

I. PROJECT IDENTIFICATION

PROJECT TITLE: Pest Management and Related Environmental Protection - University of California

APPENDIX ATTACHED: YES NO

2. PROJECT NO. (M.O. 1025.1) 931-11-190-930

5. SUBMISSION: ORIGINAL REV. NO. 12/12/74 DATE

CONTR./PASA NO. CSD 3296

RECIPIENT (specify):
 COUNTRY
 REGIONAL INTERREGIONAL TA Bureau

4. LIFE OF PROJECT
 BEGINS FY 72
 ENDS FY Continuing

II. FUNDING (\$000) AND MAN MONTHS (MM) REQUIREMENTS

A. FUNDING BY FISCAL YEAR	B. TOTAL \$	C. PERSONNEL		D. PARTICIPANTS		E. COMMODITIES \$	F. OTHER COSTS \$	G. PASA/CONTR.		H. LOCAL EXCHANGE CURRENCY RATE: \$ US (U.S. OWED)		
		(1) \$	(2) MM	(1) \$	(2) MM			(1) \$	(2) MM	(1) U.S. GRANT LOAN	(2) COOP COUNTRY (A) JOINT (B) BUDGET	
PRIOR THRU ACTUAL FY	595							595	216			
OPRN FY 1975	283							283	85			
BUDGET FY 1976	300							300	77			
BUDGET 1977												
BUDGET 1978												
BUDGET 1979												
ALL SUBQ. FY												
GRAND TOTAL	1178											

OTHER DONOR CONTRIBUTIONS

NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT

III. ORIGINATING OFFICE CLEARANCE

DRAFTER TA/AGR, CJFredrickson	TITLE Project Manager	DATE
CLEARANCE OFFICER TA/AGR, LFHesser	TITLE Acting Director	DATE

IV. PROJECT AUTHORIZATION

CONDITIONS OF APPROVAL
 Approval beyond FY 1976 will be preceded by R&DC review of progress made, particularly as regards output indicators.

CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF.	SIGNATURE	DATE
ESA/TECH	John J. Young		AFR/NARA	Woodrow W. Leake	
W/TD/RD	D. Yeaman		TA/PM	C. Melfetto	
W/DR	C. Van Haeften	1/7/75	TA/PM	J. Gunning	
APPROVAL AAS/OFFICE DIRECTORS			4. APPROVAL A/AID (See M.O. 1025.1 VIC)		
SIGNATURE Curtis Farrar		DATE 1/2/75	SIGNATURE N.A.		DATE
TA, Curtis Farrar			ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT		

PROJECT TITLE: Pest Management and Related Environmental Protection

A. GOAL

1. Goal Statement

The explosive increase in the world's population with the consequent need to feed ever-increasing numbers of people, is compelling developing countries to search for ways and means to increase their food supply.

The goal to which this project is directed is to reduce losses of agricultural crops caused by pests, insects and diseases. A goal of equal priority is to improve the ecological conditions caused by efforts to eradicate or reduce causes for such crop losses.

2. Measurements of Goal Achievement

Goal achievement is measured through evaluation of the effects of the project on the following specific indicators:

a) Increased availability of agricultural products to local consumers. Verified by LDC records and inspection of local market places.

b) Reduced cost of agricultural products to consumer. To be verified by LDC marketing records.

c) Improvement of the socio-economic status of farmers, such as better housing, improved health care, more schooling for their children. This can be verified by inspection of farmers' living conditions, LDC records on the types of commodities purchased by farmers, total agricultural production, school enrollment.

d) Reduced number of farmers and consumers afflicted by toxic effects of pest control chemicals. To be verified by LDC medical records of people treated, and labor department records of man-days lost from work.

e) LDCs have institutionalized a capability for planning and implementing sound crop protection programs. Verified by the number of extension personnel working with and advising farmers, and the number of civil servants treating pest control problems as a primary concern.

f) Improved ecological conditions in farm areas. To be verified by inspection of areas and chemical tests to determine pollution caused by pesticides; also health clinic records.

3. Assumptions about Goal Achievements

a) that the LDCs will provide political and financial support to sound pest management programs.

b) that LDCs promulgate the necessary decrees or regulations to enforce pest management control programs.

c) that LDC farmers are willing to accept the government regulations on the use of pesticides.

d) that the LDCs will maintain adequate records to permit the evaluation of the results of this project.

e) that AID/W and the LDCs will continue to give priority and support to develop effective crop protection programs.

B. Purpose

1. Statement of Purpose

The purpose of this project is to instill within selected LDCs crop protection concepts which are ecologically and economically sound. This will permit the country response to pest problems to have a sound, scientific and economic basis and result in the maximum benefit for the country, with the least adverse environmental impact.

2. Conditions expected at the end of the project

a) Selected countries will have developed an awareness of the necessity for an ecological approach to pest and disease problems and will utilize this approach to solve their crop protection problems. The LDCs will have increased their capability of managing their crop protection problems but will still need technical assistance for specific pest problems.

b) Through the efforts of the crop protection officer, a beginning in a second level of applied crop protection effort will have been made with the ultimate goal of bringing awareness and coordination among the various crop protection specialists in the countries involved.

c) At least six selected LDCs will have the skilled personnel necessary to establish local pesticide management training programs.

d) Pesticide monitoring teams to regulate use of pesticides will have been trained in at least six selected LDCs.

e) Adaptive research activities will be promulgated by some LDCs as new needs develop.

3. Assumptions prerequisite to achievement of purposes

a) that LDCs will have sufficient foreign exchange to purchase foreign-made pesticides and application equipment.

b) that LDCs will enforce regulations on application and handling of pesticides.

c) that the LDCs will utilize the technical assistance and recommendations provided by the contractor to develop ecologically and economically sound pest and pesticide management systems.

d) that the identification by LDCs of crop protection problems will result in increased requests to USAIDs and AID/W for technical assistance and training.

e) that the chemical industry will cooperate and support this effort.

f) that cultural factors within each country will not preclude the implementation of recommendations provided by the contractor.

C. Output Statement and Output Indicators

1. The following explicit outputs are expected if the later mentioned inputs are provided.

Output indicators	Output targets	
	FY 75	FY 76
a. Prototype training courses in Pest Management presented	3	3
b. LDC technicians trained in Pest Management	450	525
c. Technical assistance services requested by USAIDs, LDCs and AID/W	as requested	
d. Pest and pesticide manuals prepared	1	1

2. Assumptions which must be made in order to produce the outputs are:

a. that LDCs will provide the necessary qualified personnel for training in pest management and pesticide control.

b. that pesticides are made available to the farmers at a cost within their means.

c. that each LDC will assign sufficient trained extension workers to assist farmers with pest management and pesticide handling.

D. Inputs and Input Indicators

Inputs	Input Targets	
	FY 75	FY 76
a. Personnel Training Support Team with staff and additional consultants	56 MM	48 MM
b. Established center of resources for information, training and technical support	1 (continuous)	
c. AID/W financial support	\$283,000.	\$300,000.
d. LDCs provide technical personnel for training and operations	450	525
e. USAIDs and/or LDCs provide logistic support to contractor in-country	as required	
f. International organizations collaborate with contractor in training. (FAO, WHO, CIAT, etc.)	2 MM	2 MM
g. Technical Assistance to Missions through consultants	8 MM	8 MM
h. Specialists for overseas workshops	21 MM	21 MM

E. Narrative

1. Rationale for Project

The world has seen in recent years an amazing change in the race between food production and human population increase. Tremendous gains in food production have occurred in many parts of the world and this trend is expected to continue. This widely publicized phenomenon,

often termed the "Green Revolution," has resulted from a combination of many factors; the chief among them are: (1) the introduction of new high-yielding crop varieties, (2) the availability of purchased production inputs, e.g., fertilizers, pesticides, tractors, (3) new crop management technology (including double and multiple cropping), (4) improved irrigation capability and (5) the long-term cumulative effect of development efforts by national governments and international agencies. It should, of course, be recognized that a part of the gains in food production in some years have also been the result of favorable weather.

The system of traditional agriculture, which is characteristic of many areas in developing nations, is beginning to give way to modern agricultural technology. Traditional agriculture with its small fields sparsely planted with seeds of mixed genetic types is not as readily exploitable by endemic plant pests as are modern "monoculture" systems. The mixed culture also provides some protection against climatic adversity and attack by new pests because of its inherent heterogeneity. Furthermore, plants grown under the tillage system of traditional agriculture are generally not as susceptible to some pests as those developed under more favorable conditions for growth.

Pressured by a multitude of ubiquitous pests over many centuries, man's crop plants have become adapted through natural selection to the selective pressures of these traditional agricultural systems (agroecosystems). This state is stabilized by an array of genetic

factors for high yield combined with tolerance to low fertility, pest attack and other environmental stresses. Moreover, these traditional systems usually represent an efficient allocation of man's available resources and rarely respond to additional investment of resources without accompanying introduction of new technology for increased production. This means that if modern pest management practices are imposed on traditional agroecosystems without also increasing the basic production potential, the investment will not be profitable; on the other hand, new crop protection inputs may be needed most critically where the traditional agriculture has been modified by introduced technology, e.g., new varieties and fertilizers.

As contrasted to traditional agriculture, modern agriculture is a more intensified system that integrates capital inputs with management technology to maximize production per unit of area at minimum cost per unit of production, hopefully on a continuing basis. Many of the practices developed to achieve this goal contribute significantly to increased plant pest problems and thus may prevent achievement of the goal. For example, plant introduction and exchange has resulted in varieties with higher yields, resistance to pests and other desirable qualities; but this plant movement may carry with it new pests and disease pathogens and the introduced plant types may be susceptible to indigenous pests and diseases. Modern monocultures frequently involve only a single plant variety with a very narrow genetic base thus enhancing their vulnerability to devastation by pests and disease. Plant breeding and selection often place major emphasis on a single

or very few qualities; consequently history records many examples of new varieties highly susceptible to previously innocuous pests or to new pest strains. Vegetative propagation, e.g., bananas and potatoes, has the real disadvantage of disseminating serious pathogens through infected or infested stock.

In addition, many cultural practices of modern agriculture may enhance susceptibility to disease or attack by insects. These include (1) fertilization which produces larger and more succulent plants that are often more susceptible to disease or insect damage than plants grown at lower nutritional levels; (2) irrigation which favors many disease and insect pests as contrasted to the fluctuating soil moisture levels under natural rainfall condition; (3) tillage and other soil manipulations which are often an important factor in increasing the incidence of disease as compared to no-tillage or limited tillage cultures; (4) double and triple cropping which promote rapid increase of pest populations; and (5) more dense plant populations with resulting micro-environment changes that favor the development of some pests. These same cultural practices may at times inhibit certain other pests, but in general, the balance is one favoring increased pest and disease incidence.

The "Green Revolution" has introduced many of these practices into the developing nations at a very rapid rate, and the pace of the process promises to quicken in the future. The rapidity by which these practices have been adopted and the increased production which resulted have been both surprising and gratifying. Motivated by the increased

production with the new practices, many developing countries and international organizations have placed increased emphasis on the development and introduction of new agricultural technology. These modernizing practices, which also enhance the potential for destructive pest attacks, are being introduced without proper attention to crop protection as a component of agricultural development programs. This is not to question the validity of these developments--there is now no other alternative. The fact remains that the changed agroecosystems resulting from the introduction of new methodologies produce shifts in and very often an intensification of pest and disease problems. This proven hazard is not today properly reflected in most of the development programs around the world. There is mounting evidence indicating that pest and disease problems in the developing countries are becoming more severe, indeed in some cases devastating, as the modern practices are introduced. Unless bold measures are taken to protect the food crops of developing nations against the ravages of pests and diseases, the production gains realized recently could vanish and hope for the future could be lost. Along with the introduction of new production technology, the introducers and the recipient developing nations must assure the development of an adequate crop protection response capability in order to protect the food production gains. This must involve significant effort in the training and retraining of crop protection and pest management specialists, and the education of the general public and farmers as to the significance of crop protection to their welfare.

As part of modern concern with the quality of the environment, we must take into account crop protection activities as they may have direct and indirect impact on the environment. This is true if for no other reason than that it is almost impossible to do anything within an environment without having a secondary and often unexpected impact on that environment. Some pest and disease control activities, especially those involving use of pesticide chemicals, may have a significant impact on environmental quality or stability in an agroecosystem. However, we should not become obsessed with these disruptive influences on environmental quality resulting from pest control activities for they are relatively minor as compared to other disruptive aspects of man. It would be better if these negative aspects of pest control would be examined as just one of the many considerations as better methods of managing the environment, including improved pest control, are sought. This more positive approach can contribute to an enhanced environment and at the same time to the improved nutrition and health of man in all parts of the world.

2. Project History

The original contract with the University of California to implement the project on "Pest Management and Related Environmental Protection" was initiated in July of 1971 and has been extended to December 1974. The project was conceived in two phases,--the first to make on-the-ground surveys in seven geographical areas, to identify priority problems, to produce several training and reference manuals and to pin-point training and research to be carried out in the second phase.

The seven area study teams were assembled, the surveys made, and in-depth discussions were held with pest control specialists in many U.S. universities, in AID/W, the USDA, and international agricultural organizations. Priority needs for the immediate future have been identified.

The study teams reported many problems concerning specific pests on specific crops in their regions of study. The most frequently reported constraints of a generic nature related to:

- a) prevalence of nematodes
- b) rampant weeds
- c) reckless handling of pesticides, lack of concern for residues on marketed produce, little or no government regulation of pesticide registration, labeling and use;
- d) lack of up-dated training for pest control specialists, and extension and middle-level personnel concerned with pest control;
- e) lack of up-to-date library or reference facility.

At AID's program submission summer review in 1974, it was determined that the breadth of needs was greater than should be handled by one contractor, so some of the research components were pared from the original scope of work. This reduced the anticipated budget needs from \$713,000 per year to \$283,000 for FY 75 and \$300,000 for FY 76. Research to attack the nematode problem, item a), above, is being actively processed by AID with North Carolina State University as the possible contractor. The weed problems, item b), fall under a contract with Oregon State University. The contractor under this project will continue the follow-through on Phase I surveys and the pursuit of the problems implicit in c), d), and e) above,

and the general technical service component.

3. Progress to Date:

The contractor's Advisory Group comprises some of the most outstanding pest management specialists in the United States. The strategy was developed to send multidisciplinary teams to 39 countries in seven geographic areas to determine the priority problem areas. These teams have completed their studies, published their reports, and made recommendations for adaptive research, extension training, pesticide and pest management workshops, needed manuals of instruction, and the necessity for response capability in technical counseling.

The publications resulting from these surveys are:

Pesticide Manual (2-vol) by Von Rumker and Horay (Handling and use of pesticides, Basic information on 35 pesticide chemicals Specification)

World Directory of Plant Pathologists, edited by F. E. Fisher

Plant Protection Problems in Southeast Asia

Plant Protection in Turkey, Iran, Afghanistan, and Pakistan

Crop Protection in Senegal, Niger, Mali, Ghana, Nigeria, Kenya, Tanzania and Ethiopia

Crop Protection in Brazil, Uruguay, Bolivia, Ecuador and the Dominican Republic

The Crop Protection Situation in Guatemala, Honduras, Nicaragua, Costa Rica, Panama and Guyana

Plant Protection in Turkey, Iran, Afghanistan and Pakistan

A preliminary Study of Crop Protection Problems in Selected Latin American Countries

Crop Protection in the Mediterranean Basin

Weed Science in the Developing Countries of the World

Pest Management and the Efficient Use and Safe Handling of Pesticides in South Vietnam

The publications listed on page 12 were initially distributed to the governments of the countries concerned and all USAID Missions, as well as to TA/ACR and the Regional Bureaus of AID/W. There have been subsequent requests for additional copies from the Missions where much of the material serves as reference resource in planning and training by the host governments and AID personnel. Workshop reports are being used as a basis for planning workshops in other regions. An indication of the collateral value of these reports was evidenced at an AID/W conference on Sahel Crop Pest Management in December 1974. Parts of the Sasser report were used as the basis for short and long-term assistance to the Sahel countries and part of the Sasser report has already been quoted in a December 1974 meeting in AID/W to attack Sahelian insect ravages.

The project sponsored a successful workshop seminar in El Salvador in December 1973 at the request of the Ministries of Health and Agriculture in that country. About eighty participants, many from outside El Salvador, were given training in the various aspects of safe handling and use of pesticides, and integrated pest control. This seminar has prompted requests from the government of El Salvador for follow-up training in gas chromatography for pesticide residue analysis and other means to alleviate the serious problems experienced in Central America related to the improper use of pesticides. A report of this seminar has been published as "Management of Pesticides and Protection of the Environment - A Report on a Seminar".

A similar seminar was conducted in Jakarta for about 400 participants in July 1974 at the request of the Indonesian government. Also supporting with the logistical requirements were FAO, WHO, the pesticide industry, USAID/Jakarta and AID/W. Again, the results have been most encouraging,

to the point that another workshop has been scheduled for the Philippines in February 1975.

Emphasizing an integrated approach to pest control activities, the workshops held thus far have engaged technicians from Ministries of Agriculture, Ministries of Health, and representatives from the private sector chemical industry. While there has been some high level official participation, the majority of those attending have been technicians at the implementation level. The contractor has received many technical inquiries from participants in the first workshop, indicating an increased awareness of problem areas and an interest in attacking them.

The experience to date has led to the development of a prototype for future seminar-workshops which can be held in other developing countries, utilizing the expertise of the nationals who have been trained in one of the original workshops. This should promote the LDCs own capability to attack many of their pesticide and pest management problems.

F. 1. Proposed Course of Action for the Immediate Future

It is clear that enhanced crop protection response capability is an essential requirement for increased food production in the developing countries. This enhanced capability will assist both in securing the gains achieved and to be achieved through the "Green Revolution" and by reducing the severe food losses to pests and diseases. To improve significantly crop protection response capability, an immediate and broad attack on the problem must be made including, a) training and retraining of crop protection and pest management specialists; b) education of farmers and the general public in crop protection matters; c) in-country institution building; d) development of implementation technology for crop protection

systems; and e) adaptive research approached on a collaborative, multi-country basis to develop crop protection solutions suitable for farm-level usage.

2. Implementation Plan

To achieve the purpose of this proposal, the University of California in cooperation with the collaborating universities and AID/W, will continue to make available a nucleus of highly qualified professionals and non-professionals in the crop protection and pesticide management fields. This group will provide a source of expertise utilized by USAID and developing countries in addressing specific problems of crop protection and pesticide management. By means of surveys, reviews, consultation, etc., members of the group will upon request assess situations and provide reports, recommendations and assistance to the developing countries involved. The University of California will act as the center of information and provide training in crop protection and pesticide management as well as research in this field that would be applicable to problems in developing countries. To most efficiently utilize the expertise of the other collaborating universities the University of California will subcontract portions of the above activities with the concurrence of AID/TA/AGR. The project activities will be monitored and co-ordinated by AID/TA/AGR.

The key aspects of the proposal are as follows:

a. Training Activities

Many crop protection administrators, researchers, teachers and extension workers in developing countries received their formal training during the fifties and early sixties when an over-reliance was placed on pesticide chemicals for crop protection. In addition, many of these same scientists were trained in sophisticated university laboratories quite unlike

the ones usually available to them in their home countries. Many of these crop protection personnel are becoming increasingly aware of the importance of a broad ecological approach to crop protection and the significance of an intensified attack on practical problems threatening food production. Their earlier training is inadequate to meet these new goals and much additional training will be needed. A great variety of tactics are available to achieve these training objectives, including short courses, workshops, conferences, short-term consultants, and most importantly, active participation in collaborative research projects in the developing countries. Future training of additional crop protection specialists for the developing countries should be focused on the special needs within their own agricultural systems and should also emphasize locating the training in the developing areas.

(1) LDC Workshop on Pesticide Management: A 3 week prototype seminar in pest and pesticide management is being planned for the Philippines and Pakistan in FY 1975.

In addition to the seminar training, professionals from LDC public health, crop production, biology and chemistry will be given training as a team, at appropriate centers in the United States. The number of participants will depend on USAID funding support. Upon return to their country, they will be assisted by the contract personnel in the development of necessary laboratory facilities in order to implement their country programs.

(2) Regional Workshop on Integrated Control of Insect Pests to be given in Peru during 1975. The six-week course will provide training

in ecological methods as a basis for the development of integrated control principles. The countries and number of participants involved will be determined in collaboration with the Latin America Bureau and the USAIDs. Special emphasis in the course will be placed on the following items: Environmental factors influencing pest incidence and prevalence, economic loss levels, evaluation of natural control, mortality of natural enemies from pesticides and other adverse effects, ecological diversity, resistant plant varieties, cultural controls, selective pesticides, maintaining minimum levels of pests, and the development of extension programs in plant protection.

Upon completion of this training indicated above the participants will be prepared to conduct training of subject matter specialists in country who in turn will be advising and training small farmers in pest management. In addition these participants will promote the development of a Pest Management Control Agency and draft laws and regulations governing controls of pesticides.

Three additional Pest and Pesticide Management Workshops will be held in selected LDCs in 1976. Areas under consideration are regional workshops in Central America, East Africa, and South America.

b. Technical Assistance

In cooperation with AID/W the contractor will provide technical assistance to USAID missions and cooperating countries in crop protection and environmental monitoring, depending upon incoming requests from Regional Bureaus, USAIDs and LDCs. Such assistance is of short term nature and involves specific pest problems.

c. International Crop Protection Center

This center will continue to prepare, edit and reproduce written and illustrated instructional, informational and reference publications on the several administrative and technical aspects of crop protection and pesticide management for use by AID and cooperating countries.

d. Evaluation Plan

The project was reviewed and evaluated by the TAB Research and Development Committee on December 10, 1974. The project proposal was approved with minor changes which have been incorporated in this document.

The following is the plan of action to evaluate the contractor's performance

1. Technical reviews will be conducted in February 1976. Such review will be based on contractor's semi-annual report, Contractor's Progress Reports and USAIDs receiving contract services during the reporting period will be required to submit evaluations of contractors performance which enter into the annual evaluation.

The technical review will be made by a technical committee composed of Project Manager, representatives of TA/PM, TA/AGR Regional Bureaus Contracting Office, USDA and outside consultants.

A project appraisal report will be submitted by the project manager within 30 days.

2. An indepth Technical and Policy evaluation of the project will be made in October 1976 by the Technical Committee.

The findings and recommendations will be presented to the TAB Research and Development Committee in December 1976 for deliberations and comments for extending the services contract.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:

From FY _____ to FY _____

Total U. S. Funding _____

Date Prepared: _____

Project Title & Number: _____

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes: To increase the quantity and quality of food available and and to reduce food costs to consumers through technical assistance on pest management and integrated control.</p>	<p>Measures of Goal Achievement: a) Increase in availability of agriculture products to consumers; b) Improved socio-economic status of farmers; c) Institutional capability for implementing health and crop protection programs.</p>	<p>a) LDC records and on-site inspection; b) LDC records on expenditures by farmers.</p>	<p>Assumptions for achieving goal targets: a) LDCs provide political and financial support; sound pest management programs; b) LDCs will provide necessary support; c) LDCs develop well-trained professional staff to generate solutions for the country needs.</p>
<p>Project Purpose: The overall purpose of this project is to install within LDCs ecologically and economically sound crop protection concepts so that country response to pest problems will have a sound scientific and economic basis and result in the maximum benefit for the country with the least environmental impact.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status. a) Countries develop awareness and capability to manage pest and disease problems; b) Diffusion of crop protection practices to crop protection specialists; c) Countries develop pesticide monitoring facilities and establish regulations on pesticide use.</p>	<p>a) Logistics support provided records and on site-inspection; b) Verified by sale of pesticide in production areas and decrease crop losses; c) Regulatory agency established and regulations promulgated.</p>	<p>Assumptions for achieving purpose: a) LDCs recognize need for acquisition and dissemination of technical knowledge on pest and disease control; b) LDCs will have funds to provide logistical support and professional staff to the program; c) that the local chemical industry will cooperate in manufacture of pesticide.</p>
<p>Output 1. Trained pest and pest management instructors; b. Availability of instructional and technical information; c. LDCs have established effective Pest Management Agencies; d) Effective regulations on pest control and use of chemicals.</p>	<p>Magnitude of Outputs: a. FY 75 - 450, FY 76 - 525; b To cooperating LDCs; c. FY 75 - 3, FY 76- 3. d) Farmers utilizing pesticides properly.</p>	<p>a) Reports by contractor; b) Distribution of records maintained by AID/W; c) Report by USAID and contractor; d) On-site inspection, records and reports.</p>	<p>Assumptions for achieving outputs: a) LDCs will provide logistical support and participants; c) LDCs accept contractor's recommendations; d) Farmers accept use of pesticides and enforcement of regulation by LDC government officials.</p>
<p>Input 1. AID/W financial contribution; b. A four man core team supplemented by other staff and consultants; c) Training seminars/workshops; d) Center of resources for providing information for training and technical guidance; e) LDCs provide technical personnel to be trainers, pesticides, laboratory facilities and funds.</p>	<p>Implementation Target: (Type and Quantity) a. FY 75 - \$283,000, FY 76 - \$360,000 b. 25 (MM) for FY 75, 77 (MM) for FY 76; c. FY 75 - 3, FY 76 -3; d. As requested; e. Depending on capability of LDC.</p>	<p>a) AID/W program documentation; b) Contractor's report; c) Contractor's reports; d) AID/W records on distribution of information; e) Contractor's report.</p>	<p>Assumptions for providing inputs: a) Approval of availability of funds; b) Missions submit request for services; c) LDCs interested and able to send participant to seminar; c) Requests received from LDCs; e) LDC interest in pest management program and has financial resources.</p>

PROPOSED BUDGET

University of California, AID/csd 3296

	<u>Jan 1 -</u> <u>Dec 31, 1975</u>	<u>Jan 1 -</u> <u>Dec-31, 1976</u>
1. Salaries	\$ 81,588	\$ 85,667
2. Consultants	25,000	26,225
3. Fringe Benefits	11,493	12,067
4. Overhead	34,573	36,291
5. Travel and Transportation	30,000	31,500
6. Other Direct Costs	15,000	15,750
7. Equipment	2,346	2,500
8. Seminars and Workshops	83,000	90,000
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	\$ 283,000	\$ 300,060