



IFAD
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT
Executive Board — Sixty-Fifth Session
Rome, 2-3 December 1998

REPORT AND RECOMMENDATION OF THE PRESIDENT

TO THE EXECUTIVE BOARD ON A PROPOSED

TECHNICAL ASSISTANCE GRANT

FOR

AGRICULTURAL RESEARCH AND TRAINING

BY A

NON-CGIAR-SUPPORTED INTERNATIONAL CENTRE



TABLE OF CONTENTS

	Page
ABBREVIATIONS AND ACRONYMS	iii
PART I INTRODUCTION	1
PART II RECOMMENDATION	2
ANNEX	3

The International Centre of Insects Physiology and Ecology (ICIPE): Programme
for the Sustainable Management of African Fruit Flies



ABBREVIATIONS AND ACRONYMS

ARC	Agricultural Research Centre
BMZ	Bundesministerium für Wirtschaftliche Zusammenarbeit (Germany) (Ministry of Economic Cooperation)
CIRAD	International Cooperation Centre on Agrarian Research for Development
FAO-IGG	Food and Agriculture Organization of the United Nations-Intergovernmental Subgroup on Tropical Fruit
ICIPE	International Centre of Insect Pest Physiology and Ecology
NARS	National Agricultural Research System
OAU/STRC	Organization of African Unity/Scientific, Technical and Research Commission
SACCAR	Southern Africa Centre for Cooperation in Agricultural Research
TAG	Technical assistance grant
USDA	United States Department of Agriculture



**REPORT AND RECOMMENDATION OF THE PRESIDENT
TO THE EXECUTIVE BOARD ON A PROPOSED TECHNICAL ASSISTANCE GRANT
FOR AGRICULTURAL RESEARCH AND TRAINING BY A
NON-CGIAR-SUPPORTED INTERNATIONAL CENTRE**

I submit the following Report and Recommendation on a proposed technical assistance grant (TAG) for agricultural research and training to a non-CGIAR-supported international centre, in the amount of USD 1 000 000.

PART I - INTRODUCTION

1. The present report recommends the provision of IFAD support to the research and training programme of a non-CGIAR-supported international centre.

2. A description of the TAG for approval by the Executive Board is contained in the annex to this report:

The International Centre of Insects Physiology and Ecology (ICIPE): Programme for the Sustainable Management of African Fruit Flies

3. The objectives and content of the above-mentioned applied research programme are in line with the evolving strategic objectives of IFAD, and with the policy and criteria of its TAG programmes for agricultural research and training.

4. The strategic objectives of IFAD's support to technology development relate to: (a) IFAD's target groups and their household food security strategies, specifically in remote and marginalized agro-ecological areas; (b) 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; (c) access to productive assets (land and water, financial services, labour and technology, including indigenous technology) and sustainable and productive management of such resources; (d) a policy framework that provides the rural poor with an incentive to reach higher levels of productivity, thereby reducing their dependence on transfers; and (e) 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 rural poverty alleviation, specifically targeting items produced and consumed by 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 TAG proposed in the present document responds to the foregoing strategic objectives, in particular objectives (a), (b) and (d), to the extent that it seeks to develop an environmentally-sustainable and cost-effective set of technologies for the management of an important cluster of fruit flies that are infesting the African continent.



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, the Programme for the Sustainable Management of African Fruit Flies, shall make a grant not exceeding one million United States dollars (USD 1 000 000) to the International Centre of Insects Physiology and Ecology 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.

Fawzi H. Al-Sultan
President



THE INTERNATIONAL CENTRE OF INSECTS PHYSIOLOGY AND ECOLOGY (ICIPE): PROGRAMME FOR THE SUSTAINABLE MANAGEMENT OF AFRICAN FRUIT FLIES

I. BACKGROUND

1. Promotion of the production of, and trade in, fruit and vegetables has recently become one of the key objectives of developing countries. IFAD's regional strategy for sub-Saharan Africa focuses on enhancing the income of smallholders within the context of trade liberalization. Smallholder production and the marketing of fruit and vegetables is a key focus. However, the expansion of fruit production and export is greatly increasing the risk of transferring African fruit flies both within Africa and to other regions of the world. In addition, the lack of adequate quarantine services in Africa makes African fruit growers vulnerable to alien fruit flies from other tropical regions.

2. In Africa, the fruit fly problem is widespread and lack of expertise in controlling the problem constitutes the major obstacle to developing quality fruit production. Lack of substantial investment in fruit fly research and control techniques and in the extension of such methods to smallholders is one of several reasons why fruit growers remain disadvantaged. Both basic and adaptive research on African fruit flies has been seriously neglected and little is known about their diversity, distribution, biology, behaviour, status as pests, and control. While known techniques for fruit fly management (most of which were developed in other parts of the world) can provide a starting point, such techniques require testing and adaptation before wider dissemination can be envisaged. Hence there is a need to assemble basic information on the biology, distribution and behaviour of African fruit flies.

3. Following requests from African fruit growers and consultation with stakeholders (including smallholders, national agricultural research systems (NARS), governments and donors), IFAD invited ICIPE to develop a phased programme to address the African fruit fly issue. This initiative represents a unique multi-disciplinary and multi-institutional effort to develop, test and adapt fruit protection technologies for African fruit growers through applied/adaptive research. The programme has been reviewed positively by independent entomologists and has the support of smallholders, NARS, regional organizations (Organization of African Unity/Scientific, Technical and Research Commission (OAU/STRC), the Association for Strengthening Research in East and Central Africa (ASARECA), the Southern Africa Centre for Cooperation in Agricultural Research (SACCAR), relevant commodity bodies (the Food and Agriculture Organization of the United Nations-Intergovernmental Subgroup on Tropical Fruits (FAO-IGG)), the Governments of Kenya, the United Republic of Tanzania and Uganda and collaborating technical agencies (the Agricultural Research Centre (ARC)-South Africa, the International Cooperation Centre on Agrarian Research for Development (CIRAD), the United States Department of Agriculture (USDA), FAO, Texas A&M University (Texas A&M) and several others.

II. RATIONALE AND RELEVANCE TO IFAD

4. In East Africa, horticulture is recognized as having the potential to become a major source of income for smallholders and has been accorded high priority in the various national development plans. In Kenya, about two million people — mostly women and youth — are employed in horticultural production, transport, processing and trade. More than 80% of the produce comes from smallholders with less than 5 ha of land.



ANNEX

5. Mango is the only fruit imported in significant quantities by both the developed and developing countries and, after pineapple, it is the second most important tropical fruit traded internationally. Mango's importance as a food and cash crop in smallholder communities is well recognized and it is one of the four major commodities of concern to the FAO-IGG. Demand for mango on both the local and export markets is expected to increase by over 50% by the year 2005, and production is expected to expand as a result.

6. In Africa, heavy fruit fly infestation (as high as 80% in some smallholder situations) seriously reduces the quantity of marketable fruit and increases production costs. Moreover, fruit growers find it increasingly difficult to meet international quality standards and satisfy quarantine regulations. This is particularly true in the case of smallholders who cannot afford costly chemical control measures (which may be also ecologically hazardous). Unless action is taken to control the African fruit fly by introducing affordable and environmentally-positive management options, infestations will continue to reduce the income and market competitiveness of African smallholder fruit growers and may become an obstacle to their continued access to lucrative export markets.

7. The proposed programme responds to a number of strategic objectives of IFAD's support to technology development (as outlined in Part I of all Reports and Recommendations of the President concerning TAGs to the Executive Board), particularly objectives (a), (b), (d) and (e), in that it seeks to address an important production constraint that threatens to undermine the income-generation potential of smallholder fruit producers in Africa. These aspects are further highlighted in the full design document.

8. ICIPE's proposed programme has been developed on the basis of preliminary surveys and socio-economic assessments. The programme comprises a range of activities separated into four specific components that are interlinked and mutually dependent. Although the technical packages and processes to be developed will focus mainly on mango, it is expected that they will be adaptable to other fruit of direct relevance to African smallholders.

III. THE PROPOSED PROGRAMME

9. The proposed programme aims to develop and test, through a phased programme of activities, a cost-effective and environmentally-friendly package of fruit fly control/management options. The work will be implemented with the close participation of smallholder fruit producers, and focus on the adaptation of fly management options by combining elements that are at an advanced stage of development and deployment, are suitable for other tropical regions, and are not specific to only one species of fruit fly. These elements include: (i) baiting; (ii) physical protection of the fruit (e.g., by bagging or netting); and (iii) post-harvest treatments and preventive measures such as sanitation and simple community-based quarantine systems (e.g., restriction of uncontrolled fruit movements).

10. During the initial phase, the programme will assemble a simple package for the management of fruit flies currently infesting mangoes in East Africa through adaptation and, where necessary, development of additional bait-based techniques. Such techniques will build on those currently in use in other tropical regions. Adaptation and necessary validation trials will be carried out on small farmers' fields in typical East African locations that are also representative of other regions of Africa. In view of its importance, the proposed ICIPE programme will focus on mango, especially since pest management solutions for mango are likely to be relevant to most other African fruits. Specific components of the programme include:



Development and Adaptation of Bait-Based Techniques for Fruit Fly Management

11. Specific activities will include: evaluation of known attractants for the monitoring and control of fruit flies; the development of new attractants for flies that do not respond to known lures; development of simple monitoring methods for the target fruit flies; and farmer-driven adaptation and participatory evaluation of localized baiting stations based, *inter alia*, on food attractants, parapheromones or light activated dyes.

Development of Biological Control Agents for Fruit Fly Management

12. New agents will be identified and provided to participating fruit growers to test their efficacy as biological control agents of fruit flies. The programme will identify and evaluate fruit fly pathogens and parasitoids and test them prior to on-farm testing.

Smallholder Assessments of Fruit Fly Management Packages

13. On-farm trials will be carried out in the fields of smallholders in Ethiopia, Kenya, the United Republic of Tanzania, and Uganda. The fruit fly management packages will be assessed for their broader applicability and suitability for dissemination through smallholder development projects in the region.

14. Once the packages have been developed and validated, ICIPE and the NARS of the four participating countries will describe the distribution, pest status and basic ecology of the fruit flies infesting mango and other fruit (both cultivated and wild). Descriptions will be made at two levels of resolution - in greater detail for the pilot project areas in Ethiopia, Kenya, the United Republic of Tanzania and Uganda, and at a lower level of detail for several countries in East and West Africa. The socio-economic and environmental aspects of package implementation will be included as an essential part of the study. The results of the study should enable ICIPE to identify areas that share the same pest complex with a view to promoting packages with broad applicability. A group of East African experts will be trained in fruit fly management, and a training textbook and leaflets will be published and distributed.

Marketing, Post-Harvest and Quarantine.

15. The programme will develop and provide information — for example, on post-harvest fruit treatment and quarantine procedures — to local authorities and regional policy-making bodies to facilitate the introduction of techniques to foster the marketing and export of fruit. Comprehensive information on key fruit flies of economic importance will be provided to quarantine services and an expert group will be established to assist and advise in the setting up of fruit fly control and quarantine services in Africa.

IV. EXPECTED OUTPUTS AND EXPECTED BENEFITS

16. The initiative will lead to the development of technical packages for effective fruit fly management suitable for introduction to smallholders in both the target countries and neighbouring states. The productivity of fruit trees and the quality of fruit grown by the participating smallholders is expected to be improved, thus enhancing fruit marketability and farmers' income. More effective channels for further dissemination of the fruit fly management technology will be created. Assistance will be provided to local authorities and regional policy-making bodies to improve fruit marketing and facilitate exports by developing post-harvest fruit treatment and quarantine procedures. It is estimated that at least 2 000 smallholder families will benefit directly from the pilot effort during the adaptive research process. Approximately ten African scientists will receive formal on-the-job



ANNEX

training in fruit fly management, and a further 40-50 will receive short-term on-site training in fruit fly taxonomy, control and management. By linking the research to ongoing IFAD projects, speedy dissemination of the technology among smallholders will be facilitated.

V. IMPLEMENTATION ARRANGEMENTS

17. ICIPE is proposed as the project executing agency. To this end, ICIPE will provide overall project coordination and liaison with NARS in the four participating countries, regional research bodies, local authorities and other interested organizations. Technical support will be provided by leading agencies experienced in fruit fly management, such as USDA, CIRAD, ARC-South Africa and FAO. In order to facilitate project execution and provide technical and professional support and policy direction, a technical advisory committee, comprising representatives of OAU/STRC, regional research bodies and donors and international experts on fruit flies, will be established. Relevant consultations have taken place and agreements have been reached with research and government administrations. ICIPE will enter into an appropriate legal agreement with all the entities with which it intends to work under the programme.

18. Farming communities in the pilot project areas have already declared their willingness to contribute labour and make available part of their land for experiments and other project operations. In addition, the Nguruman community in Kenya has allocated land planted with mangoes to the programme for farmer-participatory experiments and a community-based farmer training centre that will be maintained by the community with some help from ICIPE. The initiative has built-in mechanisms for transmitting the collected information, research results and developed tools and technologies so developed — down to the smallholder fruit producers and traders; horizontally to the NARS and extension systems in the participating countries; and vertically through the local authorities and regional policy-making bodies and through linkages with OAU/STRC and regional research networks.

VI. PROGRAMME COSTS AND FINANCING

19. IFAD proposes to commit an initial amount of USD 1.0 million over a period of two years in the form of a grant. This will contribute toward a five-year programme costing an estimated USD 5.209 million, of which the Fund proposes to approve USD 1.0 million in the first instance to cover an initial two-year phase and, in due course, to revert to the Executive Board for approval of an additional USD 1.0 million for a second phase of a further two years. Cofinancing is expected from several donor partners, including the German Ministry of Economic Cooperation (BMZ) and the beneficiary countries themselves, at a level of USD 3.2 million. Pledges are expected to be formally announced at a donor conference that is being organized by IFAD (as lead donor in the initiative) towards the end of November 1998. ICIPE has confirmed its contribution in cash and kind at the level of USD 800 000.

**Financing Plan
(USD)**

Category	IFAD	ICIPE and Donors (BMZ, IFAD Phase II) etc	Total
Capital expenditures, vehicles, equipment	40	40	80
Materials, services, expendibles	80	260	340
Personnel (support staff)	200	440	640
Professional staff, consultancy	300	1 300	1 600
Travel (mainly field work)	100	140	240
Training	50	400	450
NARS and collaborators	140	500	640
Networking, dissemination	20	30	50
Institutional costs	0	800	800
Workshops, impact assessment	50	130	180
Unallocated	20	160	180
Total	1 000	4 200	5 200