Title of Proposed Project/Programme:
Assessment of the Present Conditions of On-farm Water Management

Programme Description:

Agricultural production in central and southern Iraq relies entirely upon irrigation. The area irrigated area can be estimated by more than 50% of the total cultivated area in Iraq. During the last few years, the total cultivated area was estimated at about 5.7 million ha, of which 2.7 million ha. in Northern Iraq are under rain fed conditions. The total estimated arable area under irrigation stands at 3.0 to 3.5 millions hectares of which 62.8% receives water through gravity irrigation projects, 36% pumped from rivers and major channels and 1.2% from groundwater aquifers and springs. Groundwater resources provide an estimated 0.9 billion m^3 of water annually covering the needs of approximately 64,000 ha of agricultural land in areas where traditionally surface water resources are not available.

The Ministry of Agriculture/GOI, under a subsidies scheme, started a project in order to promote the utilization of pressurized irrigation systems (solid set sprinkler irrigation systems, center pivot irrigation systems and drip irrigation systems). This project aimed at 1) increasing the agricultural production and stabilizing it on permanent basis; 2) increasing the agricultural area and increasing the area unit's productivity; 3) rationalizing the usage of water in the light of the decrease of water resources, and 4) incrementing new areas at the western desert by means of the explosion of ground water resources.

Programme Costs:
Total Cost: US$ 8 million
Govt. Contribution (tentative): US$ 1 million

Programme Location:
Governorate(s): Erbil, Sulmaniyah, Salahaddin, Mosul, Diyala and Babylon.

Programme Duration: 24 months

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

NDS:
"Rehabilitating livelihoods that have been destroyed and helping people to develop sustainable livelihoods through a right-based approach to reduce poverty."

ICI Benchmarks (as per the Joint Monitoring Matrix 2008):
Benchmark # 3: Protect and rehabilitate unique Iraqi crop varieties and agricultural genetic heritage.
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(s):
Outcome 2: Poverty reduced and sustainable employment for vulnerable groups created
Outcome 3: Agriculture Policy & Natural Resource Management Improved

1. Executive Summary:

Under the oil for food programme, modern irrigation equipment of different types for millions of dollars has been procured for installation in northern, south and center of iraq. Due to events, only a small part of the equipment has been installed, and only limited training could be given to installation crews of the technical services. It is therefore essential to continue the assistance and training programs both technical staff and for the farmers. Detailed training material has been prepared for the project and is available for immediate use. Basic economical estimations have been carried out on the various types of equipment procured. They indicate that only some crop/ system combinations may be economically viable in a not-subsided economical context (such as fruit trees with mini-drip, vegetables with pipe-distribution, grapes with drip etc.).

Center Pivot System Used for Field Crops

The procurement by FGOI over the past years of massive amounts of large size modern irrigation equipment for North, Center and south is an area of major concern, the programe aimed to equip 325,000 Ha mainly with center pivots and solid-state sprinkler systems. By now equipment have already arrived and is partially installed and operational. The issues of concern are multiple, and some are apparently shared by the MoWR:

- Risk over–explosion of the ground water reserves, resulting in a depletion of the aquifer, increased use of saline water.
- According to the providers of the equipment, most of the installed equipment is not operational at all or not properly installed and adjusted.
- Farmers seem not to have been trained for the operation and maintenance of the systems nor do they know how to schedule the irrigation and to improve their cultivation techniques,

A major technical assistance project for the installation and operation of water saving technology in Center/ South and North is suggested. This project would try to find ways to make use in the best way of the equipment received. The projects activity will involve the review of the proposed locations for installation, the review of crops and cropping patterns, and shall include also a large component of training to local staff (trainers) as well as to beneficiaries, both on the operation and maintenance of the systems, and on matters of cultivation techniques, crop choices, irrigation schedules etc. The training component will be closely linked to the extension staff of the crop production department. Applied research on suitable crops, etc will also be promoted by establishing six pilot projects.

Sprinklers Irrigation System (Hose-Move Sprinklers)

2. Situation Analysis:

Despite some attempts to improve irrigation efficiencies, irrigation water is still not efficiently used and often 60% of the diverted water does not reach the crops. Inefficient use of irrigation water not only makes it necessary to divert and / or pump large amounts of water, in process incurring high costs to government and users, but it also results in environmental degradation with such phenomena as water logging, salinaztion and pollution. Therefore, it is necessary to continue promoting the adoption of technological innovation among irrigation farmers, with a view to achieving greater efficiency in the use of water and soil resources.

3. The Proposed Integrated Programme/Outcomes:

The overall objective of the project is to have efficient management of water in order to secure an efficient irrigated agriculture in the country.

The immediate objective of the project is the development and testing of improved on-farm irrigation methods that will contribute significantly to water management which enables efficient use of resources and water saving.

The output will be more water available for different uses, better crop yields. Significant reductions of water logging and salinity problems and farmers trained for better irrigation water management. The assessment will be performed considering all the aspects involved in the irrigation practice, including the irrigation scheduling, crop water requirements, land leveling, water quality, etc. Moreover, financial and economical analysis for every system will be considered. The project will provide also the financial resources for the procurement of irrigation equipment and laser land leveling equipment.

Extension workers will be responsible for transferring irrigation technology to irrigation system users. It would also include training on environmental aspects, particularly where the use of agrochemicals is concerned, along with the mitigation of their environmental impact.

The low level of knowledge and skills of the farmers, rural women, youth and agricultural staff in making effective and efficient use of the improved technologies and practices considerably reduce yield per unit of input. As such, training is an essential component dealing with capacity building in the achievement of sustainable agricultural development. It includes institutional and field level training based on farmer's needs

4. Anticipated Outputs and Results:

- Application of main effective and participatory extension methodologies (300 field demonstration)
- Capacity building of extension staff and training of various farmers' groups (male, women and rural youth) (conducting training for 595 extension staff and 3,000 farmers from farmers groups)
- Establishment of six pilot Projects
- Development of long-term extension and training strategies

Mini-Sprinklers Irrigation System Used for Fruit Tree Orchards

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.

The project will also be implemented under close coordination with the Ministry of Water Resources.

6. Feasibility, risk management and sustainability of results:

The elements relating to risks and assumptions are:

- Farmer community capital and labour.
- Any environmental issue that may arise from the use of mechanized irrigation systems.
- Energy requirements and reliability.

- Understanding and willingness of farmers to form a Water Users Association (WUA) team.

Sustainability of the project will be secured by capacity building being provided to farmers utilizing irrigation systems which will result in farmers being trained in modern irrigation techniques. This will lead to efficient and cost-effective use of water as well as higher productivity.

7. Monitoring, Evaluation, and Reporting:

The primary responsibility for M&E of the projects will be with the WRI team leader and the regional engineers, who will assure, through their internal reporting requirements, that all relevant information on the project performance indicators is consistently and accurately collected on time. They will, through field visits, crosscheck the accuracy of the information and may carry out sample surveys if the need exists. Proper monitoring of work performance, inputs, expenditure, to the workplan etc. will provide direct information to the sub-sector management to improve performance. Also, response of the beneficiaries towards the introduction of new techniques or proposed institutional arrangements will have to be monitored closely, so as to allow amendments or changes to the implementation arrangements. The Monitoring Unit staff can assist the sub-sector staff to carry out more in-depth surveys on issues considered to be essential for the success of the programme, and identified as such before and during programme implementation (such as farmer response to the proposed O&M arrangements, implications of the “common roof” principle in the implementation of certain project components, enforcement of water extraction quotas, etc.).

The project team will provide reports on progress and achievements to the Programme Coordination Unit for use by the Planning, Programme and Monitoring Unit, the Evaluation Unit and the Community Participation Unit established, within their general monitoring duties and for the evaluation of benefits produced by the project. Under the individual project profiles, proper key indicators for benefit evaluation have also been provided.

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