

PD-ABP-543
74819

ANNUAL REPORT

October 1, 1990 - September 30, 1991

and

FINAL SUMMARY OF ACTIVITIES

October 1, 1985 - December 31, 1991

for the

INTEGRATED PEST MANAGEMENT

AND

ENVIRONMENTAL PROTECTION PROJECT

Project No. 936-4142

A.I.D. Contract No. DAN-4142-C-00-5122-00

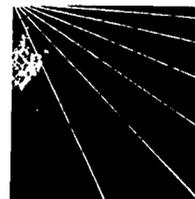
Submitted to the

**U.S. Agency for International Development
Bureau of Science and Technology Office of Agriculture**

by the

Consortium for International Crop Protection

December 1991



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FOREWORD

This report briefly summarizes activities performed under the Integrated Pest Management and Environmental Protection Project for the period October 1, 1990 to September 30, 1991. Also, since this is our final annual report, we have included tables which list a summary of activities over the six years of the project under this contract. We hope this will be useful to readers who might want information on some of CICIP's work over the period from October 1, 1985 through December 31, 1991. Funded centrally by A.I.D.'s Bureau of Science and Technology, Office of Agriculture (A.I.D./S&T/AGR), and augmented through funding from A.I.D. Missions and Offices, the Project provided crop protection assistance, training, research, and networking. Full reports and publications produced by the project are maintained in the office of the Consortium for International Crop Protection. Please write the Consortium for a list of the available reports and publications.

A. L. Steinhauer
Project Director

ACRONYMS

ADB	Asian Development Bank
A.I.D.	United States Agency for International Development
A.I.D./LAC	A.I.D.'s Bureau for Latin America and the Caribbean
A.I.D./OFDA	A.I.D.'s Office of Foreign Disaster Assistance
A.I.D./S&T/AGR	A.I.D. Bureau of Science and Technology, Office of Agriculture
A.I.D./W	A.I.D./Washington
ARS	Agricultural Research Service (U.S.D.A.)
CAB	Commonwealth Agricultural Bureaux
C.A.B.	Commonwealth Agricultural Bureaux
CARDI	Caribbean Agricultural Research and Development Institute
CATIE	Centro Agronomico Tropical de Investigacion y Ensenanza
CIAT	Centro Internacional de Agricultura Tropical
CIBC	Commonwealth Institute of Biological Control
CICP	Consortium for International Crop Protection
CID	Consortium for International Development
CNRCP	Crop Nematode Research and Control Project
CRSP	Collaborative Research Support Program
DAI	Development Associates, Inc.
DWRC	Denver Wildlife Research Center
EA	Environmental Assessment
EAP	Escuela Agricola Panamericana
EIA	Environmental Impact Analysis
FAO	Food and Agriculture Organization of the United Nations
FTE	Full time equivalent (used in reference to personnel effort)
GTZ	Gesellschaft für Technische Zusammenarbeit/German Agency for Technical Cooperation
ICAITI	Instituto Centroamericano de Investigación y Tecnología
ICAR	Indian Council for Agricultural Research
IEE	Initial environmental examination
IICA	Instituto Interamericano de Cooperacion para la Agricultura
IMP	International <u>Meloidogyne</u> Project

INNN	International Nematology Network Newsletter
IPM	Integrated pest management
IPPC	International Plant Protection Center Effective May 1990: Integrated Plant Protection Center
IRRI	International Rice Research Institute
ISU	Iowa State University
IWSS	International Weed Science Society
LA	Latin America(n)
LDC	Less developed country
LISA	Low input sustainable agriculture
MOA	Ministry of Agriculture
NARP	National Agricultural Research Project
NCSU	North Carolina State University
OSU	Oregon State University
PID	Project Identification Document
PM	Person Month
PPM	Pest and Pesticide Management
PROMECAFE	Proyecto Regional Centroamericana de Mejoramiento del Cultivo del Cafe
RENARM	Regional Environmental and Natural Resources Management Project, U.S.A.I.D./ROCAP
ROCAP	A.I.D.'s Regional Office for Central American Programs
SANREM	Sustainable Agriculture and Natural Resources Management
SOW	Scope of Work
UF	University of Florida
UMCP	University of Maryland at College Park
UMI	University of Miami
U.S.A.I.D.	United States Agency for International Development (missions)
USDA	United States Department of Agriculture

I. PROJECT BACKGROUND AND ORGANIZATION

A. BACKGROUND

The United States Agency for International Development (A.I.D.) has sponsored several projects on pest management in cooperating developing countries since the mid-sixties. The Agency's most comprehensive effort in pest management is contracted with the Consortium for International Crop Protection (CICP). Financed through A.I.D.'s Bureau of Science and Technology, Office of Agriculture (A.I.D./S&T/AGR) since 1985, A.I.D.'s Integrated Pest Management and Environmental Protection Project (Project No. 936-4142, A.I.D. Contract No. DAN-4142-C-00-5122-00), (PPM Project), is a six-year multidisciplinary program in crop pest and pesticide management.

The PPM Project compressed elements of two earlier A.I.D. projects into one activity: Weed Control Systems Utilization for Representative Farms in Developing Countries Project (contract A.I.D./ta-C-1303) conducted 1966-1985 by the International Plant Protection Center (IPPC) at Oregon State University; and the Pest Management and Related Environmental Protection Project conducted 1971-1980 by the University of California (Berkeley) under A.I.D. contract csd-3296 and ta-C-1195, and 1979-1985 by the Consortium for International Crop Protection (A.I.D. contract DSAN-C-0252). Also, a four-year extension of the Crop Nematode Research and Control Project (modified) was integrated with the PPM Project in December 1987, by North Carolina State University (NCSU). The North Carolina State effort on nematodes had previously been funded by two sequential A.I.D. projects: the International Meloidogyne Project (IMP) 1975-1984 and the Crop Nematode Research and Control Project (CNRCP) 1984-1987.

Specific PPM Project objectives, as stated in the project proposal (July 1985) are: "to expand the capabilities of less developed countries in the areas of pest and pesticide management." The PPM Project was designed to assist developing country farmers to consider and use more agronomically, environmentally, and economically sound crop protection. The Project reflects also the intent to help developing countries closely monitor the need for, use, and handling of pesticides.

PPM Project activities aimed at fostering, expanding, and strengthening regional and national pest and pesticide management programs in developing countries fall within four major categories:

* training: facilitate various pest and pesticide management training courses and activities.

* technical assistance: assist A.I.D. missions, A.I.D. offices and A.I.D./S&T/AGR with preparation of Project Identification Documents (PID), Project Papers, Initial Environmental Examinations (IEE), and Environmental Assessments (EA); assist with implementing crop protection programs in LDCs; provide technical consultancies as needed; and, act as a source of information for specific pest and pesticide problems.

* research: provide and facilitate a range of pest and pesticide management research assistance.

* communication/networking: provide information services and facilitate publication and dissemination of technical pest and pesticide management information.

A technical specialist has been assigned responsibility for coordinating each function within the project.

B. DESCRIPTION OF ACTIVITIES

The PPM Project utilizes the four components of technical assistance, training, communication/networking, and research to conduct appropriate programs in integrated pest management and environmental protection. Activities primarily focus on the disciplines of weed management (terrestrial), entomology, plant pathology, and pesticide management.

The PPM Project provides a source of pest and pesticide management expertise for A.I.D. Assistance is provided through:

- * designing and implementing cost-effective, environmentally sound pest and pesticide management research;
- * identifying pests; assessing pest-caused crop losses;
- * training in a wide range of pest and pesticide management topics;
- * assuring safe use and disposal of any crop pesticides used; and,
- * conducting pesticide use environmental assessments.

C. ORGANIZATION

By being contracted through CICP, the PPM Project has access to faculties at the 13 CICP-member universities, plus the U.S. Department of Agriculture (USDA). The resulting pool includes experts with combinations of expertise, international experience, and language capability covering most aspects of pest and pesticide management.

As primary contractor, CICP has sub-contracted with five member institutions to conduct various phases of the program. The division of responsibility and organizations involved are:

Consortium for International Crop Protection

- * overall project coordination and administration
- * liaison with A.I.D. and other donor groups
- * project development

Integrated Plant Protection Center, Oregon State University

- * weed management
- * training coordination
- * socio-economics
- * communication/networking

North Carolina State University, Department of Plant Pathology

- * publication of International Nematode Network Newsletter (INNN)
- * nematology

University of California, Berkeley, Department of Entomology

- * project management

University of Maryland College Park (UMCP), Department of Entomology

- * entomology
- * technical assistance coordination

University of Miami (UMI), School of Medicine, Department of Epidemiology and Public Health

- * pesticide residue analysis training
- * agromedical consulting and training

In addition, short-term consultants are utilized to perform specific tasks where appropriate. As a general policy, these individuals are selected from CICIP-member institutions based on appropriate experience, background, and language skills.

II. ACTIVITIES AND ACCOMPLISHMENTS

The following is a summary of activities and accomplishments during the period October 1, 1990 - September 30, 1991. Full reports are maintained in the office of the Consortium for International Crop Protection.

A. TRAINING

- 1.) Planning for Integrated Pest Management (IPM) Training Courses proposed for presentation in Kenya in 1992. Project Specialists: Shenk and Cooper.
- 2.) Locust Control Project Training: "Terrestrial Arthropod Identification and Methods for Assessing Abundance and Community Ecology" shortcourse, October 9-18, 1990, Morocco. Trained Moroccan personnel in methodology for measuring impact of locust control program on non-target arthropods. 7 participants trained. Follow-up training in identification of arthropod groups commonly monitored in pesticide side effects studies will be held in October 1991. Project Consultant: Matteson.
- 3.) Pesticide Residue Training Course was conducted at the University of Miami. There were 3 participants. March-May, 1991. Project Specialist: Mann.
- 4.) Nematode Short Course, June-July, 1991, Raleigh, N.C. Conducted short course for 12 participants from 10 countries during three-week period in July and August. Project Specialist: Barker. Project Collaborator: Dickson.
- 5.) IPM Training Course was conducted at Oregon State University, June 17 to July 26, 1991. There were 9 participants. This course was sponsored by U.S.D.A. Project Specialists: Shenk and Cooper.
- 6.) Integrated Pest and Pesticide Management Course was conducted at Oregon State University for 20 Guatemalan agricultural specialists, June 17 to July 26, 1991. Project Specialist: Shenk.
- 7.) Weed Management Strategies Shortcourse was conducted at Oregon State University. There were 3 participants, July 8-26, 1991. Project Specialists: Shenk and Cooper.
- 8.) Biological Control Workshop, July and August, 1991, Zamorano, Honduras. Conducted workshop for 34 participants from 13 Spanish-Speaking countries in Latin America at the Escuela Agricola Panamericana (EAP) in Zamorano. Project Specialists: Barfield and Steinhauer. Project Collaborators: Andrews, Baker, Cave, Estrada, Garcia, MacVean, Schuster, Sequeira, Trujillo, Zoebisch and Zelaya.

- 9.) Produced an IPM Training Manual for use in training programs to be conducted later in the year, January 1991, Corvallis, Oregon. Project Specialist: Shenk.
- 10.) Integrated Pest and Pesticide Management Course was conducted at Oregon State University for 24 Guatemalan agricultural specialists, August 15 to September 25, 1991. Project Specialist: Shenk.
- 11.) Training Course on Management and Leadership Skills was conducted at Oregon State University for 25 Salvadoran environmental leaders, September, 1991. Project Specialist: Shenk.
- 12.) Efficient and Economic Use of Pesticides short course offered in Dominican Republic for 56 Dominican Republic trainees, September, 1991. Project Specialist: Shenk.

B. TECHNICAL ASSISTANCE

- 1.) Technical Backstopping for Project Consultants, Projects, and A.I.D./W (including the National Agricultural Research Project [NARP] financed by U.S.A.I.D./Egypt), Global. Provide a range of technical and logistical activities in the process of arranging for the services of, and coordinating, technical specialist consultants. Ongoing. Project Specialists: Barfield, Matteson, Steinhauer, Kogan, Shenk and Cooper.
- 2.) Alternative Uses of Straw. A report prepared exploring alternative uses of straw in third world agriculture, October-December, 1990. Project Specialist: Conklin.
- 3.) Conducted Laboratory Quality Control Surveys, from December 1990 to September 1991. Survey involved pesticide residue laboratories from 56 countries world-wide. Project Specialist: Mann.
- 4.) Published Guidelines for Preparing Environmental Assessments of Pesticide Use in A.I.D. Agricultural Projects, Maryland, January, 1991. This publication was provided to all A.I.D. missions, offices and bureaus. Project Specialists: Bottrell and Steinhauer.
- 5.) Development of an IPM proposal for cowpea insects in collaboration with the Cowpea CRSP, Michigan State University, May, 1991. Project Specialist: Kogan.
- 6.) Environmental Assessment of Pesticides Proposed for Use in U.S.A.I.D./El Salvador Basic Grains and General Relief Programs, May 1991. Project Consultant: Calvert.
- 7.) Development of a Crop Protection Component for SANREM CRSP in collaboration with Michigan State University, June- August, 1991. Project Specialists: Kogan and Shenk.
- 8.) Work on the IPM CRSP development as part of an A.I.D.-contracted team, June-September 1991. Project Specialists: Kogan and Shenk.

9.) Environmental Assessment for the U.S.A.I.D./El Salvador Agronomic Technical Assistance component of the Democratic Labor Development Project, July-August, 1991. Project Consultants: Ward and Calvert.

C. RESEARCH

1.) Conducted the Modeling Research for the Grasshopper/Locust Project in the Sahel, October 1990-September 1991. Project Consultant: Coop.

2.) Planning Collaborative Research Projects and coordination of plans for IPM research in various countries (Egypt, India, Philippines, U.S.). Project Specialist: Steinhauer.

3.) Development of IPM Research plan with Indian Council for Agricultural Research (ICAR). April-May, 1991. Project Specialist: Steinhauer; Project Collaborators: Ford and Edwards.

D. NETWORKING

1.) Project Facilitation. Planning, reporting and responding to technical requests. Ongoing. Project Specialists: Steinhauer (CICP), Kogan (IPPC/OSU) and Mann (UMI).

2.) Production and Distribution of International Nematology Network Newsletter. A final issue of the newsletter dated December 1990 was prepared and distributed to over 770 recipients in most of the countries in the developing world. Project Specialist: Barker.

3.) Distribution of Technical Material on Nematodes, Global. Technical material on nematodes was distributed from North Carolina State University to members of Network upon request. A total of 400 books, and several hundred research reprints were distributed. Project Specialist: Barker.

4.) International Weed Science Society. Provided editorial service for 2 issues of newsletter. Ongoing. Project Specialist: Shenk.

5.) Production of information letter "Dates & Events" describing crop protection related meetings. Ongoing. Project Specialist: Cooper.

6.) Distribution of Publications in response to requests from developing countries. Ongoing. Project Specialists: Cooper, Shenk and Steinhauer.

7.) Attended Entomological Society of America Conference, December, 1990 in Texas. Project Specialist: Steinhauer.

8.) Attended Weed Sciences Society of America meeting, February, 1991 in Louisville. Project Specialist: Shenk.

9.) Attended USDA Training Seminar, February, 1991, Washington, DC. Project Specialist: Shenk.

10.) Attended LISA Conference, March, 1991 in Oregon. Project Specialists: Kogan and Cooper.

11.) Attended Plant Protection Congress, August, 1991 in Brazil. Project Specialist: Kogan.

12.) Attended Asian Development Bank/CAB International Conference, September, 1991, in Malaysia. Project Specialist: Cooper.

E. PROJECT OUTPUT

The following is a summary of publications and papers generated through the Integrated Pest Management and Environmental Protection Project (excluding consultant technical reports).

1.) How to Prepare Environmental Assessments of Pesticide Use in A.I.D. Agricultural Projects. Published a manual to assist A.I.D. contractors prepare EAs. Project Specialists: Bottrell (coordinator), Steinhauer, Mann, Shenk and Teng.

2.) Environmental Assessment, El Salvador. Completed an environmental assessment of pesticide use in U.S.A.I.D. Programs in El Salvador, May 1991. Project Specialist: Barfield. Consultant: Calvert.

3.) Environmental Assessment, El Salvador. Completed an environmental assessment of pesticide use for the Agronomic Technical Assistance Component of the Democratic Labor Development Project for U.S.A.I.D./El Salvador and the American Institute for Free Labor Development, July and August 1991. Project Specialists: Barfield and Matteson. Consultants: Calvert and Ward.

4.) International Nematology Network Newsletter (INNN). A final issue was published in December 1990, 52 pp.

5.) Taller Sobre La Enseñanza del Control Biologico en Universidades de America Latina. 1991. José Antonio Monroy (ed.). A report on the Biological Control Course held at the Escuela Agricola Panamericana, Zamorano, Honduras, July 14 to August 3, 1991. In Spanish and in collaboration with the Escuela Agricola Panamericana. 105 pp.

III. DISTRIBUTION OF PERSONNEL EFFORT AND PROJECT RELATED TRAVEL

A series of tables summarizes personnel effort expended for project activities for the report year, and since project inception:

Table 1 - Project technical personnel

Table 2 - Distribution of personnel effort

Table 3 - Summary of project staff international travel

Table 4 - Summary of project consultants' international travel

Table 5 - Summary of project consultants' activities (excluding international travel)

Table 6 - Summary of level of effort (person months)

Table 1. PROJECT TECHNICAL PERSONNEL
FTE core funded for year ended September 30, 1991

Name	Institution	Position	FTE
A.L. Steinhauer	UMCP	PPM Project Director, UMCP Entomologist	0.45
M. Kogan	IPPC	IPPC Director, OSU Entomologist	-- ^{1/}
F.S. Conklin	IPPC/OSU	IPPC Interim Director, OSU Agric. Economist	-- ^{1/}
M.D. Shenk	IPPC/OSU	PPM Training Coordinator, IPPC Weed Scientist	0.55
J.B. Mann	UMI	Pesticide Residue Chemist	0.50
D.G. Bottrell	UMCP	PPM Technical Assistance Coordinator, UMCP Entomologist	0.12
A.S. Cooper	IPPC/OSU	Weed Scientist/Computer Specialist	0.30
K.R. Barker	NCSU	Principal Investigator for CNRPC, NCSU Plant Pathologist	-- ^{1/}
C.S. Barfield	UF	PPM Technical Assistance Coordinator, UF Entomologist	0.14
P.C. Matteson	ISU	PPM Technical Assistance Coordinator, ISU Visiting Entomologist	0.03

^{1/}Salary provided by sources other than A.I.D. Contract
 No. DAN-4142-C-00-5122-00

**Table 2. DISTRIBUTION OF PERSONNEL EFFORT
October 1, 1990 to September 30, 1991**

<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>PM</u>	<u>Specialist</u>
----- <u>Training</u> -----				
Coordinating	Maryland	*	0.75	Steinhauer
Pesticide Management Proposal for Kenya	Corvallis	Oct	0.50 0.50	Shenk Cooper
IPM Training Manual	Corvallis	Jan	0.50	Shenk
Pesticide Residue Course	Miami	Mar-May	3.00	Mann
USDA IPM Training Course	Corvallis	Jun-Jul	-- --	Cooper ^{2/} Shenk ^{2/}
Integrated Pest/ Pesticide Management Training of Guatemalan Agricultural Specialists	Corvallis	Jun-Jul Aug-Sep	-- --	Shenk ^{2/} Shenk ^{2/}
Weed Management Strategies Short Course	Corvallis	Jun-Jul	1.00 1.00	Cooper Shenk
Nematode Short Course	Raleigh	Jun-Jul	-- --	Barker ^{2/} Dickson ^{2/}
Biological Control Workshop	Honduras	Jul-Aug	1.20 0.25	Barfield Steinhauer
Management and Leadership training for Salvadoran Environmental Leaders	Corvallis	Sep	--	Shenk ^{2/}
Efficient use of Pesticides Short Course	Dominican Republic	Sep	--	Shenk ^{2/}

* Entire year

^{1/} Non-core funded

^{2/} Effort contributed to project

Table 2 Cont. **DISTRIBUTION OF PERSONNEL EFFORT**
October 1, 1990 to September 30, 1991

<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>PM</u>	<u>Specialist</u>
----- <u>Technical Assistance</u> -----				
Technical backstopping for project, consul- tants, and A.I.D.	Corvallis	*	--	Kogan ^{2/}
	Florida	*	0.48	Barfield
	Iowa	*	0.36	Matteson
	Corvallis	*	0.50	Cooper
	Corvallis	*	1.60	Shenk
	Maryland	*	1.00	Steinhauer
Straw Utility Study	Corvallis	Oct-Dec	--	Conklin ^{2/}
Technical backstopping for NARP	Maryland	*	--	Steinhauer ^{2/}
Environmental Assessment Guidelines Publication	Maryland	Oct-Dec	1.50	Bottrell
			0.25	Steinhauer
Proposal for Feasibility Study on Agric. Development in Costa Rica	Corvallis	Dec	0.30	Shenk
Lab. Quality Control Survey	Miami	Dec-Sept	2.00	Mann
Computer Application	Corvallis	*	0.20	Cooper
Literature collection & maintenance	Corvallis	*	0.50	Cooper
	Maryland	*	0.50	Steinhauer
COWPEA CRSP Proposal Preparation	Corvallis	May	--	Kogan ^{2/}
SANREM CRSP Proposal Preparation	Corvallis	Jun-Aug	--	Kogan ^{2/}
			0.50	Shenk
IPM CRSP Project Design	Corvallis	Jun-Sep	--	Kogan ^{2/}
			0.50	Shenk

* Entire year

^{1/} Non-core funded

^{2/} Effort contributed to project

Table 2 Cont. DISTRIBUTION OF PERSONNEL EFFORT
 October 1, 1990 to September 30, 1991

Project Activity	Where	When	PM	Specialist
----- <u>Research</u> -----				
Planning collaborative research	Maryland	*	0.65	Steinhauer
CICP-USDA collaborative Agreement	Maryland	*	0.25	Steinhauer
Development of IPM Research Plan with ICAR/India	India	Apr-May	--	Steinhauer ^{2/}
----- <u>Networking</u> -----				
CICP-C.A.B. International liaison	Maryland	*	0.10	Steinhauer
Newsletters	Raleigh	Dec	--	Barker ^{2/}
Correspondence	Miami	*	0.50	Mann
Reports/planning	Miami Maryland	* *	0.50 1.50	Mann Steinhauer
Entomological Society of America, Meeting	Texas	Dec	0.25	Steinhauer
IWSS Newsletter	Corvallis	*	1.00	Shenk
Dates and Events	Corvallis	*	0.35	Cooper
Publications Distribution	Corvallis	*	0.30 0.45	Cooper Shenk
Weed Science Society of America Meeting	Louisville	Feb	0.25	Shenk

* = Entire year

^{1/} = Non-core funded

^{2/} Effort contributed to project

Table 2 Cont. **DISTRIBUTION OF PERSONNEL EFFORT**
October 1, 1990 to September 1991

<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>PM</u>	<u>Specialist</u>
----- <u>Networking</u> -----				
USDA Trainers Seminar	Washington, DC	Feb	--	Shenk ^{2/}
LISA Conference	Portland	Mar	0.25	Cooper
Plant Protection Congress	Brazil	Aug	--	Kogan ^{2/} Kogan ^{2/}
ADB/CABI Conference	Malaysia	Sep	--	Cooper ^{2/}
Total Effort			25.24	

* Entire year

^{1/} Non-core funded

^{2/} Effort contributed to project

Table 3. SUMMARY OF PROJECT STAFF INTERNATIONAL TRAVEL
October 1, 1990 to September 30, 1991

Project Activity	Where	When	Specialist
----- <u>Training</u> -----			
Biological Control Workshop	Honduras	Jul	Barfield ^{1/}
Pesticide Safety Shortcourse	Dominican Republic	Sep	Shenk ^{1/}
Environmental leaders training course	El Salvador	Sep	Shenk ^{1/}
----- <u>Research</u> -----			
IPM Research Project Paper	India	Apr-May	Steinhauer ^{1/}
----- <u>Networking</u> -----			
International Crop Protection Congress	Brazil	Aug	Kogan ^{1/}
ADB/CABI Conference	Malaysia	Sep	Cooper ^{1/}
International Congress on the Environment	El Salvador	Sep	Shenk ^{1/}

^{1/} Travel funds provided from sources other than A.I.D. Contract No. DAN-4142-C-00-5122-00

**Table 4. SUMMARY OF PROJECT CONSULTANTS' INTERNATIONAL TRAVEL
October 1, 1990 to September 30, 1991**

<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>Specialist</u>
----- <u>Training</u> -----			
Locust Control Project Field Training Course, Arthropod Sampling	Morocco	Oct-Dec	Matteson
Participate in Regional Workshop on Biological Control	Honduras	Jul-Aug	Baker ^{1/} Estrada ^{1/} Garcia ^{1/} MacVean ^{1/} Schuster ^{1/} Sequeira ^{1/} Trujillo ^{1/} Zoebisch ^{1/}
----- <u>Technical Assistance</u> -----			
Environmental Assessment of Proposed Pesticide Use in U.S.A.I.D. Programs	El Salvador	May	Calvert ^{1/}
Environmental Assessment for the Agronomic Technical Assistance Component of the Democratic Labor Development Project	El Salvador	Jul-Aug	Calvert ^{1/} Ward ^{1/}

^{1/} Travel funds provided from sources other than A.I.D. Contract No. DAN-4142-C-00-5122-00

Table 5. SUMMARY OF PROJECT CONSULTANTS' ACTIVITIES (Excluding International Travel) October 1, 1990 to September 30, 1991

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<u>Project Activity</u>	<u>Where</u>	<u>When</u>	<u>Specialist</u>
----- <u>Research</u> -----			
Grasshopper/Locust Expert System	Corvallis	*	Coop

Table 6. SUMMARY OF LEVEL OF EFFORT (PERSON-MONTHS)

Activity Component					
Personnel Component	Training	Technical Assistance	Research	Networking	Total
-----For Report Year, Oct 90 - Sep 91-----					
Project Technical Staff	08.70	10.19	00.90	05.45	25.24
Consultants	02.00	00.00	10.00	00.00	12.00
Support Staff	-----	-----	-----	-----	<u>29.83</u>
				TOTAL	67.07
-----Cumulative From Project Inception, Oct 85 - Sep 91-----					
Project Technical Staff	93.50	122.79	40.35	115.78	372.42
Consultants	20.25	137.97	99.18	00.90	258.30
Support Staff	-----	-----	-----	-----	<u>278.73</u>
				TOTAL	909.45

IV. FINAL SUMMARY OF ACTIVITIES FROM OCTOBER 1, 1985 TO DECEMBER 31, 1991

The following tables (7, 8 and 9) provide a quick reference to all training and technical assistance activities performed during the total project period from October 1, 1985 to December 31, 1991. There was no activity reported for the final three month period October 1, 1991 to December 31, 1991 since only administrative functions associated with the close-out of the contract were performed.

As mentioned in the foreword to this report, complete details on all activities, as well as reports and publications completed during the project, are maintained at CICIP headquarters. Also, all technical reports and publications are filed with the Agency for International Development, Bureau for Program and Policy Coordination, Center for Development Information and Evaluation, Development Information Division, Washington, DC 20523-1802, telephone no. (703) 875-4818.

Table 7. Training Activities of Project Staff, Subcontractors, and Consultants from October 1, 1985 to December 31, 1991.

Site	Dates	Activity	Collaborating Sponsors	Number Trained
El Salvador	Nov 1985	Short Course, Pesticide Safety	IICA ROCAP PROMECAFE IPPC	26
Somalia	Dec 1985	Short Course, Weed Management	FAO IPPC	33
Honduras	Jan/Feb 1986	Course, Weed Management	EAP IPPC	33
Miami, FL	Mar/May 1986	Course, Pesticide Residue Analysis	U. Miami	2
Corvallis, OR	Jul/Aug 1986	Short Course, Weed Management	IPPC	7
Miami, FL	Aug/Oct 1986	Course, Pesticide Residue Analysis	U. Miami	3
Grenada	Aug 1986	Short Course, IPM	U.S.A.I.D./Grenada	26
Miami, FL	Sep/Dec 1986	Course, Pesticide Residue Analysis	U. Miami	2
Philippines	Nov 1986	Workshop, Crop Loss Assessment	IRRI Philippine Bureau of Plant Industry	25
Grenada	Nov 1986	Short Courses (2), Pesticide Management	U.S.A.I.D./Grenada IPPC	23
Washington, DC	Nov 1986	Workshop, Crop Pest Modeling		20
Panama	Jan 1987	Short Courses (4) Pesticide Management	U.S.A.I.D./Panama IPPC	96
Thailand	Feb/Mar 1987	Seminar/Workshop, Pest and Pesticide Management	U.S.A.I.D./Bangkok GTZ, FAO, Thailand MOA	200

Table 7. (Cont'd) Training Activities of Project Staff, Subcontractors, and Consultants from October 1, 1985 to December 31, 1991.

Site	Dates	Activity	Collaborating Sponsors	Number Trained
Costa Rica	Mar 1987	Seminar, Pesticide Management and Safety	ROCAP	45
El Salvador	Mar 1987	Short Course, IPM	ROCAP	10
Gambia	Mar 1987	Course, Pesticide Safety Management	U.S.A.I.D./Gambia IPPC	30
Pakistan	Mar 1987	Short Course, Weed Management	U.S.A.I.D./Pakistan IPPC	51
Senegal	Apr 1987	Course, Pesticide Safety Management	U.S.A.I.D./Dakar IPPC	30
Panama	Apr 1987	Course, Aphid Biology and Management	ROCAP U. Panama	15
Philippines	Apr 1987	Workshop, IPM	Philippine Bureau of Plant Industry	30
Niger	May 1987	Workshop, Aerial Application	A.I.D./OFDA FAO/ECLO	27
Guatemala	Mar 1987 May 1987	Workshops (2) Immature Insect Identification	ROCAP	16
Liberia	May 1987	Short Course, Use of Pesticides	FAO IPPC	2
Syria	Jun 1987	Short Course, Use of Pesticides	FAO IPPC	20
Sudan	Jun 1987	Course, Pesticide Safety	U.S.A.I.D./Sudan IPPC	25
Corvallis, OR	Jul/Aug 1987	Short Course, Weed Management	IPPC	5
Thailand	Aug 1987	Short Course, Weed Science Training	U.S.A.I.D./Bangkok IPPC	20

Table 7. (Cont'd) Training Activities of Project Staff, Subcontractors, and Consultants from October 1, 1985 to December 31, 1991.

<u>Site</u>	<u>Dates</u>	<u>Activity</u>	<u>Collaborating Sponsors</u>	<u>Number Trained</u>
Senegal	Aug 1987	Workshop, Pesticide Management	A.I.D./OFDA IPPC	15
Peru	Sep 1987	Workshop, IPM	U.S.A.I.D./Lima	21
Corvallis, OR	Sep 1987	Workshop, Pest and Pesticide Management Pakistan	IPPC	20
India	Sep 1987	Short Course, Disease Management	TN Rice Research Institute (Tamil Nadu) IRRI	30
Philippines	Oct 1987	Workshop, Crop Loss Assessment	IRRI, FAO, GTZ	63
El Salvador	Oct 1987	Short Course, Pesticide Safety	PROMECAFE U. Miami	301
Miami, FL	Oct/Dec 1987	Course, Pesticide Residue Analysis	U. Miami	3
Malawi	Nov/Dec 1987	Special Training, Microcomputers	Malawi MOA IPPC	15
Thailand Indonesia Philippines	Sep/Oct 1987	Seminars (3), Living Mulches	IPPC	45
Jamaica	Apr 1988	Workshop, IPM and Pesticide Safety	U.S.A.I.D./Kingston	28
Dominican Republic	Jul/Aug 1988	Short Courses (3) Pesticide Management	U.S.A.I.D./Santo Domingo IPPC	102
Malaysia	Aug 1988	Workshop, Pest Assessment	FAO, Malaysia National IPM Committee	24
Morocco	Oct 1988	Short Course, Cholinesterse Monitoring	U.S.A.I.D./Morocco	24

Table 7. (Cont'd) Training Activities of Project Staff, Subcontractors, and Consultants from October 1, 1985 to December 31, 1991.

Site	Dates	Activity	Collaborating Sponsors	Number Trained
Washington, DC	Jan 1989	Workshop, Pest and Pesticide Management	A.I.D./LAC	14
Guatemala	Feb 1989	Short Course, Pest and Pesticide Management	U.S.A.I.D./Guatemala	17
Malawi	Feb 1989	Short Course, Weed Management	U.S.A.I.D./CID IPPC	38
Uganda	Mar 1989	Short Course, Weed Management	CIAT	24
Malawi	Mar 1989	Short Course, Computer Use in IPM	U.S.A.I.D./CID IPPC	20
Yemen	Mar 1989	Short Course, Computer Use in IPM	U.S.A.I.D./CID IPPC	15
Egypt	May 1989	Short Course, Weed Management	U.S.A.I.D./CID NARP IPPC	24
Egypt	Jun 1989	Short Course, Weed Management	U.S.A.I.D./CID NARP IPPC	38
Yemen	Jun 1989	Short Course, Pesticide Management	U.S.A.I.D./CID IPPC	31
Yemen	Jun 1989	Short Course, Pesticide Management	U.S.A.I.D./CID IPPC	29
Yemen	Jun 1989	Short Course, Pesticide Management	U.S.A.I.D./CID IPPC	38
Corvallis, OR	Jul 1989	Short Course, Weed Management	IPPC	9

Table 7. (Cont'd) Training Activities of Project Staff, Subcontractors, and Consultants from October 1, 1985 to December 31, 1991.

Site	Dates	Activity	Collaborating Sponsors	Number Trained
Trinidad	Aug 1989	Short Course, Pesticide Management	FAO IPPC	31
Miami, FL	Sep/Nov 1989	Course, Pesticide Residue Analysis	U. Miami	1
Miami, FL	Mar/May 1990	Course, Pesticide Residue Analysis	U. Miami	4
Malawi	Apr 1990	Short Course, Pesticide Management	Malawi MOA IPPC	40
Jamaica	Jul 1990	Workshop, Biological Control	U.S.A.I.D./Kingston CARDI CIBC	26
Jamaica	Jul 1990	Seminar, Biological Control	U.S.A.I.D./Kingston CARDI CIBC	76
Costa Rica	Jul/Aug 1990	Short Course, Pesticide Management	CATIE IPPC	10
Corvallis, OR	Jun/Jul 1990	Short Course, IPM	IPPC	7
Morocco	Oct 1990	Short Course, Locust Control	U.S.A.I.D./Rabat DWRC	7
Honduras	Jul/Aug 1991	Workshop, Biological Control	USDA A.I.D./S&T/AGR EAP	34
Raleigh, NC	Jun/Jul 1991	Short Course, Nematode	NCSU	12
Corvallis, OR	Jul 1991	Short Course, Weed Management	IPPC	3
Corvallis, OR	Jun/Jul 1991	Short Course, IPM	USDA IPPC	9

Table 7. (Cont'd) Training Activities of Project Staff, Subcontractors, and Consultants from October 1, 1985 to December 31, 1991.

Site	Dates	Activity	Collaborating Sponsors	Number Trained
Corvallis, OR	Jun/Jul 1991	Short Course, IPM and Pesticide Management for Guatemalan Agriculture Specialists	DAI IPPC	20
Corvallis, OR	Aug/Sep 1991	Short Course, IPM and Pesticide Management for Guatemalan Agriculture Specialists	DAI IPPC	24
Corvallis, OR	Sep 1991	Course, Management & Leadership Skills for Salvadoran Environmental Leaders	IPPC	25
Dominican Republic	Sep 1991	Short Course, Pesticide Management	IPPC	56
Total Trained				2213
Total Courses				78
Total Foreign Countries				28

Table 8. Technical Assistance Activities of Project Staff, Subcontractors and Consultants from October 1, 1985 to December 31, 1991

Mission or Office	Year	Activity
Africa/Asia	1987/88	Programmatic EA of locust/grasshopper control
Africa (West)	1986	IPM project evaluation
Antigua	1987	EA for bont tick eradication program
Belize	1986	Environmental assessment
Bolivia	1986	Pesticide residue analyses
	1987	Pesticide residue analyses
	1988	Pesticide residue analyses
Burkina Faso	1986	Locust/grasshopper control
Chad	1987	Locust/grasshopper control
Costa Rica	1988	Evaluate regional pesticide tolerances
Dominica	1990	Pesticide residue analyses
	1990	EA for Hurricane Hugo Rehabilitation Project
Dominican Republic	1988	SOW for EA on Commercial Farming Systems Project
	1988	EA on Commercial Farming Systems Project
Ecuador	1990	EA for agricultural exports project
Egypt	1985	IPM program review
	1986	IPM advice for NARP
	1987	IPM advice for NARP
	1988	IPM advice for NARP
	1989	IPM advice for NARP
	1990	IPM advice for NARP
	1990	Review of research proposals for NARP
	1991	IPM advice for NARP
El Salvador	1987	IEE for Basic Grains Program
	1988	EA of Rural Development Project
	1991	EA for pesticide use in U.S.A.I.D./IRD programs
	1991	EA for Democratic Labor Development project
Ethiopia	1986	Locust/grasshopper control
	1987	Assessment of pesticide disposal problem
Gambia	1986	Locust/grasshopper control review
	1987	Locust/grasshopper campaign strategy development
Grenada	1986	Crop protection infrastructure development
	1987	Crop protection infrastructure development
Guatemala	1987	Developed scope-of-work for medfly EIA
	1988	Evaluate regional pesticide tolerances
	1988	EA for six agricultural production projects
	1988	Medfly environmental impact analysis
	1989	Pesticide residue analysis quality control
	1990	EA for Coffee Improvement Project
Haiti	1986	Environmental assessment
	1987	IPM plan developed for Agro-forestry project
	1987	Pest and pesticide management - tree nurseries
	1988	Pesticide analyses, human blood
Honduras	1985	Weed management advice
	1988	Evaluate regional pesticide tolerances

Table 8. (Cont'd) Technical Assistance Activities of Project Staff, Subcontractors and Consultants from October 1, 1985 to December 31, 1991

Mission or Office	Year	Activity
India	1987	Rice disease action threshold development
	1988	Tungro virus epidemic analysis
Indonesia	1988	Mycoplasma center proposal review
	1987	Crop loss assessment and database management
	1988	Crop loss assessment database development
Ivory Coast	1989	Crop loss assessment database development
	1987	Assess capability of pesticide formulating plants
Jamaica	1986	Environmental assessment
Kenya	1985	IPM research plan development advice
	1986	Locust/grasshopper control
	1987	Assessment of pesticide disposal problem
Malaysia	1987	Assess capability of pesticide formulating plants
	1986	On-farm pest-loss assessment advice
	1986	Pesticide disposal evaluation
	1987	Rice disease action threshold development
Mali	1987	Early and late blight epidemic analysis
	1986	Locust/grasshopper control
Mauritania	1987	Assess capability of pesticide formulating plants
	1987	Locust/grasshopper campaign strategy development
Morocco	1986	Locust/grasshopper control review
	1987	Locust/grasshopper campaign strategy development
Nepal	1988	Pesticide safety assessment of locust control program
	1988	Locust control project design
Niger	1987	Pesticide management and safety assistance
Pakistan	1987	Locust/grasshopper campaign strategy development
	1986	Weed management research evaluation
Peru	1987	Weed management research evaluation
	1990	IEE and senn pest control design for Afghanistan
	1986	Medfly program evaluation
	1988	Develop training plan for pest economic thresholds
Philippines	1990	EA for Investment and Export Promotion Project
	1986	National IPM program development advice
ROCAP	1988	Cadang-cadang disease loss trials-design
	1988	Mango fumigation evaluation
	1986	Pest and pesticide management services
	1987	Pest and pesticide management services
	1988	Pest and pesticide management services
	1989	Participation in design of RENARM IPM segment
	1989	Assistance for pesticide amendment to RENARM
	1989	Pest and pesticide management services
	1990	Pest and pesticide management services

Table 8. (Cont'd) Technical Assistance Activities of Project Staff,
Subcontractors and Consultants from October 1, 1985 to
December 31, 1991

Mission or Office	Year	Activity
Senegal	1986	Pesticide risk/benefit analysis
	1986	Locust/grasshopper control review
	1986	Locust/grasshopper control
	1987	Locust/grasshopper campaign strategy development
	1987	Locust/grasshopper control monitoring
	1987	Assess capability of pesticide formulating plants
Somalia	1987	Assessment of pesticide disposal problem
Sri Lanka	1987	Weed management advice
Sudan	1986	Locust/grasshopper control
	1987	Assess capability of pesticide formulating plants
	1987	Assessment of pesticide disposal problem
Thailand	1986	Pesticide disposal evaluation
	1986	On-farm pest-loss assessment advice
	1987	Rice disease action threshold development
Tunisia	1988	Locust problem evaluation and control plan
Yemen	1987	Assessment of pesticide disposal problem

Table 9. Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Altman, R.	Independent Contractor	Entomology	
Andrews, K.	EAP, Honduras	Entomology IPM	Jamaica, Honduras
Arreaga, H.A.	USAC - Guatemala	Epidemiology, Medicine	Guatemala, El Salvador
Arriaza, H.	IICA	Agricultural Technician	Guatemala
Barbosa, P.	University of Maryland	Entomology, Ecology	Guatemala, Jamaica
Barfield, C.S.	University of Florida	Entomology, IPM	Honduras, Jamaica, Peru
Baker, P.	C.A.B. International, CIBC	Entomology	Honduras, Jamaica
Barker, K.	North Carolina State University	Nematology	
Bartholf, D.E.	Independent Contractor	Entomology, Locusts	Burkina Faso
Bender, F.	University of Maryland	Economics	El Salvador
Bentley, J.W.	Escuela Agricola Panamericana	Anthropology	Honduras
Bottrell, D.G.	University of Maryland	Entomology, IPM	Grenada, Egypt, Kenya, Malaysia, Philippines, Sudan, Guatemala, Dominican Republic, Jamaica, Honduras, El Salvador, Costa Rica, Belize, Antigua, Ecuador, Dominica, Peru
Brown, A.	University of Maryland	Pesticides	Central America (ROCAP)

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Burrill, L.C.	Oregon State University	Weed Science	Somalia, Jordan, Kenya
Calvert, D.	Independent Contractor	Entomology	Bolivia, El Salvador
Campbell, B.G.	Independent Contractor	Pesticide Application	Mali
Carlson, G.A.	North Carolina State University	Agricultural Economics	Guatemala
Castenada, L.	Universidad de San Carlos de Guatemala	Watershed Management	Guatemala
Cate, J.R.	Texas A&M University	Entomology, IPM	African Sahel
Cave, R.D.	Escuela Agricola Panamericana	Entomology	Honduras
Cavin, G.E.	Independent Contractor	Entomology, Locusts	Mali, Senegal, Gambia, Mauritania, Niger, Morocco, Tunisia
Chiri, A.A.	University of Maryland	Entomology, IPM	Costa Rica, El Salvador, Guatemala, Panama, Honduras, Belize, Jamaica
Clifford, R.	IICA	Sociology	Guatemala
Coakley, S.	Oregon State University	Plant Pathology, IPM	Philippines
Coble, H.D.	North Carolina State University	Weed Science	Philippines
Coll, M.	University of Maryland	Entomology	Philippines
Conklin, F.	Oregon State University	Economics	
Coop, L.	Oregon State University	Entomology	Chad, Mali

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Cooper, A.S.	Oregon State University	Weed Science, Pesticides	Gambia, Sudan, Pakistan, Thailand, Myanmar, Malawi, Indonesia, Philippines, Liberia, Syria, Yemen, Trinidad, Malaysia
Croft, B.	Oregon State University	Entomology, IPM	Mali
Cruz Ramos, C.	Univ. of Puerto Rico	Entomology	Jamaica
Cummings, J.	Independent Consultant	Chemistry	Guatemala, Costa Rica, Honduras, El Salvador
Cusson, M.	Laval University	Entomology, IPM	Haiti
Dale, W.	Universidad National Agraria-La Molina	Entomology	Peru
Davies, J.E.	University of Miami	Medicine, Agro-Medicine	Costa Rica, Guatemala
Denno, R.	University of Maryland	Entomology	Philippines, Indonesia, Malaysia
Deom, A.	Hospital Cantonal Universitaire de Geneve	Chemistry	Morocco
Deutsch, A.	Oregon State University	Editorial	
Dively, G.P.	University of Maryland	Entomology, IPM	Grenada, Mali
Dickson, D.W.	University of Florida	Nematology	
Doebel, H.	University of Maryland	Entomology	Philippines, Indonesia
Douglas, L.	University of Maryland	Biometrics	Guatemala

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Doutt, R.L.	Independent Contractor	Entomology	Guatemala
Drummond, R.O.	Independent Contractor	Entomology, Tick Biology	Antigua
Dunkel, F.V.	University of Minnesota	Entomologist	Niger
Dyer, R.	Independent Contractor	Agricultural Aviation	Morocco
Eadie, K.	Conservation Foundation	Sociology	Guatemala
Edwards, C.R.	Purdue University	Entomology, IPM	Senegal, Mali, Pakistan, Afghanistan, India
Estrada, R.	IICA, Agricola El Sol	Entomology	Guatemala, Honduras
Fernandez, M.G.	IICA, Ecotecnia	Agriculture	Guatemala
Fischer, A.	Oregon State University	Weed Science, Pesticides	Panama, Gambia, Senegal, Morocco
Flynn, C.	The Urban Institute	International Health	Guatemala
Ford, R.	University of Illinois	Plant Pathology	India
Freed, V.H.	Independent Contractor	Pesticide Chemistry	African Sahel
Garcia, F.	Instituto Columbian Agropecuario	Entomology	Honduras
Gaunt, R.E.	Lincoln College	Agricultural Microbiology	Philippines
Gonzalez, A.R.	USAC - Guatemala	Land Use Resource Management	Guatemala
Heinrichs, E.	Louisiana State University	Entomology	Thailand

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Hellman, J.L.	University of Maryland	Entomology, IPM	Haiti
Hemming, C.	Independent Contractor	Locust Biology	Tunisia, Sudan
Henderson, J.A.	New Mexico State University	Aerial Application	Senegal, Gambia, Mauritania, Niger, Mali
Heong, K.L.	Malaysian Agricultural Research & Development Institute	Entomology	Philippines
Herald, R.J.	Independent Contractor	Logistics	Senegal, Gambia, Mauritania, Niger, Mali
Hernandez, F.L.	IICA, Ecotecnia	Agriculture Data Analysis	Guatemala
Higgins, M.L.	A.I.D./W	Entomology, IPM, Ecology	Grenada, El Salvador
Hoppin, P.	Conservation Foundation	Environmental Science	Guatemala, Costa Rica, Honduras, El Salvador
Huddleston, E.W.	New Mexico State University	Entomology	Senegal, Niger, Mali, Mauritania, Gambia
Huarte, R.E.	Agricola el Sol, Guatemala	Entomology	Honduras
Irwin, M.E.	University of Illinois	Entomology, IPM	Peru
Jensen, J.K.	Independent Contractor	Pesticides, Pesticide Disposal	Thailand, Malaysia, Sudan, Ethiopia, Somalia, Kenya, Yemen
Johnson, K.B.	University of Minnesota	Plant Pathology	Philippines

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Kauck, D.	Organization for Tropical Studies	Sociology	Morocco El Salvador
Kenmore, P.	FAO	Entomology	Philippines, Indonesia
Kepner, R.	South Dakota State University	Plant Science	Sudan
Khoury, H.	Independent Contractor	Entomology	Niger
Klarman, W.L.	North Carolina State University	Plant Pathology	Nepal
Knapp, J.L.	University of Florida	Entomology	Grenada
Kogan, M.	Oregon State University	Entomology	Brazil
Kolodny-Hirsch, D.M.	Independent Contractor	Entomology	Mali
Lincer, J.L.	Independent Contractor	Environmental Science	Antigua
Liot, C.	Independent Contractor	Data Management	Mali
MacKay, I.R.	Independent Contractor	Entomology	Morocco
MacVean, C.	Universidad del Valle, Guatemala	Entomology	Honduras
Mann, J.B.	University of Miami	Pesticide Chemistry	El Salvador, Bolivia, Haiti, Sudan, Guatemala, Dominican Republic, Belize, Ecuador, Dominica, Peru, Egypt
Marose, B.H.	University of Maryland	Weed Science, IPM	Grenada

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Matteson, P.C.	Independent Contractor	Entomology, IPM	African Sahel, Guatemala, Antigua, Morocco
Mazariegos, J.F.	ICAITI	Toxicology	Guatemala
McGlamery, M.D.	University of Illinois	Weed Science	Grenada
McWain, L.J.	Independent Contractor	Pesticide Chemistry, Formulations	Ivory Coast, Mali, Senegal, Kenya, Sudan
Miller, S.F.	Oregon State University	Economics, Weed Science	Guatemala, Costa Rica, Bolivia, Panama, Dominican Republic
Mitchell, W.C.	University of Hawaii	Entomology, IPM	Peru, Guatemala, New Caledonia
Murphy, C.J.	Independent Contractor	Project Management	Guatemala
Murphy, C.	Oregon State University	Entomology	Chad, Mali
Murray, D.	Texas Center for Policy Studies	Sociologist	Guatemala
Nepote, K.	University of Maryland	Veterinary Medicine	Antigua
Noetzel, D.M.	University of Minnesota	Entomology	Niger
Nutter Jr, F.W.	University of Georgia	Plant Pathology	Philippines
Odlum, M.	University of Maryland	Apiculture	Guatemala
Ouedraogo, G.	Agency to Facilitate the Growth of Rural Organizations	Economics	Niger
Overholt, W.A.	Texas A&M University	Entomology, IPM	Gambia, Senegal, Mauritania

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Paschke, J.D.	Purdue University	Entomology, IPM	Niger, Senegal, Burkina, Faso, Mali
Patten, S.	University of Minnesota	Anthropology	Niger
Philips, F.M.	Independent Contractor	Entomology, Locusts	Senegal
Pinto, L.	Independent Contractor	Entomology	Sudan, Guatemala
Pitty, A.	Escuela Agricola Panamericana	Plant Pathology	Honduras
Ponciano, I.	CECON, Ecotecnia	Wildlands Biological Diversity	Guatemala
Radcliffe, E.B.	University of Minnesota	Entomology	Niger
Ragsdale, D.W.	University of Minnesota	Entomology	Niger
Reid, J.C.	CARDI/Jamaica	Entomology	Jamaica
Reissig, W.H.	Cornell University	Entomology, IPM	Thailand, Yemen
Rivas, A.M.	Independent Contractor	Entomology, Pesticides	Chad
Roderick, G.	University of Maryland	Entomology	Philippines, Indonesia
Ross, P.	University of Illinois	Agronomy	Dominica
Sanderson, R.	New Mexico State University	Aerial Application Technology	Niger, Senegal
Schaefers, G.A.	Cornell University	Entomology, IPM	Belize, Sudan, Senegal, Ethiopia, Kenya, Mali
Schmidt, T.D.	Independent Contractor	Conference Facilitation	Thailand

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Schuster, J.	Universidad del Valle Guatemala	Entomology	Honduras
Schwartz, T.	Independent Contractor	Pesticides	Sudan
Seethaler, K.H.	Independent Contractor	Logistics	Senegal, Gambia, Mali, Mauritania, Niger
Segarra, A.	University of Maryland	Entomology	Jamaica
Segueira, A.	Rincon-Vitovz Inc. CA.	Biological Control	Honduras
Shenk, M.D.	Oregon State University	Weed Science, Pesticides	El Salvador, Honduras, Pakistan, Columbia, Panama, Guatemala, Bolivia, Costa Rica, Grenada, Sri Lanka, Dominican Republic, Mexico, Malawi, Uganda, Egypt, Kenya, Ecuador, Malaysia
Shepard, M.	Clemson University	Entomology, IPM	Malaysia
Steinhauer, A.L.	University of Maryland	Entomology, IPM	Egypt, India, Costa Rica, Honduras, Peru, Guatemala, Kenya, Ivory Coast, Brazil, Thailand
Stewart, S.O.	Universidad de San Carlos de Guatemala	Anthropology	Guatemala
Strayer, J.R.	University of Florida	Entomology Pesticides	Jamaica
Strzok, P.P.	Agency to Facilitate the Growth of Rural Organizations	Public Administration, Planning	Niger, Mali, Burkina Faso

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Teel, P.D.	Texas A&M University	Entomology (Ticks)	Antigua
Teng, P.S.	University of Minnesota, University of Hawaii, IRRI	Plant Pathology, IPM, Crop Loss Assessment	Thailand, Malaysia, Philippines, Indonesia, India
Theiling, K.	Oregon State University	Entomology	Chad, Mali
Thurston, H.D.	Cornell University	Plant Pathology, IPM	Peru
Tourigny, G.	Simon Fraser University	Entomology	Haiti
Trujillo, J.	Centro de Entomologia y Acarologia, Chapingo, Mexico	Entomology	Honduras
Villagran, E.	Independent Contractor	Economics	Guatemala
Voss, C.M.	Independent Contractor	Aerial Application	Senegal, Gambia, Mauritania, Niger, Mali
Waage, J.	C.A.B. International, CIBC	Entomology, Biological Control	Jamaica
Walker, P.T.	Independent Contractor	Crop Loss, Pesticide/ Pest Management	Philippines
Ward, C.	New Mexico State University	Entomology, IPM, Pesticides	Dominican Republic, Guatemala, Ecuador, El Salvador
Watson, T.	University of Arizona	Entomology, IPM	Guatemala
Weil, R.	University of Maryland	Agronomy	Ecuador

Table 9. (Cont'd) Personnel Contributing to the Project as Staff, Consultants or Volunteers from October 1, 1985 to December 31, 1991

Name	Affiliation at Time of Service	Expertise	Developing Country Experience During Project
Williams, D.	USDA-ARS	Ecology	Guatemala, Jamaica
Yates, W.	University of California-Davis	Agricultural Engineering	Sudan
York, A.C.	North Carolina State University	Weed Science	Peru
Zadoks, J.C.	Wageningen Agricultural University	Plant Pathology	Philippines
Zelaya, R.	Escuela Agricola Panamericana	Agricultural Education	Honduras
Zoebisch, T.	CATIE, Costa Rica	Entomology	Honduras
Zweig, G.	Independent Contractor	Pesticide Chemistry, Pesticide Disposal	Thailand, Malaysia, W. Samoa

Table 10. SUMMARY OF LEVEL OF EFFORT (PERSON-MONTHS)

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Activity Component

<u>Personnel Component</u>	<u>Training</u>	<u>Technical Assistance</u>	<u>Research</u>	<u>Networking</u>	<u>Total</u>
----- <u>For Report Year, Oct 91 - Dec 91</u> -----					
Project Technical Staff	00.30	00.30	00.30	00.00	00.90
Consultants	00.00	00.00	00.00	00.00	00.00
Support Staff	-----	-----	-----	-----	<u>04.00</u>
			TOTAL		04.90

----- <u>Cumulative From Project Inception, Oct 85 - Dec 91</u> -----					
Project Technical Staff	93.80	123.09	40.65	115.78	373.32
Consultants	20.25	137.97	99.18	00.90	258.30
Support Staff	-----	-----	-----	-----	<u>282.63</u>
			TOTAL		914.25