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# West Asia Regional Program

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## Introduction

West Asia encompasses the mega-center of diversity where crops of global importance (cereals, food and feed legumes, fruit trees) have been domesticated over 10,000 years. Agriculture remains the driving economic force and forms the basis for the livelihoods of rural population facing acute environment and social challenges. West Asia Regional Program covering Cyprus, Iraq, Jordan, Lebanon, Palestine, Syria and Southern Turkey was established in 1989 in Amman. The aim is to contribute to agricultural development and integrated natural resources management by partnering with WA NARS in developing appropriate technical packages and approaches, and providing them with needed training and technical backstopping.

## Achievements

More than 27 bilateral and regional projects were implemented during the last five years including the 'Dryland Agrobiodiversity', 'Mashreq & Maghreb II', 'Badia Benchmark' and 'Dryland Initiative' projects, which introduced new approaches and tackled the problems associated with the improvement of livelihoods of farmers in the dry areas. The specific achievements are as follows:

- More than 26 new varieties (5 barley, 4 bread wheat, 6 durum wheat, 4 chickpea, 3 lentil, and 4 forage legumes) were released by NARS and another 30 varieties are proposed for release in the near future. Participatory breeding initiated for barley was extended to wheat and lentil in Jordan and Syria. More than 2600 accessions were collected and conserved at ICARDA genebank. ICARDA supported the establishment of operational national genebanks in Syria and Jordan and repatriated more than 7500 accessions of cereals and legumes. More than 34 species of medicinal value were collected in Lebanon and multiplied at ICARDA Terbol station. ICARDA provided germplasm, training and technical backstopping to Iraq and Palestine even under the difficult security situation prevailing there. Large quantities of basic seeds of adapted varieties were provided to re-launch the seed production systems in Iraq.
- The benefits of water harvesting techniques in the rehabilitation of degraded rangelands were demonstrated at large scale in Jordan, Syria and Lebanon. The feed blocks technology was adopted by farmers in the region. The Mashreq/Maghreb II project implemented in Iraq, Jordan, Lebanon and Syria allowed the introduction of Community Development Plans and the exchange of technologies (including the cultivation of spineless cactus) with North African countries.
- IRDEN durum project, implemented in Syria and Turkey demonstrated packages for

increasing durum wheat productivity and was able to help organize local communities for the production and marketing of durum products.

- In collaboration with NARS partners and Vermont University, ICARDA assessed and monitored the populations of Sunn pests in Turkey and Syria and developed an IPM package using entomo-pathogenic fungi, which contributed to the decrease of the use of pesticides.

ICARDA also coordinated the GEF-UNDP funded project on “Conservation and Sustainable Use of Dryland Agrobiodiversity in Jordan, Lebanon, the Palestinian Authority and Syria”, jointly with IPGRI and ACSAD. The effort allowed the achievement of significant outcomes and outputs, as listed below:

- Development of a holistic approach for promoting *in situ*/on-farm conservation of dryland agrobiodiversity. The project allowed the development of methodologies for assessing and monitoring local agrobiodiversity and major threats. This included, among others, development of the GIS/RS biodiversity indices and field guides for easy identification of *Lathyrus* and *Medicago* species. The project selected 45 hot spots and biodiversity rich areas including the areas for the conservation of progenitors of wheat, barley, lentils and several forage legumes and fruit trees.
- The project demonstrated appropriate technologies for enhancing landrace productivity and quality (for example, seed cleaning and treatment, IPM, rotations, water harvesting) and for the rehabilitation of degraded rangelands (plantation of native shrubs, introduction of feed blocks, training on flocks management and of community-based grazing management, etc.).
- The project investigated and demonstrated value-adding technologies (food processing including the production of jams, syrups and compote from wild *Prunus*, *Arbutus* and *Ziziphus*) and options for alternative sources of income (honey and mushroom production, cultivation of medicinal and herbal plants, making dairy products, eco-tourism and establishment of fruit tree nurseries and home gardens) for ensuring sustainable use of agrobiodiversity. Examples of successful businesses were launched at community and individual levels. The “shinglish” cheese was introduced to Palestine and Jordan, and more than 80 women in Palestine are already marketing the product. The eco-tourism experience in Lebanon allowed the establishment of links between eco-tour private companies and Ham/Maaraboon communities. The establishment of women cooperatives in Palestine and Lebanon and the acquisition of external funding to create food processing centers generated more interest in preserving landraces and wild relatives. The project helped in setting a biodiversity shop in Syria and a summer weekly market in Jordan close to historical sites to allow local communities to sell their products. The project helped in establishing two cooperatives in Lebanon and two in Palestine.
- Several strategies were used to increase public awareness of agrobiodiversity. The project successfully introduced biodiversity conservation in the school curricula in the four countries and in developing a biodiversity and natural habitats management M.Sc. program at the universities in Jordan and Palestine. School gardens were

included as extra-curricular activities along with the organization of national and regional painting contests. Two women NGOs interested in biodiversity conservation were created (“*Banat al Jord*” in Nabha, Lebanon, and “Friends of biodiversity in Ajloun, Jordan).

- The project provided training and technical backstopping to 4800 persons including 78 PhD, MSc, and BS students and 1480 women on all aspects related to agrobiodiversity conservation.
- Regarding policy and legislations, the project helped in establishing a general framework for development of national strategies and policies for the conservation of biodiversity. The representatives of the four countries drafted national policies and legislations which were proposed to the respective governments. At the end of the project, ICARDA organized a ministerial meeting where the four ministers of agriculture signed a Memorandum of Understanding for a regional alliance to promote the conservation of biodiversity and to facilitate the exchange of genetic resources.
- The success of the project was witnessed by evaluation teams, participants to the international conference and by various delegations which asked for the continuation of project activities and its extension to other countries. They also stressed the need for GEF to pay more attention to the conservation of dryland agrobiodiversity and particularly to biodiversity in the centers of diversity and centers of origin of crops of global importance.
- Based on the project results, ministries in the participating countries agreed to use native species in more than 30% of the afforested areas, and national programs were created within the research institutions and the departments of forestry to promote the use of both *ex situ* and *in situ* conservation methods.
- The project developed databases on socio-economic and farming systems characterization, with major GIS and RS layers. It also conducted eco-geographic and botanic surveys, and produced more than 146 national and regional reports.
- Memorandums of Understanding were signed with the University of Jordan and the Jordan University for Science and Technology, and with UNDP/PAPP in Palestine. Efforts of ICARDA to strengthen research and collaboration in CWANA region was publicly acknowledged with the granting of The King Abdallah of Jordan Excellence award to Prof. Dr. Adel El-Beltagy, DG of ICARDA. Through the dryland agrobiodiversity project ICARDA developed linkages and partnerships with several ministries and national agricultural research institutions, universities, NGOs, farmer and community-based organizations, as well as regional and international organizations (IPGRI, ACSAD, University Birmingham, AOAD, Arab League, GEF, IDRC, and DFID).

## Current Activities

- Provision of germplasm, training and technical backstopping to NARS.
- Implementation of bilateral and regional projects:
  - Water harvesting techniques for the rehabilitation of the rangelands in Jordan.

- Demonstration of Community Development Plans for the improvement of livelihoods of pastoral communities in the dry areas.
- Studies on animal health problems and marketing constraints of small ruminants in Jordan and Syria.
- Demonstration of agronomic packages for improving field crops production in Iraq.
- Improving the productivity of durum wheat and value-adding technologies, mainly for “burghul” and “freikeh” production in Syria.

## **Future Plans**

Provision of germplasm, training and technical backstopping, and strengthening of partnerships and regional integration among NARSs and other key stakeholders in the West Asia region. Introduction of new research approaches for improving the livelihoods of local communities, sustainable use of resources, and the use of new science tools to improve the efficiency of agricultural research. Research on water harvesting will be consolidated within the Badia Benchmark site. Sourcing of additional funding to continue activities on the conservation of dryland agrobiodiversity, and the rehabilitation of agricultural research in Iraq and Palestine would be attempted.