

**Title of Proposed Project/Programme:**  
Rebuilding the Plant Genetic Resources Activities in Iraq

**Programme Description:**

Plant genetic resources (PGRs) for food and agriculture are the basis of global food security. They comprise diversity of genetic material contained in traditional varieties, modern cultivars, crop wild relatives and other wild species. Genetic diversity provides farmers and plant breeders with options to develop, through selection and breeding, new and more productive crops, that are resistant to virulent pests and diseases and adapted to changing environments.

This project aims to improve food security and nutrition for Iraqi people with increasing domestic crop production. This will be brought by conservation and use of plant genetic resources for securing food supplies, improving the quality of life and protecting the environment for the benefit of present and future generation. This will be mainly achieved through rehabilitation of plant gene banks in Iraq which are located in the central, north and south regions.

At the end of the project it is envisaged that a national strategy for conservation of plant genetic resources would be formulated and the capacity of government research centers in development of highly productive locally adapted varieties would be enhanced significantly through collection and conserve in situ and ex situ the valuable germplasm and their utilization which are needed in crops variety development programmes. The damaged infrastructures would be rehabilitated with provision of equipment for collection, documentation, multiplication and conservation. The technical capabilities of Iraqi human resources will be enhanced

**Programme Costs:**

Total Cost: US \$5 million

Govt. Contribution (tentative): \$ 0.50 million

**Programme Location:**

Governorate(s): Baghdad, Ninvah, Aldywania, Almuthana governorate

**Programme Duration:** 24 months

**National priority or goals (NDS 2007- 2010 and ICI):**

**NDS:**

- Development of a viable agricultural research and extension services to develop and disseminate improved varieties and successful production practices needed to restore agricultural productivity
- Increase production and productivity through providing of new varieties which are adapted to agro-ecologies of Iraq and which enhance farm productivity.

**ICI Benchmarks (as per the Joint Monitoring Matrix 2008):**

Goal: To develop a stable, competitive and sustainable agriculture to enhance food security and rural incomes, generate rural employment, diversity economic growth and protect the natural environment.

Benchmark # 3: Protect and rehabilitate unique Iraqi crop varieties and agricultural genetic heritage.

Benchmark # 4: Strengthen the technical and management capacity of agricultural organizations (Priority Action).

Benchmark # 5: Develop financing plans and mechanism including public and private sources to rehabilitate damaged physical infrastructure, improve delivery of public agricultural services, improve the efficiency of agricultural information

## **Sector Team Outcome:**

Outcome 1: Sustained agriculture development, food security and natural resource.

### **1. Executive Summary:**

The project will build on the FAO onGOing Seeds programme under which a National Seeds Policy was drafted and approved by the Government of Iraq. In the said national seed policy, the GOI has emphasized that the main basis of new varieties will be indigenous germplasm as well as trials and testing under Iraqi conditions. Government will continue its support of development of a strong national system of gene banks by which the valuable germplasm of Iraq will be conserved. It is expected that research programme will safeguard local biodiversity by co-operating with the national bodies responsible for germplasm conservation. This cooperation should lead to the incorporation of indigenous germplasm into new varieties, where possible and ensure a wide genetic base for the resultant variety. This will enhance the adaptability to local agro-ecology of newly developed varieties.



Therefore it is abundantly apparent that the plant genetic resources project is intrinsic to the development of agriculture in Iraq. Consequently, FAO and UNESCO would provide the necessary thrust in all areas of the biodiversity conservation programme. The project is under the umbrella of the MOA. Stewardship is provided by the main body constituted by the GOI for the plant genetic resources- State Board for Seed Testing and Certification (SBSTC). This body will be the key implementation partner for FAO and UNESCO in this project through provision of physical infrastructures for gene banks and laboratories and staff. FAO and UNESCO will develop the institutional capacity of SBSTC through provision of specialized equipment and organizing study tours, external training and in-service training in the areas related to PGR.

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### **2. Situation Analysis:**

The human right to food is enshrined in Article 25 of the Universal Declaration of Human Rights which states: *“Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food.”*

This project seeks to safeguard the Iraqi peoples’ human right to food especially in the context of the presently 80% imports of food commodities. Many poor families - around 12 million individuals, rely heavily on Iraq’s Public Distribution System (PDS). Without the PDS, the nutritional welfare of the bulk of the population is compromised. Continued shortages in PDS commodities have been witnessed across Iraq. Thus enhancement of food production and productivity is the fundamental objective of any agricultural activity.

Plant genetic resources activities started in Iraq during 1977 through a collaborative initiative between Iraqi MoA and International Board for Plant Genetic Resources (IBPGR) and FAO. Unfortunately, the previously well-maintained collection of plant genetic resources at Abu Ghraib has been ransacked as a result of recent upheavals. Most of the herbarium and seed samples are lost and the equipment, supplies and cold storage equipment were totally destroyed or looted. However, if the Iraqi gene bank is rehabilitated and made functional, some of the lost plant genetic resources of Iraqi origin can be recovered from germplasm collections held outside Iraq and by targeted plant collections. This would add a valuable gene base for the associated breeding programs for cereals and key pulses.

To support future breeding and selection programs and encourage exchange of genetic materials, it is important that the gene bank be restocked at least with local land races and a selection of wild relatives from the key regions. <sup>1</sup>

The Iraqi MoA – three-year-plan for Development of Agricultural Sector 2009-2011 observes that biodiversity should be prioritized and work through establishing the National Committee for Plant Genetic Resources and develop plan for construction of three gene banks in three governorates.

### 3. The Proposed Integrated Programme

The integrated programme would serve towards enhancing production and productivity as well as increase the capacity for national government to enhance public-private partnership.



A seed bank is not only for the food crop but also for the protection of biodiversity for rare/endangered species. Iraq is preparing the ratification of the Convention of Biological Diversity as mentioned in the ICI document in the context of Iraq's accession to Multilateral Environmental Agreements. The proposed genetic resources bank is expected to be a "Center of Excellence" where government officials, scientist and researchers and local farmers gather to address the relevant fields of agriculture and biological diversity. UNESCO, with its mandate of education and sciences, will contribute to strengthen technical capacity of the bank through promoting research and development, networking with academia inside Iraq as well as with the international scientific community.

### 4. Anticipated Project Outcomes, Outputs and Results:

The major project outcomes are as follows:

- Outcome 1: Damaged infrastructure in the plant genetic collection rehabilitated.
- Outcome 2: Technical capacity in plant genetic resources conversation, variety improvement and production enhanced.
- Outcome 3: National strategy for conversation and utilization of plant genetic resources developed.

The major project outputs are:

- Rehabilitation of the national gene bank facilities at Abu Ghraib-Baghdad, Ninawah, Aldywaniah and Almuthana governorates
- Strengthening of the technical capability of gene bank staff
- Conservation and characterization of plant genetic resources
- Development of a national strategy for sustainable agro-biodiversity conservation and use in Iraq
- Crop wild relative and landraces collection, characterization, conservation and documentation
- Compensation of the lost germplasm
- New germplasm multiplied and characterized for agro-morphological descriptors and evaluated for other important traits, e.g. stress tolerance, seed quality etc.;

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<sup>1</sup> In the past, to save at least part of its genetic resources collection, the national program of Iraq in 1996 sent a total of 206 genetic resources accessions of different crops to International Centre for Agricultural Research in the Dry Areas (ICARDA)-Syria to be held in the long-term cold store as a "black box". The number of accessions of Iraq origin held in major gene banks outside Iraq is limited; the largest collection is at United States Department of Agriculture (USDA) (1,113 accessions). ICARDA is holding 1,003 accessions of mandated crops and the Vavilov Institute has 403 accessions. If to this are added accessions from adjacent regions in Turkey, Central Asia, Iran and Syria accessible through collections in ICARDA, Australia and Vavilov Institute, the total of lines could exceed 5,000.

- New germplasm stored *ex situ* in the medium-term active and long-term base collection and for safety duplicated at ICARDA or other external gene banks;
- Data generated in the diverse genetic resources activities are stored and managed in a database management system.
- The technical capacity of SBSTC in plant genetic conservation would be enhanced.

### **5. Implementation and Management:**

The project activities will be implemented under the supervision of a Project Management Unit (PMU) that will oversee the overall implementation of the proposed project interventions. This will be headed by an International Coordinator/Consultant. Under the PMU, a Project Steering Committee (PSC) which will be composed of all stakeholders will be established and meet quarterly to ensure the overall quality control of project management and activities.

This project will be executed and implemented by FAO in partnership with UNESCO and the Ministry of Agriculture. The State Board for Seed Testing and Certification of the MoA will be responsible for main project activities implementation.

The MoA will specifically provide:

- Building for the gene banks and required laboratories;
- Personnel deputed to support FAO for project implementation;
- The MoA will also specifically implement Integrated Seed Programme.

### **6. Feasibility, risk management and sustainability of results:**

The project is designed towards institutional capacity building and to rehabilitate the gene banks facilities. One of the major elements for sustainability is the emphasis on capacity building which is a key component of this project.

The seed research and crop improvement programme will be based primarily on the local germplasm, contributing to conservation of plant diversity and thus ensuring environmental sustainability.

The following are the assumptions taken in the project design:

- Except in the case of an extreme situation of an emergency such as major pest outbreak, increase in insurgency, and climate disturbance the project will run minimal risks.
- Risks associated with difficulties in recruiting and retaining qualified staffs in SBSTC due to the low national remuneration are considered medium.
- It has been assumed, that the construction of the buildings needed for this exercise will be completed by the MoA before the arrival of the equipment/machinery at their destinations. This will guard against creating idle capacity and delaying the production of targeted outputs.

### **7. Monitoring, Evaluation, and Reporting:**

In line with FAO and UNESCO policies and procedures, monitoring will be done at all crucial stages of implementation of the project based on the measurable indicators and means of verification identified in the attached results framework and indicators.

The National Project Coordinator will prepare a monthly progress report on the activities to be submitted to the Chief Technical Adviser and FAO and UNESCO Headquarters. A Project Steering Committee (PSC) constituted of the representatives of the seed industry stakeholders will be established. The PSC will meet twice per year to endorse the annual workplan, review the progress in implementation, monitor the project effectiveness and make the recommendations for the next steps of the project.

Periodic project progress reports – at least once every 6 months - will be sent to FAO and UNESCO and the government by project management. These will be transmitted to the Sector Outcome Team as required. Annual meetings attended by Representatives from MOA, FAO and, possibly, Donor UNDG EC will be carried out for project evaluation. Additional meetings could be convened as the need arises.

The project will be subject to a review and preparation of a follow-up phase of the project by the Government, FAO and UNESCO before completion of full implementation. The FAO/UNESCO Chief Technical Adviser and the UNESCO/FAO National Project Coordinator shall prepare and present to the review meeting a project performance evaluation report (PPER) and a project follow-up phase based on PPER. It will assess in a concise manner, the extent to which the Project's scheduled activities have been carried out, its outputs produced, the progress towards achievement of the project specified Outcomes, will also present recommendations for future follow-up action arising out of the project in the form of a follow-up phase of the project. The terms of reference, exact timing and place will be decided in consultation among the concerned parties.

Reporting will be done as per the guidelines of the EC.