SEA
- Updating of EPL and its Regulations;
  - Special By-Law for EIA/SEA;
    - Raising Awareness;
    - Institutional Reform.

