

9310206 (2)  
70-446-681-61

<b>AGENCY FOR INTERNATIONAL DEVELOPMENT</b> <b>PROJECT PAPER FACESHEET</b> TO BE COMPLETED BY ORIGINATING OFFICE		<b>1. TRANSACTION CODE</b> ("X" appropriate box) <input checked="" type="checkbox"/> Original <input type="checkbox"/> Change <input type="checkbox"/> Add <input type="checkbox"/> Delete	<b>PP</b>  <b>DOCUMENT CODE</b> 3
<b>2. COUNTRY/ENTITY</b> TA/Bureau                      GTS		<b>3. DOCUMENT REVISION NUMBER</b>	
<b>4. PROJECT NUMBER</b> 931-130-206-	<b>5. BUREAU</b> a. Symbol                      b. Code TAB                              6		<b>6. ESTIMATED FY OF PROJECT COMPLETION</b> FY 7   9
<b>7. PROJECT TITLE - SHORT</b> (stay within brackets) <input type="checkbox"/> Weed Control Systems <input type="checkbox"/>		<b>8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION</b> a. INITIAL <sup>mo. yr.</sup> [4   76]    b. FINAL FY [7   8]	

**9. ESTIMATED TOTAL COST (\$000 or equivalent, \$1 = )**

a. FUNDING SOURCE	FIRST YEAR FY _____			ALL YEARS		
	b. FX	c. L/C	d. Total	e. FX	f. L/C	g. Total
<b>AID APPROPRIATED TOTAL</b>						
(Grant)	(    )	(    )	(    )	(    )	(    )	(    )
(Loan)	(    )	(    )	(    )	(    )	(    )	(    )
Other						
1.						
U.S.						
2.						
<b>HOST GOVERNMENT</b>						
<b>OTHER DONOR(S)</b>						
<b>TOTALS</b>						

**10. ESTIMATED COSTS/AID APPROPRIATED FUNDS (\$000)**

a. Approp-riation (Alpha Code)	b. Primary Purpose Code	c. Primary Tech. Code	FY 76		FY 77		ALL YEARS				
			d. Grant	e. Loan	f. Grant	g. Loan	h. Grant	i. Loan	j. Grant	k. Loan	
			120		231		325			1,055	
<b>TOTALS</b>			120		231		325			1,055	

**11. ESTIMATED EXPENDITURES**                      1,055

**12. PROJECT PURPOSE(S)** (stay within brackets)     Check if different from PID/PRP

Provide a response mechanism for meeting USAID and LDC requests for training weed scientists, improving the interchange of information, identifying the magnitude of important aquatic weed problems and developing integrated systems for their control.

**13. WERE CHANGES MADE IN BLOCKS 12, 13, 14, or 15 OF THE PID FACESHEET? IF YES, ATTACH CHANGED PID FACESHEET.**

Yes                       No

<b>14. ORIGINATING OFFICE CLEARANCE</b>		<b>15. Date Received in AID/W, or For AID/W Documents, Date of Distribution</b>  mo.   day   yr.
Signature  Title Ray B. David Jr Director, Office of Agriculture	Date Signed mo.   day   yr. FEB 19 76	

AID 1330-4 (7-75)

120  
231  
325  
676

Proj. No. 9310 206  
PN-

MEMORANDUM

DATE: March 17, 1976

TO : AA/TA, Mr. Curtis Farrar  
FROM : TA/PPU, John N. Gunning  
SUBJECT: Technical Assistance in Weed Control - Oregon State University Project Paper

Problem: Technical assistance has been provided to LDCs as a component of the research contract with Oregon State University (OSU), since 1966. This service is now being proposed as a separate activity.

Discussion: During the AA/TA review of the OSU Weed Control research project on July 7, 1975, the feasibility of separating the GTS activity from research was discussed. It was agreed that the heavy demand for technical assistance was detracting from the research effort and that the two activities should be presented as separate projects. The AA/TA recommended that no funds be provided for the GTS project in FY 1976. The PID was approved by the AA/TA on November 3, 1975 for funding to commence in the T.Q.

However, because of the RAC recommendation and increasing requests from the USAIDs and LDCs for technical assistance, it was decided to initiate the GTS activity as a separate project in FY 76. You concurred with this course of action during your review of the TA/AGR FY 1977 Congressional Presentation. Sufficient funds were reprogrammed to permit a start April 1 and to carry the contract until T.Q. funds become available.

Since this is a Utilization and Field Service project in an important area concerned with food production, we expect that the project will continue beyond the period stated in the attached project paper. Extension of the project past FY 1979, of course, will be subject to favorable results of an evaluation of contractor's performance, demands for services from the field and approval of a revised project paper at that time.

The project was reviewed and endorsed by the R&DC on March 9, 1976.

Recommendation: We recommend that you approve the project paper by affixing your signature.

Approved CF Date 3/29/76

Disapproved \_\_\_\_\_ Date \_\_\_\_\_

Clearance:  
PPC/DPRE, A. Handly AH  
PPC/DPRE, H. Sharlach HS

## PROJECT PAPER (PP)

for

### WEED CONTROL SYSTEMS UTILIZATION FOR REPRESENTATIVE FARMS IN DEVELOPING COUNTRIES - - GTS COMPONENT

#### 1. Contribution of, and need for, these services:

Since 1966 Oregon State University (OSU) has been under contract with AID to carry out a weed control program - weighted toward research. Recently the contractor focused on developing and evaluating weed control systems for representative farms in developing countries, with emphasis on small- and medium-size farms. This research work has been concentrated in El Salvador, Central America, and Brazil. Under the current research contract, OSU has conducted technical assistance activities through distribution of publications, fielding survey teams, providing expert technical assistance, and conducting workshops. A program for weed control is proposed consisting of research and general technical assistance projects, each with its specific objectives and budget. The two components are interlocked into a common framework necessitating consideration of the program as a single entity. The GTS project is contained herein. The research project has been approved in a separate proposal.

The goal is to increase food production on small- and medium-sized farms in the LDCs by decreasing the loss of production caused by weed infestations. This goal can be achieved by (1) increasing the number of trained weed control specialists by the use of on-the-job training, workshops, and dissemination of subject publications, (2) supplying technical response through expert assistance to country integrated weed control problems, (3) making available various weed information publications to all LDCs upon request, and (4) developing integrated weed control systems in target areas.

Contractor has developed institutional and staff weed control capabilities in LDCs which contributed to increased agricultural production. OSU has developed weed control systems for small- and medium-size farms in LDCs which encompassed traditional and modern techniques or combinations. Also they have evaluated the resulting systems in terms of effects on both economic and social conditions and goals, such as economic efficiency, unemployment, and income distribution.

In order for LDCs to raise production levels, the application of new technologies and methods in weed control developed under the research projects is essential. To be useful, its technologies must be socially

PROJECT PAPER (PP)

for

WEED CONTROL SYSTEMS UTILIZATION FOR REPRESENTATIVE FARMS IN  
DEVELOPING COUNTRIES - - GTS COMPONENT

1. Contribution of, and need for, these services:

Since 1966 Oregon State University (OSU) has been under contract with AID to carry out a weed control program - weighted toward research. Recently the contractor focused on developing and evaluating weed control systems for representative farms in developing countries, with emphasis on small- and medium-size farms. This research work has been concentrated in El Salvador, Central America, and Brazil. Under the current research contract, OSU has conducted technical assistance activities through distribution of publications, fielding survey teams, providing expert technical assistance, and conducting workshops. A program for weed control is proposed consisting of research and general technical assistance projects, each with its specific objectives and budget. The two components are interlocked into a common framework necessitating consideration of the program as a single entity. The GTS project is contained herein. The research project has been approved in a separate proposal.

The goal is to increase food production on small- and medium-sized farms in the LDCs by decreasing the loss of production caused by weed infestations. This goal can be achieved by (1) increasing the number of trained weed control specialists by the use of on-the-job training, workshops, and dissemination of subject publications, (2) supplying technical response through expert assistance to country integrated weed control problems, (3) making available various weed information publications to all LDCs upon request, and (4) developing integrated weed control systems in target areas.

Contractor has developed institutional and staff weed control capabilities in LDCs which contributed to increased agricultural production. OSU has developed weed control systems for small- and medium-size farms in LDCs which encompassed traditional and modern techniques or combinations. Also they have evaluated the resulting systems in terms of effects on both economic and social conditions and goals, such as economic efficiency, unemployment, and income distribution.

In order for LDCs to raise production levels, the application of new technologies and methods in weed control developed under the research projects is essential. To be useful, its technologies must be socially

and economically acceptable to all levels of the rural community, including the small- and medium-size farms. Therefore, this project will concentrate on the need to: (a) encourage and help develop institutions responsible for weed control, such as weed societies and responsible ministries in LDCs, (b) identify and train weed control specialists, (c) stimulate information flow and communications in the weed science community, (d) further adapt weed control systems for small- and medium-farms, (e) assess the economic and social impact of new weed control technology. The project will provide the expert services to respond to LDC and Mission requests in these areas.

## 2. Services to date:

Under the existing contract, during the last three-years, the work/months each year devoted to GTS activities have been approximately:

Home Office Professional	32
Home Office Nonprofessional	25
Field Staff Professional	24.

Services provided have been and shall continue to be:

- Training weed scientists.
- Improving flow, scope, and interchange of weed control information.
- Encouraging utilization of integrated weed control programs.
- Promoting awareness of weed related damage to crop production.
- Organizing and conducting weed control short courses.
- Providing short term technical expertise to LDCs.
- Promoting safety in utilization of herbicides.
- Publishing a newsletter on weed science information.
- Promoting establishment of weed science societies.
- Editing multilingual weed science bulletins and publications.
- Developing training programs for LDC weed institutions.
- Conducting in the field weed control demonstrations.

- Holding field days and tours of weed research activities.
- Conducting weed control demonstrations on farmers' fields.

An in-depth evaluation of this activity will take place within two-years and prior to the need for decisions on further continuation. The evaluation team will include at least one member from a regional bureau or AID Mission. Evaluation will be based on the number of weed control scientists trained, the conduct and results of planned workshops, the request and response to country weed problems, and the level of information dissemination.

Quantification of project effect in developing countries - greater practice of more effective or efficient weed control resulting in higher production, with attendant socioeconomic conditions acceptable to the government - is virtually impossible in the short range. No single measurement device seems appropriate for systematically assessing improvement.

Evaluation, therefore, will necessarily be restricted to a review of reports and quality of services performed, the attitude or actions of those developing countries' citizens who have had contact with project activities, and other forms of feedback. In the latter category acknowledgments and thank you letters for publications received and a continuing dissemination of weed control research information.

Experience indicates that host government interest is another clue to project worth. Periodic reviews by AID personnel and by others provide useful opinions of project activity, as well as surfacing areas in which operations can be modified and strengthened.

### 3. Evaluation of Services:

GTS services provided by the contractor have been excellent. Impact of the project can be measured by the successful efforts to train counterparts in proper methodology for weed control activities; by the promotion of practical and safe usage of herbicides through training programs; by encouraging consideration of regulatory laws and the ecological and environmental aspects of the programs; and through the continued development of a worldwide communications network for weed control specialists. The success of this project has depended, and will depend, on the provision of information to growers and farmers. This has been done effectively through in-country training programs, seminars, field days, and demonstration plots. Other project utilization activities were: Information dissemination, publications, economic analyses and linkages with

other weed research institutions. Contractor has prepared publications such as Prevalent Weeds of Central America, Weed Science Research Field Manual, Tropical Weeds, Aquatic Weeds and Manual of Pesticide Application Equipment. As further evaluation of the services of the contractor the following is quoted from page nine of the April 1975 Project Appraisal Report:

"The opinion of the technicians who reviewed the project is that they are following work plans, are on schedule with their research activities, have developed useful information, have trained counterparts, have undertaken outreach activities in neighboring LDCs, have developed excellent plants for future activities, recognize the socioeconomic impacts and, overall, have performed in an outstanding manner."

#### 4. Accomplishments:

##### A. Training

##### (1) Trained Scientists

Eighty-eight weed control scientists have been trained by OSU during the life of the contract in Latin America. Trained scientists refers to personnel having benefited from prolonged on-the-job training and capable of performing one or more weed control activities without supervision.

	<u>1/</u>		
Colombia	30	Guatemala	2
El Salvador	11	Honduras	2
Brazil	12	Nicaragua	2
Ecuador	7	Argentina	2
Costa Rica	6	Venezuela	2
Peru	5	Paraguay	1
Bolivia	3	Panama	3

Total 88.

##### (2) Training Workshops in 1973-74-75.

(a) Philippines	10 participants
(b) Malaysia	15 participants
(c) Thailand	15 participants
(d) Indonesia	25 participants
(e) CIAT	31 participants (from 12 LA countries, one-month duration)

---

1/ 19 went on to advanced degrees.

- B. Dissemination of publications, data, information letters in 1974. Approximately same level or higher in 1975.  
 Data - 300 requests acknowledged from 60 countries.  
 Publications - 2,250 copies of 11 publications distributed (at cost to private sector, support gratis distribution to LDCs).  
 Information letters - 4,000 delivered to 120 countries of at least 4 letters/year.
- C. Institution building as a direct result of OSU participation, advice, and council.
- (1) Weed Societies:
- Colombian Weed Society.  
 Latin American Weed Society, ALAM.  
 Asian Pacific Weed Society, OSU on Executive Board.  
 International Weed Science Society, formed at Corvallis in 1974 with OSU serving as Secretariat.
- (2) Increase in Central American experiment stations working on weed control since OSU involvement: 15 in 5 countries.
- D. Weed Control Trials on various food crops in Latin America.
- (1) During life of project: 300 experiments equaling over 25,000 plots.
- (2) Experiments in Brazil and El Salvador in 1974 in support of socioeconomic research to find most efficient weed control systems: Brazil - 1,200 plots ; El Salvador - 800 plots.

##### 5. Expected Trend :

The expected trend can be determined by study of the project purpose which is: to provide upon request of USAID and LDCs the expert services needed to improve the interchange of information and by identifying the magnitude of important aquatic weed problems and developing integrated systems for their control.

Trends include phase out of activities in Brazil by June 1976, Central America harvests remain an area of continued concentration. The contractor will assist in development of a National Weed Science Research Institute (NWSRI) in Thailand and provide increased training and institution building on a worldwide basis.

Discussion with Regional Bureaus and requests from LDCs have resulted in the inclusion of aquatic weeds in future project work. Through a subcontract with the University of Florida, short term consultants will be made available in all areas of aquatic weed activities. In total, 12 work/months will be available each year for this service. The initial effort will be a worldwide (LDC) survey of aquatic weed problems.

Objectives of the aquatic weed control program are:

To identify the biological and socioeconomic problems of aquatic weeds in agricultural and nonagricultural production.

To provide short term consultation in integrated weed control methods to the LDCs.

To establish answering services for inquiries on aquatic weed problems.

To develop integrated control systems for economically important aquatic weeds.

#### 6. Alternate Sources:

There are no alternate sources for AID to turn to in order to obtain the desired expertise, at least none with the high quality of expertise of Oregon State University and the University of Florida.

In addition to OSU's long time interest and capability in the weed control area, the institution now has almost 10-years of experience in the foreign area as a result of the AID contract. During this period the institution has developed innovative research techniques, has gained experience in dealing with LDCs, has established a viable International Plant Protection Center on campus, and has acquired a trained professional and nonprofessional staff equipped to conduct the activities called for in this project.

The University of Florida has emerged as the leading institution in the United States in the area of aquatic weed control. The institution has long experience in the aquatic weed field - in both research and utilization. It has a sizeable trained staff and experts recognized worldwide.

Oregon State University, through the years of it's AID contract activities, has demonstrated that it is cost conscious - it is the opinion of TA/AGR that no other contractor, with proven merit, could be obtained to carry out this project within present budget estimates. It is also TA/AGR's opinion that the subcontract with the University of Florida (\$58,000 for the first year) is reasonable.

## 7. Other Issues:

Staffing includes two professionals (24 W/M) in the field, and 4 professionals (28 W/M) and four support staff (24 W/M) at OSU. The subcontract calls for 8 work/months of consulting service and one support position (8 W/M) at the University of Florida. Facilities present at OSU and accessible to the project include all the facets of a major, agriculturally oriented land grant university, extensive research plots, laboratories, equipment, libraries, office space, material and equipment storage, electronic data processing equipment, and the Office of the International Plant Protection Center. (WM/YR = 92).

Expertise in a wide range of disciplines, and years of experience, can be tapped for guidance in conducting project activities. The current project staff offers a considerable resource in that it represents an aggregate of 41 work/years of experience in international agricultural research and related activities.

### A. Role of Small Farmers and the Rural Poor:

In 1972, following an intensive review of the OSU project, it was determined that the research and GTS activities of the project were benefiting those segments of the LDC rural population most able to take advantage of the offered technology, viz., the larger and more affluent farmers. Since that time, the basic purpose of the project has been to analyze the small farms and the labor force associated with them in order to tailor weed control systems for this segment of the LDCs.

### B. Role of Women:

In the poor rural societies of the LDCs, all members who are physically capable, work when given opportunity. Women have traditionally been involved in weeding the crops, either with a hoe or by hand. Weed control in much of the tropics is the single most labor intensive activity and can be the constraint to acreage planted.

Improved weed control systems will allow for greater efficiency and therefore less labor per unit area. This will allow for higher production, reduced time spent weeding, and increased time available for rural women as well as the entire farm community to devote to other endeavors.

In those areas where mechanized (power driven) or chemical control appear efficient and economical as a supplement to manual control and where much of the weeding is performed by women, there will be a reduction of labor performed by women.

C. Impact on Environment:

Herbicides will be recommended only when their economic use has been proven to be superior to other methods. The particular herbicides recommended will be restricted to those proven to have benefits overriding possible adverse effects and with methods of application which have least possible adverse effects on the environment. To assure a minimum of danger to the applicator and to the environment, training of applicators in the safe use of herbicides will be a continuing activity. The impact of this project should be positive since it analyzes all methods of weed control and then recommends systems which demonstrate superior efficiency in contrast to recommending only pesticides. The use and recommendation of herbicides will conform to EPA regulations.

D. Effect on Purchased Energy Inputs:

The effect of the project on purchased energy inputs is unknown at this time and difficult to estimate with any degree of accuracy. However, it should be noted that efficient use of hand labor and hand hoeing of weeds is included as an area of study in a related research project and, therefore, is included among the possible recommendations in an integrated weed control program.

E. Benefit to Small Farmer:

Weed control--when practiced--traditionally relies on manual and mechanical means--a hand-held chopping device, or an animal-drawn implement. More recently, improved mechanical and sophisticated chemical methods have been introduced and quickly accepted by some strata within developing countries. But these methods require a substantial capital expenditure cost for farms, industries, and government. Many small- and medium-size farms do not utilize modern weed control technology due to the associated high capital costs, resistance based on cultural mores, or perceived negative social implications.

Project generated information suggests that small farmers in Northeastern Brazil are likely to continue to rely on manual (traditional) weed control methods, not only because these methods are economically efficient, but also because both on- and off-farm alternative opportunities are limited. In El Salvador--even with a high percentage of the total population being rural--reliance on mechanical and chemical weed control techniques will increase due to the existence of highly valued on-farm labor alternatives and opportunities.

To be employed, technology must be proven economically efficient and consistent with the social environment and economic capability of farm enterprises. But the existence of external effects of technology--those effects not generally taken into direct account by farm decision makers--suggest that the consequences of new technology need to be evaluated from the point of view of a larger community. Employment, income distribution, and efficiency of production are decision variables commonly employed by government in evaluating the effects of technology and frequently form a basis for establishing policy. Without good estimates of the effect of alternate technologies and policies, governmental leaders have difficulty determining the policy which maximizes social welfare.

Increased food production obviously remained a major goal for developing countries, but, as the first wave of results from the introduction of modern agricultural technology--the "green revolution"--were analyzed, some observers noted that not all segments of developing country citizenry were enjoying equal benefits from the change. Progressive, relatively affluent farmers tended to capture the bulk of the gains while the social and economic positions of small farmers and rural laborers deteriorated. Recognition that new technology was not neutral in its social and economic effects precipitated a redefinition of project goals.

Even with the use of modern technology the relative importance of weed control is increasing. For rice production in the Philippines, 8% of the total work hours engaged in farm labor related to some phase of weed control as of 1966, compared with 17% in 1970. This situation stems in part from the effect of other agricultural inputs on weed growth. Increased fertilizer use and improved culture of crop plants also benefit the weed population, thereby generating even stronger competition for available nutrients, water, and light.

Most weed-caused damage to crops occurs within the first 30 days of crop plant life, also usually a period of peak labor need. Often, land in production is limited by the amount of weeding that can be performed given the available labor supply. The effective constraint is not area of land available, but the weeding requirement of land in production and the availability of labor to perform the task of weeding.

THREE-YEAR BUDGET: TECHNICAL ASSISTANCE (GTS) COMPONENT  
ESTIMATED BUDGET

<u>Category</u>	<u>(12 Mos.*) 1976-77</u>	<u>(12 Mos.) 1977-78</u>	<u>(12 Mos.) 1978-79</u>	<u>(36 Mos.) Total</u>
<b>Salaries and Wages:</b>				
On-campus	84,645	81,246	89,371	255,262
Off-campus	40,995	51,136	56,249	148,380
Total	125,640	132,382	145,620	403,642
Consultants	0	0	0	0
Fringe Benefits	19,381	20,504	22,554	62,439
<b>Overhead (Indirect Costs):</b>				
On-campus	38,276	36,740	40,414	115,430
Off-campus	28,574	16,931	18,624	64,129
Total	66,850	53,671	59,038	179,559
Travel, Transportation, and Allowances	48,336	38,080	59,267	145,683
Other Direct Costs	3,620	3,123	3,435	10,178
Equipment, Vehicles, Material, and Supplies	28,108	21,895	24,084	74,087
Subcontract (Florida)	58,750	55,000	65,000	178,750
<b>Total</b>	<b>350,685*</b>	<b>324,655</b>	<b>378,998</b>	<b>1,054,338</b>

\* Funding period April 1, 1976 - March 31, 1977.

Proposed Obligations

FY 76 -	\$120,000
TQ	\$231,000
FY 77 -	\$325,000
FY 78 -	\$379,000

676  
U.S.  

---

181

PLAN OF WORKWork Plan:

The work plan will be divided into three sections.

Southeast Asia  
Central America  
Corvallis-based staff.

I. Southeast Asia (Thailand)

One agronomist (12w/m/yr) will be stationed in Southeast Asia with responsibilities in general technical assistance. He will have strong working relationships to another agronomist stationed in Southeast Asia who is funded under a separate research project with Oregon State University.

The time-phased plan of activity, will be broken into three periods. The are: A) April 1976 - March 1977, B) April 1977 - March 1978, and C) April 1978 - March 1979.

A. April 1976 - March 1977.

1. Develop agreement with Thai Government to obtain necessary counterparts and logistic support.
2. Identify, secure and ship needed equipment and supplies.
3. Agronomist arrives in Southeast Asia - ETA, July 1976.
4. Contact and establish working relations with AID, Thai Government, National Weed Science Research Institute (NWSRI), regional research and extension organizations as well as international research organizations. The latter would include: IRRI, BIOTROP, Rodent Research Center (Philippines), RED, Mekong Committee, and IACP (Inter-Asian Corn Program).
5. Promote awareness of weed-related damage to crop production to agricultural administrators and agricultural scientists through a series of short courses held in Thailand and other S. E. Asian countries.
6. Identify key nationals with potential for scientific leadership and encourage them to pursue advanced graduate training.

7. Provide on-the-job training to weed scientists in proper terrestrial weed control techniques and methods by actually conducting field experiments. The weed researchers would include students from universities as well as NWSRI staff.
8. Examine the available weed control literature to determine inadequacies and devise plans for filling the needs.
9. Work cooperatively with agronomists from those institutions listed in 4 above to identify research priority and establish field trials.

**B. April 1977 - March 1978.**

1. Provide on-the-job training to weed scientists in weed control techniques.
2. Design plans and initiate action on preparation of a series of bulletins on weed control recommendations for food crops in S.E. Asia especially oriented to small- and medium-sized farms.
3. Organize and conduct a series of short courses on weed research methodology.
4. Organize and conduct a series of short courses for weed extension workers demonstrating weed control methods.
5. Review and evaluate governmental, commercial and farm procedure for handling, storage, and control of herbicides.
6. Actively encourage and promote environmental and personal safety in the use of herbicides.
7. Develop educational materials on weed control methods and safe application methods.

**C. April 1978 - March 1979**

1. Continue work previously started.
2. Evaluate and modify as required plans and procedures to develop weed control recommendations for major food crops.
3. Prepare reports and publications related to work activities.

## II. Central America

An agronomist will be stationed in Central America (12wm/yr) to conduct technical assistance in weed control activities. He will be stationed in either Costa Rica with ROCAP or in El Salvador with the Ministry of Agriculture. Assistance will be provided to the region upon request and a working relationship will be maintained with another weed control research agronomist stationed in Central America who is funded under a separate research project with Oregon State University.

The time-phased plan of activity suitable for Southeast Asia was necessary because it is the initial activity in the region. The OSU weed project has been active in Central America for years negating the necessity of dividing activities into three time phased periods.

The time-phased plan of activity will be presented in two periods. They are: A) April 1976-March 1977, B) April 1977-March 1979.

### A. April 1976-March 1977

1. Develop agreements with ROCAP or the Government of El Salvador to obtain necessary counterparts and logistic support.
2. Agronomist arrives in Central America ETA, July 1976.
3. Contact and establish working relationships with AID, regional governments, regional extension organizations as well as international research organizations.
4. Identify, secure and ship needed equipment and supplies.
5. Promote awareness of weed-related damage to crop production to agricultural administrators and agricultural scientists through a series of short courses held in the region.
6. Identify key nationals with potential scientific leadership and encourage them to pursue advanced graduate training.
7. Conduct field demonstrations of weed control practices.
8. Identify weed control priorities and set out field trials demonstrating specific control of priority weeds in major crops.

### B. April 1977-March 1979

1. Provide on-the-job training to weed scientists in weed control techniques.

2. Design plans and initiate action on preparation of a series of bulletins on weed control recommendations for food crops in S.E. Asia especially oriented to small-and medium-sized farms.
3. Organize and conduct a series of short courses on weed research methodology.
4. Organize and conduct a series of short courses for weed extension workers demonstrating weed control methods.
5. Review and evaluate governmental, commercial and farm procedure for handling, storage and control of herbicides.
6. Actively encourage and promote environmental and personal safety in the use of herbicides.
7. Develop educational materials on weed control methods and safe application methods.
8. Prepare reports and publications related to work activities.

### III. Corvallis-based Staff, (Oregon)

Project Leader (4wm/yr) primarily administrative, coordinate project inputs, both human and commodities, from OSU Agronomic Crop Science and Agricultural Economics Departments. Provide general staff and budget management and carry primary responsibility for contacts with AID and national and international research organizations. The project leader is expected to visit project staff in each field location once or twice a year, and also to be responsible for close liaison with the AID/University of California project on pest management and environmental protection.

Weed Control Specialist (8wm/yr) in addition to helping the project leader provide direct in-field assistance and maintain liaison with other research agencies, the weed control specialist will have four primary functions:

- Transmit to field agronomists any improvements in weed control technology being developed by OSU weed research under a separate contract.

- conduct weed control literature search to assist OSU in-field staff design optimum test programs for specific crops and weeds as well as to answer inquiries from AID Missions and developing countries.
- secure, and arrange for supply of, required equipment, reference literature, etc., for in-field staff.
- serve as a consultant to developing countries, when required by preparing material and participating in short courses and workshops.

Information Specialist (8w/yr) implement broad and rapid utilization of the information developed through research conducted by the project through the following:

- cooperate with, and advise project staff on the publication and dissemination of information based on weed control research performed.
- maintain a worldwide list of the key weed control scientists, extension, and teaching personnel, especially in developing countries (over 3,600 entries as of April, 1975).
- search, develop, and edit material for the International Plant Protection Center (IPPC) INFOLETTER to include new developments in weed control research, available literature, meetings, etc., expedite distribution of INFOLETTER (to worldwide list) no less than quarterly.
- assume leadership for searching, editing, designing, assembling and publishing additional books and/or literature on weed control to fulfill needs in developing countries on advice of AID.
- facilitate the processing of requests for information from OSU field staff, USAID Missions, and developing countries, and process, either directly or with assistance from the technical staff.
- act as liaison with the OSU Public Information Office, mass media, and other channels, as applicable.
- carry out assigned administrative functions and serve as acting director in the project director's absence.

Fiscal Officer and Translator (8w/yr) activities cover a range of duties, including, but not limited, the following:

- prepare budgets, and periodic financial reports for AID and campus use, and manage revolving funds for foreign-based staff members.

- act as liaison with department, experiment station and university business offices with regard to project personnel and fiscal matters.
- translate, or arrange for translation of, letters, reports, and notices.
- order supplies and equipment as needed.
- facilitate appointment of personnel including necessary university payroll procedures, AID clearances, etc.

OSU Support Staff (24wm/yr)

Secretaries (3) 16 wm  
Technician 8 wm

IV. University of Florida- (12wm/yr)

Activities to be performed:

- (a) Identify the biological and socioeconomic problems of aquatic weeds in agricultural and related non-agricultural production.
- (b) Provide short-term consultation in integrated weed control methods to developing countries.
- (c) Provide answering services for aquatic weed problems.
- (d) Develop integrated control systems for important aquatic weeds,

---

Short-term Consultant 6 wm  
Assistant 6 wm

## ADDENDUM

Project Consideration of Effect on Rural Women

As stated earlier, women, which include the wife and older daughters of a small rural family, are an essential component of the family work force. This is true whether the family works its own land or works as labor for larger farms. The most labor intense aspect of farming is weeding, therefore, under the traditional system of weeding, women devoted a significant portion of their time 1) weeding their families' crops or 2) employed for wages to weed someone else's crops. The introduction of labor saving technology such as chemical weed control could free the women to pursue other activities or could displace them as labor and therefore reduce family income.

There is a companion research project being carried out by Oregon State University whose objectives are to determine the socioeconomic impact of various weed control techniques in selected developing country locations. Labor distribution is one of the variables studied. As results become available from the research project, the field staff funded under the project will recommend practices which are most amenable to the poor rural farmer including the wife and daughters.

The findings of the socioeconomic impact of technology change will also be brought to the attention of government officials. They will be informed of the impact to all segments of the rural community of various government policies. Therefore, policy helping the larger farmer at the detriment to the small farmer can be identified.

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Life of Project:  
From FY \_\_\_\_\_ to FY \_\_\_\_\_  
Total U S Funding \_\_\_\_\_  
Date Prepared: \_\_\_\_\_

Project Title & Number: Oregon GTS

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																												
<p><b>Program or Sector Goal:</b> The broader objective to which this project contributes:</p> <p>To increase the food production of small farmers in LDCs by decreasing losses caused by weed infestations.</p>	<p><b>Measures of Goal Achievement:</b></p> <p>Increased harvests in countries participating in weed control programs.</p>	<p>Country statistics from Ministries of Agriculture. USAID reports. On-site observations.</p>	<p><b>Assumptions for achieving goal targets:</b></p> <p>Recipient countries give priority to food crop production.</p>																												
<p><b>Project Purpose:</b></p> <p>Assist world weed control community by:</p> <ol style="list-style-type: none"> <li>1. training weed scientists.</li> <li>2. improving interchange of information.</li> <li>3. identifying magnitude of important aquatic weed problems.</li> <li>4. developing integrated control systems.</li> </ol>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ol style="list-style-type: none"> <li>1. Weed control included in national research programs in participating countries.</li> <li>2. International exchange of weed research is strengthened.</li> <li>3. Studies made on aquatic weed problems in tropical areas.</li> <li>4. Aquatic weed control systems and alternatives developed.</li> </ol>	<ol style="list-style-type: none"> <li>1. LDC gov't reports.</li> <li>2. Contractor reports.</li> <li>3. Contractor reports.</li> <li>4. Contractor reports.</li> </ol>	<p><b>Assumptions for achieving purpose:</b></p> <ol style="list-style-type: none"> <li>1. Participating LDCs have personnel and material resources to support weed research.</li> <li>2. International institutes (1) other weed research organization (one) able and willing to contribute to information network.</li> <li>3. Host countries will facilitate conduct of aquatic weed studies.</li> <li>4. Socio-cultural factors will not inhibit studies.</li> </ol>																												
<p><b>Outputs:</b></p> <ol style="list-style-type: none"> <li>1. On-the-job training for LDC weed scientists.</li> <li>2. Short courses and/or workshops in LDCs.</li> <li>3. Response to problem situations and country integrated weed control programs.</li> <li>4. Quarterly newsletter for LDC weed scientists.</li> <li>5. Weed information publications.</li> <li>6. Biological and socio-economic studies on aquatic weed problems.</li> </ol>	<p><b>Magnitude of Outputs:</b></p> <ol style="list-style-type: none"> <li>1. 6000 man-days of OJT provided for scientists from at least 6 LDCs.</li> <li>2. One regional workshop per year, two workshops in LDCs.</li> <li>3. Dependent upon LDC and USAID requests; estimated at 4 per year.</li> <li>4. Four issues of Weed Newsletter per year, sent to all LDCs.</li> <li>5. Two special publications, plus annual reports of OSU/AID research, distributed to AID/W, USAIDs, and International institutes.</li> <li>6. Socio-economic studies conducted in at least two tropical regions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Contractor trip reports, annual reports.</li> <li>2. Contractor trip reports, annual reports.</li> <li>3. USAID correspondence, contractor reports.</li> <li>4. AID/W observation, contractor reports.</li> <li>5. AID/W observation, contractor reports.</li> <li>6. Contractor reports.</li> </ol>	<p><b>Assumptions for achieving outputs:</b></p> <ol style="list-style-type: none"> <li>1. LDCs indicate need for training, qualified personnel available.</li> <li>2. USAIDs and LDCs desire technical assistance in weed control.</li> <li>3. LDCs request technical assistance.</li> <li>4. Worldwide interest is maintained in weed control.</li> <li>5. Worldwide interest is maintained in weed control.</li> <li>6. Host governments will collaborate in situation studies; no political nor cultural objections.</li> </ol>																												
<p><b>Inputs:</b></p> <ol style="list-style-type: none"> <li>1. AID/W financial support.</li> <li>2. Oregon State to provide technicians, home campus facilities to support project.</li> <li>3. USAIDs and LDCs to provide participants and logistical support as needed in LDCs.</li> </ol>	<p><b>Implementation Target (Type and Quantity)</b></p> <table border="1"> <tr> <td>1. AID funding (000)</td> <td>FY76</td> <td>FY77</td> <td>FY78</td> </tr> <tr> <td></td> <td>351</td> <td>325</td> <td>379</td> </tr> <tr> <td>2. OSU specialists-man/months</td> <td></td> <td></td> <td></td> </tr> <tr> <td>    Overseas</td> <td>24</td> <td>24</td> <td>24</td> </tr> <tr> <td>    Home Campus</td> <td>28</td> <td>28</td> <td>28</td> </tr> <tr> <td>    Supporting</td> <td>24</td> <td>24</td> <td>24</td> </tr> <tr> <td>3. Subcontract</td> <td>16</td> <td>16</td> <td>16</td> </tr> </table>	1. AID funding (000)	FY76	FY77	FY78		351	325	379	2. OSU specialists-man/months				Overseas	24	24	24	Home Campus	28	28	28	Supporting	24	24	24	3. Subcontract	16	16	16	<ol style="list-style-type: none"> <li>1. AID/W reports.</li> <li>2. On-site observation Contractor reports.</li> <li>3. Contractor reports. USAID correspondence.</li> </ol>	<p><b>Assumption for providing inputs:</b></p> <ol style="list-style-type: none"> <li>1. AID will provide requested funding according to time schedule.</li> <li>2. Contractor will have adequate qualified personnel available. University will continue to provide on-campus support. Commodity will be available and will be in place when needed.</li> <li>3. LDCs will provide or find means to support in-country activities.</li> </ol>
1. AID funding (000)	FY76	FY77	FY78																												
	351	325	379																												
2. OSU specialists-man/months																															
Overseas	24	24	24																												
Home Campus	28	28	28																												
Supporting	24	24	24																												
3. Subcontract	16	16	16																												