

**Project Paper**

**INTEGRATED SYSTEMS FOR SMALL FARMERS:  
FARMING SYSTEMS RESEARCH AND EXTENSION  
(Project No. 936-4099)**

**Office of Agriculture  
and  
Office of Rural Development and Development Administration,  
Bureau for Science and Technology  
U.S.A.I.D.**

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**NOTE: This version of the project paper contains no budgetary information.**

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**PROJECT PAPER FACESHEET**

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10 ESTIMATED COSTS \$000 OR EQUIVALENT \$1 -

A. FUNDING SOURCE	FIRST FY <u>82</u>			LIFE OF PROJECT		
	B. FY	C. L.C.	D. TOTAL	E. FY	F. L.C.	G. TOTAL
AID APPROPRIATED TOTAL	2,392		2,392	7,887.6		7,887.6
GRANT	2,392		2,392	7,887.6		7,887.6
LOAN						
OTHER						
TOTALS	2,392		2,392	7,887.6		7,887.6

11 PROPOSED BUDGET APPROPRIATED FUNDS \$000

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE	E. 1ST FY <u>82</u>		H. 2ND FY <u>83</u>		K. 3RD FY <u>84</u>		
			C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT
1 ARDN	130	140	-	2,392	-	400	-	1,500	-
2									
3									
4									
TOTALS				2,392	-	400		1,500	-

A. APPROPRIATION	N. 4TH FY <u>85</u>		O. 5TH FY <u>86</u>		LIFE OF PROJECT		12 IN-DEPTH EVALUATION SCHEDULED
	C. GRANT	F. LOAN	P. GRANT	S. LOAN	T. GRANT	U. LOAN	
1 ARDN	1,700	-	1,896	-	7,887.6		
2							
3							
4							
TOTALS		1,700	-	1,896	-	7,887.6	

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## TABLE OF CONTENTS

I.	Project Recommendations and Summary.....	1
A.	Recommendations.....	1
B.	Summary Description of Project.....	1
II.	Project Background, Summary, and Relationship to Other Projects.....	2
A.	Project Background and Rationale.....	2
B.	Project Goal and Purpose.....	5
C.	Project Outputs.....	5
D.	Project Inputs.....	6
E.	Relationship to Other Projects.....	7
III.	Project Activities.....	10
A.	Technical Assistance.....	10
Field Guidelines from Comparative Evaluations.....	12	
B.	Training.....	13
C.	Networking.....	16
Regional Workshops.....	16	
Newsletter.....	17	
Documentation Center and Annotated Bibliography.....	18	
VI.	Implementation Plans.....	19
A.	AID Project Management.....	19
B.	Project Instrument: Cooperative Agreement.....	20
C.	Project Staff.....	21
Project Leader.....	21	
Coordinator for Technical Assistance.....	23	
FSR/E Practitioner-Scientists.....	23	

	Support Staff.....	23
	Coordinator for Training and Networking.....	23
	Training Consultants.....	24
	Support Staff.....	24
	Networking Consultants.....	25
D.	Documentation Center and Annotated Bibliography.....	25
E.	Phasing of Activities.....	25
	Technical Assistance.....	29
	Training.....	30
	Regional Workshops.....	31
	Newsletter.....	32
	Documentation Center and Annotated Bibliography.....	32
V.	Project Evaluation Plan.....	33
VI.	Financial Plans: Detailed Budgets.....	35
VII.	Technical Analyses.....	45
	A. Administrative Analysis.....	45
	B. Economic Analysis.....	46
	C. Social Analysis.....	48
	The Role of Women in Development.....	48
	D. Environmental Impact Statement.....	49

Appendices

A.	Summary of Mission Requests for Project Assistance in Response to Informational Cable.....	50
B.	Memorandum of Understanding of Collaboration in the Design and Implementation of Joint Projects.....	51
C.	Memorandum on Relationship of S&T and AFR (CIMMYT) Farming Systems Projects.....	53
D.	Project Design Summary: Logical Framework.....	54

## I. PROJECT RECOMMENDATIONS AND SUMMARY

### A. Recommendations

Authorization of a grant in the amount of \$7,887,600.00 over a five year period is recommended. This represents an obligation of \$2,392,000 in FY 82, a second obligation of \$400,000 in FY 83, a third obligation of \$1,500,000 in FY 84, a fourth obligation of \$1,700,000 in FY 85, and a final obligation of \$1,896,000 in FY 86.

### B. Summary Description of the Project

This project is designed to assist the collaborative efforts of USAID missions and LDCs at building effective and viable research-and-extension programs for limited resource farmers. More specifically, the project fosters and helps coordinate the many "farming systems research and extension" (FSR/E) programs that have been instituted in the last decade. This is the first half of a planned ten-year effort.

FSR/E has evolved as a response to common problems in the development of small-farm agriculture. Because the approach has been developed in many distinct institutional contexts, there are today diverse views on its nature and scope. But there is also widespread agreement on its operational characteristics. FSR/E encourages research on farmers' fields and with farmers' participation, encompassing not only biological responses within the farm field but also interactions within the production system of the farm family. FSR/E also requires stronger two-way linkages between researchers, extension agents, and farmers than is the case in most LDC agricultural development systems. These two operational characteristics--wider farm-level scope and closer interagency coordination--it is believed, make FSR/E a more effective means for defining and developing technology that is immediately useful by small farmers.

To foster and coordinate FSR/E efforts involves both technical assistance and institution strengthening. Technical assistance provides immediate help in resolving specific problems in farm production, as well as program management. Institution building--short-term applied training and communications or networking (workshops, newsletters, bibliographies, and a documentation center)--helps create within participating countries the professional expertise and commitment necessary for self-sustaining, coordinated national programs. These are, therefore, complementary activities in an integral endeavor.

Technical assistance under this project will provide collaborating USAID missions and LDCs those skills required at any stage in the project cycle: pre-project assessment, PID and PP design, implementation assistance, and evaluation for mid-term redesign, as well as for end-of-project follow-on. Importantly, technical assistance to missions on specific matters of immediate concern in the development of agricultural production technologies will also yield information on relevant topics that can be synthesized into recommendations useful for all missions and LDCs.

Short training courses in the fundamentals of FSR/E will strengthen the capacity of host-country nationals both to perform this work and to institutionalize these methodologies. There will be two types of courses, one on specific methodologies for field practitioners and a shorter one on management concerns for policy makers, administrators, and educators. These courses, which will be given only upon mission request, will be tailored to national or regional needs and will be revised periodically in order to incorporate new insights and methods. Importantly, since these training activities are designed to assist LDC efforts in building FSR/E systems, the agencies requesting training assistance will be expected to pay most trainee costs.

This project also facilitates communication among FSR/E practitioners by organizing several informational activities, specifically, a newsletter, workshops, and an annotated bibliography, as well as a documentation center. These activities make more possible the sharing of individual experiences in the development and institutionalization of national FSR/E programs.

The immediate beneficiaries of this project are FSR/E practitioners in the developing countries who learn the methods and approaches of farming-systems research and extension. The ultimate beneficiaries of this FSR/E project are the limited-resource farmers who receive technological recommendations that build upon existing production and enterprise systems. Providing immediate technical assistance while building national institutional capabilities in FSR/E helps ensure lasting benefits for these farmers.

The project will be let competitively as a cooperative agreement. The recipient, as the cooperator is technically termed, will provide a project leader responsible to the AID project officer for all project activities. Under the project leader, two coordinators, one for technical assistance and one for training and networking, will implement those activities, with the necessary professional and support staff. The documentation and bibliographic services, however, will be provided directly by the Office of Development Information and Utilization of the Bureau for Science and Technology (S&T/DIU) in order to ensure the availability of the materials after, as well as during, this project.

## II. PROJECT BACKGROUND, SUMMARY, AND RELATIONSHIP TO OTHER PROJECTS

### A. Project Background and Rationale

All countries have as a primary goal the provision of adequate food supplies to their citizens. This goal usually implies improved agricultural production and productivity, within the context of greater employment and more equitable distribution. Unhappily, achieving these goals seems daily more elusive. Projections of current trends in population growth, resource use, and environmental change depict a bleak situation for many countries by the turn of this century. As population doubles, while the arable land base remains essentially static, environmental degradation will become more

severe, diets more inadequate, and food shortages more common. Though these projections may prove inaccurate, they do underscore the current gap between government aspirations for agriculture and its present performance.

In the last development decade, increasing attention has been paid to the role of small producers in the process of national development. The rationale for this orientation is clear: small producers will not decline in number in the foreseeable future, they control a sizable proportion of each nation's arable land, and they produce a large proportion of each nation's foodstuffs. As a group, these farmers have the potential to increase national food supplies significantly. That they have not done so in many cases is due as much to the orientation of national research and extension agencies toward monocrop agriculture as to operational difficulties of serving numerous, scattered small farmers. Thus, to increase agricultural production while maintaining rural employment requires programs adapted to small-farm production. Moreover, providing more appropriate technologies to small farmers promises great returns in increased food production, more efficient labor utilization, and higher rural incomes, as well as improved soil conservation and environmental protection--all of which are necessary if the LDCs are to increase food supplies for their growing populations while stimulating private sector growth.

In order to assist small farmers more effectively, agricultural researchers must take careful account of these farmers' production and enterprise systems. Small farmers are as economically responsive as larger or better endowed farmers. Yet their production systems are qualitatively different in that their agriculture tends to be both more polycultural and intertwined with livestock and forestry. They are often dependent on income from off-farm enterprises. They operate under seasonal labor surpluses and shortages, and most have inadequate access to essential support services. Therefore, tested technologies which may appear scale neutral are not in fact. Improved technologies must be adapted not only to the agroecological environments of these farmers but also to their particular socio-economic circumstances.

Farming systems research and extension has evolved in many countries and in many institutions in response to these concerns. Operationally, FSR/E involves an approach to agricultural research and technology generation that encourages research on farmers' fields and with farmers' participation. FSR/E thus takes into account more factors than those limited to the field: it examines responses within the production system of the farm family, rather than just biological responses within the farm field. At the same time, the consideration of resource-use alternatives from the perspective of the whole-farm operation entails many more concerns than those of agronomy. It is these aspects that make FSR/E more effective than traditional agricultural research in small-farm development programs.

FSR/E thus represents an adjustment in, or reorientation of, prior efforts at agricultural research and extension by complementing and enhancing the efficiency of on-station work in two major ways. First, FSR/E involves

analysis of the whole-farm system and the complex series of agronomic, economic, and social elements and interactions of which it is composed. Such information has proved valuable in the determination of station-based priorities and in the orientation of on-station work. Second, once seemingly appropriate technologies have been developed, FSR/E provides a means to implement adaptive research on farmers' fields with farmer involvement. In other words, the objectives of FSR/E are the same as those of traditional agricultural research: improved technology. By focusing on farmer needs FSR/E provides a complementary and effective means for defining and developing technology that is more immediately useful by small farmers. In other words, FSR/E builds collaboratively upon basic discipline research. The two approaches are, and will remain, complementary and necessary endeavors.

In a development perspective, farm-centered research may also imply some reorganization of national agricultural research and extension agencies. In implementing an FSR/E program, extension agents assume some of the functions of researchers and FSR/E researchers can at times act as extension agents, as, for example, in their field trials. This melding of research and extension roles requires a wide scope of action for the field personnel, most particularly in setting research agenda that accord with local needs. Yet the agricultural establishment in many LDCs today is divided into separate agencies for research, extension, livestock, water management, marketing, and on. Even where the proliferation of separate sections or agencies has been contained, highly centralized bureaucracies find it difficult to manage an essentially decentralized program, such as FSR/E. Though these issues of organizational management are not directly related to the farm-level concerns of FSR/E, these matters are crucial to the development of viable, national FSR/E programs.

The widespread recognition of an immediate need for whole-farm analysis in the context of many different national arrangements has given rise to a diversity of views about FSR/E, not only in this country, but also in LDCs and in the international agricultural research centers. These distinct interpretations about the specific structure and operation--"the model"--of FSR/E relate to different mandates, funding levels, staffing characteristics, and the like. There is no one model, nor should one be expected. There is, however, a single aim: more effective generation of technology for small farm operations which will stimulate higher private sector performance and increase aggregate food supplies for the benefit of all citizens in each country.

The urgent need for small-farm agricultural development underlies the recent and rapid expansion in the number of FSR/E programs worldwide. In turn, the increase in FSR/E programs has brought with it a number of problems that require remedial action if the effort is to achieve its aims. Experienced FSR/E practitioners are relatively few. Many now work in national programs or are based at international centers. In this country, FSR/E expertise is scattered thinly among many universities. Consequently, many new FSR/E projects are being implemented without the assistance of experienced personnel who could readily resolve problems.

Second, with or without external help, FSR/E practitioners in the LDCs would benefit greatly from the opportunity to share their experiences in workshops and through periodic publications. Finally, there is a need to assist in the training of LDC nationals in the principles and methods of FSR/E, for ultimately it is these professionals who are charged with the responsibility of fostering agricultural growth in their countries. In short, the rapid expansion in FSR/E programs has created a need for immediate technical assistance, for short-term applied FSR/E training, and for improved information dissemination. This project is designed to meet these needs, by providing technical assistance while methodically building national capacity and regional networks.

#### B. Project Goal and Purpose

The goal of this FSR/E project is to strengthen LDC agricultural research and extension programs in order to increase the productivity, income, and quality of life among small farmers in the lesser-developed countries. The purpose of this project is to provide technical assistance to missions and LDC agricultural research and extension programs for the design, implementation, and evaluation of projects intended for the small or limited-resource farmer, while at the same time building institutional capacity within those countries through training and networking.

#### C. Project Outputs

In the first five years, it can reasonably be expected that this project will accomplish eight major activities. These are:

1. At mission request and with mission collaboration, provision of technical assistance for project design and evaluation, as well as for the resolution of specific problems during implementation of FSR/E projects. Also, the recipient will develop a roster of FSR/E practitioners in this country and abroad as a natural corollary of this work.
2. Publication of field recommendations based on syntheses of experiences gained through technical assistance in specific problem areas and through limited applied research, and the distribution of these recommendations to missions, LDC agencies, and practitioners.
3. Conduct 12 courses for LDC field practitioners and a like number of courses for policy makers, administrators, and educators in the principles and methods of farming systems research and extension work.
4. Establishment of seven regional (subcontinental) networks of FSR/E practitioners.
5. Sponsor annually in each region a workshop whose theme and location will be determined by FSR/E practitioners in that area.

6. Publication of a quarterly newsletter that reports the insights gained during technical assistance, the evaluations performed under this project, and the results of the regional workshops.

7. Publication and distribution of an annual annotated bibliography (five over the life of this project).

8. Establish, within S&T/DIU, a documentation center for FSR/E literature that will, upon individual request, provide copies of uncopywritten works not only during the life of the project but, no less importantly, afterwards also.

#### D. Project Inputs

Each activity requires a different level of effort and resources. Overall, technical assistance accounts for 40 percent of the total budget, training for 29 percent, and networking for 27 percent. In terms of personnel, once the project is fully operational (PY 4), technical assistance will require 92 months of professional, staff, and consultant time each year, as well as funds for travel and per diem, and a small amount for publication and distribution of guidelines. By contrast, institution-building activities (training and networking) will then require 66 person-months of effort per year, in addition to travel, per diem, and some operating expenses.

Technical assistance for consulting with missions in design, implementation, and evaluation is scheduled to begin in PY 1 with 30 person-months of field effort, to increase to 45 person-months in PY 2, and to reach 60 person-months in PY 3, which level of effort will be maintained in PYs 4 and 5. This stepped increase in the level of effort is based on experience in providing technical assistance under cooperative agreements: more and more missions take advantage of this assistance over time, so that the level of effort must increase if the project is to continue assisting earlier programs while initiating assistance for new programs. Nonetheless, the recipient is expected to make available from the outset the full range of professional expertise in FSR/E, e.g., areal diagnostics, agronomic experimentation, agriculture-and-livestock production systems.

The training and networking activities abroad are programmed to begin slowly and to expand because of the inherently greater initial difficulty of these activities. Thus, staff and operating expenses are provided for one training course in PY 1, two in PY 2, and three in PYs 3, 4, and 5. (Most participant costs will be covered by their agencies.) The regional network and workshop activities are similarly phased in order to focus efforts on initial, organizational problems and to be able to build on experience. Funds are provided to initiate one network committee and workshop in PY 1, with two additional committees and workshops being established in each of PYs 2, 3, and 4. Thus, over the life of the project, the number of regional workshops will increase from one in PY 1, to three in PY 2, to five in PY 3, to seven in PYs 4 and 5. By contrast, funding for information-dissemination activities based in this country--the

newsletter, documentation center, and annotated bibliography--are provided at the same relative level throughout the life of the project.

In addition to funds for projects services, there are allocations for project management and for external evaluations. The recipient will hire a project leader, one-half time, who will oversee the implementation and coordination of project activities. Also, evaluations are scheduled for PYs 2, 4, and 5 in order to assess project accomplishments and disappointments in a fashion timely enough to incorporate the lessons into the program development.

In summary, the level of inputs is scheduled to increase in the first three years, with the project reaching full operational capacity only in PY 4. This evolution is consistent with Agency experience with similar projects. It also accords with the assumptions that though the need for technical assistance is immediate and continuing, increasing emphasis must be put on building national institutional capabilities in small-farm agricultural research and development, if the present effort is to take root and grow. Thus, technical assistance accounts for more of the budget allocation in PY 1 (44%) than in PY 5 (37%), but the amount of technical assistance provided will double in that time, from 30 person-months in PY 1 to 60 person-months in PY 5. By contrast, the level of project staff support for institution building activities remains constant over the life of the project, but the amount of operational funds for training and networking increases, as more national programs take advantage of this project's services.

#### E. Relationship to Other Projects

A great deal of attention and support have been devoted to agricultural development in general and to farming systems research and extension in particular. This FSR/E project complements and supports such efforts by closely coordinating with USAID missions, which are most knowledgeable about their country programs, other donor activities, and host-country interests. Moreover, it avoids duplication and increases the likelihood for success by extending model programs that have been implemented in one or another region to other areas.

Farming systems research and extension evolved in the last decade with the support of several international foundations and international agricultural research centers. Most notable among the foundations, Rockefeller supported the Plan Puebla in Mexico, which with significant modifications became the model for national programs in Guatemala and Honduras, also funded in part by the foundation. Among the international agricultural research centers, the International Rice Research Institute established a cropping-systems network (in part with Rockefeller funding) and a cropping systems training program. Meanwhile, the Centro Internacional para el Mejoramiento de Maize y Trigo (CIMMYT) developed an agricultural research and training program which emphasized agro-economic analyses, farmer-field trials, and farmer participation, as did also The Centro Agronomico Tropical de Investigacion y Ensenanza (CATIE). In fact, all of the international research

centers have now shown interest in this approach. For example, the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) and the International Institute for Tropical Agriculture (IITA) have active programs. And, the basic thrust of the recently organized International Center for Agricultural Research in Dry Areas (ICARDA) is clearly farming-systems research.

The multilateral and bilateral donors, often in collaboration with the international agricultural centers, support such work today. The World Bank, for example, has greatly increased its funding for agricultural research and extension from \$103 million in four countries over the fifteen years, 1960-1976, to \$455 million in ten countries in 1978 alone. The specific activities funded by the Bank vary from country to country, so that the coordination between their project and this one can only be established in the instance. To take but one relevant example, the Bank is implementing its "training and visitation" (T&V) system of agricultural extension in the Punjab region of Pakistan. USAID/Pakistan, meanwhile, will support an FSR/E program, in collaboration with this central project. An informal survey of Pakistani field personnel in research, extension, and education that was conducted jointly by S&T/RAD and S&T/AGR established the usefulness of a national workshop that would bring these professionals together in order to establish the agenda for the farming systems program in that country. Clearly, inviting Pakistani extension personnel working in the Bank's T&V program to participate in the national FSR/E workshop will go far in enhancing coordination among donors and, more importantly, in further strengthening the development of Pakistani agricultural institutions.

USAID already funds numerous projects that involve FSR/E in part or in their entirety. Several projects, such as the USAID/Honduras "Agricultural Research Project," are to be counted among the pioneering efforts in establishing national FSR/E programs. Today, these efforts have proliferated in all regions, so that, for example, Africa bureau alone now counts some 26 projects that involve FSR/E. (Every attempt to enumerate the number of country programs that include FSR/E activities soon encounters difficulties: some projects that bear the title "farming systems research and extension" are essentially on-station, commodity-research projects; other projects that do not carry that title nonetheless incorporate on-farm testing with farmer participation.) The level of Agency support is obviously substantial and growing.

This central project is designed with enough flexibility to assist individual missions in their efforts. Technical assistance, for example, will be provided at any stage in the project cycle. Missions that are now contemplating the initiation of FSR/E activities can call upon the project team for pre-project assessment. Those that have already completed this phase may require design assistance in the development of their PIDs and PPs. Those that have projects underway may ask for technical assistance with specific implementation problems. And all missions may find advantage

in combining project staff with other experts for mid-term and final evaluations. Importantly, such flexibility is not limited to the technical assistance component. The training and networking activities can also be combined in ways that meet the particular needs of individual missions. Thus, missions in countries where there is little understanding of FSR/E principles and methods might wish to organize a training course for administrators, to be followed by a regional workshop to foment further interest, before requesting a training course for practitioners or managers. By contrast, missions in countries that already profess strong interest and support for FSR/E, might wish to initiate workshops and training courses almost immediately. Such flexibility is a natural and necessary element in any central project that assists mission activities; it also minimizes duplication and maximizes appropriateness of project activities.

Coordination with mission activities is an essential and inherent aspect of this central project. The particular arrangements will of course differ in each case, but they must be specified. USAID/Tanzania, for example, is currently designing an FSR/E project to be implemented in cooperation with the Tanzania Agricultural Research Organization (TARO). USAID/T has proposed that this central project provide technical assistance to TARO in management and planning activities, assist with some management-level training in FSR/E, and participate in project evaluations. It is precisely this type of coordinated assistance that will prove beneficial to all concerned--S&T, the missions, and the LDCs.

The geographic bureaus of the Agency also fund regional activities with which this central project will coordinate. For example, Africa bureau is now planning to fund a proposal from CIMMYT that covers many of the same activities as this project--technical assistance, training, networking, and limited documentation. The CIMMYT activities will be funded for two years. During this time, the two projects will coordinate for mutual advantage, but because most needs in east and southern Africa will be met by CIMMYT, this project can focus on other areas. Thereafter, if demand exists, the central project can extend to those regions.

A similar situation obtains in Asia with respect to the network committee for farming systems research and extension. In this region, IRRI has successfully evolved a cropping-systems network that incorporates many national FSR/E concerns. There is, therefore, no need to duplicate the effort. But there is good reason to take the IRRI model and extend it, with appropriate modifications, to other regions. (This matter is discussed in detail in the section on "Regional Networks and Workshops.")

In summary, the activities of this project complement and further those of other donor agencies, USAID missions, and LDCs. The project, which is described in detail below, builds upon prior experience in that it will extend programs successful in one region to other areas. At the same time the project builds in a deliberate flexibility, in recognition of the different needs of different countries at different times. Flexibility, however, does not mean lack of focus. From a central perspective, similar

problems will arise in different contexts, thus focusing attention on real problems of widespread importance.

### III. PROJECT ACTIVITIES

This project provides various services to missions and LDCs. Some services--the newsletter, annotated bibliography, and documentation center--will be immediately useful to all. The need for other services--technical assistance, training, and workshops--will depend upon the success and orientation of particular mission programs. For this reason, the project is designed in such a way that individual missions can call upon different combinations of services, which will give each mission a continuity in outside efforts. Continuity is also important to this project, for it creates the opportunity to understand particular programs in wider perspective and over time: fulfilling diverse needs in FSR/E programs creates in this project a unique opportunity to synthesize experiences and solutions in different LDCs into general guidelines that can, by being brief and apt, help all missions and LDCs in their planning and programming processes. Thus, the activities in this project are designed to provide direct services to missions supporting FSR/E activities and, at the same time, to synthesize and disseminate lessons learned in diverse settings to the wider audience of development practitioners.

All project activities are premised on mission collaboration and assistance. Thus, in operation, a mission must request assistance under this project and specify the time, duration, and level of effort that best fit into its program before arrangements may be made final. Further, the users of some services--be they missions, LDCs, or practitioners--will be expected to support the activity in part. Missions will contribute about one-third of consultant travel and per diem costs incurred for technical assistance. Missions and LDC agencies will cover most or all of participant costs for the training courses and workshops after the initial one. And, users will subscribe to the newsletter and in some cases pay duplication and handling fees for the documentation service. Together, participation in the planning of project activities and cost sharing will better ensure that all activities are relevant to field needs.

#### A. Technical Assistance

Technical assistance will be provided at mission request to resolve problems that arise at any stage of the project cycle in farming-systems programs. In terms of the project cycle, technical assistance will be provided for pre-project assessment, PID and PP design, problem identification during implementation, and evaluation for mid-term redesign and end-of-project follow-on. Technical assistance team may include production scientists (e.g., agronomy, animal science, pisciculture, forestry), economic and behavioral scientists, and organizational or administrative scientists. A wide range of services is encompassed within the scope of FSR/E work. They include:

- Pre-project Assessment: Survey of the adequacy of agricultural training, research, and extension to serve small farmers; nationwide assessment of current approaches to agricultural research and extension and of interest in FSR/E by region and sector.
- PID and PP Design: Design of FSR/E programs within the context of existing national institutions, and conduct of required administrative, technical, economic, social, and environmental analyses.
- Implementation Assistance: Design of survey instruments, delimitation of target groups of farmers, conduct of rapid field assessments, and timely analysis of information; design of agronomic experiments with farmer participation; identification and resolution of subsequent production and post-production difficulties (e.g., agronomic, pest control, livestock, post-harvest losses) within context of local farming systems. (Once this project is underway, assistance may be provided as a complement to training activities [below]).
- Evaluation: Assessment of extent and timeliness of administrative support, clarity of problem definition, caliber of experimental work, relevance of training program, nationalization of FSR/E program, and of adoption rates by farmers; identification of critical areas requiring further effort if bottlenecks are to be broken.

To judge from mission responses to the informational cable about the FSR/E PID, the demand for technical assistance requires at this time equal effort in design, implementation, and evaluation. Of the 20 countries in Asia, Africa, and Latin America that specified likely needs, seven requested design services, seven requested implementation assistance, and twelve requested evaluation assistance (Appendix A). However, the types of technical assistance rendered to missions will naturally change over the life of this project, as more missions develop FSR/E projects. As a consequence, technical assistance for operational problems during implementation and for evaluation may represent 80 percent of the overall endeavor in the second half of this project.

Technical assistance in implementation and evaluation requires flexibility in order to meet the needs of different missions, as well as the varying needs of a particular mission over time. As a general rule, the identification of technical problems (though not their resolution) and PID design require less time than other activities. Even so, the duration of technical assistance can only be determined in the instance with the mission. This project therefore budgets for both one- and three-month consultancies.

The size and composition of each team also depends upon the nature of the activity. Pre-project assessment, for example, typically requires a larger and more diverse team than some types of implementation assistance. To

assess the possibilities for an FSR/E program in Pakistan required the collaboration of four persons, a plant breeder, an agronomist, an economist, and an anthropologist. By contrast, specific technical problems during implementation--assessment of the adequacy of on-farm experimental alternatives, the design of an in-depth diagnostic survey--may require fewer specialists. Thus, missions will specify in their requests the number and type of experts required; the recipient will then locate qualified, available persons to undertake the assistance.

Importantly, repeat visits are possible either to follow up on an original problem or to tackle a new one. For the missions, these repeat visits provide a useful continuity in outside effort. For the Agency and the recipient, they provide the opportunity to monitor the consequences of specific actions. Technical assistance under this project, however, is not intended, and will not be used, for continuous long-term research.

In order also to meet the diverse substantive needs of missions, the technical assistance budget allows for 20 months of consultant time in PY 1, 33 months in PY 2, and 44 months thereafter. The technical assistance coordinator will be responsible for locating the best qualified and most appropriate consultants available in terms of the specific request from the mission. This means that individuals with experience in FSR/E programs will be drawn from agricultural institutions not only in this country but also abroad, whether in national programs or at international agricultural research centers. It also means that the project FSR/E training consultants should participate on teams composed at mission request for assistance with national training programs. Finally, because this project aims to build national institutional capacity, the coordinator will allot to the LDC national practitioners, administrators, and educators who successfully complete the training courses (below) about 10 percent of the consultant time in PY 2 and about 20 percent thereafter.

#### Field Guidelines from Comparative Evaluations

Technical assistance that directly serves missions will provide a clear indication of which concerns are frequent and which are rare. Those concerns that arise with any frequency deserve comparative evaluation in order to elucidate the causes, probable solutions, and possible consequences. Indeed, the synthesis of diverse experiences into field recommendations to assist all missions is an important rationale for central backstopping. In their responses to the informational cable, the missions have already identified a number of areas of current concern, including methodological issues, benefit-cost analyses, organizational and management concerns, and extension problems. A central project that permits timely consideration of these issues can be of great assistance to missions.

The analysis of these problems can for the most part be dealt with within the framework of technical assistance. Pre-project assessment and evaluation, in particular, require consideration of a wide range of matters and their interconnections. It is usual during these activities to collect

information on costs and benefits, methodological procedures, and organizational structures in order to assess fairly the achievements of a particular project. When collected systematically for a number of national programs, this information will provide the basis for needed comparative evaluations. Consequently, a small portion of the technical assistance funds--no more than 20 percent--will be used to collect comparative information. (It should perhaps be pointed out that this sum will be necessary in order to include, for example, successful programs that have not taken advantage of this project. No work, however, will be undertaken without approval, assistance, and collaboration from both the mission and the country.)

As many as five practical field guidelines may be prepared over the life of this project. The first guideline must consider alternative methodologies, explaining the reasons for differences in approach and operation of ongoing national programs. Subsequent guidelines--on cost-benefit analyses, organizational concerns, extension problems, and, perhaps, training courses--can then be developed on the basis of project experience within the context of the methodological analysis. These guidelines will be distributed to missions directly and to interested practitioners through the S&T/DIU documentation center.

The synthesis of diverse experience presumes a continuity in personnel. For this reason, the budget for technical assistance provides for a full-time coordinator and two full-time technical specialists (one a production scientist and one a behavioral scientist). At least one member of this staff will participate in all major technical assistance activities, so that the technical assistance staff has full knowledge of each and all of its endeavors. This requirement will both raise the level of technical assistance provided to missions and better ensure the completeness of the field recommendations.

In summary, technical assistance under this project is designed to provide specific and general services. Because technical assistance here is "demand-driven"--that is, technical assistance will be provided at mission request and in response to specific problems--it is important to build in flexibility through the use of a wide range of consultants with prior FSR/E experience. It is equally important to maintain continuity with a core staff so that field recommendations can be synthesized through informed, comparative evaluations of project experiences. The mix of core staff and consultants called for in the technical assistance component of this project should provide both the flexibility and the continuity necessary for the development of informative field guidelines that arise out of the specific technical assistance activities provided individual missions.

#### B. Training

The rapid expansion of FSR/E programs has created a shortage of experienced practitioners. The need for trained personnel is particularly great among the field staff in national programs, those who carry out the day-to-day

operations. However, the effort to build strong national research and extension programs for small-farm agriculture will fail unless policy makers, administrators, and educators are also informed about the nature and the methods of this new approach. Policy makers and administrators can provide the informed support within their agencies that is necessary for field practitioners in the conduct of their work, thus fostering the program in the short run and beyond. Educators in agricultural colleges can incorporate the FSR/E program into their curricula, thus sustaining the formation of knowledgeable practitioners in the future. To succeed, the training program must reach all these audiences.

The project will develop two training courses, one for agricultural research and extension personnel and one for policy makers, administrators, and educators. Both courses will cover the same topics, but with different emphases and different purposes. Generally, the topics include the concept of FSR/E, the socio-economic and agronomic methodologies of FSR/E work, technological diffusion, and such organizational issues as the centralized management of a decentralized program and the relationship between research and extension.

The practitioner course for field personnel is intended to be a detailed refresher course in specific methodologies. A training module will be developed for the methodologies used at each stage of the FSR/E cycle. These include:

- areal diagnostics of whole-farm systems, identification of remedial problems, and experimental design;
- initiation of on-farm experiments with farmer participation, monitoring of field experiments, and collection of yield data;
- analysis of agronomic and economic data (including partial budgeting analysis) and design of a new cycle of experimentation; and,
- extension services.

Thus, if a national program encounters difficulties during some phase of the FSR/E cycle, the program officials can request, through the mission in that country, a training course in those specific methodologies. The FSR/E trainer-consultants would then adapt the relevant training modules into a course appropriate to the level and needs of the prospective trainees. The course may last for as much as six weeks, and it may be held in one or two sessions, depending upon the nature of the difficulties and the level of the practitioners. Also, the training course will involve actual field work, so that the practitioner-trainees can learn from experience. By designing training modules that can be combined and adapted into a practical course of variable length and structure, the training activity under this project builds in the flexibility necessary to meet diverse field needs.

The administrator course, by contrast, will introduce FSR/E concepts and operations, but will focus more on policy and managerial concerns. It can, therefore, be run more as a seminar than a training course. It would introduce the concept of FSR/E and lay out its potential and limits for agricultural development. While the participants might, for example, analyze whole-farm production and enterprise systems in order to determine and design agronomic experiments, most of the course would be devoted to organizational and managerial issues, e.g., how to institute FSR/E programs given the existing institutional organization of their countries and how to manage and support a decentralized FSR/E program from a centralized agency. In other words, this course should be designed to deal with the conceptual and the operational implications of FSR/E in such a way that the participants leave with a profound understanding of the importance and difficulty of implementing FSR/E programs in their own situations.

Both the practitioner and the administrator courses will be given in the prevalent professional language and at an appropriate location in each country. In most instances, the courses will be held at an international agricultural research center, a national agricultural research station, or an agricultural college. The selection of a particular institution will depend first upon the proximity of target-group farmers. Further, where there exists a national FSR/E program, a national agricultural institution would be the preferred site.

For pedagogical reasons, the courses should be limited to 30 persons per session. Further, to minimize the recurrent cost problem, participants for the practitioner course must be employees of the national agricultural research or extension service and hold FSR/E responsibilities. Participants for the administrator course must come from decision-makers concerned with the agricultural sector. This may include personnel from agriculture, livestock, water management, extension, among others, or from universities or agricultural colleges. In all cases, individuals will be selected by the mission and host country with a view toward existing bilateral projects. By selecting several such individuals from each institution, the training courses will help create a critical mass of practitioners and administrators who can work within their institutions and coordinate with FSR/E proponents in other institutions.

Participants in the practitioner and the administrator courses who demonstrate superior ability and dedication will be asked to participate as integral members of the short-term technical assistance teams. This opportunity is highly desirable from a programmatic point of view because it would provide those individuals a practical, applied experience in an ongoing FSR/E program other than the one they work in. The other selection criteria, specifically, substantive qualifications that meet the requirements of the mission making the request for assistance, of course remain valid.

The S&T training budget allows for 24 person-months of staff time per year (the training coordinator and a full-time secretary), 12 months of consultant time for trainers in PY 1 and 6 months per year thereafter, travel

and per diem for the training staff, operating expenses (including subcontract costs for the training sites), and per diem for participants in the administrator course. It is expected that missions, LDC agencies, or both will pay the travel and per diem costs of practitioners after PY 1 and the travel costs of administrators. Moreover, the host countries will be expected to continue paying their participants' salaries during the training course. (Former trainees who are invited to join short-term technical assistance teams will be paid as consultants according to the standardized schedule of fees used by the recipient.) This cost-sharing should help ensure that the training courses meet the needs and aims of the participants.

### C. Networking

The marked increase of FSR/E activities around the world makes communication among practitioners a paramount and timely concern. Practitioners and administrators in many programs now face many of the same problems. Their solutions to these problems and their adaptations of FSR/E methods for specific needs and circumstances can readily prove useful to colleagues in other national programs. Yet few channels now exist to support this exchange of ideas. This project will therefore promote the flow of information among those involved in FSR/E by sponsoring regional workshops, publishing a newsletter and annotated bibliography, and establishing a documentation center with open access. Together, these activities will help LDC personnel institute and develop their FSR/E programs.

Networking is best organized on a regional basis. One possible classification of countries into regions follows conventional zonation into agro-ecological zones in order to coordinate better with on-going efforts at fostering improved agricultural research and extension. Thus, Asia, which already has a cropping systems network, is considered a single region; Africa, whose research and extension organizations are only now evolving, is divided into five regions (Sahel and Sudan, West African coast, Congo basin, southern African plateau, and the east African highlands); and, Latin America is divided into three regions (Central America, the Caribbean, and South America). Near East, which is generally considered a single region, can participate in one of the African regions, either East Africa or the Sahel. The final delineation of regions and priorities for establishment of regional networks will be established in PY 1.

#### Regional Workshops

This project will support regional workshops for FSR/E practitioners. The common focus of these workshops will be farming systems research and extension methods. Informal contact will deal with a wide range of issues, but each workshop will be organized around particular issues in FSR/E work, e.g., methodologies, technologies, organizational concerns. Each workshop will be held at an agricultural institution involved in the host country's FSR/E program, so that a monitoring tour for workshop participants can follow the workshop. These monitoring tours provide an excellent opportunity

for learning about another country's FSR/E endeavors and, no less importantly, give collegial recognition to the host country's professionals. Monitoring tours thus complement and extend the lessons of the workshop.

Both the theme and the site of each regional workshop will be determined by the FSR/E network committee to be established in each region. This committee will comprise one FSR/E practitioner-leader from each participating country, one representative from the project core staff (the coordinator for training and networking or his nominee), and one representative from AID (the project officer or his nominee). This committee will meet annually, after each workshop, to determine the topic and site of the next workshop. The only stipulation is that the location of the workshop rotate among the member nations.

With the advice of the project committee, the coordinator for training and networking will contract with an institution within the region to act as the base of committee operations. This institution, which may well be an international agricultural research center in the region, can perform much of the organizational work necessary for the conduct of any workshop as a part of its existing program. In this way, the regional FSR/E committee has a natural base of operations that not only complements current efforts but also helps ensure the evolution of FSR/E efforts within the region during this project and afterwards.

This project design gives national FSR/E leaders a decisive voice in determining the nature of the workshops. If two or more network committees deem it advantageous to hold a joint meeting at an institution in one of their regions, the coordinator for training and networking will assist those committees in arranging all the organizational matters involved in putting together such a conference. In this way, regional groups will have the opportunity not only to work on problems common to a group of neighboring countries but also to discuss these and other matters with colleagues in other regions and indeed on other continents.

#### Newsletter

The project will publish a quarterly newsletter beginning in the second half of PY 1. The importance of the newsletter far exceeds the level of resources necessary to support it. This project will generate much useful information through its technical assistance, training, and workshop activities. This information can be quickly provided to FSR/E practitioners throughout the world through a quarterly publication.

The content of the newsletter will vary from issue to issue, but all articles will focus on aspects of farming systems research and extension programs. In the first year of publication, the newsletter will mostly report the results of technical assistance provided different missions. Other matters can be included as the other project activities get underway. Thus, in the second year of publication, the newsletter will publish synopses of the guidelines developed through technical assistance, report results from the regional workshops, and review national programs inspected

during the workshops. The newsletter may also solicit, edit, and publish contributions from FSR/E practitioners on issues of timely importance.

The recipients of the newsletter will comprise all consultants identified by the technical assistance coordinator, all participants in the training sessions, and all other individuals and institutions who request the publication. In order to accommodate readers whose professional language is not English, the newsletter will be published in French and Spanish also. Recipients may therefore request one copy of the newsletter in their language of preference.

The first three issues of the newsletter will be made available free of charge. Thereafter, a moderate subscription fee will be instituted for all but LDC practitioners residing abroad. Only if this additional source is insufficient will a subscription fee for LDC practitioners be established, and then only for the cost of mailing. Requests for additional copies of the newsletter will cost all individuals and institutions an amount equal to the cost of printing, handling, and mailing.

#### Documentation Center and Annotated Bibliography

The expansion of FSR/E programs has greatly increased the number of articles, reports, and monographs dealing with particular aspects of such programs. This literature is unavailable to many FSR/E practitioners, who by the nature of their work are stationed in relatively isolated areas. The unavailability of these materials can only slow progress in establishing and developing national FSR/E programs. Thus, this project will establish a centralized documentation center with open access and will publish annually an annotated bibliography on the subject.

The FSR/E documentation center will be established within S&T/DIU, which offers several advantages over other arrangements. First, S&T/DIU already has a catalogue system and facilities for storing documents. Second, S&T/DIU can provide copies of all uncopywritten works and, with permission from the publisher, of copywritten articles. This service is provided to all individuals at nominal cost. Third, unlike most contractors, S&T/DIU can continue the documentation center and duplicating service after the life of this project, thus ensuring that publications remain available.

In operation, S&T/DIU will receive documents for the FSR/E collection. The project staff will make the selections of relevant materials for S&T/DIU during the course of their usual work. The coordinator will acquire and provide S&T/DIU two copies of each work. S&T/DIU will then catalogue and store the materials. Upon receipt of a request, S&T/DIU will duplicate the document and send it to the requester. At the outset of this project, the service will be provided free of charge to LDC practitioners abroad, while all others will be charged a fee equal to the cost of duplication (now 13 cents a page) and mailing. Only if no other alternative exists will a user fee be instituted for LDC practitioners.

The publication and distribution of an annual, annotated bibliography will inform LDC practitioners and others of the materials available in the documentation center. The annotated bibliography will be more useful to users if it is selective. Therefore, the project staff will each year select up to 100 titles in the S&T/DIU collection, and S&T/DIU will subcontract for the work of abstracting each article and book in the same language as the original work. Importantly, the use of S&T/DIU subcontractors in this work ensures high quality, informative abstracts. S&T/DIU will then subcontract the printing and undertake the distribution of the bibliography to the recipients of the newsletter. (The bibliography will run about 20 pages, with four or five abstracts per page. Copywritten works that cannot be provided through the documentation center will be so noted, along with the pertinent information of where to obtain the work, such as the publisher.)

#### IV. IMPLEMENTATION PLANS

##### A. AID Project Management

Although major responsibility for funding the Farming Systems Research and Extension project lies with S&T/AGR, implementation of the project activities will be managed collaboratively between S&T/AGR and S&T/RAD. A framework for joint project programming has already been established by the Directors of the two offices (Appendix B). In this case, S&T/AGR will assign a Project Officer to perform the prescribed project management functions. Official project files and action authority (inquiries, cables) will rest with S&T/AGR. The S&T/AGR project officer will maintain close liaison with the assigned S&T/RAD deputy project officer, who will be assigned half-time to this project. The S&T/AGR and S&T/RAD Office Directors will be called upon to resolve any conflicts or disputes.

Regional bureau participation will be maintained by the creation of a project committee. Representation will include one member from each of the geographic bureaus, PPC and the S&T/DIU representative responsible for the documentation center and bibliography. The project committee will meet at least once every three months, or more often as required, to review project implementation and provide general guidance. At the third quarterly committee meeting each year, the committee will review the monitoring evaluations of each project activity and the annual work plan proposed by the recipient. When appropriate, representatives from other bureaus, especially the Bureau for Private Enterprise (PRE) and the Bureau for Food for Peace and Voluntary Assistance (FVA), will be called upon to participate in the project committee meetings.

(Since the Farming Systems Research and Extension project is a joint activity of S&T/AGR and S&T/RAD, PID approval was obtained separately from both the Technical Program Committee on Agriculture (TPCA) and the Rural Development Steering Committee (RDSC), the respective guiding bodies for the two offices. Creation of the S&T Sector Councils should facilitate the creation of a joint sub-council (or sub-committee) which will act as the project committee, described above. Further, as experience is gained in the formulation of farming systems research and extension programs, the

sub-council can become an advisory forum to the Sector Council for policy discussion.)

Regional committee members will act as the primary bureau contact for project activities in their respective region so that activities will be better coordinated with expressed mission needs. During the early stages of implementation at least, this function will fall most heavily on AFR/DR/ARD because Africa Bureau will be the major recipient of support services provided by this project (Appendix C). Nonetheless, all project committee members are expected to make substantive contributions to the annual work-plan, to coordinate project activities in their region, and to clear on any project implementation activities in their region.

#### B. Project Instrument: Cooperative Agreement

This project will be let competitively as a cooperative agreement, which instrument combines features both of a grant and of a contract. Grants may be used to develop the capacity, integrity, and quality of eligible institutions in the performance of functions relevant to the economic or social betterment of underdeveloped countries. But the Agency relinquishes much managerial control. By contrast, contracts are used to provide for the performance of projects over which AID plans to exercise a substantial degree of operational control. In essence, the Agency contracts for work it specifically wants done. Cooperative agreements represent a middle ground. They permit the development of capacity in eligible institutions and the performance of specified activities, both with a high level of Agency participation. These are precisely the specifications of the present project.

Technical assistance, training, and networking would complement and strengthen the small-farm programs that have been established at various institutions. At the same time, the newsletter and regional workshops represent activities specifically desired by the Agency. Moreover, a high level of Agency participation is necessary because of the flexibility of central projects. For all of these reasons, a cooperative agreement is the most appropriate instrument for this project.

Cooperative agreements may be let with any institution. It is, however, unlikely that any single institution could fulfill all the project activities for the simple reason that FSR/E expertise in this country is widely scattered among many institutions. Some set of institutions will almost surely have to join together and designate a lead institution in order to undertake this project. The arrangements between the institutions must be left to the institutions themselves, but the arrangements must be specified. Thus the cooperative agreement will be let competitively in order to ensure selection of the recipient that can best access FSR/E expertise for the project and that has made optimal institutional arrangements.

Proposals will be evaluated on several grounds. First, the proposals must specify the relationship agreed upon by the lead institution and all other institutions in the group. Second, the proposals must detail the range and depth of personnel at those institutions who are experienced in FSR/E work,

the experience and work of those individuals for the institutions, and the future availability and accessibility of those individuals during this project. Third, the proposals must demonstrate a commitment to develop a strong FSR/E program in at least the lead institution. Such a commitment minimally entails a detailed plan for interdepartmental cooperation. Fourth, the proposals must discuss means for accessing skilled personnel from outside the recipient institutions, naming individuals who have provided letters of collaboration. Ideally, some of these professionals should be brought together at one of the recipient institutions. Proposals that envision such staff development will receive especial consideration.

### C. Project Staff

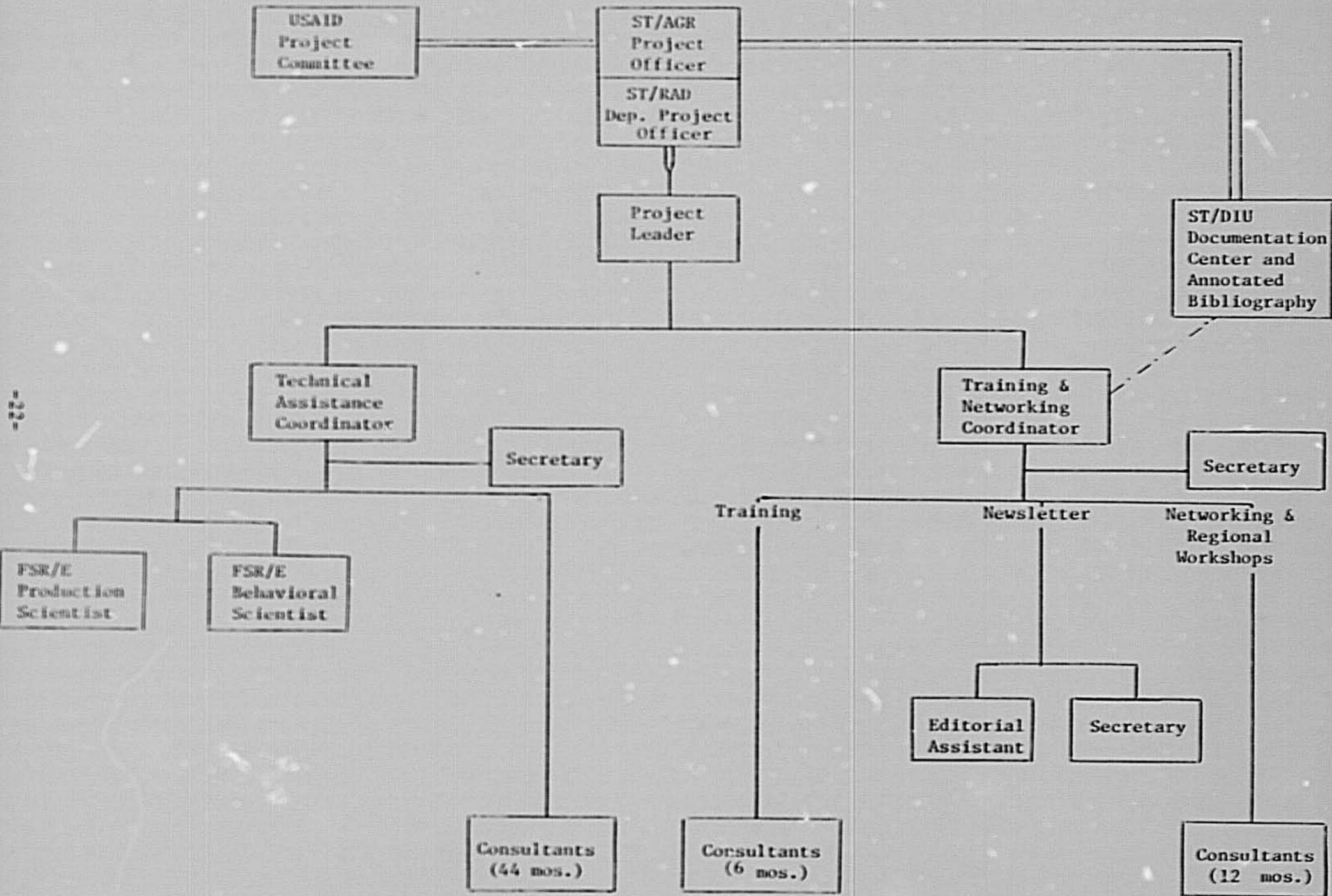
The core staff for this project comprises five professionals and four support staff, beside consultants. The professional staff includes one half-time project leader, one coordinator for technical assistance to oversee and participate in that activity, one production scientist and one behavioral scientist for technical assistance, one coordinator for training and networking. The support staff include three secretaries, one for technical assistance and two for institution-building (one for training and one for networking), and an editorial assistant for the newsletter. Thus, overall, six person-months per year are devoted to project management, 48 person-months of staff time are dedicated to technical assistance, and another 48 person-months of staff time to training and networking. In addition, each project activity involves consultant specialists--up to 44 person-months in PY 3 and thereafter for technical assistance, 6 person-months per year after PY 1 for training, and 12 person-months per year for networking.

#### Project Leader

The project leader is responsible to the S&T/AGR/EPP project officer for overall management of the project by the recipient institution. This responsibility includes coordination of activities between the lead and the collaborating institutions in the recipient group, supervision of the technical assistance and of the training and networking coordinators, in collaboration with the AID project officer. The project leader will be responsible for preparing the annual monitoring evaluations and work plans in sufficient time for the third quarterly meeting of the project committee each year, and he will discuss the evaluation and work plan reports with the committee members and at that committee meeting.

The project leader will be a senior professional familiar with FSR/E endeavors in production and experienced in project management. For such an individual, the responsibilities of this project should require no more than one-half of his or her time. Even so, the individual should not have major responsibility for any other project as part of his other duties. The individual may be based at his home institution. (For ease of exposition, the lines of authority between project staff and with AID personnel are depicted in Diagram 1.)

Diagram 1 : Organization of Personnel



### Coordinator for Technical Assistance

A coordinator for technical assistance will manage this activity under the guidance of the project leader. The coordinator will have major responsibility for developing a roster of consultants (with bio-data), identifying and handling mission requests and, composing technical assistance teams in response to those requests. He will also be responsible for producing the reports that synthesize the results of the technical assistance provided to different missions and LDCs on particular topics. In all of these activities, the coordinator for technical assistance will cooperate closely with the coordinator for training and networking.

The coordinator for technical assistance will be a middle-level professional who has worked in FSR/E programs and who has management experience. The responsibilities of the technical assistance coordinator make this a full-time position. The individual will need to spend considerable time in D.C., at least at the outset.

### FSR/E Practitioner Scientists

Two FSR/E practitioners, one a production scientist and one a behavioral scientist, will assist the coordinator on a full-time basis. These individuals are charged with the actual provision of technical assistance to missions, and, to the extent possible, at least one of the two will be on each technical assistance team. These scientist-practitioners will work with the coordinator to write brief presentations of results for publication in the newsletter and to prepare the field guidelines based on technical assistance experiences. In the course of their work, they will also identify pertinent titles in the FSR/E literature for inclusion in the document center and in the annual bibliography. When absent, the coordinator will, with the approval of the project leader, name one of these individuals as acting coordinator, in charge of handling mission requests.

These practitioner-scientists will be middle-level professionals with experience in national or international farming systems programs. Ideally, this means at least two years of farming-systems work in LDCs apiece. Each should have some experience in the development field, either in project design and evaluation or in field implementation. And, each should speak either French or Spanish at a level equivalent to the FSI 3.

### Support Staff

One full-time secretary will assist the core staff for technical assistance. The secretary will type reports, handle daily office affairs, and perform those management tasks that the coordinator deems appropriate.

### Coordinator for Training and Networking

One coordinator for training and networking will manage those project activities that deal most directly with institution-building. The major

responsibility of this individual is to promote informal FSR/E networks in each region, to initiate the regional workshops with the advice and consent of the regional committee, and to organize the logistics of the training sessions, the timely publication of the newsletter and annotated bibliography, the provision of duplicate copies of all pertinent FSR/E documents to the S&T/DIU center, and the provision of the list of bibliography titles for annotation to S&T/DIU.

The position of coordinator for training and networking requires not only managerial skills and familiarity with the percepts of FSR/E but also extensive experience abroad in facilitating the development of regional networks. This individual should have had prior experience at working with and through host country governments in order to organize a working body. It is extremely desirable that this experience have been gained in Africa, given the relatively greater need for networking on that continent. For this same reason, the coordinator should speak French at the level of an FSI 3, preferably at the level of an FSI 4. Disciplinary specialization, however, is not decisive. The individual might be a production scientist, such as an agronomist or livestock specialist; he might be a political scientist; or, for another example, he might be a communications specialist with experience in agricultural production. The pertinent qualifications in this case are first-hand experience at institution-building, and FSR/E training and managerial skills, and language ability.

#### Training Consultants

The coordinator for training and networking will contract as consultants individuals who have experience in the various FSR/E methodologies. These individuals will develop the training modules in PY 1, and one or two of them will pilot test the practitioner course by the end of that year. To assist the training consultants develop the modules, the coordinator may also contract LDC practitioner-trainers of FSR/E (see Implementation, pp. 30-31). He may also contract with a generalist trainer to help establish the format for interactive learning in adult courses.

Ideally, the individuals who develop the training modules in PY 1 should be the same people who are contracted to conduct the training courses in later years. Hiring, as consultants, methodological specialists experienced in FSR/E to train practitioners and others is preferable to hiring full-time generalist trainers, for specialists have extensive knowledge of the minute details that can derail the best of programs. Moreover, the flexibility of consultant arrangements means that each course can be tailored better to the needs of the trainees. This is especially important for the practitioner course, which is designed to eliminate methodological difficulties encountered by field personnel in the actual conduct of their work.

#### Support Staff

Under the direction of the coordinator for training and networking, an editorial assistant will prepare all copy for the newsletter--results of

technical assistance, design of the training sessions, reports of the regional workshops, notifications of recent and important works in the FSR/E field, as well as unsolicited materials. Though this individual should have an interest in the development of small-farm agriculture, the primary skills are editorial, expository skills. Though budgeted as a single position, the duties of editorial assistance may, at the discretion of the recipient, be discharged by more than one individual.

One secretary will assist the coordinator for training and networking in the discharge of his duties. This secretary also will type reports, handle daily office affairs, and perform those management tasks that the coordinator deems appropriate. A second secretary will work with the editorial assistant on the newsletter. This secretary will assist the coordinator's secretary at the direction of the coordinator.

#### Networking Consultants

To assist the coordinator in the establishment of regional networks and to act as resource persons for the regional workshops, the coordinator will contract as consultants individuals who have important knowledge and contacts in each region. These individuals will provide up to 12 person-months of time each year. During this time, the consultants will act as field representatives for the coordinator in the establishment of networks and as resource persons for the regional workshops.

#### D. Documentation Center and Annotated Bibliography

The documentation center and annotated bibliography are most easily handled under this project as a separate activity by S&T/DIU, under the supervision of the S&T/AGR/EPP project officer. S&T/DIU will assign responsibility for these activities to an individual in its office. The project leader is responsible for seeing that the coordinator for training and networking provides this S&T/DIU officer with duplicate copies of all pertinent works on FSR/E and that the coordinator and his staff provide S&T/DIU a list of up to 100 works for annotation by the beginning of the third quarter of each year, so that S&T/DIU can complete its subcontract operations and distribute the bibliography by the end of each project year.

#### E. Phasing of Activities

This project is designed to provide technical assistance while building viable national research and extension systems through assistance with training and communications to missions, LDCs and FSR/E practitioners. Though all project activities commence at the same time, some activities require more preparation or "spade work" than others, so that the first outputs of some activities are delivered later than others. (An illustrative timeline for project activities is provided in Diagram 2.)



Diagram 2/continued

Year	July and 1987	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1988	Feb.	March	April	May	June	July and 1988	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1989	Feb.	March	April	May	
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Practitioner and administrator courses																								
Regional Workshops (1)																								
Regional Workshops (2)																								
Regional Workshops (3)																								
Regional Workshops (4)																								
Regional Workshops (5)																								

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Diagram 2/ continued

	<p>Every person needs assistance will be provided to students at their request. Consultant roster will be expanded</p>												
	<p>These six week practitioner courses and three one week administrative courses will be scheduled and taught.</p>												
	<p>Practitioner and administrator courses</p>			<p>Practitioner and administrator courses</p>			<p>Practitioner and administrator courses</p>			<p>Practitioner and administrator courses</p>			
	<p>Regional workshops (1)</p>			<p>Regional workshops (1)</p>			<p>Regional workshops (1)</p>			<p>Regional workshops (1)</p>			
	<p>Vol. 1, No. 1 distributed</p>			<p>Vol. 2, No. 1 distributed</p>			<p>Vol. 1, No. 2 distributed</p>			<p>Vol. 2, No. 2 distributed</p>			
	<p>Project Committee Meeting with FIM approval</p>			<p>Project Committee Meeting</p>			<p>Project Committee Meeting</p>			<p>Project Committee Meeting, evaluation committee and annual reports FIM presentation are reviewed</p>			
Year	July 1974	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. 1975	Feb.	March	April	May	June	July and 1975
	<p>External evaluation conducted</p>			<p>External evaluation conducted</p>			<p>External evaluation conducted</p>			<p>External evaluation conducted</p>			

### Technical Assistance

Technical assistance begins at the outset of this project, at least by the second month of PY 1. This scheduling reflects both the immediate and continuing estimated need for technical assistance and the experience the Agency and recipient institutions already have in this type of activity. Even so, technical assistance is scheduled to increase from 30 to 60 person-months in the first three years of this project. This phased increase acknowledges Agency experience with mission demand for technical assistance from central projects: typically, more missions make greater use of central assistance projects over time. Thus, more requests for assistance are expected once the project is underway than at the outset.

The lower level of technical assistance effort in the first two years of this project will free more time for the project staff to organize the comparative evaluations (Table 1). It is especially important that the staff develop a guideline on alternative methodologies as soon as possible, for an understanding of why different techniques have evolved in distinct settings underlies all attempts to prescribe and implement remedial actions. Moreover, the other general issues (e.g., benefit-cost analyses, managerial concerns) can be explicated in practical terms only once differences in methodologies have been sorted out. Thus, a methodological guideline will be prepared and distributed during PY 1. The technical assistance core staff will be then responsible for completing at least one additional guideline each subsequent year.

Table 1: Allocation of Staff Time for Technical Assistance, PYs 1-5 (in person-months)

Project Year	Technical Assistance Activities		Technical Assistance Field Services			
	Field Services	Reports and Guidelines	Staff	Short-term Consultants	Medium-Term Consultants	Subtotal
1	30	26	10	8	12	30
2	45	24	12	21	12	45
3	60	20	16	32	12	60
4	60	20	16	32	12	60
5	60	20	16	32	12	60
<b>Totals</b>	<b>255</b>	<b>110</b>	<b>70</b>	<b>125</b>	<b>60</b>	<b>255</b>

The use of consultants for technical assistance presumes that the coordinator and his staff will build a roster of FSR/E experts that includes not only the staffs of the recipient institution but outside consultants (U.S. and LDC) as well. To facilitate this activity, the coordinator should develop criteria for the selection of FSR/E consultants during the first months of PY 1. Thereupon, the coordinator can expand the roster, which is naturally a continuous, if sporadic, process. The coordinator will provide the S&T project officer with the resumes of all individuals on this roster, so that the project officer and deputy project officer will be better able to evaluate for approval the composition of all technical assistance teams.

### Training

To initiate the training program requires development of training modules for both the practitioner and the administrator courses. The training modules will be developed during PY 1 by experienced FSR/E trainers on the basis of available materials\* and with the assistance of LDC and international agricultural research center personnel experienced in FSR/E programs. In the first six months of PY 1, the FSR/E trainer-consultants will review the FSR/E literature and organize the training modules. In the development of these materials, the FRS/E trainers will have for one month the counsel of six FSR/E practitioners who work in LDC programs and who have themselves developed courses in this subject. These design consultants will be selected to provide a range of geographic experience and programmatic knowledge. Ideally, two individuals will be contracted from each of the three major geographic regions, namely, Asia, Africa, and Latin America. Further, at least one but preferably both of the individuals from each region will have worked in a national FSR/E program. If only one consultant has experience in a national FSR/E program, the other should have

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\* There already exists extensive literature on actual FSR/E programs that can serve as a basis for the training courses. The Agency, for example, has funded several overviews of FSR/E programs, including the three-volume "Farming Systems Development" by Colorado State University and "Farming Systems Research: A Critical Appraisal" by Gilbert, Norman and Winch, which is published in the Michigan State University Rural Development series, funded by the S&T/RAD Alternative Rural Development Strategies contract. The Agency has also funded reviews of national FSR/E programs, including "Central America: Small-Farmer Cropping Systems" in the PPC/E/S Impact Evaluation series, and "Farming Systems Research (FSR) in Honduras, 1977-91: A Case Study" by Galt, Diaz, and Contreras, also in the Michigan State Rural Development series. At the same time, FSR/E specialists at the international agricultural research centers have produced a number of notable works, including Michael Collinson's "Planning Technologies Appropriate to Farmers; Concepts and Procedures" (CIMMYT) and Zandstra, Price, Litsinger, and Morris' "A Methodology for On-Farm Cropping Systems Research" (IRRI).

worked in the FSR/E program of an international agricultural research center in that region. This mix of professionals will ensure the widest possible range of pertinent experiences for developing and refining the practitioner and administrator courses.

Once developed, the courses will be pilot tested during the last quarter of PY 1. Ideally, the initial course for the practitioners and the one for administrators and educators will each take place at a location that will permit the enrollment as course participants of LDC persons with FSR/E experience. The enrollment in the first course of some participants with such experience will strengthen early feedback to trainers. This first evaluation of course content, its perceived practical value, and the training team's performance by participants with some FSR/E experience will help better "fine tune" the program than would be the case if only participants without FSR/E experience were selected for the initial courses.

While the FSR/E trainer-consultants are developing their courses during the first half of PY 1, the coordinator for training and networking will identify a training program, arrange financial and logistic details, and select the participants for the pilot course, in consultation with appropriate persons in the regional bureaus, interested mission, and LDC. This organizational work is a continuing responsibility of the coordinator. In recognition of the greater difficulty often encountered at the beginning of any new endeavor, the training courses will begin with one cycle in PY 1, increasing to two cycles in PY 2, and then to three cycles in each of the subsequent years.

While the coordinator has responsibility for organizational issues and the trainers have responsibility for substantive matters, it is important that the training consultants all work together in revising the training courses and disseminating relevant experiences. Consequently, in theory and in practice, these positions are collegial.

#### Regional Workshops

Like training, the regional workshops activity of this project must begin slowly and expand over time. Thus, the number of workshops to be held increases each year, from one in PY 1, to three in PY 2, to five in PY 3, to seven in PYs 4 and 5. The workshops will be initiated in those areas in greatest need of support. For this reason, the workshop in PY 1 may be held in Africa, with one African and one Latin American region added in PY 2. The regional workshops to be initiated in PY 3 will be determined by the project manager and the recipient during the second year of this project.

To initiate workshops in PY 1, the coordinator for training and networking would, for example, consult with the Africa Bureau in order to identify priority regions, and with the Bureau and its missions in order to identify those countries in each priority region with a strong FSR/E program. This

stipulation is necessary because the FSR/E network and the workshops must have leadership from people working in national FSR/E programs. These people should also be from the region. Once the priority regions are identified, the coordinator will consult with the missions, ministries, and agricultural research centers in these regions in order to help organize the first workshops. The regional network committee will assume much of this responsibility during the course of the first workshop, so that the coordinator will be freer to focus on initiating new networks and workshop activities in other regions. In other words, the coordinator will help establish the FSR/E network committee and will act as its administrator only as long as necessary and in most cases no longer than six months after the first regional workshop.

Each network will require a center of operations. This center must be based at an institution within the region that has or is developing an FSR/E program. This stipulation helps ensure that the networking and workshop activities planned under this project become part of an on-going effort in the region without further proliferation of new regional hierarchies. The coordinator for training and networking will be responsible for locating the operations of the regional networks in existing institutions as part of his work in initiating those networks.

#### Newsletter

During the first six months of PY 1, the editorial assistant and his coordinator will determine the format of the newsletter, arrange for translation, publication, and distribution, and compile the initial mailing list, which will include LDC practitioners and administrators as well as U.S. FSR/E specialists. The compilation of the mailing list will be done in collaboration with the coordinator for technical assistance, who will at that time be putting together the roster of FSR/E practitioner-consultants.

Once this organizational work is completed, the newsletter will be published quarterly, beginning with month 6 of PY 1. As has already been discussed, the newsletter will serve mostly as an outlet for information generated by the project--brief reports of technical assistance activities, comparative assessments of different aspects of FSR/E programs, reports from the regional workshops.

#### Documentation Center and Annotated Bibliography

The core project staff will identify pertinent titles in the FSR/E literature and provide duplicate copies of these documents to S&T/DIU for the documentation center. By the end of the third quarter of each project year, the staff will provide S&T/DIU a list of titles for the annotated bibliography. These two activities can be performed by the staff as a natural part of their other responsibilities.

S&T/DIU has functioning documentation and annotation systems. These systems work well, according to AID mission personnel who have used them. There are, therefore, no further implementation problems anticipated, once the recipients provide duplicate copies of all relevant works to the S&T/DIU center.

#### V. PROJECT EVALUATION PLAN

A project that is designed to assist and foster diverse national efforts must be constantly monitored to ensure that its focus remains on the practitioners and their needs in serving their clients, the small farmers. Although only the project core staff can perform such continuous monitoring, even the most dedicated and knowledgeable staff can benefit from periodic, external reviews. Therefore, this evaluation plan combines continuous internal monitoring with independent external evaluations at critical points in the course of the project.

This FSR/E project provides services to several types of users--missions and LDC governments, trainees, workshop participants, newsletter readers. Each of these users will be requested to assess the usefulness of the service to them. Missions that request technical assistance will be asked to rate the actual composition of the team in terms of its original requirements, the pertinence of the teams' recommendations for the solution of the specific problem, and the helpfulness of the team members on other matters of mission interest. Trainees will be asked to complete a form that inquires into the perceived usefulness of the course--the topics treated and not treated, the relevance or irrelevance of the training materials, particularly strong, weak, or even missing topics--and the effectiveness of the trainers. Workshop participants will be asked to rate the usefulness of the working sessions and monitoring tours and to suggest topics for further working sessions. And, newsletter readers will be asked for their preference in types of articles. These user evaluations will be compiled quarterly under the direction of the appropriate coordinator.

The project leader will provide these quarterly reports to the project officers in sufficient time for distribution to the project committee members before their quarterly meetings. In addition, the project leader will provide the AID project officers a brief but complete accounting of activities undertaken in the previous quarter and of those contemplated for the coming quarter, including, in both cases, the extent and nature of mission add-ons. The project committee will consider these reports, in relation to the user evaluations, in its recommendations for project activities.

For the third-quarter review each year, the project leader will provide detailed annual summaries of work undertaken, of user evaluations, and of time commitments of all project staff, as well as a work plan for the up-coming project year. This work plan will be reviewed by the project committee, which has the authority to accept or reject the plan. This third-quarter meeting thus provides an important opportunity to review

progress in the project and to suggest greater or lesser emphasis or redirection in project activities.

Internal monitoring through user ratings must be complemented with periodic, external evaluations. Three such evaluations are scheduled during the course of this project. The first evaluation will take place at the end of the second year, when initial efforts may be reviewed and still be strengthened. A second, mid-term evaluation is scheduled for the beginning of the fourth year, when all project activities will have been underway for at least a year. This evaluation will constitute the basis for a recommendation to continue or discontinue the project for a second five-year period. Finally, the end-of-project evaluation in the last quarter of the fifth year will review and assess the accomplishments and disappointments of the project. If the evaluation in PY 4 recommends continuing the project, this end-of-project evaluation will be used to help set the agenda for the second phase.

These external evaluations will assess the effectiveness of the technical assistance and the success of institution-building efforts. When necessary, they will suggest changes in orientation or emphasis for the consideration of the project committee. Because it is particularly important that the evaluation teams ascertain users' opinions about the impact of the central FSR/E program--personal interviews at a later date can gather both more detailed information and important retrospective opinions--all independent evaluators will make field visits to selected nations that participate in the program. The project officers are responsible for composing these teams, on the basis of FSR/E experience, disciplinary range, and language ability, among other considerations. Moreover, the AID project officers, in collaboration with the project committee and evaluators, will select the country programs to be examined.

This combination of internal monitoring with periodic reporting to the Agency and independent evaluations at strategic points in the development of the project is intended, and should be used, to help in the planning and, if necessary, reprogramming of future activities.

SUMMARY BUDGET (in \$000)

		PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
1. TECHNICAL ASSISTANCE:	<u>TOTAL</u>	<u>356.9</u>	<u>523.4</u>	<u>698.2</u>	<u>753.6</u>	<u>816.7</u>	<u>3,148.8</u>
	Missions	58.7	91.4	126.5	136.5	148.4	561.5
	ST	298.2	432.0	571.7	617.1	668.3	2,587.3
2. TRAINING:	<u>TOTAL</u>	<u>233.1</u>	<u>351.5</u>	<u>523.6</u>	<u>565.5</u>	<u>610.4</u>	<u>2,284.1</u>
	Mission/LDC	--	206.1	334.0	360.6	389.2	1,289.9
	ST	233.1	145.4	189.6	204.9	221.2	994.2
3. NETWORKING:	<u>TOTAL</u>	<u>189.1</u>	<u>308.1</u>	<u>438.2</u>	<u>582.5</u>	<u>628.9</u>	<u>2,146.8</u>
	Mission/LDC	7.5	24.3	43.7	66.2	71.4	213.1
	ST	181.6	283.8	394.5	516.3	557.5	1,933.7
4. PROJECT MANAGEMENT:		30.0	32.4	37.6	40.6	43.8	184.4
5. EVALUATION:			11.8		63.0	68.3	143.1
<u>GRAND TOTALS</u>		<u>809.1</u>	<u>1,227.2</u>	<u>1,697.6</u>	<u>2,005.2</u>	<u>2,168.1</u>	<u>7,907.2</u>
	Mission Contribution	66.2	321.8	504.2	563.3	609.0	2,064.5
	ST Contribution	742.9	905.4	1,193.4	1,441.9	1,559.1	5,842.7
	Recipient 35% overhead on ST Contribution	260.0	316.9	417.7	504.7	545.7	2,045.0
<b>TOTAL COST</b>		<u>1,069.1</u>	<u>1,544.1</u>	<u>2,115.3</u>	<u>2,509.9</u>	<u>2,713.8</u>	<u>9,952.2</u>

I. TECHNICAL ASSISTANCE	Z Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
A. Short-term Technical Assistance (one-month TDYs)							
1. Personnel							
Technical Assistance Coordinator	100	40.0	43.2	46.7	50.4	54.4	234.7
FSR/E Production Scientist	100	40.0	43.2	46.7	50.4	54.4	234.7
FSR/E Behavioral Scientist	100	40.0	43.2	46.7	50.4	54.4	234.7
Secretary	100	15.0	16.2	17.5	18.9	20.4	88.0
Core Staff Subtotal		<u>135.0</u>	<u>145.8</u>	<u>157.6</u>	<u>170.1</u>	<u>183.6</u>	<u>792.1</u>
Consultants (\$175/day for 22 days per month; 8 months PY 1, 21 months PY 2, 32 months PYs 3, 4, and 5)							
		30.8	37.3	143.7	155.2	167.6	584.6
Personnel Subtotal		<u>165.8</u>	<u>233.1</u>	<u>301.3</u>	<u>325.3</u>	<u>351.2</u>	<u>1,376.7</u>
**2. Travel and Per Diem (Staff and Consultants)							
a. International							
1. Travel (\$2,000 average round trip cost; 18 trips PY 1, 33 trips PY 2, 48 trips in PYs 3, 4, 5)							
		36.0	72.6	110.4	120.0	129.6	468.6
ii. Per Diem (\$80/day for 30 days per TDY; 18 TDYs PY 1, 33 TDYs PY 2, 48 TDYs PYs 3, 4, and 5)							
		43.2	85.8	134.4	144.0	158.6	565.8
International Travel Subtotal		<u>79.2</u>	<u>158.4</u>	<u>244.8</u>	<u>264.0</u>	<u>288.0</u>	<u>1,034.4</u>

TECHNICAL ASSISTANCE (Cont)	Z Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
b. Domestic (Consultant briefings in Washington)							
i. Travel (\$400 per TDY; 8 in PY 1, 21 in PY 2, 32 in PYs 3, 4, 5)		3.2	9.0	14.9	16.1	17.4	60.6
ii. Per Diem (\$75/day for 5 days per TDY; 8 in PY 1, 21 in PY 2, 32 in PYs 3, 4, and 5)		3.0	8.5	14.0	15.1	16.3	56.9
Domestic Travel Subtotal		<u>6.2</u>	<u>17.5</u>	<u>28.9</u>	<u>31.2</u>	<u>33.7</u>	<u>117.5</u>
Travel Subtotal		<u>85.4</u>	<u>175.9</u>	<u>273.7</u>	<u>295.2</u>	<u>321.7</u>	<u>1,151.9</u>
<u>TOTAL Short-term Technical Assistance</u>		<u>251.2</u>	<u>409.0</u>	<u>575.0</u>	<u>620.5</u>	<u>672.9</u>	<u>2,528.6</u>
B. Medium-term Technical Assistance (1 four-person, three-month TDY per year)							
1. Personnel--Consultants (4 persons for 3 months of 22 workdays @ \$175/day)		<u>46.2</u>	<u>49.9</u>	<u>53.9</u>	<u>58.2</u>	<u>62.9</u>	<u>271.1</u>
2. Travel and Per Diem							
**a. International							
i. Travel (\$2,000 average round trip; 4 per year)		8.0	8.8	9.2	10.0	10.8	46.8
ii. Per Diem (\$80/day for 90 days for 4 persons, each year)		28.8	31.1	33.6	36.3	39.2	169.0
International Travel Subtotal		<u>36.8</u>	<u>39.9</u>	<u>42.8</u>	<u>46.3</u>	<u>50.3</u>	<u>215.8</u>

TECHNICAL ASSISTANCE (Cont)	Z Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
b. Domestic							
i. Travel (2 round trips to Washington, @ \$400 each)		3.2	3.5	3.7	4.0	4.4	18.8
ii. Per Diem (\$75/day for 15 days)		<u>4.5</u>	<u>4.9</u>	<u>5.3</u>	<u>5.7</u>	<u>6.1</u>	<u>26.5</u>
Domestic Travel Subtotal		<u>7.7</u>	<u>8.4</u>	<u>9.0</u>	<u>9.7</u>	<u>10.5</u>	<u>45.3</u>
<u>Travel Subtotal</u>		<u>44.5</u>	<u>48.3</u>	<u>51.8</u>	<u>56.0</u>	<u>60.5</u>	<u>261.1</u>
<u>TOTAL Medium-term Technical Assistance</u>		<u>90.7</u>	<u>98.2</u>	<u>105.7</u>	<u>114.2</u>	<u>123.4</u>	<u>532.2</u>
c. <u>Field Recommendations</u>							
Translation, Publication (500 English, 300 French, 300 Spanish) Distribution		<u>15.0</u>	<u>16.2</u>	<u>17.5</u>	<u>18.9</u>	<u>20.4</u>	<u>88.0</u>
<u>TECHNICAL ASSISTANCE TOTALS</u>		<u>356.9</u>	<u>523.4</u>	<u>698.2</u>	<u>753.6</u>	<u>816.7</u>	<u>3,148.8</u>

\*\*Missions are expected to contribute 33% of these consultant costs.

11. TRAINING	Z Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
<b>A. Training Staff</b>							
Personnel							
Coordinator for Training and Networking	100	40.0	43.2	46.7	50.4	54.4	234.7
Secretary	100	15.0	16.2	17.5	18.9	20.4	88.0
Core Staff Subtotal		<u>55.0</u>	<u>59.4</u>	<u>64.2</u>	<u>69.3</u>	<u>74.8</u>	<u>322.7</u>
Design Consultants (6 for 22 days @ \$175/day)		23.1	0	0	0	0	23.1
Training Consultants (12 person- months PY 1, 6 person-months thereafter)		46.2	24.9	26.9	29.1	31.4	158.5
Consultant Subtotal		<u>69.3</u>	<u>24.9</u>	<u>26.9</u>	<u>29.1</u>	<u>31.4</u>	<u>181.6</u>
Personnel Subtotal		<u>124.3</u>	<u>84.3</u>	<u>91.1</u>	<u>98.4</u>	<u>106.2</u>	<u>504.3</u>
<b>B. Travel and Per Diem</b>							
1. Consultant/Trainers-Travel (\$2,000 round trip, 2 trips per course for 1 trainer; practitioner course PY 1, 2 courses PY 2, 3 courses PYs 3, 4, 5)							
		4.0	8.8	13.8	15.0	16.2	57.8
Per Diem - Practitioner Course (\$80/day 1 person for 42 days)							
		3.4	7.3	11.8	12.7	13.7	48.9

TRAINING (Cont)

	Z Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
Per Diem - Administration Course (\$80 day for 1 person for 8 days)		.5	1.4	2.2	2.4	2.6	9.1
Staff Travel Subtotal		<u>7.9</u>	<u>17.5</u>	<u>27.8</u>	<u>30.1</u>	<u>32.5</u>	<u>115.8</u>
2. Design Consultants-Travel (6 persons @ \$2000 round trip)		12.0	--	--	--	--	12.0
Per Diem (\$75/day for 30 days for 6 people)		13.5	--	--	--	--	13.5
Consultant Travel Subtotal		<u>25.5</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>25.5</u>
3. Participants							
a. Practitioners							
*Travel (@ \$500 round trip, 2 round trips per course; PY 1 15 people, PYs 2-5 30 people)		15.0	64.8	105.0	113.4	122.4	420.6
*Per Diem (\$40/day for 42 days; PY 1 15 people, PYs 2-5 30 people)		25.2	108.9	176.5	190.5	205.6	706.7
Practitioner Travel Subtotal		<u>40.2</u>	<u>173.7</u>	<u>281.5</u>	<u>303.9</u>	<u>328.0</u>	<u>1,127.8</u>
b. Administrators, Policy makers, Educators							
*Travel (30 people @ \$500/round trip per course)		15.0	32.4	52.5	56.7	61.2	217.8
**Per Diem (30 people for 6 days at \$40/day)		7.2	15.6	25.2	27.2	29.4	104.6
Administration Travel Subtotal		<u>22.2</u>	<u>48.0</u>	<u>77.7</u>	<u>83.9</u>	<u>90.6</u>	<u>322.4</u>
Travel Subtotal		95.8	239.2	387.0	417.9	451.1	1,591.0

F

TRAINING (Cont)	Z Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
4. Operational Expenses							
a. Practitioner Course (@ \$10,000 per course)		10.0	21.6	35.0	37.8	40.8	145.2
b. Administrator Course (@ \$3,000 per course)		<u>3.0</u>	<u>6.4</u>	<u>10.5</u>	<u>11.4</u>	<u>12.3</u>	<u>43.6</u>
Operational Expense Subtotal		<u>13.0</u>	<u>28.0</u>	<u>45.5</u>	<u>49.2</u>	<u>53.1</u>	<u>188.8</u>
TRAINING TOTALS		<u>233.1</u>	<u>351.5</u>	<u>523.6</u>	<u>565.5</u>	<u>610.4</u>	<u>2,284.1</u>

The number of training courses should increase over time: one course will be held in PY 1, two courses in PY 2, and three courses in PYs 3, 4, and 5. Therefore, twelve practitioner courses and twelve administrator courses will be held over the life of this project.

- \* Missions and LDC governments will be expected to cover these costs of participants after PY 1.
- \*\* ST project will cover the per diem costs of participants in administrator course during this project.

III. NETWORKING	2 Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
A. Regional Networks and Workshops							
1. Personnel-Resource Consultants (1 Consultant for 12 months/yr. @ \$150/day, for 22 days per month)		<u>40.0</u>	<u>43.2</u>	<u>46.7</u>	<u>50.4</u>	<u>54.4</u>	<u>234.7</u>
2. Staff and Consultant Travel and Per Diem							
a. Project Core Staff: Coordinator for Training and Networking Travel (\$2,000 average round trip; 3 trips in PY 1, 4 in PY 2, 5 in PYs 3, 4, 5) Per Diem (\$80/day for 60 days/ year)		6.0	8.8	11.5	12.5	13.5	52.3
		4.8	5.2	5.6	6.0	6.5	28.1
b. Consultants Travel (\$2,000 average round trip; 3 trips in PY 1, 4 in PY 2, 5 in PYs 3, 4, 5) Per Diem (\$80/day for 180 days/year)		6.0	8.8	11.5	12.5	13.5	52.3
Staff Travel & Per Diem Subtotal		<u>14.4</u> <u>31.2</u>	<u>15.6</u> <u>38.4</u>	<u>16.9</u> <u>45.5</u>	<u>18.1</u> <u>49.1</u>	<u>19.6</u> <u>53.1</u>	<u>84.6</u> <u>217.3</u>
3. Participant Travel and Per Diem							
*a. Travel (30 people @ \$500 round trip each per workshop: 1 in PY 1, 3 in PY 2, 5 in PY 3, and 7 in PYs 4 and 5)		15.0	48.6	87.5	132.3	142.8	426.2
b. Per Diem (\$40/day for 7 days for 30 people per workshop)		<u>8.4</u>	<u>27.2</u>	<u>49.0</u>	<u>74.1</u>	<u>80.0</u>	<u>238.7</u>
Participant Travel Subtotal		<u>23.4</u>	<u>75.8</u>	<u>136.5</u>	<u>206.4</u>	<u>222.8</u>	<u>664.9</u>
Travel Subtotal		<u>54.6</u>	<u>114.2</u>	<u>182.0</u>	<u>255.5</u>	<u>275.9</u>	<u>882.2</u>

NETWORKING (Cont)	% Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
4. Workshop Operating Expenses (@ \$5,000 per workshop)		<u>5.0</u>	<u>16.2</u>	<u>29.2</u>	<u>44.1</u>	<u>47.6</u>	<u>142.1</u>
5. Network Operating Expenses (@ \$15,000 per network)		<u>15.0</u>	<u>48.6</u>	<u>87.5</u>	<u>132.3</u>	<u>142.9</u>	<u>426.3</u>
Network & Workshop Subtotal		<u>114.6</u>	<u>222.2</u>	<u>345.4</u>	<u>482.3</u>	<u>520.8</u>	<u>1,685.3</u>
<b>B. Newsletter</b>							
1. Support Staff							
Editorial Assistant	100	20.0	21.6	23.4	25.2	27.2	117.4
Secretary	100	<u>15.0</u>	<u>16.2</u>	<u>17.5</u>	<u>18.9</u>	<u>20.4</u>	<u>88.0</u>
		<u>35.0</u>	<u>37.8</u>	<u>40.9</u>	<u>44.1</u>	<u>47.6</u>	<u>205.4</u>
2. Publication, Distribution Expenses		<u>5.0</u>	<u>10.8</u>	<u>11.6</u>	<u>12.6</u>	<u>13.6</u>	<u>53.6</u>
Newsletter Subtotal		<u>40.0</u>	<u>48.6</u>	<u>52.5</u>	<u>56.7</u>	<u>61.2</u>	<u>259.0</u>
<b>C. Documentation Center &amp; Annotated Bibliography</b>							
1. Document Acquisition		2.5	2.7	2.9	3.1	3.3	14.5
2. Bibliography (Abstracting, Translation, Distribution)		<u>32.0</u>	<u>34.6</u>	<u>37.4</u>	<u>40.4</u>	<u>43.6</u>	<u>188.0</u>
Documentation Subtotal		<u>34.5</u>	<u>37.3</u>	<u>40.3</u>	<u>43.5</u>	<u>46.9</u>	<u>202.5</u>
NETWORKING TOTALS		<u>189.1</u>	<u>308.1</u>	<u>438.2</u>	<u>582.5</u>	<u>628.9</u>	<u>2,146.8</u>

\* Missions and LDCs are expected to pay 50 percent of the cost of participant travel.

IV. PROJECT MANAGEMENT

	% Time	PY 1	PY 2	PY 3	PY 4	PY 5	TOTAL
Personnel Project Leader	50	30.0	32.4	37.6	40.6	43.8	184.4

V. EVALUATION

a. Personnel (2 Consultants for 15 days PY 2; 5 consultants for 33 days @ \$175 per PY 4, 5)			5.7		36.4	39.3	81.4
b. Travel (2 people @ \$2,000 round trip PY 2; 5 people @ \$3,000 round trip PYs 4 and 5) Per Diem (2 people for 10 days PY 2; 5 people for 20 days @ \$80/day, PYs 4 and 5)			4.0		15.0	16.2	35.2
			1.6		10.1	10.9	22.6
c. Report (Printing, Distribution)			<u>.5</u>		<u>1.5</u>	<u>1.9</u>	<u>3.9</u>
<u>EVALUATION TOTALS</u>			<u>11.8</u>		<u>63.0</u>	<u>68.3</u>	<u>143.1</u>

## VI. TECHNICAL ANALYSES

### A. Administrative Analysis

Expertise in farming systems research is widely dispersed among many institutions; no one university or other organization has predominant capability in this area. The problem is how to most effectively utilize this expertise. It is impractical to directly employ all or even most of the best experts under a single contract or cooperative agreement. The other extreme, direct AID contracting with individuals, would be unwieldy. Thus, we have chosen an intermediate option, a small core staff of experts with funds and authority to contract for the services of other experts as appropriate. This is judged to be the best option and may be the only feasible one given the severe limitations on AID direct hire technical staff.

Both S&T/AGR and S&T/RAD have managed several cooperative agreements. Although this instrument is relatively new to the Agency, financial and technical reporting and decision-making procedures have been refined to the point where no special problems are anticipated. S&T/RAD, for example, has pioneered the use of an interbureau project committee with the authority to review and approval, or reprogram, activities through an annual review in its decentralization project with the University of California at Berkeley.

Management of the project thus involves the active participation of two S&T directorates, as well as the regional bureaus. The involvement of these various entities is necessary to ensure that project outputs will be relevant to the needs of the missions and that the services rendered are high quality. At the same time, it is imperative that one individual, in this case the S&T/AGR project manager, be responsible for successful execution of project management tasks. The centering of responsibility is entirely consistent with the usual mode of AID project management. The active involvement of other offices and bureaus also is not new and will be facilitated by the formal establishment of a project committee and the inter-bureau working relationships established by the sector councils.

Similarly, from the recipient's point of view, though this project requires a great deal of flexibility and coordination, the lines of authority between project staff are clear. Each professional and support staff person is formally responsible to only one of two coordinators, both of whom are responsible to the project leader, who reports to the ST project officer. Informally, it is important that all staff work collaboratively for the success of the endeavor. Thus, it is the responsibility of the appropriate superior officer, either the coordinators or the project leader, to resolve any tensions or difficulties that may arise during the implementation of this project.

Finally, the procedure for selecting the recipient, competitive bidding, is the option preferred by federal procurement regulations. Furthermore, competition, in this case, is expected to yield the best possible proposal.

## B. Economic Analysis

FSR/E programs promise great economic returns from relatively small investments. Indeed, this is their very *raison d'être*. The returns from biological research can be high: it is not uncommon to double usual yields. But the cost of this research is high. And, more importantly, these experimental increases are seldom attained in everyday farming for a vast number of particular reasons. By involving farmers early on in the process of generating and adapting agricultural technology, FSR/E not only discovers basic, widespread production problems amenable to station research, it also develops techniques that better accord with farmer conditions, thereby increasing the likelihood of adoption. In other words, FSR/E is a means to make the theoretical returns real.

FSR/E can also improve the returns on the sunk costs of station research. Review after review has lamented the misdirection of much LDC research, e.g., elaborate trials to determine the effects of different levels of trace elements on particular crops that are rendered useless because they are conducted on overfertilized station plots. FSR/E can reduce such waste of resources and skilled personnel by introducing researchers to, and interesting them in, the actual problems of the majority of farmers. In such a case, the returns to station research would not only increase but also be available to a broader segment of the farmer population.

The overall costs of FSR/E programs are relatively small. Most countries already have research and extension systems, whatever their effectiveness. The problem, therefore, is not to hire new personnel, but to use the existing staffs, to move some of the researchers off of the station and to involve some of the extension agents, so that they may both contribute to research directions and have technology to diffuse. The solution requires short-term training and logistical support, minor costs compared to those of building a research station and equipping laboratories.

Although the returns from FSR/E can be great, the cost-effectiveness of particular FSR/E methodologies has yet to be examined. There has, for example, been a continuing debate in the last few years over the utility (or futility) of systematic vs. informal surveys for areal diagnostics. It is precisely to clarify and help resolve such issues that this project will develop field recommendations on methodologies and benefit-cost analyses, among other matters. These guidelines should help all practitioners decide which alternatives promise the greatest return given a particular country setting.

Field recommendations are but one example of the coordination that a central project can provide all missions. The Agency has a large number of FSR/E projects in its portfolio--over ten projects are underway in Asia, a like number are being supported in Latin America, and nearly three times that number exist or are planned in Africa. In all, there are some 30 individual mission endeavors. Some of these projects will succeed, but others will equally surely stumble or fail. A central project would be necessary if only to help ensure success in all these efforts. But the

role of a central project is greater, for by assisting one mission this project can help missions in all regions by sharing the lessons learned in each experience. As noted earlier, comparative evaluation is a fundamental and important rationale for all central projects.

Each activity in this project has been deemed necessary and useful by various missions and their regional bureaus. Moreover, each activity has been designed for flexibility and continuity in order to eliminate duplication and to extend resources. Should users nonetheless fault a particular service, the annual review system permits a redirection or elimination of that activity. This system is the only way to ensure the usefulness of activities whose benefits cannot be easily monetized.

Finally, this project could be implemented under either a cooperative agreement (rather than a contract; see section IV-B) or through the "new mode" of in-house management. On balance, a cooperative agreement is preferable. Only the recently authorized "Small Farmer Marketing Access" project (936-1192) employs the new mode, which though theoretically feasible has yet to be proven operationally and economically. Even if this experimental approach to project implementation succeeds, it is not clear that the approach could be extended to many projects, for in-house implementation requires a significantly larger staff than project management. In the present case, eight persons in addition to the project officers would be required. Such a sizable increase in AID project staff could only be achieved through the use of RSSA and IPA arrangements, which because they are temporary appointments, would break the continuity deemed essential to the success of this project. At the same time, the real cost, including overhead, of that staff is similar under either arrangement.

Two other considerations also favor a cooperative agreement. First, potential recipients already have experience and capabilities that would have to be created within AID. Many institutions have considerable experience in technical assistance, FSR/E training, networking, workshops, and newsletters, so that the combination of several institutions into a recipient group would create a strong base at the outset of the project. Second, USAID can experience unfortunate delays in contracting short-term consultants that do not afflict most recipients, who could therefore provide assistance on a more timely basis. These advantages are strong arguments for a cooperative agreement over the new mode of in-house implementation.

The documentation center and annotated bibliography, however, are better performed by USAID/S&T/DIU than by a recipient. Either could serve as a repository for all documents. But only S&T/DIU now has a working system for worldwide distribution and can ensure the availability of those materials after the life of this project. S&T/DIU also has a subcontracting system for abstracting and publishing. It would be less costly to use the existing S&T/DIU systems for these activities than to develop these capabilities through a recipient. And, the quality of the abstracts would be uniformly high, something that has proven not to be the case when recipients do not maintain these capabilities.

In summary, FSR/E promises proportionally large returns from more appropriate research and improved technological adaptation, even while the advantages of particular methodologies are still debated. Indeed, the promise is so great that many LDCs and missions are already implementing such projects. In this situation, a central project can, by assisting individual mission efforts, comparatively evaluate program experiences in order to develop recommendations that will be useful to missions in all regions. Finally, due to the experience and capabilities of potential recipients, as well as to staffing patterns within USAID, this project is best implemented through a cooperative agreement, with the exception of the documentation center and annotated bibliography, which can be managed better by S&T/DIU.

### C. Social Analysis

Farming systems projects accord fully with Section 103A (Agricultural Research) of the Foreign Assistance Act of 1961, as amended in 1975. The Act expresses the very aims of the FSR/E approach: to develop or adapt agricultural interventions for small farmers, given the panoply of factors that impinge on their operations. Further, FSR/E expressly designs interventions that fit existing production systems and that disrupt existing patterns as little as possible in the short run. Insofar as FSR/E has evolved primarily to serve limited resource farmers better, application of the approach will probably lessen inequality.

The primary beneficiaries of this project are the FSR/E practitioners themselves, for the true benefit of this project lies in the establishment and strengthening of FSR/E programs in developing countries. However, it is neither possible nor intended to assist all agricultural practitioners in any country. This project aims to establish and support in as many countries as possible a cadre of working professionals who can then further the evolution of a national farming systems program. Thus, in time, those interested colleagues who were not a part of this project can benefit nonetheless.

The ultimate beneficiaries of this project are the small or limited resource farmers to whom farming systems research and extension programs are directed. Once established, an FSR/E program will help to orient research priorities toward the concerns and needs of the small farmer. It will thereby develop technologies that will improve small-farm production and raise the standard of living of small farmers. Though these benefits are indirect, they are, in the final analysis, the reason for farming systems research and extension programs.

### The Role of Women in Development

Women work on and manage small farms in most developing countries. In some, women perform most of the basic agricultural activities. Nonetheless, most traditional research and extension work has overlooked the significant role of women in agricultural and livestock production. FSR/E should help rectify this situation. Inasmuch as FSR/E begins and ends

with assessments of local agronomic and socio-economic conditions, including the division of labor, analyses of the entire production-and-enterprise system should improve understanding of the role of women in rural production and thus of how best to assist them. Further, participation of the farmers is essential in conducting the field trials. It is assumed that researchers will conduct these trials with whoever, male or female, performs the farm work. At the extension stage, women must be involved at least to the extent that they perform the farm labor. FSR/E programs are likely to increase the sensitivity of researchers and extension agents to these situations.

This project will directly support these aims in several ways. The annotated bibliography will include recent work focused on women farmers and herders. The newsletter will periodically devote a section to specific successes (or failures) of FSR/E work with women. And, in the training efforts, candidates will be selected so that women agricultural agents participate at least in proportion to their numbers.

#### D. Environmental Impact Statement

The activities proposed for this project fall into the area described in environmental procedure regulations, Para. 216.2(c) "Analysis, Studies, Academic or Investigative Research. Workshops and Meetings." These classes of activities will not normally require the filing of an Environmental Impact Statement or the Preparation of an Environmental Assessment. It is possible that an output of this project will be a set of procedures, guidelines or analytical results which would lead to activities requiring such assessment. However, the project itself only proposes analyses and directly supportive activities. Under these guidelines, the project clearly qualifies for a negative threshold decision.

APPENDIX A

SUMMARY OF MISSION REQUESTS FOR PROJECT ASSISTANCE  
IN RESPONSE TO INFORMATIONAL CABLE

<u>Country</u>	<u>Person-Months</u>	<u>Training Only No. of Participants</u>	<u>Anticipated Services</u>
<u>AFRICA</u>			
Botswana	6-8	6-8	TA (evaluation), Training
Senegal	Not estimated	-	TA (operational problems)
Swaziland	Not estimated	-	Information, TA (monitoring evaluation)
Toga	Not estimated	-	TA (design), research
Zaire	Not estimated	3	Training, TA (evaluation)
Burundi	Not estimated	-	Information
Lesotho	Not estimated	Not estimated	Training, information, TA (operational problems)
Niger	Not estimated	-	Information, TA (implemen- tation, evaluation)
Sierra Leone	Not estimated	-	Information, TA (design and evaluation)
Tanzania	10+	20	TA (design, implementation; evaluation), training, information
Zimbabwe	Not estimated	-	All four components
<u>ASIA</u>			
India	Not estimated	-	TA (implementation)
Pakistan			
Philippines	6	Not estimated	TA evaluation) & design), Training
Bangladesh	Not estimated	Not estimated	TA (evaluation), training, Information)
Indonesia	Not estimated	Not estimated	TA (implementation), training, research
Nepal	10		TA (evaluation), training
<u>LATIN AMERICA</u>			
Bolivia			TA (design), information
Dominican Republic		3/yr.	Training, TA (evaluation, design
Ecuador			TA (evaluation), information
Panama			TA (design)

## APPENDIX B

### MEMORANDUM OF UNDERSTANDING

#### Procedures for ST/AGR and ST/RAD Collaboration in the Design and Implementation of Joint Projects

It has become increasingly obvious over time that our two offices have many common developmental objectives, common responsibilities, and common program interests. It is also clear that the appropriate mix of professional talents needed to address adequately those shared concerns is available in-house if and only if there is inter-office collaboration.

The sponsorship of collaboration in the design and implementation of complementary agricultural and rural development programs gained sharper focus in the FY 82 planning cycle. Joint project committees were formed and a joint funding mechanism was established for two major project efforts:

1. Farming Systems for Small Farmers (936-4099), and
2. Small Farmer Marketing Access (936-5315).

The PID for the Small Farmer Marketing Access has been approved by technical committees for both offices and by both the RDSC and the TPCA. A draft PID for the Farming Systems for Small Farmers project has been circulated to the technical committee members for comment.

Given the encouraging results of collaboration thus far and a positive staff attitude to continue such efforts, we have decided to establish the following procedures concerning inter-office project collaboration. If these two projects prove to be successful, additional opportunities for joint activities will be explored.

1. For purposes of clarity in programming of collaborative projects, we have agreed that one office will assume full funding responsibility. Consequently, each collaboratively developed and jointly approved Project Paper will identify the unique funding office.
2. Whereas collaborative projects will be design and implemented jointly by ST/AGR and ST/RAD staff, one office will assume the mandate for project management accountability (official project file maintenance, cable traffic action, etc.).
3. In order to maintain as close collaboration as possible, we will have bi-monthly meetings of relevant staff to review progress and resolve implementation problems. To the extent possible these

inter-office meetings will be chaired alternately by the two Office Directors.

4. In light of the above, we have decided that ST/RAD will assume funding and management accountability for Small Farmer Marketing Access and ST/AGR will assume funding and management accountability for Farming Systems for Small Farmers.

Since the two Offices have separate project approval committees (the TPCA and RDSC) and procedures, a unified system of PID and PP approval for joint projects must be created. We will propose to the TPCA and RDSC that a single joint committee of either TPCA/RDSC members or appointed representatives to a sub-committee be delegated responsibility for such approval.

                  /s/ D.R.F.  
Donald R. Fiester  
Director  
Office of Agriculture

                  /s/ J.F.  
Jerome French  
Director  
Office of Rural Development and  
Development Administration

                    
Date

                    
Date

APPENDIX C

February 4, 1982

MEMORANDUM

TO: DAA/AFR, Mr. W. Haven North

FROM: S&T/FA, J. S. Robins /s/ JSR  
S&T/HR, Ruth Zagorin /s/ RZ

SUBJECT: Relationship of S&T and AFR (CIMMYT) Farming Systems Research Projects

S&T/AGR and S&T/RAD are developing an FSR project (936-4099) with a project committee drawn from all Bureaus. The Africa Bureau will be the major recipient of support services provided by this project, at least in its early implementation. Thus, AFR/DR/ARD has been and will continue to be the most heavily involved of any of the Regional Bureau offices in defining and guiding the PP to completion and implementation. We are grateful for their support and special assistance in helping us move forward.

We have also reviewed the AFR (CIMMYT) FSR unsolicited proposal for support of AID FSR projects and national institutions in Eastern and Southern Africa. We met with the proposed project leader Michael Collinson in January when he was in transit from consultation in CIMMYT/Mexico to his post in Nairobi. We do not find any conflict in the proposals. The CIMMYT project will increase technical assistance, regional networks for training and workshops, and provide some documentation of FSR experiences and methodology in Eastern and Southern Africa. The FSR Project Advisory Committee will also oversee the CIMMYT activity in order to assure complementarity and coordination of the activities under both projects. The S&T/FSR project will coordinate support for all African missions in (a) technical assistance, (b) networking and training, (c) workshops, and (d) research on FSR methodology.

We would hope that some arrangement may develop near the end of the AFR (CIMMYT) FSR project wherein that activity would be completely integrated with the S&T/FSR project. Until then, we will all be giving special attention to the complementarity of the two efforts.

cc: AFR/DR, John Koehring  
AFR/DR, Lawrence Heilman  
AFR/DR, Lane Holdcroft  
SAA/S&T, Nyle Brady  
S&T/AGR, Donald Fiester  
S&T/RAD, Jerome French  
S&T/AGR, Richard Sutter

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Line of Project  
From FY 82 to FY  
Total US Funding \$7,887,600  
Date Prepared March 15, 1982

Project Title & Number: FARMING SYSTEMS RESEARCH FOR SUSTAINABLE RURAL DEVELOPMENT

INTERMEDIATE GOALS	OPERATIONAL VISIBLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																						
<p><b>Program Sector Goal:</b> The basic objective is which this project contributes</p> <p>To strengthen the capabilities for small farm development of 100 agricultural research and extension field stations.</p>	<p><b>Class and Field Assessment</b></p> <ol style="list-style-type: none"> <li>1. Reported numbers of loans and work on small field sites among 100 agricultural field stations, within each country and among countries.</li> <li>2. Number of multi-disciplinary teams assigned to small farm production and enterprise studies.</li> <li>3. Reported research capability for small farm production.</li> </ol>	<ol style="list-style-type: none"> <li>1. Annual reports of ILC agricultural field stations.</li> <li>2. Quarterly and annual reports to project officers.</li> <li>3. Peer evaluations of project services.</li> <li>4. Periodic external evaluations of project activities.</li> </ol>	<p><b>Assumptions for achieving goal targets</b></p> <ol style="list-style-type: none"> <li>1. The physical resources in the rural areas have potential for development.</li> <li>2. Small farmers want to improve their production and living conditions.</li> <li>3. Government policies endorse and support small-farm programs.</li> <li>4. ILC institutional arrangements permit interagency coordination.</li> </ol>																						
<p><b>Project Purpose</b></p> <p>To support the improved design, implementation, and evaluation of farming systems research and extension (FSR/E) activities.</p>	<p><b>Condition that will indicate purpose has been achieved:</b> End of project status</p> <ol style="list-style-type: none"> <li>1. Establishment of viable FSR/E programs within selected ILC field stations.</li> <li>2. Studies of multi-disciplinary research teams composed of field personnel from research and extension systems.</li> <li>3. Level of farmer participation in development and conduct of on-farm research.</li> <li>4. Reported logistical support for FSR/E teams.</li> <li>5. Reported work scheduling for FSR/E teams.</li> <li>6. Completed organizational management of FSR/E teams.</li> </ol>	<ol style="list-style-type: none"> <li>1. Annual reports of ILC agricultural field stations.</li> <li>2. Quarterly and annual reports to project officers.</li> <li>3. Peer evaluations of project services.</li> <li>4. Periodic external evaluations of project activities.</li> </ol>	<p><b>Assumptions for achieving purpose</b></p> <ol style="list-style-type: none"> <li>1. National FSR/E programs receive necessary continuous support.</li> <li>2. Local farming systems are understood before developing or adapting technologies.</li> <li>3. FSR/E practitioners test new or adapted technologies with farmers on farmers' fields.</li> <li>4. Extension service participates in on-farm experimentation.</li> </ol>																						
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>1. Appropriate, cost-effective methodologies for research, extension, training, and extension.</li> <li>2. Personnel trained in FSR/E approaches and perspectives.</li> <li>3. Organizational structures and coordination mechanisms developed for different environments, including challenges within and between research, training, and extension units and farmers.</li> <li>4. Budgetary, logistical, staffing, and supervisory work-planning and control mechanisms are developed for varying country situations for the support of FSR/E approaches.</li> <li>5. Recording of lessons of above experiences.</li> <li>6. Dissemination of lessons learned.</li> </ol>	<p><b>Measures of Outputs</b></p> <ol style="list-style-type: none"> <li>1. In ILC agricultural field stations have received FSR/E technical assistance at mission request.</li> <li>2. 17 practitioners courses and 12 administrative courses, tailored to participants' needs.</li> <li>3. Five analytical papers with recommendations for field programs.</li> <li>4. 15 newsletters, quarterly after months of FY 1, with a circulation of 1000 copies in English, French, and Spanish.</li> <li>5. Seven national regional coordinators.</li> <li>6. 71 regional workshops.</li> <li>7. Five annotated bibliographies, each with up to 100 pertinent articles in the FSR/E literature.</li> <li>8. Complete collection of pertinent FSR/E materials, with open access during and after this project.</li> </ol>	<ol style="list-style-type: none"> <li>1. Quarterly and annual reports to project officers.</li> <li>2. Peer evaluations of project services.</li> <li>3. Periodic external evaluations of project activities.</li> </ol>	<p><b>Assumptions for achieving outputs</b></p> <ol style="list-style-type: none"> <li>1. Commitment on part of national policy makers, administrators, and practitioners to support FSR/E approach.</li> <li>2. Basic agricultural research capability already in place.</li> <li>3. Existing outreach programs working successfully with target populations.</li> <li>4. Mission and host countries demonstrate commitment to training activities by funding participant costs.</li> <li>5. Mission and host countries demonstrate commitment to networking by funding half of workshop participant travel costs.</li> <li>6. Present SBI/DID mandate remains unchanged at least through life of project.</li> </ol>																						
<p><b>Inputs</b></p> <ol style="list-style-type: none"> <li>1. Technical assistance for consulting in design, implementation, and evaluation of FSR/E approaches.</li> <li>2. Training of participants.</li> <li>3. Operating funds for development, workshops, and coordination.</li> <li>4. Project management.</li> <li>5. Project evaluation.</li> </ol>	<p><b>Input/Outputs Table (Type and Quantity)</b></p> <table border="1"> <tr> <td>1. Studies of field stations</td> <td>\$ 1,967.1</td> </tr> <tr> <td>2. Applied Research</td> <td>670.2</td> </tr> <tr> <td>3. Training</td> <td>996.2</td> </tr> <tr> <td>4. Extension Workshops</td> <td>1,472.2</td> </tr> <tr> <td>5. Coordination</td> <td>259.0</td> </tr> <tr> <td>6. Evaluation study</td> <td>202.5</td> </tr> <tr> <td>7. Project management</td> <td>186.4</td> </tr> <tr> <td>8. Evaluation</td> <td>151.1</td> </tr> <tr> <td>Subtotal</td> <td>\$ 5,842.7</td> </tr> <tr> <td>1% overhead</td> <td>2,044.9</td> </tr> <tr> <td>SI total</td> <td>\$ 7,887.6</td> </tr> </table>	1. Studies of field stations	\$ 1,967.1	2. Applied Research	670.2	3. Training	996.2	4. Extension Workshops	1,472.2	5. Coordination	259.0	6. Evaluation study	202.5	7. Project management	186.4	8. Evaluation	151.1	Subtotal	\$ 5,842.7	1% overhead	2,044.9	SI total	\$ 7,887.6	<ol style="list-style-type: none"> <li>1. Quarterly and annual reports to USAID project officer.</li> <li>2. Peer evaluations and financial information.</li> <li>3. Periodic external evaluations of project activities.</li> <li>4. Audits of project records and expenditures.</li> </ol>	<p><b>Assumptions for providing inputs:</b></p> <ol style="list-style-type: none"> <li>1. ILC agencies meet budgetary commitments to support FSR/E programs.</li> <li>2. FSR/E can be cost effective.</li> <li>3. Qualified FSR/E experts are recruited for IA and training activities.</li> <li>4. At least five, and preferably ten, years are allowed to develop the program.</li> </ol>
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