Title of Proposed Project/Programme:
Production and introduction of Integrated Pest Control Agents into Iraqi Agro-eco system

Programme Description:

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. The IPM approach can be applied to both agricultural and non-agricultural settings, such as the home, garden, and workplace.

The project would aim at providing the necessary support for the introduction of integrated pest control agents into Iraqi agro-eco systems through IPM – Integrated Pest Management programs. It would include infrastructure facilities, capacity building, production of biological agents for controlling plant diseases, development of resistant crop varieties, and field trials. IPM methods would be introduced progressively and priority areas would be selected giving preference to those locations where other development initiatives would be ongoing.

Programme Costs:
Total Cost: US $ 7 million
Govt. Contribution (tentative): US$ 1 million

Programme Location:
Governorate(s): Nation wide

Programme Duration: 24months

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

NDS:
The project is designed to directly contribute to Iraq's National Development Goal number 1 to *"Eradicate Hunger and Poverty"* through its first pillar (Strengthening the foundations of economic growth), which foresees to:

- Transform the structure of the Iraqi economy to allow for a greater role for Agriculture, and;
- Establish agricultural demonstration sites throughout Iraq to reinvigorate crop production and boost rural job creation.

In the light of this project, the following NDS prioritized actions are to be taken for this:

- Development of a viable agricultural research and extension service to develop and disseminate ...successful production practices;
- Increasing production and productivity.

ICI Benchmarks (as per the Joint Moniotring Matrix 2008):
The International Compact with Iraq in its Agriculture Strategy has specified goals and objectives as follows: *"To develop a stable, competitive and sustainable agriculture to enhance food security and rural incomes, generate rural employment, diversify economic growth and protect the natural environment."*

The project directly supports and links up to the ICI priority to develop a stable, competitive and sustainable agriculture to enhance food security and rural incomes, generate rural employment, diversify economic growth and protect the natural environment, by:

- Strengthening critical public support organization through capacity building for agricultural planning, monitoring, oversight, research, extension, disease control, and quality standard.

The following ICI benchmarks with indicative actions are relevant to the project:

Benchmark # 4: Improve institutional and regulatory underpinning of public agriculture;
Indicative actions: over 2008-2010, strengthen the technical and management capacity of agricultural organization (priority action) JMM 4-2008

Benchmark # 5: Carry out investment plans;
Indicative actions: By 2008, develop financing plans and mechanisms including public and private sources (priority action)

- Rehabilitate damaged physical infrastructure
- Improve delivery of public agriculture services
- Improve the efficiency of agricultural information services.

Sector Team Outcome(s):
The project will contribute to the following Agriculture and Food Security Sector Outcome: "Enhanced Production and Productivity in the Agricultural Sector".

1. Executive Summary

The Overall goal of this project is to re-commence the efforts of specialists at the Ministry of Agriculture (MoA) and other national institutes in Production, Formulation and Introduction of Biological and Para biological Control Agents into Iraqi Agro-ecosystem through Integrated Pest Management (IPM) Program.


Pest Damage

The project will have a direct contribution to the attainment of the MDGs in Iraq. The Goal that will be focused on is Goal 1 *"Eradicate extreme poverty and hunger"* through raising the potential for domestic food production and associated job creation and promotion of income-generation in agricultural activities. The project will also indirectly contribute to other Goals.

The programme directly supports and contributes to the Iraqi national development priorities included in the Prime Minister Initiative, namely an increased production and improved productivity in the agricultural and livestock sectors to achieve self sufficiency in the major food commodities and secure food security for the Iraqi population.

The immediate objectives of the proposal are:-

- Reinstall of labs, mass rearing and pilot scale production facilities.
- Reconstruct of the pilot plant for production of plant pathogens biopesticides.
- Develop of scientific personnel capabilities.
- Re-commencement and enhancement of research and development (R&D) activities and scale up results to a pilot scale production.
- Conduct pilot scale field trails using produced candidates of the integrated pest control agents at farmer's fields.

Implementation of the proposed project will lead to availability of variety of biological and parabiological pest control agents. Therefore, implementing IPM programmes will reduce dependency on hazardous chemical pesticides. Continued dependency on chemicals to control agricultural pest will lead to further health and environmental risks which could

adversely affect the agro ecosystem. Environmental concerns are one of the preliminary motives to propose this project. In addition risk assessment will be evaluated step-by-step through quality control measures.

The project will use a strong participatory approach, involving MoA, farmers, NGOs, civil society representatives and other stakeholders at the local level, and will make building of their institutional capacity a priority. It will be implemented with full participation and significant resource inputs from the Iraqi Ministry of Agriculture and allied institutions. FAO will provide technical assistance, expertise and management services to the project.

2. Situation Analysis:

Integrated Pest Management (IPM) strategies are essentially a holistic approach to pest control that seeks to optimize the use of a combination of methods to manage a whole spectrum of pests within a particular cropping system. Pest management involves a number of stakeholders ranging from researchers to farmers and agribusiness to consumers and has always been and will continue to be a constant challenge to all of these groups and especially for researchers.

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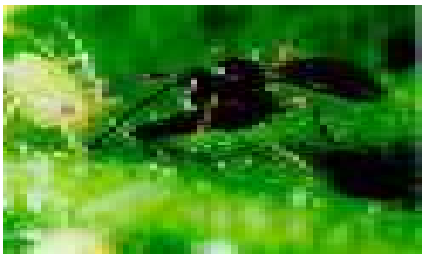
The development of an IPM programme requires detailed knowledge of an agro-ecosystem, its component parts and how they interact. Generation of this knowledge is the job of scientists. In practical term, knowledge also includes services and products such as biopesticides, monitoring and trapping devices, semi chemicals, parasitoids and predators, etc. In Iraq IPM is not implemented yet and stay as a concept dealt with at theoretical and experimental levels only, hence all pest control practices relies completely on synthetic chemical pesticides.

This proposal develops and produces a modern, environmentally benign tools and agents for IPM programmes as an important component of crop management for agricultural production. In such endeavor, international technical support and experience are requisite to assure success.

3. Proposed Integrated Programme

IPM is not a single pest control method but rather a series of pest management evaluations, decisions and controls. Within this program, FAO will build capacity of growers to become aware of the potential for pest infestation and will follow a four-tiered approach which includes:

1. Set Action Thresholds
   Before taking any pest control action, IPM first sets an action threshold, a point at which pest populations or environmental conditions indicate that pest control action must be taken. Sighting a single pest does not always mean control is needed. The level at which pests will either become an economic threat is critical to guide future pest control decisions.



2. Monitor and Identify Pests
   Not all insects, weeds, and other living organisms require control. Many organisms are innocuous, and some are even beneficial. IPM programs work to monitor for pests and identify them accurately, so that appropriate control decisions can be made in conjunction with action thresholds.

3. Prevention
   As a first line of pest control, IPM programs work to manage the crop, lawn, or indoor space to prevent pests from becoming a threat. In an agricultural crop, this may mean using cultural methods, such as rotating between different crops, selecting pest-resistant varieties, and planting pest-free rootstock. These control methods can be very effective and cost-efficient and present little to no risk to people or the environment.

4. Control
   Control methods would be employed, such as targeted spraying of pesticides. Broadcast spraying of non-specific pesticides is a last resort once monitoring, identification, and action thresholds indicate that pest control is required, and preventive methods are no longer effective or available, IPM programs then evaluate the proper control method both for effectiveness and risk.

4. Anticipated Outcomes, Outputs and Results

Outcome1: Introduction of new biological and para-biological pest control agents.
Outcome 2: Gaining new experience and dealing with advanced technology.
Outcome 3: Improve implementation of IPM programme.
Outcome 4: Reduction in chemical pesticides usage and less residues and health and environmental risks.

Project Outputs:

1. Establishment of labs, mass rearing and production facilities equipped with advanced and new scientific equipment and tools.
2. Enhancement of (R&D) activities which will lead to generate applicable and tangible results
3. Reflected positively in pest control programs.
4. Production and formulation of biopesticides for controlling plant pathogens and insect pests.
5. Mass production of insect parasitoids and predators.
6. Mass production of sterile insects.
7. Development of resistant crop varieties.
8. Formulation of plant based pesticides.
9. Establishment of insect pest activity monitoring program.
10. Field trails to evaluate the efficacious of the products along with tied co-ordination with scientists of ministry of Agriculture and farmer participation.

5. Implementation and Management:

The responsibility for the overall technical implementation of this project will rest with FAO in full coordination with the Ministry of Agriculture.

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.

6. Feasibility, risk management and sustainability of results:

The project takes into account the general security situation prevailing in Iraq and is designed to ensure sustainability after the project's lifespan, however, the project design takes into consideration inter-alia the following risks and assumptions:

- It is assumed that adequate staff, with the required skills be provided to the project and that sufficient basic information already exists in Iraq to commence production, formulation of control agents and extending IPM programme to local farmers.
- The project will be subject to a review and possible preparation of a follow-up phase by the Government and FAO before completion of full implementation.
- There is an assumption that the current trend of security improvements will continue. Deviation from this trend can reduce access to the field and jeopardize implementation.
- The project also presupposes the farmers' acceptability of IPM techniques and continues to use them.
- Availability of baseline data from GOI on endemic biological agents
- With strong participatory approach from the farmers ensures sustainability

Sustainability further ensured through the enactment of legislation regarding pesticide use. Sustainability is further ensured through other complimentary programmes planned within the Agriculture and Food Security Sector Outcome Team, namely UNESCO's proposed programme for cataloging Iraqi biodiversity and natural resources.

7. Monitoring, Evaluation and Reporting:

Day-to-day monitoring of the project activities will be carried out by the National Project Coordinator (NPC) under the supervision of the Chief Technical Advisor (CTA) through regular and frequent visits to project sites and regular contacts with the Ministry of Agriculture.

International staff will also make frequent visits to monitor and supervise the implementation of project activities. Periodic Project Steering Committee involving all stakeholders will discuss field problems and, when needed, corrective measures will be recommended.

The NPC will prepare a monthly progress report on the activities to be submitted to the CTA and FAO Headquarters. Monitoring indicators and detailed arrangements for the Medium Term and Final Evaluations will be prepared with the assistance of the international consultants during the first six months of project implementation.

Six monthly progress reports will be prepared by the CTA with the assistance of the project national and international staff. A Project Steering Committee, comprised of representatives from key MoA services from the governorates and from FAO, will be established and meet periodically to review the progress in implementation and make the recommendations for the next steps of the project. A final workshop and an independent final evaluation of the project will be organized.