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REPORT AND RECOMMENDATION OF THE PRESIDENT

TO THE EXECUTIVE BOARD ON A PROPOSED

TECHNICAL ASSISTANCE GRANT

UNDER THE GLOBAL/REGIONAL GRANTS WINDOW

TO THE

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

FOR THE

DEVELOPMENT OF A PREVENTIVE AND ENVIRONMENTALLY SAFE APPROACH TO A DESERT-LOCUST CONTROL METHODOLOGY

TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS **iii**

PART I - INTRODUCTION **1**

PART II - RECOMMENDATION **2**

ANNEX

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS: DEVELOPMENT OF A PREVENTIVE AND ENVIRONMENTALLY SAFE APPROACH TO A DESERT-LOCUST CONTROL METHODOLOGY **3**

ABBREVIATIONS AND ACRONYMS

BMZ	Federal Ministry for Economic Cooperation and Development (Germany)
CABI	CAB International
DL	Desert Locust
EMPRES	Emergency Prevention System
FAO	Food and Agriculture Organization of the United Nations
ICIPE	International Centre of Insect Physiology and Ecology
IITA	International Institute of Tropical Agriculture
NPB	Nymphal Pheromone Blend
PAN	Phenyalcetonitrile
SAREC	Swedish International Development Cooperation Agency: Department for Research Cooperation

REPORT AND RECOMMENDATION OF THE PRESIDENT OF IFAD TO THE EXECUTIVE BOARD ON A PROPOSED TECHNICAL ASSISTANCE GRANT

TO THE

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

I submit the following report and recommendation on a proposed technical assistance grant for agricultural research and training to the Food and Agriculture Organization of the United Nations in the amount of USD 1.5 million for the Development of a Preventive and Environmentally Safe Approach to a Desert-Locust Control Methodology.

PART I - INTRODUCTION

1. This report recommends the provision of IFAD support to the research and training programme of the Food and Agriculture Organization of the United Nations (FAO).

2. The document presenting the technical assistance grant for approval by the Executive Board is contained in the annex to this report:

> Food and Agriculture Organization of the United Nations: Development of a Preventive and Environmentally Safe Approach to a Desert-Locust Control Methodology.

3. The objectives and content of this applied research grant project are in line with the evolving strategic objectives of IFAD, and the policy and criteria of its grant programme for research and capacity-building.

4. The strategic objectives of IFAD's support for technology development relate to: (i) IFAD's target groups and their household food-security strategies, specifically in remote and marginalized agro-ecological areas; (ii) technologies that build on traditional knowledge systems, are gender-responsive, and enhance and diversify the productive potential of resource-poor farming systems by improving productivity and addressing production bottlenecks; (iii) access to productive assets (land and water, financial services, labour and technology, including indigenous technology) and the sustainable and productive management of such resources; (iv) a policy framework that provides the rural poor with an incentive to reach higher levels of productivity, thereby reducing their dependence on transfers; and (v) an institutional framework within which formal and informal, public- and private-sector, local and national institutions provide services to the economically vulnerable, according to their comparative advantage. Within this framework, IFAD also intends to develop commodity-based approaches to the rural poor. Finally, the establishment of a consolidated network for knowledge-gathering and dissemination will enhance the Fund's capacity to establish long-term strategic linkages with its development partners and to multiply the effect of its agricultural research and training programme.

5. The technical assistance grant proposed in this document responds to the foregoing strategic objectives in that it seeks to improve the comprehensive methodology for management of the desert locust through development of a preventive approach. This includes large-scale validation and deployment of environmentally sustainable, alternative control methods and the assessment of their impact on the pre-empting of swarming and future desert-locust plagues. Through this grant project, IFAD will also build the capacity of government partner agencies, national and local institutions (including non-governmental organizations) and vulnerable farming communities. Through this improved capacity, they will be better equipped to face future threats in a sustainable and

environmentally acceptable way – by bringing up-to-date knowledge and technology prototypes to bear on each problem, effectively, before it reaches epidemic proportions.

PART II - RECOMMENDATION

6. I recommend that the Executive Board approve the proposed technical assistance grant in terms of the following resolution:

> RESOLVED: that the Fund, in order to finance, in part, emergency assistance for the Development of a Preventive and Environmentally Safe Approach to a Desert-Locust Control Methodology, shall make a grant not exceeding one million five hundred thousand United States dollars (USD 1 500 000) to the Food and Agriculture Organization of the United Nations, upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board in this Report and Recommendation of the President.

Lennart Båge
President

ANNEX

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS: DEVELOPMENT OF A PREVENTIVE AND ENVIRONMENTALLY SAFE APPROACH TO A DESERT-LOCUST CONTROL METHODOLOGY

I. BACKGROUND

1. Following the unusually heavy and widespread rains that fell over western and northwestern Africa from July 2003 to April 2004, the populations of the desert locust (DL) developed into a major upsurge that could reach a full-scale plague by the end of 2004. Management operations started immediately in Niger, Mali and then in Mauritania. Despite efforts made by the affected countries and the substantial support provided by Algeria and Morocco to Mauritania (estimated at around USD 2.2 million), uncontrolled swarms, ever denser and more numerous, started moving north to Morocco and Algeria in late January 2004, and eventually spread to Tunisia and Libya. Throughout the spring, intensive control operations were undertaken against newly bred populations in these four countries. Although these operations reduced the number of locusts, crop damage occurred, and those locusts that escaped started forming new swarms in June. These swarms started moving towards the Sahelian countries in West Africa, where at least one summer generation of breeding would occur in August-October. By mid-July, they had appeared and were laying eggs in important cropping areas in Mali, Mauritania, Niger and Senegal. More than 8 million hectares were treated in northwestern Africa between October 2003 and July 2004.

2. FAO's DL management strategy seeks to prevent outbreaks and upsurges from developing into a plague. This strategy was designed to limit the use of pesticides, particularly during local outbreaks, because the areas requiring treatment are small. Nevertheless, when unusual rainfall occurs, creating favourable breeding conditions, outbreaks and upsurges cannot always be contained. Large-scale emergency interventions with conventional pesticides have had to be used in the past to protect crops and reduce locust populations.

3. Drawing on lessons learned from earlier upsurges and plagues, many key research and development institutions have been developing approaches to maximizing the effectiveness of locust management operations in ways that minimize health and environmental risks. Such institutions include FAO, the International Centre of Insect Physiology and Ecology (ICIPE), the International Institute of Tropical Agriculture (IITA) and CAB International (CABI). The current upsurge is being addressed in a broad, coordinated approach to prevent it from developing into a plague by the end of 2004. Mid-term strategic activities are needed to supplement this assistance by contributing to improved aspects of DL management.

4. The environmental concerns that emerged from massive applications of highly toxic pesticides during the 1986-1989 DL plague, and which continued during subsequent routine DL control operations, were addressed by:

- studies on the environmental impact of the pesticides conventionally used, principally by the Locustox project;
- an investigation of application techniques and how they might be improved so that less pesticide would be used (mainly by a Norwegian-funded project);
- development of bio-pesticides and an array of promising, environmentally sustainable *pheromone*-based products through ICIPE research; and
- development of the insect pathogen *Metarhizium anisopliae* ("Green Muscle") through CABI and IITA research.

ANNEX

II. RATIONALE/RELEVANCE TO IFAD

5. Recent upsurges of the DL underline the continued unpreparedness of locust-affected countries to face these sporadic events, and the dependence on large-scale application of broad-spectrum synthetic insecticides for control. During the last 14 years, ICIPE has spearheaded research[1] on the DL's chemical communication signals (semiochemicals) and their exploitation for control. It has also researched development of a quantitative understanding of the genesis of locust 'gregarization', swarming and outbreaks in order to formulate an early-warning system, which is critical to a preventive locust management strategy. Promising results have been generated on both fronts. Two pheromones have shown special promise in locust control: the major component of the adult pheromone phenylacetonitrile (PAN) and the nymphal pheromone blend (NPB).

6. The need for a significant change in both the strategy adopted and the tools employed is widely recognized. First, it is recognized that broad-spectrum synthetic insecticides should be substantially reduced, as far as possible, towards eventual total elimination, and methodically replaced by environmentally benign agents that are cost-effective and sustainable. Second, there is a general consensus that, in the longer term, the optimal use of such agents must rely on their strategic use at very early stages in the development of a locust outbreak, as part of a truly preventive control strategy – for example through the use of pheromone technology or insect pathogens – which are all biological and environmentally benign. This proposal is intended to develop a preventive control strategy as detailed in paragraph 10.

7. At present, only two countries of the FAO Emergency Prevention System (EMPRES) Central (CR)[2] and Western Regions (WR)[3] have capacity at the national level to evaluate the impact of unacceptable side effects of the locust campaigns and to safeguard the environment.

8. The overarching purpose of the project is to contribute to the reduction of rural poverty. The project envisages reducing farmers' vulnerability to natural disasters and safeguarding food production in some of the most marginal, but densely populated areas of the world. Governments, local institutions, including non-governmental organizations, and communities will be better equipped to face a potentially devastating plague in a sustainable and environmentally acceptable way. All small farmers/smallholders supported by IFAD projects in the two regions will directly benefit.

III. THE PROPOSED PROJECT

9. The objectives of the mid-term grant project are to:

- undertake multisite validation field trials with PAN, *Metarhizium*-based Green Muscle and others, in collaboration with national locust-control organizations; document the effect of these agents on the life cycle of the insects; undertake technology refinement and optimize formulation of the pheromones, dose levels, and delivery in order to target early stages of DL swarming;
- undertake appropriate training of locust-control personnel in sustainable, safe preventive and control technologies;
- build awareness of the level of environmental damage caused by inorganic- and toxic-chemical pesticide-based control methodologies;

[1] With financial support from IFAD, Germany (the Federal Ministry for Economic Cooperation and Development – BMZ), Sweden (the Swedish International Development Cooperation Agency: Department for Research Cooperation – SAREC), the United Nations Development Programme (UNDP) and the Arab Fund for Economic and Social Development (AFESD).

[2] CR: the Central Region of the DL distribution area, i.e. Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, The Sudan and Yemen.

[3] WR: the Western Region, i.e. Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal and Tunisia.

- investigate sustainable, participatory control and preventive approaches, mainly by scaling up practices that are effective and less damaging to the environment. Enable the development of early-warning systems, and improve capacity for using the Geographic Information System and other tools to aid in locating emerging, juvenile solitary locusts;
- strengthen preventive control measures, etc.;
- test the adoption of control strategies by farmers, and evaluate the socio-economic impact of the most promising control and prevention options.

10. The project includes the following activities:

- Selection of participating countries: the selection is based on the (predicted) DL situation and the possibility of linking activities with other ongoing or planned programmes, specifically within the framework of EMPRES (Central and Western Regions).
- Evaluation of the economics, efficacy and efficiency of biologically friendly control approaches; and, where possible, mainstreaming of the adoption of some of these approaches in national locust-control programmes.
- Training/updating of environmental officers of national locust-control units in: Algeria, Burkina Faso, Cape Verde, Chad, Egypt, Eritrea, Ethiopia, The Gambia, Libya, Mali, Mauritania, Morocco, Niger, Senegal, The Sudan and Yemen. National experts from some of these countries (e.g. Mauritania, Morocco, Niger, Senegal) will be hired as trainers by preference.
- Composition, training and equipping of monitoring and evaluation teams for the quality and impact of field operations (one or two per country, depending on size).
- Development and implementation of awareness-building activities on the level of environmental damage caused by inorganic- and toxic-chemical pesticide-based control, and informing all stakeholders of available alternatives.
- Improvement in the capacity of member countries and relevant agencies such as FAO, ICIPE, CABI and IITA to forecast, detect and address locust threats through early warning and preventive control strategies.

11. The affected and threatened countries in northern and western Africa include: Algeria, Burkina Faso, Cape Verde, Chad, Egypt, The Gambia, Libya, Mali, Mauritania, Morocco, Niger and Senegal. Infestations in horn of Africa countries – Eritrea, Ethiopia, The Sudan, and in Yemen – could also threaten Afghanistan, India and Pakistan.

12. The DL swarms damage crops and vegetation, affecting entire communities, including the rural poor (farmers and herders) in locust-threatened countries. However, the poorest smallholders are the most vulnerable to shocks and are normally the ones that suffer most from the devastating effects of the DL invasion, often losing their entire lifetime's savings and means of livelihoods within a matter of a few hours.

IV. EXPECTED OUTPUTS/EXPECTED BENEFITS

13. It is expected that at the end of the grant project the following outputs will be achieved:

- Validated, refined and documented PAN, *Metarhizium*-based Green Muscle and other biological control and preventive approaches, and the effect of biological agents on the life cycle of the insects evaluated.
- Economics, efficacy and efficiency of biologically friendly control approaches evaluated and, where possible, mainstreamed in national locust-control programmes.

- The national capacity of DL control/prevention in 16 infested countries (Algeria, Burkina Faso, Cape Verde, Chad, Egypt, Eritrea, Ethiopia, The Gambia, Libya, Mali, Mauritania, Morocco, Niger, The Sudan, Senegal and Yemen), with respect to quality and safety, is created or reinforced through a system of trained and operational field teams under national coordinators.
- Capacity of the member countries, regional institutions and relevant agencies such as FAO, ICIPE, CABI and IITA to detect locust threats improved.
- The sustainability of alternative (preventive) control options evaluated in the context of a socio-economic analysis.

V. IMPLEMENTATION ARRANGEMENTS

14. The grant project will be implemented over two years. It will be managed by an FAO coordinator, who will liaise with collaborating national and international institutions (e.g. ICIPE, IITA, CABI) in the preparation of work plans, budgets and reports. Technical committees will be established to guide activities. A monitoring and evaluation process to measure and assess progress in all aspects of the project will be developed in a participatory fashion.

15. A Grant Steering Committee (GSC) representing FAO, ICIPE, IITA, CABI, threatened countries' representatives and other collaborators and donors directly contributing to this grant will provide leadership, governance and oversight, review progress and approve annual workplans and budgets. IFAD will be represented by the grant task manager. The FAO coordinator will be responsible for preparation of annual workplans and progress reports at least three weeks prior to the GSC meeting. The meeting should normally be held in one of the key participating countries each year. All legal, reporting and financial matters will be incorporated in a grant agreement between IFAD and FAO. FAO will enter into separate agreements with relevant collaborating institutions.

16. The role of the implementing agency: FAO will coordinate the programme, its implementation with member countries and collaborating agencies such as ICIPE, IITA and CABI as needed, and supervise reporting and timely delivery of activities. FAO's responsibilities shall include the monitoring, evaluation and supervision of the grant project, ensuring: satisfactory performance of the eventual contract with IFAD; that the work of the GSC and national coordinators is carried out effectively; that project activities are performed in conformity with annual workplans and budgets approved by IFAD; that the procurement process is in accordance with FAO's procedures; and that IFAD is provided with adequate financial and other reporting during implementation of the project and upon completion.

17. The national coordinators, in collaboration with consultants and national staff, will submit regular progress reports to FAO. Towards the end of the project, the national coordinators will prepare a draft terminal report. The draft will be sent to FAO headquarters for finalization and submission to the governments concerned before the conclusion of the project. This report will set out concisely: the extent to which the project's scheduled activities have been carried out; outputs produced; immediate objectives achieved; and the manner in which the results were used towards the realization of related development objectives. The report will also include recommendations for any future work arising from the project.

18. Coordination with ongoing programmes: all stages of project activities will be coordinated/aligned with: (i) ongoing programmes for the strengthening of survey and control capacities in the countries (EMPRES); and (ii) the USAID-West African Regional Programme − a training programme on survey and control. Wherever possible, the project will be linked to the emergency programmes for large-scale testing of alternatives to conventional pesticides, in collaboration with ICIPE, IITA and CABI.

ANNEX

VI. INDICATIVE PROJECT COSTS AND FINANCING

19. The project costs over two years amount to USD 3 025 000. Contributions are as follows:
- IFAD grant USD 1 500 000;
- in-kind contributions from collaborating institutions and national institutions USD 225 000;
- Government of Italy USD 1 300 000.

PROJECT COSTS

Budget Categories	Amounts (in USD)
Personnel national/international	291 000
Travel	227 451
Operational cost	240 000
Capital equipment[a]	500 000
Training and capacity-building	150 000
Incremental administrative and logistic support	91 549
Total IFAD contribution	**1 500 000**
Other donors (Italian Government)	1 300 000
Collaborating institutions (in-kind)	200 000
Nationals (in-kind)	25 000
TOTAL	**3 025 000**

[a] This item will not include purchase of inorganic- or toxic-chemical pesticides. Details of the capital equipment shall be included in the workplans and budgets prepared by FAO and subject to IFAD approval.