INTRODUCTION

This document has two purposes:

1. OBJECTIVES OF MEETINGS
to explain the objectives of the meetings and to identify inputs that can be provided by national representatives

2. OVERVIEW OF CONCEPTS AND ISSUES
to provide national representatives with a concise overview of the concepts and issues that are the subject matter of this project and that will therefore be discussed during the meetings at FAO in Rome;

OBJECTIVES OF MEETINGS

Objectives of meetings and the role of representatives from national participating institutions

The objectives of these meetings are as follows:

• To agree on the composition and Chairperson of the Steering Committee that will oversee the implementation of this project

• To establish the working procedures to be followed during the design and development of the project

• To review and finalize the project work plan and to identify resource people to be recruited for project planning workshops

• To establish the Technical Advisory Group that will advise the Steering Committee and formulate the terms of reference of the TAG
National representatives are expected to brief the meeting on the current state of *in situ* conservation in their countries. Reference may be made to the Annex to the project document (copied at end of this document) in their presentations. National representatives can prepare for the meeting by familiarizing themselves with the project document and briefing documents prepared for the meetings. They will of course at all times be free to represent the interests and concerns of the countries and all such inputs will be welcomed.

**OVERVIEW OF CONCEPTS AND ISSUES**

Although the word ‘biodiversity’ does not appear in the title of this project, it is a biodiversity project and it is important to understand the approach that will be taken to biodiversity.

*Biodiversity*

“Biodiversity is the variety and variability of life on earth. It encompasses the differences within and between all levels of biological organisation – genetic, species and ecosystem – and from the largest mammals and trees down to microscopic plants, animals, bacteria and viruses.” [Koziell and Saunders 2001, at page 1]

This project will be concerned with the conservation of the genetic diversity of particular plant species in the ecosystems in which they occur. In other words, it will be concerned with biodiversity at all levels.

Biodiversity is considered to be valuable because it provides a range of benefits, including:

- **Direct use** values, which may be either subsistence [for example, plant or animal foods gathered or hunted for personal consumption], or tradable [for example, plant or animal products that are sold in commercial markets to provide income]

- **Indirect use** values, such as ecosystem services, the genetic diversity used to produce new crops and medicines, and aesthetic qualities which provide a basis for a tourist industry

- **Non-use values**, such as adaptability that provides insurance against climate change, and existence value, which is the intrinsic value that justifies its existence to some people.

*Agricultural Biodiversity*

A vital sub-set of biodiversity is agricultural biodiversity. This is the result of human interaction with nature particularly by those whose food and livelihood security depend on the sustained management of the diverse biological resources that are important for food and agriculture.

Agricultural Biodiversity comprises the variety and variability of animals, plants and microorganisms used directly or indirectly for food and agriculture (including, in the FAO definition,
crops, livestock, forestry and fisheries). It comprises the diversity of genetic resources (varieties, breeds, etc.) and species used for food, fodder, fibre, fuel and pharmaceuticals. It also includes the diversity of non-harvested species that support production (e.g. soil micro-organisms, predators, pollinators and so on) and those in the wider environment, including 'wild' relatives, that support agro-ecosystems (agricultural, pastoral, forest and aquatic), as well as the diversity of the agro-ecosystems themselves.

It has been defined as follows:
Agricultural biodiversity encompasses the variety and variability of animals, plants and micro-organisms which are necessary to sustain key functions of the agro-ecosystem, its structure and processes for, and in support of, food production and food security. [FAO, 1999]

**In situ conservation**

This project is explicitly committed to *in situ* conservation.

Traditionally, *in situ* conservation has been used principally for the conservation of forests and of sites valued for their wildlife or ecosystems, whereas *ex situ* conservation has been the classical approach for the conservation of plant genetic resources [i.e. “the economic, scientific or societal value of heritable materials contained within and among species”] for food and agriculture [PGRFA]. In recent years, however, the need for integrated conservation strategies for PGRFA based on the complementarity of *in situ* and *ex situ* approaches has become clear. This has been elaborated in a number of plans and programmes in which has been added the concept of *on-farm* (or *in-garden*) conservation [See, for example, Priority Activity Area 2 of the Global Plan of Action (FAO, 1996)].

In contrast to *ex situ* conservation, *in situ* or on-farm conservation permits populations of plant species to be maintained in their natural or agricultural or horticultural habitat, thus allowing the evolutionary processes that shape the genetic diversity and adaptability of plant populations to continue to operate.

As defined in the Convention on Biological Diversity “*in situ* conservation means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surrounding where they have developed their distinctive properties.”

In relation to crop varieties, it has been said that “the purpose of *in situ* conservation programs and projects is to conserve specific agroecological, cultural, and biological processes in specific localities so that historical processes and ecological relationships of crop evolution remain viable therein.” [Brush 2000, at page 12]. These ideas have obvious relevance to plants of economic importance and have been reflected in a number of agreements.

The conservation and sustainable use of 'wild' relatives of crops plants and underutilized species are planned activities of the Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture. These activities’ objectives are:
“*To promote conservation of genetic resources of wild crop relatives and wild plants for food production in protected areas and on other lands not explicitly listed as protected areas.”* [FAO 1996, Priority Activity Area 4]
“To promote the conservation and sustainable management of under-utilised species and their genetic resources. [FAO 1996, Priority Activity Area 12]

In addition, the International Treaty on Plant Genetic Resources for Food and Agriculture (PGRFA) has a focus on the conservation and sustainable use of all PGRFA, including 'wild' relatives and underutilised species. Relevant articles include:

“5.1 (d) Promote in situ conservation of wild crop relatives and wild plants for food production, including in protected areas, by supporting, inter alia, the efforts of indigenous and local communities;”

“6.2 (e) promoting, as appropriate, the expanded use of local and locally adapted crops, varieties and underutilized species;” [FAO 2001b]

In the context of forests it has been found that: ‘The majority of tree species cannot be conserved ex situ in plantations or genebanks because of biological, technical and resource limitations. … Therefore, conservation of the majority of the world’s plant genetic resources will rely on in situ conservation, which underlines its importance. Because conservation of genetic resources can be included in managed natural production forests and protected areas, in situ conservation will usually be a low cost option. …

long term conservation of forest genetic resources in situ is far from a straightforward process, but one whose success depends on:

- appropriate social, economic and political conditions
- relevant biological information
- commitment and appropriate resourcing
- active participation of and benefits to local communities.” [FAO et al. 2001a, at pages 1 - 3]

**Planning of in situ conservation**

Since this project will be involved with the conservation of individual plant species, an approach to planning a program to conserve the genetic resources of a particular tree species is instructive. The main steps of this are:

1. Set overall priorities, i.e. identification of genetic resources at the species level based on their present or potential socioeconomic value and their conservation status.

2. Determine or infer the genetic structure of the priority species at the landscape level.

3. Assess the conservation status of the target species and their populations.
4. Identify specific conservation status requirements and priorities, typically at the population level for single species and at the ecosystem level for groups of species, i.e. identify the geographical distribution and number of populations to be conserved.

5. Identify the specific populations to be included in the network of *in situ* conservation stands.

6. Choose conservation strategies of identify conservation measures.

7. Organize and plan specific conservation activities.


**Gender**

Gender in often an important consideration in understanding the traditional management of genetic resources at community level. For example, in the context of crop genetic resources:

“There are … clear gender differences in local agricultural biodiversity management. Women are usually the seed selectors for the range of criteria required domestically by households, such as taste, colour, smell, cooking time, etc. Where a division of labour exists, women are often responsible for staple or subsistence crops and men for cash crops. Women’s concern with the household economy provides a balance to the market-oriented pressures that emphasise higher yields and uniformity. In many households, women manage components of the farming system containing high levels of biodiversity, such as home gardens, and make extensive use of gathered species and tree products. Since women often prepare family meals, this influences the variety of crops which they select for the home garden. Therefore, gender analysis is required to understand the dynamics of agricultural biodiversity management in a given household or community.” [Cromwell et al. 2001, at page 85]

**Stakeholders**

Effective and equitable management of plant genetic resources require that the interests of all stakeholders should be taken into consideration. Stakeholders may be either direct or indirect.

Direct stakeholders may include: multinational companies, consumers, scientists, international gene bank system, farmers in industrial-type agriculture, farmers and gardeners in traditional-type agriculture and horticulture, providers and users of traditional medicine.

Indirect stakeholders may include: countries and country groupings, NGOs, farmers' organisations and other civil society organisations, multilateral and bilateral donor organisations.
Policies, laws and institutions

Inappropriate or inadequate policies and/or laws, and ineffectual or non-existent institutions can impede effective conservation of genetic resources and therefore need to be considered. The need for effective institutions exists at all levels from the central government to communities. At the local level, land tenure and use rights may be crucial issues influencing the incentives for conserving natural resources, including plant genetic resources, and institutional weakness is no less serious at the local level than it is at higher levels. Intellectual Property Rights regimes may influence options for conservation both in situ/on-farm and ex situ.

References


ANNEX 9: Annexes Contained in the UNEP GEF PDF B as approved by GEF

Annex 1: *In situ* Conservation in the Participating Countries

The status of *in situ* conservation [ISC] in the participating countries is briefly summarised below with the objective of demonstrating their involvement in and commitment to ISC.

EGYPT

[1] Institutional responsibility for ISC of plants
a) Faculty of Science, Flora Research Dept.
b) Desert Institute, Flora Research Dept.
c) Field Crops Research Institute – Gene bank – Bahteem
d) Island Plant at Aswan – Upper Egypt
e) Environmental Affairs System – Prime Minister Office
(Information provided by University of Cairo)
f) Nature Conservation Sector (NSC) at Egyptian Environmental Affairs Agency (EEAA) is the responsible body for management of protected areas and conservation of biodiversity in Egypt and the sole candidate to act as the counterpart for the proposed project.

Contacts : Dr. Moustafa Fouda
Director, Nature Conservation Sector
Egyptian Environmental Affairs Agency
14 Shagaret El-Dor, Zamalek, Cairo

NFP - Dr. Ibrahim Abd El Gelil, Chief Executive Officer, Ministry of State for Environmental Affairs, Office of the Minister.

[2] Recent and ongoing activities in ISC

A US$ 4,3 million UNDP/GEF Project entitled “The Conservation and Sustainable Use of Medicinal Plants in Arid and Semi-Arid Ecosystems” is becoming operational. The project document is the output of a PDF-B phase that started in 1998 and the project activities will start this year. The objective of the project is to conserve globally significant medicinal plant species and associated habitats in St Katherine’s Protectorate. It focuses on protection, registration and regeneration of endangered endemic species (42 species), training of Bedouins on cultivation, harvesting, processing and marketing of medicinal plants. As part of the project activities the Egyptian Government will use the experience gained in the Sinai project to develop a National Strategy for Medicinal Plants in Egypt which can be one area of cooperation between the two projects.
(Information from UNDP Cairo)

El-Gazar Project directed by Drs. El-Gazar, El-Kasas, El-Batanony and Nabeel El-Hadide.(Inf. from Cairo University)

Some activities initiated by Dr. Mamdouh Riad, Undersecretary of state For Afforestation and Environment, Ministry of Agriculture and Land Reclamation – species : Khaya, Acacia, Mulberry, Jatropha, Cupressus, Casuaria, Poplar.
[3] **Priority Species**
*medicinal and aromatic plants* Salyx spp.
*ornamental plants*
*fibres:* Papyrus spp., Typha spp.
*oil plants*
*fuel wood*
*fodder and grazing plants*

[4] **People who make use of these categories**
These categories are mainly used by artisans

[5] **Trade in species in these categories**
No information is available

[6] **Conservation of these species**
Limited information

[7] **Availability of genetic resources from these species in gene banks, field gene banks or protected areas**
Limited information

[8] **Protection of these species by national laws or regulations**
Some general protection is provided by laws and regulations and Egypt has recently acceded to CITES

[9] **Inclusion of these species in country reports, biodiversity strategies and action plans**
Salyx spp. features in Egypt’s national Afforestation/Forestry Action Plan
LEBANON

[1] Institutional responsibility for ISC of plants
Two ministries have responsibilities relating to in-situ conservation, namely:
• the Ministry of Environment;
• the Ministry of Agriculture.
The GEF Focal Point is the Director General of the Ministry of the Environment, Dr Berj Haljian.

[2] Recent and ongoing activities in ISC
Ongoing activities include an Agrobiodiversity Project, an in situ Econursery Project, and inventories of plant species in protected areas.

Also, a GEF in-situ project was launched by the Ministry of Environment in 1996. It will come to an end in November 2001. It is entitled “Strengthening of National Capacity in Grassroots in-situ Conservation for Sustainable Biodiversity Protection” and is supported by UNDP, GEF, and technically by IUCN.

The project objectives are the elaboration of a management strategy for Protected Areas to safeguard endemic, rare and endangered species of flora and fauna, the conservation of their habitats and the incorporation of biodiversity conservation as an integral part of sustainable human development. It has also promoted national reconciliation between different parties through the incorporation of education (building capacities) and sensitization components (documentary films, TV spots, Posters) directed towards the local communities.

Within the framework of this project, the ministry initiated a one year project ‘Flora & Fauna diversity in the Protected areas’. It was launched by the Lebanese National Council for Scientific Research (LCNRS). On the basis of surveys of fauna and flora in each reserve, lists of species were elaborated and species of biological importance were highlighted.

[3] Priority species
herbs, aromatic and medicinal plants: Oregano, Salvia, and Allium spp. 
horticultural plants: Almond, Fig, Pear, Pistachia, Plum
fuel wood: Oak, Pine
fodder and grazing plants: Alfalfa, Clover, Vetch

[4] People who make use of species in these categories
At the local level, farmers and villagers. At the national and global level, plant breeders and researchers

[5] Trade in species in these categories
There is no information on this.

[6] Conservation of these species
Some work is ongoing in the Agrobiodiversity Project on in situ conservation through awareness rising in farming communities and fencing plots. Some general protection is provided by protected areas and forest conservation measures.
[7] Availability of genetic resources from these species in genebank, field genebanks, or protected areas
Genebanks have been and are being established in cooperation with institutions such as FAO, ICARDA, LARI and Kew.

The Agrobiodiversity Project is developing field gene banks for fruit trees in cooperation with ACSAD.

[8] Protection of these species by national laws or regulations
Species which have explicit legal protection include conifers and medicinal plants.

[9] Inclusion of these species in country reports, biodiversity strategies and action plans
MOROCCO

[1] Institutional responsibility for ISC of plants
ISC of wild plants is the responsibility of the Directorate for the Conservation of Forest Resources [DCRF] in the Ministry of Water and Forests [MCEF].

The GEF Focal Point is the Division of Wildlife, Fisheries and Biodiversity in the DCRF.

[2] Recent and ongoing activities in ISC
Activities relating to ISC are being implemented by the following institutions:
- in the Ministry of Water and Forests, both the Directorate for Conservation of Forest Resources [DCRF], and the Division for Forestry Research and Experimentation [DREF];
- the Department of Biology in the Institute of Science in the Mohammed V University;
- the Department of Ecology in the National College of Forest Engineers;
- the Department of Ecology and the Complex for Horticulture of Agadir in the Hassan II Agronomic and Veterinary Institute;
- Moroccan Committee of Man and the Biosphere programme;
- Association of Aromatic and Medicinal Plants [NGO];
- Moroccan Biodiversity Association [NGO].


[3] Priority species
- herbs, aromatic and medicinal plants: Carob, Lavender, Mint, Myrtle, Oregano, Rosemary, Thyme
- ornamental plants: Laurier Rose, Rosemary
- fibre: Doum, Sisal
- oil plants: Argan
- fuel wood: Argan, Cypress, Fir, Juniper, Oak
- fodder and grazing plants: Argan, Carob, Hawthorn, Heather
- Used for handicrafts: Heath, Thuya

[4] People who make use of species in these categories
Local populations are the main users of plants for fuel wood, forrage and oil. Private enterprise makes use of herbs, aromatic and medicinal plants, and plants for fibre under licence.

[5] Trade in species in these categories
The annual volume of exports in herbs, aromatic and medicinal plants is over 10,000 tonnes

[6] Conservation of these species
Carob, Lavender, Mint and Rosemary are cultivated. Argan and Jujube are regarded as vulnerable.

[7] Availability of genetic resources from these species in genebank, field genebanks, or protected areas
Genetic resources of most species are available in the wild and/or in protected areas
[8] Protection of these species by national laws or regulations
There is no specific legal protection, but the Forestry Law provides general protection.

[9] Inclusion of these species in country reports, biodiversity strategies and action plans
Some species are mentioned in the National Biodiversity Report [Department of Environment], an in the Report on the Plan of the Director of Protected Areas.
TURKEY

The following is a concise summary of a modest subset of the copious information that exists on ISC of plants in Turkey.

[1] Institutional responsibility for ISC of plants

Three institutions have responsibilities related to ISC in Turkey, namely:
- the Ministry of Agriculture and Rural Affairs, which is responsible for in situ conservation of wild crop species – the Executing Agency for this project;
- the Ministry of Forestry, which has responsibilities for ISC of forest genetic resources, including trees and other plants of economic importance;
- the Ministry of the Environment has responsibilities for ISC through its coordination of activities related to the Convention on Biological Diversity.

There are two GEF Focal Points, the Undersecretary of the Treasury and the Department of Foreign Relations in the Ministry of the Environment.

[3] Recent and ongoing activities in ISC

In addition to regular program activities of departments involved in ISC in the Ministry of Agriculture and Rural Affairs and the Ministry of Forestry, substantial project based ISC activities have been and continue to be implemented.

Between March 1993 and September 1998 the $5.2 million In-situ Conservation of Genetic Diversity Project, GEF Grant No. 28632-TU was implemented. The objectives of this project were: [i] to identify and establish in-situ conservation areas for the protection of genetic resources and wild relatives of non-woody and woody species and associated forest germplasm; [ii] to develop institutional capacity for preparing and implementing a national strategy for in-situ conservation. The project outcome was rated as highly satisfactory.

Early in 2001 implementation of the $ 8.2 million World Bank/GEF Biodiversity and Natural Resources Management Project began. This includes a component “Developing Prototypes for Effective Protected Area Management”.

[4] Priority species

The distribution of priority species has not been precisely mapped, but in general terms they occur primarily along the Black Sea, Mediterranean and Aegean coastlines. Examples of priority species and types include:

- herbs, medicinal and aromatic plants: Incense, Thyme, Oregano, Rosemary, Carob, Myrtle, Bay, Sumac, Chestnut, Madder
- ornamental plants: Tulip, Crocus, Snowdrop, Cyclamen, Fritillaria, Lily
- horticultural plants: Almond, Cherry, Pear, Plum
- oil plants: Storax [liquid amber oil]
- fuel wood: Oak – more than 20 species
- fodder and grazing plants: Alfalfa, Clover, Vetch

[5] People who make use of species in these categories

These species are used by forest villagers, rural people, plant breeders, traders, exporters and industrialists. In other words, they are used by a wide spectrum of people in activities ranging from the traditional to modern commercial and industrial.
[6] Trade in species in these categories
There is substantial trade in these species. Trade in aromatic, medicinal and ornamental species is documented. In 1996 it provided revenue of nearly $7 million to villagers.

[7] Conservation of these species
Information on the conservation of individual species is limited, but more than 3 million hectares of land have been allocated to various forms of in-situ conservation, including conventional protected areas, Conservation Forests, Seed Stands, Seed Orchards, Seed Plantations, and Gene Management Zones

[8] Availability of genetic resources from these species in genebank, field genebanks, or protected areas
Existing genebanks are mainly for crops and some related wild species. The availability of genetic resources of individual species in in-situ conservation areas is generally not well documented, but it can be inferred that a substantial number of species will be represented in one or other of the various types of in-situ conservation area, precisely because these are established for conservation purposes.

[9] Protection of these species by national laws or regulations
There is no national protection of individual species, but national regulations cover:
• the collection, storage and use of plant genetic resources;
• the collection, production and export of wild flower bulbs;
• the collection of plant material in Turkey;
• research on plants by foreigners.

The Forest Law allows the General Directorate of Forestry to regulate the use of wild plant species on State Forest lands through a system of licensing.

[10] Inclusion of these species in country reports, biodiversity strategies and action plans
These species are mentioned in general terms in both the “Draft Report on the National Plan for In-situ Conservation of Plant Genetic Diversity in Turkey” and the “Draft Biodiversity Assessment Strategy and Action Plan of Turkey.”