

## **Request 5 for Section 108 Funds (Moroccan dirhams)**

### **Biological Diversity, Cultural and Economic Value of Medicinal, Herbal and Aromatic Plants in Morocco**

#### **A. DESCRIPTION OF PROJECT**

The overall objective of the project is to support the conservation, management, and sustainable utilization of medicinal and herbal plants in Morocco while ensuring effective *in situ* protection of threatened habitats and ecosystems. The project will be located near Settata, a region characterized by large rainfed grain farms. Because of the lack of income alternatives in this area, this region will be one of the most severely affected as the FTA eventually results in increased imports of US grains and pulses. Medicinal plants offer one of the few viable cropping alternatives to grains in this area. This project is an extension of an on-going project in Tunisia, and is envisioned to extend further to other arid and semi-arid countries in the region.

#### **B. MARKET OVERVIEW**

##### **Introduction**

One of the major difficulties of assessing the importance of medicinal and aromatic plants and developing a strategy for their conservation and sustainable use is the lack of hard facts about which species are used, what is their detailed distribution, how they are collected or harvested, which species are in cultivation and where, and what are the quantities involved in collection, consumption, and trade. Trade statistics are unreliable as is the identity of the material traded under such names as oregano, covering plants belonging to more than one genus and several species.

There has been renewed interest in recent years in phytotherapy as well as an increasing awareness for the conservation and sustainable use of biodiversity for local people by local people. The project is seen as a means to generate income and to sustainably utilize and conserve biodiversity by numerous Moroccan stakeholders that are concerned with medicinal and herbal plants who agree there is a large commercial potential not yet exploited.

##### **Trade Impact**

Because of the extreme vulnerability of Moroccan grain producers, in the FTA negotiations wheat was identified as one of 3 so-called “explosive” commodities, and other grains and pulses were highly sensitive. This project aims to explore alternative income generation in a rainfed region that relies on grains and has few other alternatives (e.g., tourism).

In the Settata region, more than 80 percent of the area is devoted to grains (bread wheat, durum wheat, and barley) and pulses. With no large irrigation projects nearby, the region depends on rainfall, which in a normal year is about 350 mm (14 inches) a year, less than in the Texas

panhandle. Production varies dramatically, depending on rainfall. In some years, the Settat region can account for up to 15 percent of Moroccan durum wheat production and almost 10 percent of Moroccan production of bread wheat and barley. About 80 percent of farmers in this region have less than 12 acres of land. This area would be one of the most vulnerable in Morocco when/if producer prices for grains are reduced. Without irrigation, there are few other crops suitable for planting, as well as few other economic opportunities.

Morocco has long been a major market for US grains. By offering vulnerable grain producers a possible alternative to cereal production, this project will help lessen the negative impact of the FTA on one of the most vulnerable sectors in the Moroccan economy, thereby reducing opposition to the FTA and facilitating the market for U.S. wheat and barley, as well as pulses.

### **C. PERFORMANCE INDICATORS**

#### **Goal**

- (a) A comprehensive diversity collected and conserved; endangered species identified; niches of biodiversity identified for *in-situ* conservation; a herbarium and database established; genetic variability assessed; promising genotypes with chemical and medicinal properties identified.
- (b) Degree of cultivation, marketing and processing assessed; constraints to the sustainable development of the sector identified; the cultural role of medicinal and herbal plants assessed; recommendations for research, policy and management made.
- (c) A mechanism established for coordination and information exchange within and among countries, and creation of a safety duplication of ICARDA germplasm with germplasm gathered from Morocco as well as from Tunisia, Egypt, Jordan, and from other arid and semi-arid areas.
- (d) Improved techniques for commercial production developed.

#### **Objectives**

The overall objective of the project is to support the conservation, management, and sustainable utilization of medicinal and herbal plants in Morocco while ensuring effective *in situ* protection of threatened habitats and ecosystems. The project's specific objectives are to:

1. Prepare a national database on indigenous medicinal and herbal plants, with a view to assess their usage, status, and ecosystems;
2. Conserve, manage, and sustainably use, both *in situ* and *ex situ*, medicinal, herbal and aromatic plants in arid and semi-arid areas;
3. Institutionally strengthen collaborating agencies, i.e. scientific research institutes, faculties of pharmacy, extension services, universities, NGOs, etc. to add value to medicinal herbal and aromatic plants through processing, chemical analysis and marketing;
4. Improve public awareness of the importance of medicinal plants and build on traditional knowledge and cultural heritage.

## Activities

- Collect and conserve local species
- Identify and establish *in situ* conservation sites
- Characterize the biology and agronomy of selected species
- Conduct chemical analysis for selected species
- Survey cultural and economic values of herbal, medicinal and aromatic plants
- Develop a CD ROM with information on available germplasm, habitat and distribution, use, published reports, etc.
- Promote involvement of NGO and private sector
- Enhance regional and international networking
- Conduct field days and awareness workshops

## Participants

- The Centre d'Aridoculture (Arid Agriculture Center) is part of the **Institut National de Recherche d'Agronomie (INRA)**, the major research body of the Ministry of Agriculture. The Center was created in 1980 by USAID and the Mid-America International Agricultural Consortium (MIAC), a 5-state consortium comprising Nebraska, Missouri, Kansas, Oklahoma, and Iowa. Because of this connection, INRA Settat has long had close links to US scientists.
- The **International Center for Agricultural Research in the Dry Areas (ICARDA)** is one of 16 international agricultural research centers that make up the CGIAR system. Based in Aleppo, Syria, ICARDA has a regional office in Tunisia that has been working with FAS/RSED for several years. ICARDA is currently managing six 108-funded projects for RSED in Tunisia, including a project similar to this one on medicinal plants.
- USDA's **Agricultural Research Service (ARS)** will provide expertise and guidance for this project.

## Project Management and Evaluation.

The ICARDA office in Morocco will manage the funds and the project. (See Annex I.) Money will be provided in 2 tranches. The first tranche will be provided at the beginning of the project. The second will be provided after one year, following an interim progress report submitted to the Agricultural Affairs Office, Embassy Rabat. At the end of the project, a final report, including a record of expenses, will be submitted by ICARDA to Carol Kramer-LeBlanc, Director, FAS/ICD/RSED, with a copy to AgRabat.

### **Contributions from Other Parties**

ICARDA, INRA Settat, and ARS will make in kind contributions consisting of:

- salaries of ICARDA, INRA and ARS scientists;
- support staff expenses at all 3 institutions
- laboratory and equipment usage.

## ANNEX I

**Title:** Biological diversity, cultural and economic value of medicinal, herbal and aromatic plants in Morocco

**Country:** Morocco and the USA

**Institution:** *Centre d'Aridoculture* (Center for Arid Agriculture), INRA Settat

### Principal Investigators:

	<b>In INRA (Morocco)</b>	<b>In ICARDA (Tunisia)</b>	<b>In the USA</b>
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**Start date:** 1 August 2004

**End date:** 31 July 2006

**Funds Requested:** Total: 2,663,400 Dirhams (eq. US\$292,600 at \$1 = 9 Dh)

**Check Payable to:** ICARDA

**Check Sent to:** Dr. Mohamed El Mourid, Regional Coordinator

**INRA Authorized Representative Signature:**

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Dr. Hamid Narjisse

**ICARDA Authorized Representative Signature:**

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Prof. Dr. Adel El-Beltagy

**USDA-ARS-OIRP Authorized Representative:**

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Ms. Arlyne Meyers

