

United Nations Economic
Commission for Africa
(UNECA)

International Centre
of Insect Physiology
and Ecology (ICIPE)

PROGRESS REPORT

For the period from 1st January to 30th June 1988

**PROJECT TITLE: REDUCTION OF FOOD LOSSES THROUGH INSECT
PEST MANAGEMENT AND USE OF SMALL-SCALE
AND LOW-COST FARM EQUIPMENT**

ICIPE
MBITA POINT FIELD STATION
P.O. BOX 30
MBITA, KENYA

1. Project Title: Reduction of Food Losses Through Insect Pest Management and Use of Small-Scale and Low-Cost Farm Equipment
2. Funding Source: Belgium
3. Total Cost: US\$ 526,500
4. Total Expenditure: US\$ 226,600
5. ECA/ICIPE Contribution

ECA and ICIPE are jointly implementing the pilot project and are providing the necessary administrative support. The ECA is also contributing to the project in the form of discussions and suggestions through its own personnel from time to time and during the meetings of the Advisory Committee. The ICIPE is providing the physical facilities and the professional services of its staff to the project.

The Ministry of Agriculture, Republic of Kenya, is supporting the project through secondment of seven members of its extension staff being paid out of the project funds.

6. Present status of project implementation

The activities during the period under review included:

 - 6.1 Supervising and periodic monitoring of agronomic aspects of the project including farming operations undertaken by the participating farmers and agronomic performance of the crops planted by these farmers.
 - 6.2 Monitoring the entomological aspects including the incidence of insect and other pests and the damage/losses caused by them on the crops planted by the participating farmers.
 - 6.3 Monitoring socio-economic aspects of the agricultural productivity of the participating farmers.
 - 6.4 Training of ECA Project technical staff and farmers.
7. Progress of the work and results: Highlights

The following are the highlights of the work done during the period under review:

- 7.1 The second year of the implementation phase of the project started in January 1988 in both Kendu Bay and Oyugis Divisions. Out of 50 farmers selected in the first year, 23 and 24 farmers in Kendu Bay and Oyugis Divisions, respectively, have participated in the project during the second year.
- 7.2 The land provided by each farmer for growing the crops under the project was about an acre. The crops as well as their cultivars selected for the pilot trials in their fields for the long rainy season of 1988 (February/March - July/August) were the following:

<u>From ICIPE</u>	<u>Commercial Cultivars</u>
Maize: KRN 1 V-37	Maize: Hybrid 622 Hybrid 511
Sorghum: 87LRB5 87LRB8	
Cowpea: ICV2	

Small Sample.

KRN1 was planted by 5 farmers in each Division while V37 was planted by 9 farmers in Kendu Bay and 5 farmers in Oyugis. Sorghum and cowpea from ICIPE and commercial maize cultivars were planted in both the Divisions along with their own cultivars of these crops.

KRN1 and V37 were planted as monocrops while all the other crops of sorghum and maize were planted as intercrops with ICV 2 cowpea and also as monocrops.

- 7.3 The progress made in respect of the above mentioned activities is briefly presented below:

7.3.1 Agronomic Aspects

Land preparation, harrowing, planting, thinning, and weeding operations were done early enough by a majority of farmers according to the schedule given by the ECA project team. A majority of farmers carried out a second weeding as well. These farming operations this year, showed a marked improvement, over those of last year. Consequently, the crop stand this year was fairly uniform in most of the farmers' fields as compared with last year.

Considering the performance of the crops, the cob size of the maize KRN1 was large, almost similar to the hybrids. V-37 also gave fairly good sized cobs. With respect to sorghum, the head formation of the ICIPE's varieties was quite good and large.

The farmers seemed to like these maize and sorghum varieties so much that they insisted on growing the same in future years as well.

7.3.2

Entomological Aspects

A. Sorghum and Maize

- (i) Armyworms. There was an outbreak of armyworms in Kendu Bay Division. But, only one project farm was seriously affected, whereas the pest's attack on other farms was quite low. However, the rains came in time to wipe out the armyworms. The attack this year was less severe than last year.
- (ii) Stem-borers. The main stem-borers that infested the two crops were: Busseola fusca and Chilo partellus. The ICIPE maize cultivars KRN1 and V-37 had a lower infestation and damage by these stem borers than the commercial hybrids.

Also, the infestation as well as damage by these insects was lower in the sorghum/cowpea intercrop than in the monocrop.
- (iii) Shootfly. There was a slight attack by the shootfly on the sorghum varieties, the attack being slightly more on 87LRB8 than on 87LRB5. However, 87LRB8 responded well by tillering and thus compensating for the damage.
- (iv) Birds. The two ICIPE sorghum varieties were not susceptible to bird damage and this was another reason for the farmers' insistence on growing both of them in future.

B. Cowpea

- (i) Pod borers and Thrips. The populations of the pod borer and thrips were lower in the intercrops of cowpea/sorghum and cowpea/maize than in the monocropped cowpea. In Oyugis

Division, hailstorm was more on monocropped cowpea than on the intercrops as the cereals provided cover. In this respect, the intercropping offered another advantage, in addition to reducing the pest attack, over monocropping.

- (ii) Aphids and Defoliators. The incidence of aphids and defoliators was low due to good rainfall. However, defoliation was higher in the monocropped cowpea than in the intercrops.

7.3.3 Social-economic Aspects

- (i) During the period under report, there was an improved response of the farmers to the ICIPE's pest management package and an improved utilization of the resources available at farm level by them.
- (ii) Family labour was utilized as the main source of labour for various farming operations in the majority of farms. However, at peak farming periods, certain farmers supplemented the family labour with some hired labour.
- (iii) Efficiency in time taken to perform various operations showed a marked improvement this year over last year.
- (iv) The ICIPE's crop cultivars were accepted by the farmers on account of their good performance which the farmers themselves could observe in the fields.

8. Training

- 8.1 During the period under review, training of the participating farmers by the extension staff was continued. Identification of pest species, efficient use of preventive methods and ecologically sound pest management practices were emphasized.
- 8.2 On-farm training of the participating farmers continued on various farming and pest management practices and also on the efficient use and maintenance of the introduced equipment.

8.3 Under the auspices of the Ministry of Agriculture, Republic of Kenya, the ECA/ICRPE Pilot Project organized a 3-day training course for 25 participating farmers (12 from Oyugis, and 13 from Kendu Bay) at the Farmer's Training Centre (FTC), Homa Bay (South Nyanza District) in February 1988, to improve the farmers' knowledge base and skills in the use and maintenance of farm equipment. In addition, the participating farmers visited Mbita Point Field Station to get acquainted with the facilities and the on-going experiments.

9. ECA/ICRPE Project Advisory Committee Meeting

The second meeting of the ECA/ICRPE Project Advisory Committee was held in May 1988 at the Mbita Point Field Station. The Committee reviewed and discussed the activities undertaken during the first year of the implementation phase of the project and work plans for 1988.

10. Work still to be carried out

10.1 For the long rainy season crops in Oyugis, monitoring of agronomic, entomological as well as socio-economic aspects will continue till August 1988.

10.2 For the short rainy season crops, similar activities will be undertaken in Oyugis Division only because this area has regular rains during the period but not Kendu Bay.

11. Major problems faced

11.1 During the long rains of 1988, out of 50 participating farmers, two in Kendu Bay and one in Oyugis could not plant their crops. This was mainly due to certain unavoidable problems in their respective families. In addition, in Oyugis Division, one female farmer died due to sudden illness in May 1988.

11.2 As the seeds of certain ICRPE varieties of maize could not be produced in adequate quantities, the area for planting these varieties was limited. However, attempts are being made to multiply enough seed for the next cropping season in Oyugis Division.

12. ECA/ICRPE Project Personnel

The following professional staff have been provided by the ICIPE for the project:

Prof. K.N. Saxena	Project Coordinator	4 mean months in 1988
Dr. K. Seshu Reddy	Entomologist	"
Dr. E.O. Omolo	Agronomist	"
Dr. A Pala Okeyo	Social Anthropologist	"
-	A Driver	to be appointed in the position vacated by the previous incumbent

The field staff working in the project have been provided by the Ministry of Agriculture, Republic of Kenya as per the following list:

Mr. Lucas Ngode	National Project Officer	12 man months
Mr. C. Odhiambo	Field Technician	"
Mr. Robert Okech	"	"
Mrs. Mary Owiti	"	"
Mr. Tobias Oyoyo	"	"
Mr. Peter Kodondi	"	"
Mr. Dickens Ambuoro	"	"