

PROJECT DATA SHEET

C = Change  
D = Delete

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COUNTRY/ENTITY: GUINEA-BISSAU  
 BUREAU/OFFICE: AFRICA  
 PROJECT NUMBER: 657-0012  
 PROJECT TITLE: FOOD CROP PROTECTION III

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM DD YY 01 9 3 01  
 7. ESTIMATED DATE OF OBLIGATION (Under "B" below, enter 1, 2, 3, or 4):  
 A. Initial FY: 815 B. Quarter: 4 C. Final FY: 818

8. COSTS (\$000 OR EQUIVALENT \$1 = )

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	1,000		1,000	2,250		2,250
(Grant)	1,000		1,000	2,250		2,250
(Loan)						
Other U.S.						
1.						
2.						
Host Country		174	174		870	870
Other Donor(s)		90	90		690	690
TOTALS	1,000	264	1,264	2,250	1,560	2,810

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	113					1,000		2,250	
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)  
 11. SECONDARY PURPOSE CODE  
 12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)  
 A. Code  
 B. Amount

13. PROJECT PURPOSE (maximum 480 characters):  
 To strengthen the National Crop Protection Service's capability to administer and implement a crop protection program based on integrated pest management strategies.

14. SCHEDULED EVALUATIONS: Interim MM YY MM YY Final MM YY 01 9 3 01  
 15. SOURCE/ORIGIN OF GOODS AND SERVICES: 935  
 000  941  Local  Other (Specify) vehicles

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a \_\_\_\_\_ page PP Amendment)  
 An increase in AID Grant funding of \$1 million to finance construction, short-term technical assistance, training, commodities, and special projects.

17. APPROVED BY: Signature: Anne M. Williams  
 Title: A.I.D. Representative  
 Date Signed: MM DD YY 01 9 3 01  
 18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

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PROJECT PAPER SUPPLEMENT No. 1  
Guinea-Bissau: Food Crop Protection III, No. 657-0012

I. SUMMARY

In a February, 1988 Evaluation and a May, 1988 Strategy Review several incomplete or new activities were identified as necessary to the achievement of Project Purposes; as technically and financially feasible; and as able to be done before the September 30, 1990 PACD. These activities fall under the general rubrics of construction; short-term technical assistance; training; and the procurement of vehicles and various agricultural extension/equipment and supplies. In addition to scientific specialization, the technical assistance will include special projects such as an information campaign promoting the environmentally safe storage, handling, and use of pesticides and other agricultural chemicals, a program of support for the formulation and implementation of legislation governing the use of such pesticides and chemicals; and cost-benefit analyses of different pest control methodologies. These activities are expected to cost up to an additional \$1 million, estimated as follows:

Construction	\$300,000
Technical Assistance	185,000
Training	170,000
Vehicles	100,000
Equipment & Furnishings	115,000
Audit & Evaluation	30,000
Contingency	100,000
	\$1,000,000

The USDA Animal and Plant Health Inspection Service (APHIS) is the only U.S. organization able to provide plant protection and quarantine services throughout the Free World. APHIS is uniquely qualified to provide the Technical Assistance required under this Project, and the PASA with the USDA will be continued. This arrangement with APHIS also offers the possibility of continued institutional support from the APHIS Office in Abidjan to the National Crop Protection Service after the completion of this Project.

All procurement will be administered by OAR/GB, assisted by REDSO/WCA. A Section 611 (a) certification has been provided by the REDSO/WCA Engineering Office, and the Project's Section 611 (e) certification is still valid. As a Relatively Lesser Developed Country, Guinea-Bissau will be excused from the usual 25% counterpart contribution requirement. The Project Authorization and Agreement will be amended by OAR/GB following REDSO/WCA concurrence in this PP Supplement.

II. BACKGROUND: THE FOOD CROP PROTECTION PROJECT

The National Crop Protection Service (CPS) of the Ministry of Rural Development and Fisheries in Guinea-Bissau was created under the Sahel Regional Food Crop Protection Project (625-0916) in response to the drought and grasshopper attacks in millet/sorghum growing areas in 1977.

The awareness of food crop protection as a factor in agricultural development led to a second phase (625-0928) lasting until 1986. The third phase (FCP-III) of this effort was authorized in August 1985 at the level of \$1.250 million, bringing our total financing over the ten-year period (1977-87) to about \$3 million. The Project is being implemented with USDA assistance. FCP-III has used approximately 90 percent of its financial resources in about 60 percent of its planned Project life, and the work program is only about half completed. Substantial progress has been made towards all planned Outputs, and with additional funding they could be fully accomplished by the end of the Project. Last year the design was modified to provide periodic short-term technical assistance from USDA rather than a long-term Advisor in-country. This will allow Host Country managers to develop, rather than relying on a resident Advisor; but it slowed progress in accomplishing the Project Outputs.

The February 1988 Mid-term Evaluation concluded that: (a) considerable problems exist in Guinea-Bissau concerning the safe handling of pesticides; (b) the CPS needs a stronger mandate with respect to the handling and use of pesticides nationally; (c) additional Inputs are needed; and (d) the Project should be continued. The Evaluation recommended that greater attention be given to the regional outreach capacities of the CPS, and that Zone Offices be constructed in four areas.

An AID/Washington review of this Evaluation agreed with the recommendation to strengthen the outreach capacity of the CPS, suggested several sources of technical assistance to address pesticide handling and use, and criticized the Evaluation for neglecting to calculate cost/benefit relationships regarding pesticide use. An AID/W and REDSO/WCA Strategy Review in May, 1988 concurred in the continuation of the Project, and suggested that additional funding for the Food Crop Protection Project be provided within the current PACD of 9/30/90 for: (a) construction of regional CPS facilities (two Zone Offices plus two Zone warehouses and a storage shed at Headquarters); (b) short-term technical assistance for the CPS's specialized departments, and to derive cost benefit information on alternative pest control interventions; (c) short-term training, vehicles and commodities; and (d) the development of a national information campaign regarding the environmentally safe storage, handling, and use of pesticides and other agricultural chemicals.

### III. THE PROPOSED SUPPLEMENT

#### A. RATIONALE

##### 1. The Guinea-Bissau Setting

Guinea-Bissau has viable opportunities for development. Its natural resource base--agriculture, forestry, and fishing -- are promising assets. Given rain potential yield increases are high, and production is not constrained by lack of land. The country is gaining on food self-sufficiency, due partly to improved policies and partly to the recent absence of drought and grasshopper infestations. Better national pesticide practices are needed, especially in the storage, handling and use of agricultural chemicals. This is of increasing importance in the long term, since there are few users of such inputs today.

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## 2. The AID Strategy

Until this year the AID program in Guinea-Bissau followed a 1981 Small Program Strategy Statement focussing on the rural poor and the institutional development required to attend to their basic needs. As a result of a Strategy Review carried out in May, 1988 the AID program is changing from a project mode to a non-project, sectoral assistance approach which will support the COGB's structural adjustment efforts while increasing private sector agricultural output, with a gradual phaseout of present activities and staff levels.

In considering FCP-III the Review acknowledged the key position of this project in the new strategy and its potential contribution to increasing private sector employment and agricultural output, and recommended additional funding in FY 1988 to allow for its completion as planned and within the 1990 PACD. This course of action fulfills the productive thrust of the new strategy, while remaining consistent with the longer term movement towards a lesser program level and reduced staff presence.

## 3. Stay The Course

The alternative of not supplying the additional funds required to properly finish CPS-III, and instead allowing it to finish in truncated form, was considered. This alternative was rejected on three grounds: the additional funding basically represents a financial mid-course correction in a sound and workable project, and not a rescue or salvage operation; if the original benefit:cost calculations were sound, then this marginal investment and consequent marginal benefits may even improve the benefit:cost ratio; and a failure to provide such a relatively minor funding increment for a recognizedly worth-while project could have adverse effects on our bilateral relationship.

In brief, the rationale for this added financing is that the Project directly addresses a high priority need at the center of the AID strategy which continues to promise substantial economic benefits.

## B. PROJECT CONTENT

### 1. Goal and Purpose

The Goal and Purpose remain as stated in the original Project Paper. The Goal is "to increase productivity in staple food crops". This Goal is shared by all agricultural projects in the Mission's portfolio. The Purpose is "to strengthen the National Crop Protection Service's capacity to develop and direct a crop protection program, and to implement the on-going program in crop protection".

### 2. Outputs

#### a. Originally Planned

FCP-III contemplates five Outputs. Progress has been recorded in each, as follows:

1. Trained Senior Staff in CPS Headquarters. Training of five participants at the BS and MS level is underway.

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ii. Trained Field Supervisors In Each Zone. Three of the four Zone Supervisors will be trained at the BS level.

iii. Functionally Trained Field Agents. In-country training is being given to the Field Agents, who are assisted by village volunteers reporting on pest appearances.

iv. Extension Infrastructure for the CPS. This includes vehicles, motorcycles, and a fixed-base radio net. Most of the vehicles and motorcycles and the radio net have already been ordered or received.

v. Crop Protection Strategies. Intergrated post management strategies were drawn up for rice, maize, sorghum, millet, vegetable crops, and farm-level storage. Non-pesticide based strategies will receive more attention within the training to be provided under the Supplement. Also, the CPS is drawing on research done in nearby countries and by international organizations.

b. Proposed in the Supplement

In addition to completing the five original Outputs, the Supplement will produce three new Outputs:

1. Storage and Distribution Centers. Two Zone Bases, two warehouses, and a storage facility at Headquarters (map on next page).

ii. Trained Technical Departments within the CPS.

iii. Special Projects. A series of research, policy analyses, and educational exercises. Examples: crop loss assessments as a first step in cost-benefit analyses of alternate pest control interventions, and as partial baseline data for the Final Evaluation; research in legislative formulation and implementation covering pesticides and quarantine; and improved on-farm storage assistance, including technical guidance, the loan of building forms for blocks and bases, and the sale of cement and special storehouse doors to farmers.

3. Inputs

a. Construction (\$300,000)

The Crop Protection Service moved into new headquarters in April 1987. The Director, Deputy Director, Technical Assistance Advisors, entomologist/plant Pathologist and the Administrative Officer have offices; the training/conference room accomodates 80 people; and there are entomology and plant pathology laboratories, a small library, a generator room, and a small repair shop. There is a large warehouse for pesticides and application equipment and supplies, and a small warehouse for donated food storage.

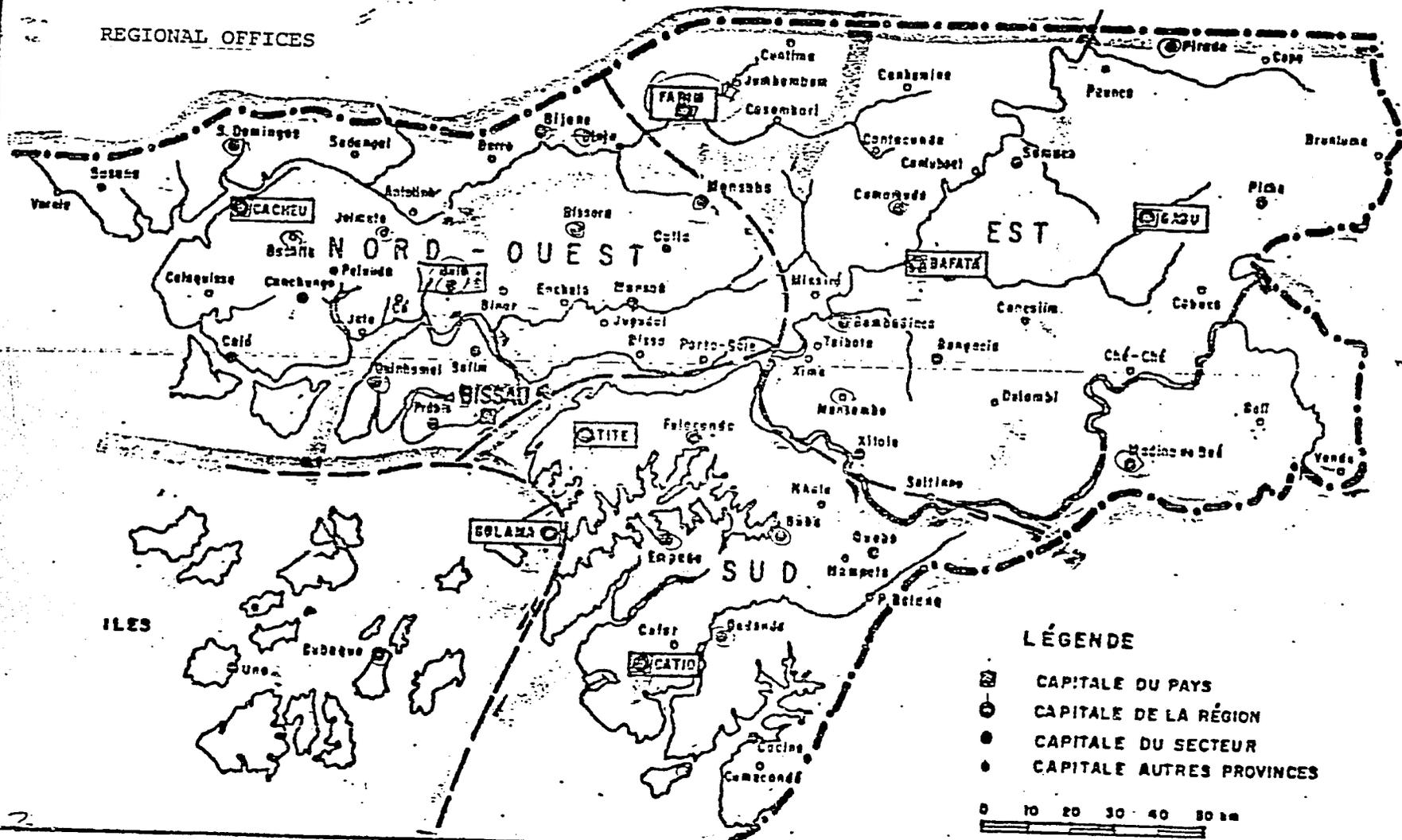
Bid Documents including final plans and specifications will be prepared by the Ministry of Public Works; construction supervision will be provided by a local engineering firm; and construction will be performed by one or more local construction companies.

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CPS HEADQUARTERS

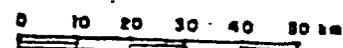
ZONE BASES I, II, III, IV **GRANDES ZONES DE DÉVELOPPEMENT**

REGIONAL OFFICES



LÉGENDE

- ◻ CAPITALE DU PAYS
- ⊙ CAPITALE DE LA RÉGION
- CAPITALE DU SECTEUR
- CAPITALE AUTRES PROVINCES



Zone Bases will be built in Bula and Bafata. Base construction will consist of an office, house, warehouse and enclosure at each location. Warehouses only will be built at Catio and Bolama. In addition, a small (5 x 10 meters) spare parts storage facility will be built at the CPS headquarters in Bissau.

b. Goods (\$215,000)

i. Vehicles and Spares (\$100,000): The Project has already purchased one Toyota minibus, two Toyota Landcruiser 4WD diesel stationwagons, five Toyota Landcruiser 4WD diesel pick-up trucks, one Toyota Tercel 4WD sedan, and 24 Honda 125cc motorcycles. Two more vehicles are on order. The last two pick-up trucks and six motorcycles will be ordered in 1989 for delivery in 1990. Spare parts plus some lubricants will also be purchased, half during the first part of FY 1989 and the remainder during the first half of FY 1990. Three vehicles serve the administrative, training, entomology, plant pathology quarantine, stored products, and plant pathology units at headquarters. The remainder are in the field. The motor pool concept is being introduced at the CPS headquarters, and an Administrative Assistant has just completed ten months of training in Portugal in vehicle operations, office procedures, inventories, etc.

ii. Training Materials (\$30,000)

The CPS Training Department will produce materials for CPS employees and for farmers. These materials include:

- Manual: Update the Guide to the Key Plant Pests of Guinea-Bissau Agricultural: Their Biology and Recommended Controls. The new format will be in a three-ring binder to permit the distribution and use of individual sections as they become available. Production is planned for 1000 numbered sets in Portuguese.

- Calendar: This device has proved very popular and is used to transmit specific messages (i.e., pest control, grain storage, pesticide safety) appropriate to the month concerned. 2000 calendars will be printed each year in CY 1989 and 1990.

- Newsletter: This 10-20 page publication in several hundred copies provides timely information on various topics such as recent pest problems, storage suggestions, pesticide safety, and current activities of the Crop Protection Service. This publication is being produced by the CPS on an irregular basis. Plans are to put it out four times a year, and to upgrade the quality of production.

- Posters: A series of one-sheet comic strip style posters. Topics will include Striga control, millet mildew, sorghum smut, agricultural storage, and pesticide safety. About 1000 copies of each will be produced.

iii. Office and Maintenance Supplies (\$25,000): Most of these orders will be placed in the first half of FY 1989 in order to have office furnishings, equipment, and supplies on hand for the Zone Bases when construction is completed. Household furnishings will be provided by the CPS or the occupants of the two new houses.

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iv. Warehouse Storage and Safety Equipment (\$25,000): Water and pesticide containers, hand trucks, disposal equipment, pallets, and safety equipment. These facilities and their use will serve as a national model for pesticide storage. Under proposed pesticide legislation, proper storage will be a condition of approval for the importation of pesticides.

v. Reference Works and Scientific Journals (\$20,000): The new level of training of the headquarters and field staff has led to a demand for reference works and scientific journals at the headquarters library and at the Zone Offices. There has been no significant purchase of professional books and journals since 1984. Approximately \$15,000 will be expended now for the Headquarters library and Zone Offices. Final purchases up to \$5,000 will be made in mid-FY 1990.

vi. Demonstration and Startup Materials (\$15,000): Materials needed in the course of the TA exercises described below.

c. Services (\$355,000)

i. Technical Assistance (\$185,000): When the long-term Plant Protection Advisor left in June 1986, nearly one year before the anticipated completion of his tour, the USDA Project Manager placed an emphasis on the local management of specific CPS offices (i.e., training, entomology, field operations) with on-the-job training from short-term TDY specialists. This approach will continue, with an increased emphasis on the CPS's responsibility for dealing with emergency pest outbreaks (e.g., army worms, birds, grasshoppers and locusts). Additional technical assistance to be provided through the existing PASA with the USDA will include:

- Management of the Project including technical assistance, logistics, training, pesticide safety (8 months)
- Baseline survey of pest problems in traditional agriculture (1 month)
- Vertebrate (birds/rats/other) control specialist (2 months)
- Stored products specialist (1 month)
- Insect identification specialists (4 weeks)
- Plant pathologist- extension (2 months)
- Extension entomologist (2 months)
- Biological control specialist (1 month)
- Weed identification and control specialist (1 month)
- Plant quarantine legislation development and implementation (1 month)
- Pesticide legislation development and implementation (2 months)
- Research on specific pest problems in coordination with one or more U.S. or third-country universities.

In addition, TA advisors will assist the CPS in the various studies and analyses to be carried out under Special Projects, e.g. cost: benefit analyses, pesticide safety information, and legislative studies.

- ii. Training (\$170,000)  
(a) Long-Term (\$140,000)

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The RCP-III budget is overextended in this category, and no additional long-term academic training is proposed. Most CPS employees had no English, and the original Project underestimated the time and costs of necessary English language training: \$140,000 under this Supplement will cover the five Participants now in training.

(b) Short-Term (\$30,000)

Short-term U.S. and third-country training, as well as technical assistance, aims at developing institutional relationships that will continue after the Project is concluded. Short-term training activities will include:

Plant Pathology: The Plant Pathology and Entomology Departments of the National Agriculture Research Institute in Ories, Portugal have agreed to provide training at no cost if the Project will cover per diem and travel for CPS participants. Training will be provided to two Participants from CPS' Plant Pathology Department on the following schedule:

Vegetable diseases	2 months 1988
Rice/maize diseases	2 months 1989
Root crop diseases	2 months 1990;

and for one Participant from the CPS Entomology Department for one month in 1988.

A sorghum/millet disease course of study is being developed through contact with ICRISAT in Niger.

Vertebrate pest control training: In August 1989 one senior CPS employee will attend the 2nd International Short Course on Vertebrate Pest Problems and Solutions in Developing Countries.

African Association of Insect Scientists: Participation of one CPS entomologist in this annual conference is planned for 1988 and 1989.

Pesticide Legislation: On-the-job training in an organization (to be selected) involved in implementing pesticide legislation for one CPS employee for one month.

Extension Entomology: Participation in the USDA Extension short course, and on-the-job training in a U.S. institution on organizing and conducting extension programs at the grass-roots level.

Plant quaranting: On-the-job training at a U.S. port of entry and study of legislation and implementing regulations.

. There also will be training courses and conferences at several levels:

Mini-training packages: These brief programs developed by the CPS Training Development are highly structured, and are administered by the CPS and extension workers at the village level. The packages are composed of linked crop protection themes such as pesticide use and safety, project storage, basics of plant pathology, and striga and grasshopper control, presented in a simple 10-20 page illustrated booklet (the "ABC" series) produced locally, with flipcharts or flashcards.

National Conference on Plant Protection: The Project will sponsor the first national conference of various Guinea-Bissauan agencies involved in plant protection. The purpose will be to assist Government agencies to identify national plant protection problems, establish research priorities, discuss approaches, and divide responsibilities. Foreign specialists will be invited. The conference is likely to take place in March 1990. The International Centre for Insect Ecology and Physiology in Nairobi has expressed interest in participating in and providing some funding for this Conference.

National Pesticide Safety Information Campaign: This campaign on the environmentally safe storage, handling, and use of pesticides will be directed at all Government agencies using pesticides and at the private agricultural sector, and will draw on the mini-training packages and the training materials described above.

CPS In-House Training: An annual two-week CPS training and planning workshop takes place each April. Training is given to senior staff, field supervisors, agents, and volunteers in the safe use and management of pesticides and in alternative controls.

With the increase in use of written materials, selected monitors will require Portuguese language training; and secretarial/typing training will be given CPS secretaries.

#### 4. Costs

##### Supplemental Budget

##### Construction

Two Regional Centers	\$240,000	
Two Warehouses	50,000	
One Storage Shed	20,000	
Enclosures (4)	40,000	\$350,000

##### Goods

Vehicles & Spare parts	\$110,000	
Training Materials	35,000	
Office & Maintenance	30,000	
Storage & Safety Equip.	30,000	
Books, Journals, Training	20,000	
Demo & Startup Materials	<u>15,000</u>	\$240,000

##### Services

Technical Assistance (21pm)	\$190,000	
Training		
Long-Term	140,000	
Short-Term	30,000	
Studies	20,000	\$380,000

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Oversight

Audit	\$15,000	
Final Evaluation	15,000	\$ 30,000
		-----
		\$1,000,000

Cumulative Project Budget - PP Format  
(\$ '000')

	<u>Original</u>	<u>Supplement</u>	<u>Totals</u>
Technical Asst.	300	190	490
Training	350	170	520
Construction	-	350	350
Vehicles	350	110	460
Studies/Eval.	50	50	100
Commod/Supplies	200	130	330

Financial Implementation Plan

Project Element	Implementation	Financing	Current	Increase	Total
1. Tech Assist.	AID Direct	Direct Pay	300	190	490
2. Training	Direct Place	Direct Pay	350	170	520
3. Vehicles	AID Direct	Direct Pay	350	110	460
4. Evaluation	AID Direct	Direct Pay	50	35	85
5. Commodities	AID Direct	Direct Pay	200	130	330
6. Construction	AID Direct	Direct Pay	0	350	350
7. Audit	AID Direct	Direct Pay	0	15	15
Total:			1,250	1,000	2,250

C. Project Execution

1. Implementation Plan

a. Schedules

	<u>Date</u>	<u>Selected Events</u>
	August	REDSO/WCA concurs PP Supplement OAR/GB authorizes Supplement Grant Agreement signed
1988	September	All PIO's issued
	October	Construction drawings/specs complete
	December	Bids received, reviewed

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1989	Jan	Construction contractor selected
	Feb	Equipment ordered
		Construction begins
		Plant Pathology Dept. equipped
		Pesticide Legislation in draft
	<u>Sept</u>	<u>Pickups, motorcycles, parts ordered</u>
	Jan	Equipment received
	Feb	Entomology Department equipped
		Construction completed
1990	June	Final Evaluation
	July	Pesticide legislation approved by GOGB
		Return of last Participants
	Aug	Last two pickups, parts and motorcycles received.
	Sept	Departure of USDA Project Manager PACD

Procurement Actions

<u>Item</u>	<u>Dates</u>	<u>PIO</u>	<u>Competition</u>	<u>Order</u>	<u>Final Receipt</u>	<u>Final Payment</u>
Construction	9-88		12-88	1-89	2-90	2-91
Vehicles	9-88		-----	9-89	8-90	6-90
Equip. & supp.	9-88		10-88	1-89	1-90	11-89
Books	9-88		-----	2-89	11-89	9-89
TA	9-88		-----	9-88	-----	3-91
TRNG - LT	9-88		-----	-----	7-90	AID/W
TRNG - ST	9/88-11/89		-----	-----	6-90	6-90

2. Procurement

Procurement under this Supplement will be financed under the Development Fund for Africa (DFA) and thus subject to the AID/W Procurement Guidelines issued April 4, 1988.

a. General Procurement Responsibilities:

The GPS is the implementing agency for the Project. Procurement of commodities and services will be undertaken by USAID/Bissau and REDSO in coordination with the GPS. In those instances where procurement exceeds the Mission's contract authority, the contracting will be accomplished by REDSO/WCA or by AID/W. Procurement of commodities and services by the USAID will be AID-direct contracting, and will be carried out in accordance with the Federal Acquisition Regulations (FAR) and AID Acquisition Regulations (AIDAR).

b. Construction Contracting

Standard drawings and specifications already in use by the Government of Guinea-Bissau will be employed for the construction of these structures. The construction will be identical at both sites. Construction will be undertaken by one or more private contractors already established in Guinea-Bissau, and supervision will be provided by a local engineering firm under the guidance of the REDSO/WCA Engineering Office. Additional periodic visits to the construction sites will be made by the PASA Project Manager (the latter has construction experience on previous AID projects).

The construction schedule is estimated as follows:

- |                  |   |
|------------------|---|
| 1. October 1988  | Drawings/specifications completed           |
| 2. December 1988 | Bids received, reviewed                     |
| 3. January 1989  | Contractor selected                         |
| 4. February 1989 | Construction begins                         |
| 5. February 1990 | Construction completed, utilities connected |

c. Procurement of Technical Services:

Technical assistance will be furnished under the PASA with the USDA, which will include a long-term Project Officer and short-term technical assistance coming from the US or third countries, and by IQC consulting firms.

d. Commodity Source-Origin Requirements:

The authorized source/origin for commodities financed with funds provided by this Supplement is AID Geographic Code 935, with U.S. source/origin procurement to be maximized. It is anticipated that over three-fourths of the commodities (office, training, and warehouse equipment, and books) will be of US source/origin. The vehicles and parts will not come from the US, due to the lack of adequate maintenance, service and spare parts in Guinea-Bissau for US-manufactured vehicles. The Project has already received waivers under the original Authorization for these vehicles and spare parts.

As a result of the shortage of foreign exchange in Guinea-Bissau, few goods which might be used in the Project are available locally. We expect little shelf-item procurement, except perhaps from neighboring Senegal.

e. Transportation:

US shipping will be utilized to the extent possible. However, due to the infrequent visits of US flag carriers to Guinea-Bissau, it is anticipated that non-US flag vessels will be used. In order to comply with the Cargo Preference Act, suppliers not shipping on US flag vessels will obtain on a case-by-case basis a Certificate of Non-Availability in accordance with HBI, Suppl. B, Chapter 10, from M/SER/OP/TS.

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### 3. Payments

The FAR financing mechanism for the construction is not being used as the GOGB does not have the capacity at present to award and administer contracts of this nature. All procurement will be arranged directly by AID, and all payments will be made directly to suppliers by AID.

### D. Other Considerations

#### 1. Environmental Considerations

There is no change in the emphasis on environmental concerns presented in the original Project Paper, and no substantive change in the scope or nature of the Project which would result in environmental impacts not previously assessed pursuant to 22 CFR 216.3 (a) (9). The construction will cause dust and noise only during the construction period, and will not occur on any site characterized by the presence of "relatively undergraded forest". Conversely, there are included in the Supplement several specific components that continue the effort toward reduction of pesticide need and use. These include:

Increased emphasis on identifying potential areas for cultural and bio-controls;

Use of specialists to establish minimum needed pesticide rates, and to identify alternatives when available;

Improved management and logistics to better identify pest outbreaks when they begin, rather than when larger areas of more mature pests develop;

Development of legislation to regulate pesticide selection, importation, transport, storage, use and disposal; and

Plant quarantine to prevent introduction of new pests which would require pesticides.

#### 2. Evaluation Plan

A Final Evaluation is scheduled for June 1990, three months before PACD. It will draw on the Baseline Survey of pest problems in traditional agriculture, as well as the crop loss assessments, and will focus on the Project's accomplishment of Outputs, achievement of Purpose, and contribution to the attainment of the Goal. The Evaluation will also assess the kind and degree of impact that the Project had and will continue to have on the CPS and the rural populations involved. Any measurable change in agricultural production or harvest losses will be examined for linkages to CPS services. The Final Evaluation will also review the progress made in addressing the problems raised by the Mid-Term Evaluation, particularly involving the national use and safe handling of pesticides.

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### 3. Other Funding

The Crop Protection Service has received support from AID apart from that provided under this Project via the Emergency Locust/Grasshopper project, 657-0517, which provided funds in 1987 for technical assistance, pesticides (malathion/carbaryl), fuel, lubricants, spare parts, bicycles, safety equipment, and warehouse renovation. Funds have been requested from the same source for 1988. Locally generated PL 480 funds have been used for a number of years to finance CPS operating costs, especially fuel and lubricants. In 1987 this provided six million Guinea-Bissau pesos for fuel. The 1988 request is for 54 million pesos for fuel, lubricants and parts.

The Project has benefitted from the contributions of other donors including:

- Sweden - 1 vehicle; sprayers; bicycles
- FAO - 1 double cab pick-up
- Senegal - Salary of stored products specialist
- IITA - 1 boat with 2 motors; 4 motorcycles
- Denmark - Grasshopper technician for four months
- Portugal - Pesticide regulation specialist (proposed three weeks)
- On-going training and technical backstopping of CPS' Plant Pathology Dept.
- EEC - Pesticides and 20 backpack motorized sprayers
- Italy - Pesticides, application equipment, and safety equipment, and 2 vehicles
- WFP - Rice, oil, sardines, corned beef
- ICRISAT - Technical backstopping for sorghum smut control
- ICIPE - Facilities and technical support for CPS Entomologist's Master's thesis

Assistance from France and the Netherlands has been solicited, and contacts with Japan, West Germany and other donors are planned. Looking ahead, donors have been approached regarding the next grasshopper and locust invasion (2). These donors include the EEC, Sweden, France, Holland and the FAO.

(2) See Annex C.

### 4. Continuity and Replicability

Between now and the PACD in September 1990, the Project will attempt to:

- Involve other donors to a greater extent in financing various aspects of CPS operations. This will include, for example, the financing by a European donor of a replacement for an 8-year old, AID-financed truck. As a result of the declining Dollar, costs for such non-US inputs have increased to the point where the GPS must seek out other hard-currency donors.

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- Prepare the various CPS departments and field operations to carry out their services after the PACD. This will include providing documentation, books, journals and subscriptions to the library as well as fostering continuing relationships with outside organizations involved in crop protection.
- Establish a permanent, functioning presence in the interior able to cope with crop protection problems after the PACD.
- Procure spare parts and maintenance supplies that will last beyond the PACD. This is particularly important for vehicles if the CPS is to remain effective in the interior.
- Develop management skills, procedures and guidelines that establish a permanent structure on which to base continuing operations, especially in the interior. This is the primary aim of the technical assistance being provided under the PASA.
- Provide training aids, equipment and materials that can be used long after the PACD. A CPS Training Officer is being prepared to continue these functions on a permanent basis.
- Provide the infrastructure and an operational model for the planned, monitored, rational management of pesticides to assure safe and environmentally sound useage.

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ANNEX A

SUPPLEMENTAL LOGICAL FRAMEWORK  
 FOOD CROP PROTECTION III  
 (657-0012)

LDP Funding: \$2,250,000  
 P&C: Sep. 30, '90

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
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Goal:

Same

Same

Same

Same

Purpose:

Same

EOPS:

ADD:

- Professionally trained Technical Departments at work in the CPS.
- National awareness of pesticide safety practices.

ADD:

- Site inspections.
- National media and regulations regarding pesticides.

Same

Outputs:

- Storage and Distribution Centers.
- Special Projects-A series of research, policy analyses and educational exercises.
- On-farm Storage Facilities

ADD:

- Two Zone Bases, two Warehouses, on-farm storage facilities built.
- Studies and other documents issued.

ADD:

- Consulting engineer's reports.
- Site inspections.

Same

Inputs:

US: Construction	\$300,000
Goods	215,000
Services	355,000
Oversight	130,000

AID-records.

\$1,000,000

Same

### Annex B: Construction Specifications

This Supplement will finance the construction of Regional Centers at Bula and Bafata; warehouses at Catio and Bulama; and a small storage shed at the Central Office of the GPS in Bissau. Each Regional Center site will contain a three-office building, a separate storage warehouse for pesticides, operating equipment and spare parts, and a two-bedroom house. Electricity and water exist at both of the sites.

Preliminary specification for this construction include:

- a. Office: A 10.8 x 5 meter structure containing three offices for the Zone Director, the Regional Director and the secretary/base radio will be constructed at each site. Construction will be a concrete slab, straight line roof structure with adequate ventilation and a small porch. Office will be distanced and upwind from pesticide warehouse. Office window location will permit observation of entrance to warehouse for improved security and safety monitoring of operations.
- b. Warehouse: A 10 x 5 meter structure with large double doors located midway on each side of the building. Doors open out. Three meter height to roofline. Site is to be a well-drained elevated surface with no flooding possible, distanced from residential buildings, offices, animals, foodstuffs or fertilizer storage. The building orientation will be lengthwise presenting as small a surface facing the sun as possible. Construction characteristics will include fireproof construction to extent possible; level floor surface of smooth concrete to permit cleaning, steady shelf storage, and ease of pallet movement; built-in sump; one door set lockable from the inside, the other from the outside; several small openings (approx 10 x 25 cm) slightly above floor level; and openings at roofline for ventilation and light. All openings are to be barred/screened to exclude animals and birds and unauthorized entry. One set of double doors is to open onto a loading dock. Wall surfaces exposed to sun will be painted white, and trees (e.g. neem) will be planted along exterior side facing sun to reduce heat build-up inside warehouse. A static water supply, safety equipment, drain racks, etc., will be provided to facilitate safe handling and container disposal by personnel at the warehouse. The structure will have appropriate markings/warnings, and the management of the facility will be highly structured to emphasize inventory controls and safety.
- c. Enclosure: The warehouse will be fenced to prevent approach by animals and restrict access by unauthorized individuals. The GOGB will provide guards to patrol the area during non-duty hours. The warehouse manager will be responsible during duty hours.
- d. House: Simple, small two-bedroom house of concrete slab, straight-line construction. 15 x 5 meter house will have kitchen facility, small living/dining room, two bedrooms with exterior toilet and shower. House will be upwind and distanced from warehouse. Orientation of house will permit monitoring of warehouse and office during off-duty hours.

Africa's plague of locusts

Desperate remedies

IN THE past three years an outbreak of locusts in Ethiopia has escalated into a plague that is threatening all of north Africa and is edging beyond. Exceptional rains have helped. So, some experts believe, did a ban demanded by western environmentalists on dieldrin, the insecticide once used to control locusts. They think that the risks it poses are preferable to the devastation of crops that has occurred without it.

The species that is now on the rampage is the desert locust, whose voracity and mobility make it one of the world's worst pests. It can eat its own weight every day. This means that a square kilometre of swarm, containing 50m locusts, can chomp through 100 tonnes of vegetation in a day—enough food to feed 500 people for a year. A swarm recently sighted in Mali stretched for 120 kilometres and was 25 kilometres wide.

It is thanks to migration that locusts manage to find so much food in arid areas. They prefer to travel on the prevailing winds because these often herald rain, which both nourishes their food and provides good conditions for egg-laying. But swarms can also fly 150 miles a day in still air and travel up to 3,000 miles before breeding. This puts up to 65 countries, from the Atlantic coast of Africa to Bangladesh, within range of the invading army.

Unlike most successful armies, a swarm

of desert locusts is an unprofessional mob. For years at a time the insect remains a harmless solitary grasshopper. Then, suddenly, when populations become especially dense, the peaceable citizen rises to arms. Its wings get bigger, its hind legs shorter, it changes colour from brown to yellow, and it assumes the menacing gregarious instincts and migratory urge of the locust. Such an insidious army is hard to prepare for.

Rain in mid-1985 after a long drought in Ethiopia and Sudan turned the Jekyll-like grasshoppers into locust Hydes. Successive rainy seasons enabled the locusts to sweep right across Africa to the Western Sahara, breeding as they went (see map). This year they have started to turn back east. Tunisia and Morocco have treated 3m hectares of land against locusts since January. Morocco had 1,500 specialists working night and day to fight them (in April King Hassan let them off fasting during the month of Ramadan, as if the country were at war). Other swarms are now invading the Sahel countries to the south, and may then disperse even farther.

The plague is fast assuming the proportions of one that lasted from 1949 to 1963. And it has prompted what some see as a desperate reaction: in March the United Nations Food and Agriculture Organisation (FAO) declared that the plague could be checked "only by controlled and supervised use of the pesticide dieldrin", which is now widely banned. Dieldrin transformed locust control when it was introduced in the 1950s. Locusts could be stopped in their crawling stage by strips of vegetation several miles apart sprayed with quantities as small as two ounces an acre (in more concentrated doses, dieldrin can also kill locusts on the wing). Because its effect on each locust is cumulative as the poison builds up inside it, and because one dose remains active for six weeks, the locusts' future path could be treated rather than the swarms themselves.

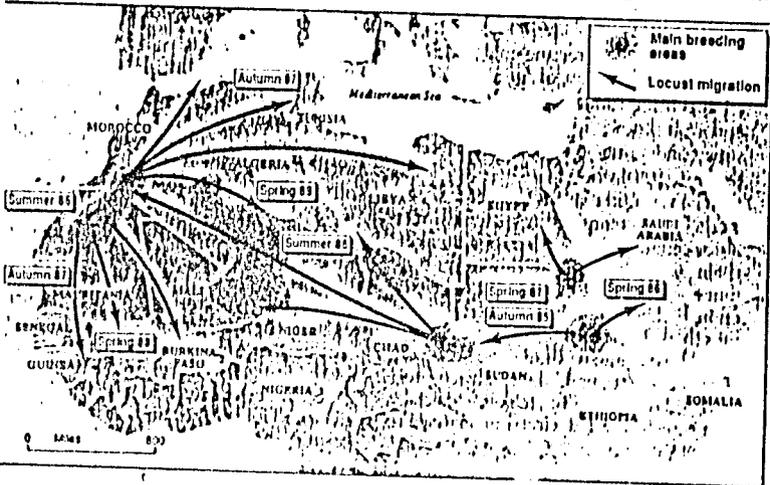
These very qualities, however, alarmed environmentalists, who argued that dieldrin

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would get into the food chain. America banned it from agricultural use in 1974 because of the risks it posed to people. The European Economic Community followed suit in 1981. Some developing countries have also restricted its use, but in most of them the question does not arise, because the aid agencies' western donors will not pay for it. Shell, the only company that made it, stopped production last year (there is still plenty in stockpiles).

Instead, locust-control has relied on less persistent insecticides such as fenitrothion. Because its effects last only a few days, areas may have to be resprayed several times during an invasion. This is expensive. It is often difficult too because many of the infested areas are remote, and others—such as southern Sudan, northern Ethiopia and southern Morocco—suffer from civil war as well as locusts. Because its effects are not cumulative, whole areas have to be sprayed. Officials at the FAO fear that with repeated applications of larger quantities over a larger area, it may prove more damaging than dieldrin as well as less effective. That is why, provided it is carefully used, they would like dieldrin to be used once more in desert areas.

Friends of the Earth, an environmental group, still thinks that dieldrin is too nasty to use. It prefers fenitrothion, partly because it is only sprayed directly on to locusts. Best of all, it would like prevention rather than cure, with better satellite reconnaissance (to track flying locusts), ground surveillance (for the crawlers) and faster treatment. Unfortunately, that runs up against the root of most third-world problems: money.



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