

FARMING SYSTEMS RESEARCH PROJECT (696-0110)

PROJECT PAPER SUPPLEMENT

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FARMING SYSTEMS RESEARCH PROJECT

PP SUPPLEMENT

1. Purpose of Supplement

The purpose of this PP Supplement is to take advantage of a very special opportunity provided in the evolution of Rwanda's agricultural research program. This is the desire on the part of ISAR's leadership to apply elements of the farming systems approach to its national commodity research programs. In particular, ISAR wishes to use the results of diagnostic/verification surveys to inform its commodity research protocols and to engage in an expanded program of on-farm trials. The fusion of these two approaches (commodity focused and farming systems research) will be tested by the integration of the Farming System Improvement Project (FSIP) with the commodity research programs at the Rwerere sub-station, responsible for the development of improved agricultural technologies for the Buberuka Highlands. The shift in focus to a greater emphasis on research and training, especially in the context of MINAGRI's strategy of regional concentration on priority crops, entails additional changes in the implementation and management of the project, but not in its objectives. Among others, these have to do with how extension will be involved and supported by the project and how the rural infrastructure component will be implemented. All the changes arise from a common concern by all parties to fully integrate the project into ISAR. These changes also entail adjustments in administration, management and budgets. Our purpose is to record these adjustments for the record and thereby describe the major elements of the Farming Systems Research Project (FSRP), the new title agreed to by all parties.

2. Background

The FSIP was designed under a collaborative mode in early 1984, involving the University of Arkansas as the lead institution in a consortium of universities under Title XII as the contractor to A.I.D. This contract was signed in April 1985 and a five person expatriate team was fielded by the contractor in August 1985. The contractor is also responsible for the participant training program (66 person years), some procurement, local cost financing and administration. In addition to the Title XII contract, FSIP provided for direct AID management of:

- construction of infrastructure at the Rwerere research sub-station (mainly housing for the technicians, office space and a training center);
- construction of rural infrastructure (roads, water systems and community centers);
- other technical assistance (mainly the services of an engineer to supervise construction);
- commodity procurement outside the contract;

--local cost financing outside the contract (an element added in a subsequent amendment to the original project agreement by Project Implementation Letter No. 7 dated April 22, 1986);

--other costs.

The multi-faceted nature and the complexity of the project led to confusion about implementation responsibilities and its purpose. Local government officials were concerned about delays in construction of rural infrastructure that would primarily benefit local communities (e.g. water and community centers). These concerns hampered project implementation, especially the extension component. Expatriate researchers have spent much time negotiating with local officials, easing their frustrations and explaining that FSIP was not primarily an integrated rural development project. In spite of these efforts, memoranda of understanding eliciting local cooperation in farming systems research and extension were never negotiated or executed.

Another problem was that the approach to farming systems research was never clearly articulated to ISAR's leadership. Rather, work programs were submitted which left ISAR wondering about the efficacy of research protocols, the value and potential return of "farming systems" research relative to the high administrative costs needed to support it. Further, the role of the extension advisor at Rwerere and of the Farming Systems Coordinator at Rubona were questioned by ISAR.

In addition, it was felt that neither the contractor nor the project was doing enough to develop key linkages with support networks, notably the University of Rwanda's Faculty of Agronomy and the IARCs (especially CIMMYT/Nairobi in farming systems research).

But the major problem perceived by ISAR leadership was that the project was an island unto itself, not at all under the control of ISAR.

For these reasons an "external" evaluation was called in late 1986, slightly more than one year into project implementation, and the team submitted its report in December. Major recommendations of the evaluation which drive this PP supplement and which were accepted (some in modified form) by all parties are:

1) FSRP and ISAR should fully integrate FSRP into ISAR so that it reinforces the strengths of the national agricultural research programs. Comprehensive, integrated annual workplans accompanied by detailed budgets should be written in consultation with ISAR/Rubona staff to satisfy both ISAR's needs and the requirements of the AID/UOA contract. The draft workplan should be submitted to both AID and ISAR according to ISAR's timetable. The approved annual plan should be submitted to AID by July 1st.

2) FSRP scientists in Rwerere should work as a multidisciplinary team to refine farming systems methodology so that it can serve as a model for replication in ISAR's national research programs. They should: a) identify key problems through diagnostic surveys and identify what the Rwerere station (including the FSRP team) can do to address them; b) develop a methodology for doing on-farm and on-station research and pre-extension and for reinforcing ISAR programs carried out at the Rwerere station as well as in the four

project communes (statement of methodology to be developed by the FSRP team and reviewed by GOR and OAR/Rwanda); c) propose terms of reference for all team members that specify their role as part of a multidisciplinary team (revised TORs to be reviewed by GOR and OAR/R); d) develop means for measuring FSRP's impact on agricultural production and marketing in the four communes and high-altitude zones.

3) The GOR should provide three more AOs (including a training/communications specialist) and five more A2s to complete its contribution as agreed to in the Project Agreement.

4) The Rwerere Station Chief will be named Project Director and should direct FSRP research activities. He should effectively represent the ISAR Director concerning FSRP, and his responsibilities should be clearly defined and understood by all interested parties.

5) The position of Farming Systems Advisor in Rubona should be filled when deemed appropriate by collaborating parties by a permanent, tenure-track or tenured faculty member, with extensive FSR/E experience, from a university under contract. This may be difficult to achieve, but it should be vigorously pursued.

6) The position of expatriate Extension Specialist should not be continued when the incumbent's contract expires. When any extension personnel are needed for the project, they will be hired and paid for by ISAR to work exclusively on the project; they will work on national extension themes only when congruent with project objectives.

7) The rural development infrastructure activities should be implemented as soon as possible. OAR/Rwanda should write a letter to MINAFFET explaining that only \$500,000 is available for rural infrastructure in the project zone. OAR/Rwanda should employ an American NGO to implement these activities.

8) ISAR, UNR Faculty of Agronomy, UOA, and OAR/Rwanda should meet as soon as possible to activate FSRP's special studies component and to establish criteria and procedures for implementation which fit ISAR's decisionmaking structure. The objective of this component will be redefined to support linkage between ISAR and UNR. The majority of funds will be used for research by UNR students and faculty.

9) OAR/Rwanda recognizes the need for greater coordination and interchange among the three parties. However, the Project Coordinating Committee should not be formed. The FSRP annual workplan should plan periodic consultations among representatives of ISAR, UOA and OAR/R. The FSRP annual work plan should also include provisions for semi-annual plenary sessions involving all ISAR, UOA, OAR/R personnel based in Rwanda who are involved in the project.

10) AID and GOR will negotiate a new project budget which AID will prepare with UOA assistance.

11) AID and GOR should change the name of the project to the Farming Systems Research Program.

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12) The UOA Contract Representative and the OAR/R Project Officer should jointly review the functions of the Kigali Office with the objective of preparing a plan to reduce its operating costs and profile in a manner that will not adversely impact FSRP.

13) AID and the GOR should amend the PROAG and Project Authorization to drop all requirements for MOUs.

14) The FSRP team should give immediate attention to undertaking priority diagnostic and verification survey work, perhaps with CIMMYT assistance.

15) The FSRP team should define and put into action extension interventions necessary for farming systems research, and, as technologies can be diffused, it should develop educational modules covering these tasks for FSRP and ISAR in-service training.

16) AID, UOA and ISAR should finance a biometrician out of savings from the unfilled Farming Systems Advisor position at Rubona.

17) ISAR should consider asking CIMMYT to start their in-country national FSR/E short course series. The training center at Rwerere might serve as a base for this exercise, which would benefit from the FSRP field computer facilities.

18) In addition to FSRP resources now allocated to special studies, AID should try to secure new sources of funds to facilitate UNR researchers' collaboration with the ISAR research program. OAR/Rwanda should review ISAR support for in-country activities related to priority research networks with appropriate IARCs and, if needed, seek to provide funds to assure that in-country activities are adequately supported.

3. Progress to Date in Implementing the Evaluation Recommendations

The first integrated workplan was prepared in close consultation with ISAR/Rubona and approved by ISAR. Detailed budgets and procurement plans have been prepared. The expatriate extension advisor and agricultural economist have not renewed their contracts. UOA's new contract representative came to Rwanda in early September 1987. Recruitment for a replacement agricultural economist is underway. The biometrician has been recruited and started work in Rubona in mid-September. The Rwerere station chief was appointed project director and authority is being delegated to him as his responsibilities are being defined. FSRP and commodity researchers at Rwerere are working together and have benefited from a special consultancy during August by a farming systems expert. All of the researchers are now jointly developing a methodology for on-farm and on-station research based on a revised program of diagnostic and verification surveys. CIMMYT has started its special in-country training program and future courses will be worked out with ISAR. OAR/Rwanda has agreed to finance housing for 7 A2s and ISAR has agreed to partially fund the on-going services of a PSC engineer to supervise construction.

OAR/Rwanda has written a letter to MINAFFET explaining the funding situation for the remaining rural infrastructure activities and the arrangements for engaging the services of a qualified PVO to assist the four communes. ISAR, UOA and OAR/Rwanda have agreed on the status and role of the Kigali Office. The participant training program has been revised and a list of the remaining candidates has been submitted shortly. Approximately 71 person-years of training are now envisaged. Finally, OAR/Rwanda has received funds for and signed a grant with the University of Minnesota to strengthen linkages among the Faculty of Agronomy, ISAR and appropriate IARCs in ways that draws the Faculty more closely into the national agricultural research network.

4. Project Revisions

4.1. Objectives

The goal and purpose of FSIP as stated on pages 11-14 of the Project Paper are consistent with OAR/Rwanda's CDSS which was approved in May 1987. Therefore, the goal and purpose of FSIP will remain the same for FSRP. However, some end of project conditions (EOPS) which will indicate achievement of the project purpose require modification:

With respect to EOPS (a) - the geographical focus of the program's activities will be in the Buberuka highlands, particularly the four communes of Butaro, Cyeru, Nyamugali, and Nyarutovu.

EOPS (b), which concerns extension services, is to be dropped because the project will emphasize research and pre-extension. Focus on extension activities would be premature.

EOPS (c), which concerns establishment of linkages among ISAR, MINAGRI, and local administration, is to be modified by dropping all requirements for establishing memoranda of understanding, coordinating or advisory committees, and formal management structures.

Regarding project outputs (pages 14, 15 of the PP), the following should be revised as follows:

Output (a) - change from "six agricultural scientists" to "eight agricultural scientists."

Output (b) - delete and replace with: "Diffusion and Adoption of Appropriate Technologies -- It is expected that the FSR/E approach will encourage ISAR researchers (including commodity researchers) to base their research programs on farmer problems and constraints identified in diagnostic/verification surveys and on-farm trials. Thus far, preliminary diagnostic work reveals the following constraints which farmers face in the Buberuka highlands:

1. soil infertility and erosion
2. plant disease, especially for beans
3. insect damage
4. livestock diseases
5. small and fragmented landholdings
6. non-availability of purchased inputs.

For each of the above constraints already identified, at least one technology will be developed which is appropriate and will be used by farmers. This will be done as other research will be undertaken based on additional diagnostic/verification surveys and work on farmer fields.

Output (c) - Trained Rwandans at several levels who are familiar with FSR/E, approximately 71 person-years of overseas degree training will be provided (approximately four to the Ph.D. level, approximately ten to the M.S. level, and approximately eight to the B.S. level).

Output (d) - All remaining research studies on special topics will be undertaken by UNR faculty and students or other ISAR researchers.

Output (g) - In order to increase the communes' role in determining their rural infrastructure needs, this output should be modified as follows: "Provision of rural infrastructure to gain community support for implementation of the FSR/E approach in the four project communes, such as the improvement of rural access roads, installation of piped water systems, or other activities which contribute to agricultural productivity."

Finally, two additional outputs should be listed as they were not listed in the original PP but for which several inputs have been provided:

An expanded, fully-functioning farming systems research station at Rwerere provided with appropriate facilities, infrastructure and equipment.

ISAR's linkages with faculties of the National University of Rwanda will be strengthened through collaborative and other research activities.

4.2. Inputs

4.2.1. AID Inputs

Long-term technical services to be provided by AID (through the UOA contract) is to be modified as follows:

- FSR/E team at Rwerere: one agronomist for five years, one extension specialist for two years, one socio-economist for about 4 years, one soil scientist for four years, one plant pathologist for about 29 months (who will serve as the senior advisor to the project director and as UOA's contract representative to OAR/Rwanda)
- FSR/E personnel at Rubona: one farming systems advisor for two years, one biometrician for about 29 months
- personnel at Kigali: one administrative officer for two years, to be replaced by a Rwandan office manager for the remainder of the project

Clarification on the Kigali support office for the UOA contract is to be added as follows:

Under the UOA contract, a small, low-profile office will be maintained in Kigali, under the supervision of the UOA contract representative, to serve the following functions: 1) assist UOA in satisfying its reporting requirements to AID, 2) provide logistical support to the UOA team in Rwerere and Rubona and to ISAR's station in Rwerere (e.g. procurement and customs clearance of commodities, communications), 3) assist ISAR/Rwerere in its budgeting and accounting, and 4) provide administrative support, to the extent possible, to other agricultural research activities in Rwanda. The office will have a small Rwandan staff (roughly three individuals) headed by an office manager. The office space will be rented by UOA.

In addition, an expatriate mechanic is to be added to the team in Rwerere. This mechanic is to maintain project vehicles and other equipment (e.g. generators), and to train ISAR personnel in mechanics. This mechanic has already been funded for one year and worked in Rwerere under a Personal Services Contract with OAR/R. For the second year, he will be funded under the UOA contract and will train a Rwandan mechanic. The Rwandan mechanic will replace the expatriate starting in the following year, and he will be paid by the project.

Participant training to be provided by AID (through the UOA contract) is to be modified by reducing the number of B.S. level degrees to approximately 8 and increasing the number of M.S. level degrees to about 10 and Ph.D. level degrees to approximately 4. Since approximately two M.S. level degrees can be financed for each B.S. level degree, ISAR, UOA and AID agreed that this participant training mix would be more cost-effective. In addition, the requirement that M.S. level degree participants spend six months working with the FSR/B team prior to academic training was determined unfeasible. Instead, these participants are to receive 1-2 weeks of orientation with the FSR/B team before academic training.

English language training is to be modified as follows:

Candidates for long-term training, upon being selected by the GOR, accepted by the graduate school of an American university, and achieving a minimum TOEFL score of 500, will be approved for travel to the U.S.

The Special Studies and Research activity will be expanded to include ISAR researchers working in fields other than farming systems research. Further, unless agreed to by the Parties, all remaining funds for this activity will be reserved for UNR faculty and students and ISAR researchers, rather than reserving some funds for students from participating U.S. universities. While all international costs of this activity will continue to be financed through the UOA contract, the local costs of participation of ISAR researchers and UNR faculty and students will be financed directly through ISAR. This activity will include participation of researchers, faculty and students at international seminars and meetings. No advisory committee will be established to facilitate implementation of this activity. Rather, it will be implemented as part of the project's annual work plan, which will be reviewed according to standard ISAR procedures.

Commodities -- Additional commodities to be procured are listed in Annex 2. These include 6 additional vehicles (4 4-wheel drives, 1 5-ton truck, 1 minibus), increasing the total from 10 purchased under the project to 16. Also, 7 additional motorcycles are to be purchased, increasing the total to 14.

Construction is modified as follows:

- (c) Residences at Rwerere -- Housing will be constructed in Rwerere for both expatriate personnel and their Rwandan scientists/counterparts (A0s) and for A2s assigned to the project. Housing requirements include eight three-bedroom houses, one two-bedroom guest house, and eight two-bedroom apartments (4 houses with two apartments each). Since only 7 A2s are to be assigned to the project, the eighth apartment may be occupied by another A1 or A2 on the station currently lacking adequate housing (for example, the ISAR chief mechanic)
- (d) Commune Multi-Purpose Centers, (e) Improvement of Rural Access Roads, and (f) Installation of Rural Water Systems -- These are to be dropped. Instead, the following will be substituted:

Under OAR/Rwanda supervision, the 6.3 km road from Kirambo to Rwerere will be rehabilitated. ISAR/Rwerere will be responsible for assuring the road's maintenance. In addition, OAR/Rwanda will grant funds to a U.S. PVO to work with the four project communes to select, design, and implement rural infrastructure activities. These activities could include construction of commune multi-purpose centers, improvement of rural access roads, installation of rural water systems, or other rural infrastructure which are expected to reduce constraints to improved agricultural productivity. The communes will support these activities by providing self-help (umuganda) labor. The PVO will follow A.I.D. design guidelines where applicable (e.g. environmental concerns).

Additional construction to be added by this PP Supplement includes:

- 8 small warehouses -- one per research site
- annex for the Rwerere laboratory (including a cold chamber)

Since this new construction is primarily on-station or will follow A.I.D. guidelines where applicable, this PP Supplement is not considered to have significant environmental implications.

Other Costs is modified by:

- increasing the services of an expatriate engineer (PSC) from two to three years to backstop and support all construction activities; recruit a local hire engineer to assist in construction supervision and maintenance of facilities after construction is complete
- adding the services of AID project management (by a PASA or PSC) for the life of the project -- full time for approximately the first four years of the project, and half time for the remainder of the project

- deleting the provision concerning local employment of secretaries, administrative assistants, etc., and replacing it with: "Other ISAR/Rwerere station operating costs or improvements, within budgetary limits, until December 31, 1989." (Financial details for these operating costs, which are to be programmed through ISAR, are given in Annex 3.)

4.2.2. GOR Inputs

Technical Services is modified as follows:

- the GOR will provide most importantly the services of agricultural scientists at the AO or equivalent level to work with expatriate advisors, as follows:
 - one project director for the life of the project
 - one agronomist (5 years)
 - one social scientist or agricultural economist (5 years)
 - one soil scientist (for the remainder of the project)
 - one economist or statistician (for the remainder of the project, to work with the expatriate biometrician in Rubona)
- the GOR will assign seven A2 level or equivalent agronomes to work with the FSR team on the Rwerere research station and in the communes
- given difficulties in identifying and financing qualified personnel, there will be no requirement for the GOR to double encumber positions.

Note: The GOR has had difficulty in meeting its obligation to provide some of this personnel in the past (e.g. agricultural economist for five years), but it is essential that the GOR rigorously pursue these targets if project objectives are to be achieved.

Facilities, Equipment and Land remains unchanged, except that housing, utilities and basic furnishing will be provided at the Rubona research station for any project-financed expatriate advisor, should s/he actually live on the station.

In-Kind, Self-Help Support is modified as follows:

substitute "Rural infrastructure improvements" for "The improvement (rehabilitation and maintenance) of rural access roads and installation of rural water supply systems."

4.3. Implementation Plan

4.3.1. Integration of Project within ISAR

As discussed in the last evaluation, the project has suffered from lack of integration within ISAR. Without such integration, achievement of project objectives will be impossible. To implement integration, several actions are already in process while others are still to be undertaken.

First, the project is to be viewed and implemented as a research program of ISAR. Hence its title is to be The Farming Systems Research Project, and locally it will be referred to as "The Farming Systems Research Program of ISAR." As the project is based primarily in Rwerere, its activities there are to be integrated with the research program of the Rwerere station, providing support to and working closely with its commodity research activities and complementing them with on farm research. The station director will also be FSRP's project director. While the senior advisor provided under the UOA contract will inevitably have some administrative responsibilities, particularly the management of the Kigali office, his primary function will be to serve as counterpart to the Project Director of FSRP in research planning, execution and application.

To the extent practicable, the project's implementation mechanisms will be integrated with those of ISAR. Thus, the project's annual work plan will be prepared and reviewed in the context of the annual station work plan, following ISAR guidelines and procedures. The project's provision of local cost financing for station operating costs (e.g. fuel and maintenance for vehicles, pumps, and generators) will be done directly through ISAR, in the context of the annual work plan, rather than through the UOA contract. These finances will be accounted for by ISAR. Project-financed commodities (especially vehicles) at Rwerere will become part of the station's inventory and will be maintained and managed in accordance with station procedures, as defined and implemented by the station director or his delegate. These commodities should be managed in such a way that ISAR/Rwerere researchers' collaboration with farmers is maximized, and specifically so that research plans and schedules with farmers can be respected. During the course of project implementation, ISAR, UOA, and AID will seek additional ways to promote integration of the project within ISAR.

4.3.2. Responsibilities of Parties

4.3.2.1. GOR

As stated in the Project Paper, ISAR will be the GOR's implementing agency for the project. ISAR's implementing responsibilities will be unchanged. However, while all of the parties (GOR, UOA, local officials, AID) are to share responsibility for implementing the project, ISAR will take the lead and bear primary responsibility. Besides providing personnel and other contributions, ISAR will provide overall direction via the project director and its established review/supervision processes (e.g. review of research plans by ISAR's Research Committee and Administrative Council). Further, it will assure that project personnel (expatriate and Rwandan), have full opportunity to interact with other ISAR personnel in Rubona and elsewhere in the conduct of agricultural research to the extent that it promotes the farming systems approach (e.g. access to new varieties for on-farm trials, discussion/presentation of research results).

Local officials in the project area (Sous-prefet, bourgmeistres, etc.) are responsible for working with the local population and the PVO in identifying, designing, implementing, and maintaining the rural infrastructure activities of the project.

Since FSRP is a research program and new technologies have yet to be developed, the extension component will not be emphasized. Rather, during this early phase of the research program, pre-extension activities will be undertaken. In this phase, farmers actively participate in the research and information is shared between ISAR/Rwerere researchers and farmers. When new technologies become available, mechanisms will be put in place to enable the GOR's extension network to diffuse them.

4.3.2.2. A.I.D.

No change from the Project Paper, except that in OAR/R's role of "general project management," emphasis will be placed on monitoring rather than implementation, with AID's overall intention being that project objectives are pursued and AID regulations followed. Hence, while OAR/R will prepare necessary project documentation, implementation will be done by the other parties and overall management will be primarily ISAR's responsibility. This includes all remaining commodity procurement, local cost financing, research planning, and rural infrastructure construction (for which OAR/R will make a grant to a PVO for design and implementation; see section 4.3.4.). The exception to this is for remaining construction on station (housing for A2s and associated water systems, laboratory annex) or small warehouses at research sites, which will be supervised by an AID engineer and will be contracted for by ISAR (under the Fixed Amount Reimbursement Method).

4.3.2.3. Contractor

No change from the Project Paper, except in one important respect. While the University of Arkansas and its subcontractors will be responsible for provision of services (technical assistance, training, commodities), it will not alone "be responsible for implementing the project" (PP, p. 32). Rather UOA is to share this responsibility with other parties, especially ISAR, which is the lead party in project implementation.

4.3.3. Management Structures

As pointed out by the evaluation, little progress has been made in establishing the management/coordination committees and memoranda of understanding called for by the Project Paper. Further, the intent of these committees and memoranda is not very precise or clear in some cases, which can add to confusion and frustration. In any event, the parties agree that they are not necessary, so they are to be dropped. The only coordination to be at all institutionalized is periodic consultations among representatives of ISAR, UOA, and AID, and this should not be done through formal accords but through workplans. ISAR will chair these meetings and will be free to invite representatives of other institutions to these meetings.

In the Project Paper's discussion on "Management Structures" (PP p. 33), GOR designation of the Project Director is to be modified so that ISAR designates the Project Director, and OAR/R's advice and consent will not be required. In the subsequent discussion of workplans, the following modifications are made:

the annual workplans will be prepared by the station personnel under the supervision of the ISAR station director in consultation with the UOA senior advisor and other researchers

on-station and on-farm trials will be conducted by multidisciplinary teams comprised of Rwandan and expatriate personnel

annual workplans will be submitted to ISAR's established review process (e.g. Production Systems Department, Research Committee, Administrative Council), not the "FSIP Coordinating Committee," and then to A.I.D. for approval of local cost financing.

4.3.4. Rural Infrastructure

As a relatively small part of the project (approximately \$610 thousand), the Project Paper contemplated various rural infrastructure activities: rural roads improvements, rural water systems development, construction of storage sheds and of multi-purpose communal centers in the four project communes. These infrastructure activities were intended to support the implementation of the FSR/E approach in the four communes, including building support for the project and addressing certain constraints to agricultural development such as lack of water supply and farm-to-market roads.

For a number of reasons discussed in the 1986 evaluation, there has been only limited progress in these infrastructure activities. This has caused local officials to be dissatisfied with the project and soured the environment, and it threatens future implementation of project research activities. Also, implementation of these activities, has proven management intensive, but neither AID nor ISAR have adequate resources to work directly with the communes in determining priorities for infrastructure nor for carrying them out.

To solve this problem, the parties have accepted, after extensive discussion and analysis of options, an evaluation recommendation to employ a U.S. PVO as an intermediary to design and implement the rural infrastructure component in close collaboration with the local population. To do this, OAR/Rwanda will grant, through a local competition, \$750 thousand to a U.S. PVO already registered with AID and operating in Rwanda. The rationale for this limitation of competition is to: speed up implementation (quicker award of the grant and less mobilization time), lower administrative costs (since a new PVO office will not need to be budgeted for), and easily gain confidence of the GOR and AID (which requires that the PVO have a proven record of effective performance in Rwanda). A full discussion of the background and need for this limitation of competition was given in Kigali 3930 of August 13, 1987, and the Assistant Administrator's approval for this limitation of competition was communicated in State 269084 of August 28, 1987. Given the delays in implementing this component, cost inflation, and mounting exasperation of local officials, the parties have agreed that the amount originally budgetted was inadequate, and that in addition to the \$110 thousand already expended, another \$750 thousand should be added.

To make the award, OAR/Rwanda will issue directly to any U.S. AID-registered PVOs in Rwanda a request for applications which will describe the nature of the activities to be carried out under the grant and ask the PVOs to propose the programs and approaches to carry out the grant in collaboration with the local population. Selection criteria will be included in the request for applications. After a period of one month following the issuance of the

request, GOR and AID representatives will form a committee to review the applications and make a selection. OAR/Rwanda will make a grant to the successful applicant after consultation with the Regional Contracting Officer of REDSO/ESA.

4.3.5. Construction

All construction originally planned under the Project Paper has been completed. However, in order to permit the assignment of seven A2s to the project, the project will construct housing for them at the Rwerere station. This housing will be built in the form of duplexes: four houses of two apartments each. The eighth apartment will be available for another A1 or A2 on the station currently lacking adequate housing (e.g. the mechanic). This housing will be of simple design and will conform with GOR guidelines for A2 housing (see Annex 1 for engineering analysis). Other additional construction on-station includes a laboratory annex (with cold chamber) and water systems for the new housing. All this construction will be subject to the normal conditions precedent for construction, including AID approval of specifications and supervision of the construction by an AID engineer. The cost of this supervision will be borne by the project, although it may be reduced if funding from AID construction in other projects becomes available.

Off station, the project will finance construction of eight warehouses at research sites located in the communes. These warehouses will be used to store seeds before research trials, grain from the research trial harvests, and agricultural implements.

4.3.6. Grant to PRAPAC

In Project Implementation Letter (PIL) No. 6 of February 26, 1986, ISAR and AID agreed that the project would finance the Rwanda portion of the five year Regional Potato Improvement Program (PRAPAC), to be managed by ISAR and implemented by the International Potato Center (CIP). This activity will promote the project objective of establishing national and international networks to support the project and FSR/E in general in Rwanda. REDSO/ESA has granted \$251,100 in project funds to CIP for this purpose. This grant is to be used to support the PRAPAC program in Rwanda, including seed development and late blight research, and to finance construction of the PRAPAC Coordinator's house in Ruhengeri.

4.3.7. Procurement Plan

Most commodities contemplated by the Project Paper have been procured. To avoid any confusion in procurement responsibilities, all remaining commodity procurement will be done either by UOA through the contract or locally by ISAR if specifically budgeted for local cost financing in the annual work plans. AID will have no further commodity procurement responsibilities under the project except to prepare necessary waivers for vehicles and motorcycles.

4.3.8. Amended UOA Contract

To reflect revisions in the project, the UOA contract needs to be amended. AID will issue a PIO/T for ISAR approval to instruct the Regional Contracting Officer to amend the UOA contract. This amendment will include the following:

- amend project name to Farming Systems Research Project (FSRP)
- position descriptions for new long-term advisors (UOA senior advisor and biometrician)
- increased commodity procurement responsibilities
- revised participant training levels
- removal of some local cost financing (for operating costs to be directly financed through ISAR)
- removal of financing for U.S. university student participation in the Special Studies and Research component; financing exclusively for UNR faculty and students and ISAR researchers
- reduce frequency of some reporting requirements
- and other changes to reflect the project's integration within ISAR.

4.4. Cost Estimates and Financial Plan

The distribution of AID's contribution among project budget elements is revised as shown in Table 1. While the total amount of funds administered by OAR/R and total administered by UOA do not change dramatically, there are important changes among line items. The most important change is that all remaining AID-administered funds for local costs under this Supplement are to be allocated to ISAR for Rwerere station improvements and research operating costs. The project will reimburse ISAR for these costs, so these funds will in fact be administered and disbursed by ISAR. The budget for these expenditures, to be funded by the project only in 1988 and 1989, is summarized in Table 2 (and detailed in Annex 3).

Important changes in the UOA contract budget are: 1) funds allocated for training and commodity procurement increase; 2) funds allocated for in-country operating costs decrease (included in "other direct costs") because on-station operating costs are to be administered by ISAR according to Table 2, instead; and 3) funds allocated to technical assistance decrease owing to gaps in filling long-term positions.

Important changes in the AID-administered budget are: 1) funds allocated for commodity procurement decrease (all remaining procurement shifted to UOA); 2) funds allocated for construction decrease; 3) funds allocated for "other costs" increase to provide \$750 thousand to a PVO for the rural infrastructure activity; 4) funds allocated for technical assistance decrease (all new expenditures will be for construction supervision, AID project management, and external audit); 5) funds allocated for local costs decrease (all remaining funds to be allocated to ISAR for operating costs and station improvements). With this amendment, \$436 thousand is freed up, to be programmed later (inflation/contingency).

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TABLE 1 AID CONTRIBUTION — BUDGET SUMMARY (\$1000)

	TOTAL BEFORE AMENDMENT A	REVISED BY THIS AMD'T B	TOTAL AFTER AMENDMENT A+B	EXPENDED C	BALANCE (WITH AMD'T) A+B-C
1. UOA-Administered					
Salaries+Wages	1714	-401	1313	579	734
Fringe Benefits	283	-83	200	97	103
Travel+Transport	769	-227	542	196	346
Allowances	370	96	466	136	330
Commodities	652	220	872	286	586
Participant training	1477	560	2037	253	1784
Subcontracts	1175	18	1193	202	991
Other Direct Costs	829	-271	558	253	305
Special Studies/Research	200	0	200	25	175
Indirect Costs	897	50	947	271	676
TOTAL	8366	-38	8328	2298	6030
2. AID-Administered				(Barmarked)	
Commodities	700	-366	334	334	0
Construction	1350	-163	1187	747	440
Other Costs	515	533	1048	298	750
Technical Assistance	1275	-280	995	754	241
Local Costs	794	-122	672	66	606
TOTAL	4634	-398	4236	2199	2037
3. Inflation/Contingency	0	436	436	0	436
TOTAL	13000	0	13000	4497	8503

TABLE 2 ISAR-ADMINISTERED OPERATING COSTS (\$1000 EQUIVALENT)

	1988	1989	TOTAL
Personnel	86	99	185
Vehicle/motorcycle operations	111	117	228
Generator operation	22	23	45
Research site development	22	-	22
On-station storage dev't	13	-	13
Road maintenance	6	7	13
Special studies/research	50	50	100
TOTAL	310	296	606

4.5. Monitoring and Evaluation Plan

4.5.1. AID Monitoring

The Project Paper stated that an Agricultural Officer (PASA) would be responsible for day-to-day management of the project. Unfortunately, AID operating expense funds were not available for supporting this individual, so project funds had to be used. This represented an unbudgeted expense of \$185,000 for about two years. After this officer completed his tour in Rwanda, he was replaced by a local hire project manager for one year, which cost the project an additional \$44,000 in unbudgeted funds. These were necessary expenditures for OAR/Rwanda, but this was not clear to the GOR. That these expenditures were not discussed during original project design and not budgeted may have contributed to GOR frustration with the project.

In order to responsibly provide for day-to-day management of the project, OAR/Rwanda has had no choice but to hire a project manager and consultants with project funds. As before, this position will come under the supervision of the direct hire Agricultural Officer. OAR/Rwanda has recruited a well-qualified FSN to fill this position, for whom operating expense funds have become available. However, the project will budget for part-time local hire project management for the rest of the project.

In conformance with recent A.I.D. guidance, the project will now budget \$75 thousand for external audit of the project.

Other modifications to the PP monitoring plan, already discussed, are:

- ISAR, rather than the university contractor, will take the lead in implementing the project. The university contractor will assist ISAR in this function.
- A Project Coordination Committee for supervisory monitoring will not be established. Supervisory monitoring will be provided by ISAR, UOA, and AID leadership, who should consult with each other periodically. ISAR will be responsible for reporting to other GOR agencies (especially MINAGRI) on progress and problems of the project.

In addition to the project annual work plan (which is submitted by the ISAR station at Rwerere to ISAR headquarters), UOA progress reports are to be submitted approximately six months later on an annual, rather than semi-annual, basis. Both the work plans and progress reports are to include discussion of research results.

4.5.2. Farm Monitoring and Evaluation of Impact

Farm monitoring in the project is to have several objectives, among them:

- evaluation of alternative technologies
- estimating the impacts of selected technologies on production
- estimating spread effects.

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To achieve these objectives, a good frame of reference is necessary which should be provided by the baseline data collected in a diagnostic survey. This diagnostic survey should not only identify problems constraining production as indicated by men and women farmers, but should also include:

- inventory of what the farmers are already doing to address their problems;
- analysis of the apparent suitability of current cultural practices;
- analysis of the implications of various farmer resource endowments on the kinds technologies they are likely to find useful;
- analysis of the relationships of the various agricultural enterprises with each other or to the system as a whole.

Following the diagnostic survey, verification surveys are to be done which confirm the definition of the problems and the viability of the proposed solutions.

Another diagnostic survey is to be done early before the second Implementation Progress Evaluation takes place in June 1989. This survey should provide information on:

- the new technologies generated by FSRP to address problems constraining production in that area;
- the acceptance of new technologies by selected farmers;
- the spread effects of the new technologies;
- the improvement of household economies from the new technologies;
- the market situation for agricultural products in that area: improvement or status quo?
- improvement of living standards in that area;
- extension feasibility of new technologies to the whole Buberuka highlands area and other highland zones of Rwanda.

4.5.3. Implementation Progress Evaluations

The Project Paper planned two implementation progress evaluations; one at the end of operational years 1 and 3 of the project. The first was to primarily examine performance of AID, the Grantee and the Contractor in terms of putting the project into operation and the second is to examine project accomplishments at approximately mid-term in project implementation relative to those anticipated in the Logical Framework and Implementation Plan.

While the project was authorized in August 1984, the first operational year of the project was August 1985 when the contract team arrived in Rwanda. Accordingly the first implementation evaluation was completed in December 1986. The evaluation was accomplished by representatives of the Parties and this PP Supplement directly reflects the recommendations of this evaluation.

B

The next implementation evaluation will be undertaken in June 1989. This evaluation will assess specific progress against achieving End of Project objectives and review progress in achieving the major recommendations of the December 1986 evaluation. If the evaluation finds that the project has made sufficient progress towards objectives, it will recommend how the GOR should assume all on-station operating costs starting in January 1990. Following GOR (ISAR and MINAGRI), AID, UOA review of the evaluation, the GOR will decide whether or not it will assume responsibility, starting in January 1990, for all on-station operating costs, including those previously paid by the project

4.5.4. Self-Evaluation

The Project Paper planned FSIP contractor self-evaluations to be done in the context of submitting the Annual Work Plan to ISAR. This evaluative measure is confirmed as appropriate as it links performance to the contractor's contributions to producing a quality work plan which is consistent with ISAR objectives and needs. It is appropriate that the home-office contract representative also review individual advisor performance at this time as well. The project will thus continue to perform self-evaluations after submission of the project work plan to ISAR and receipt of their comments and/or approval.

4.5.5. Threshold and Impact Evaluations

It was planned to conduct a threshold evaluation in the second project year and an impact evaluation in the fourth year. This schedule is herein revised. The threshold evaluation and the first implementation evaluation were combined in the evaluation of December 1986. Questions regarding the Parties' ability to implement the project as designed were examined and recommendations were made to in fact modify certain implementation methods and to give greater emphasis to research, as opposed to extension, activities in the early years of the project. Design questions should be reexamined in the context of the implementation evaluation now planned for June 1989. No threshold evaluation should be held separate from the implementation evaluation as it will be too early to make any judgements about the potential of extending the project to a follow-on phase. In lieu thereof, a final external evaluation should be undertaken sometime in late FY 1990 or early FY 1991. By then, there will have been enough time to consider whether a follow-on phase is warranted. This plan is consistent with the recently approved CDSS which requires the mission to strictly evaluate performance before providing additional resources to program activities.

The external final evaluation should concentrate on assessing the overall success of the project in achieving its End of Project objectives, the performance of all Parties, the lessons learned and the implications for the future. To be examined is whether or not an AID longer-term commitment to supporting the development of the farming systems research and extension approach is warranted and if this approach is replicable on a wider geographic scale.

The team members for the final evaluation should not include members of the AID mission, the contractor nor representatives of the implementing institutions. Independent consultants should be primarily engaged, however it may also be appropriate to invite representation of either AID/W or REDSO. Experts might include a farming systems expert, an evaluation expert, a socio-economist and an agronomist.

An impact evaluation performed by PPC/CDIR might be warranted. The mission should seek the views of AID/W on this question probably in the last year of the project. If there is interest, the mission should consider combining an impact evaluation with the final external evaluation if the timing is acceptable. Otherwise an impact evaluation could be done after the PACD.

4.5.6. Collaborative Evaluations

Given that this schedule already represents a heavy evaluative effort, additional Collaborative Evaluations, though originally planned, should not be undertaken.

4.6. Conditions and Covenants

In order to be consistent with revisions discussed earlier in this PP Supplement, various conditions precedent and covenants need to be modified or deleted.

Since the rural infrastructure activities are to be separated from the rest of the project and cannot be fully specified until the selected PVO works with the communes, Condition 4.B.2. of the Authorization is modified as follows: delete "the rehabilitation of rural roads or development of rural water resources" and replace with "the rural infrastructure development of the communes."

Condition 4.B.3. of the Authorization is deleted and replaced with the following: "Disbursements for Activities Related to Rural Infrastructure - Prior to disbursements for activities related to rural infrastructure development of the communes or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made, the Parties will agree in writing to grant funds to a qualified private voluntary organization (PVO) for the definition, planning, and implementation of rural infrastructure activities."

Condition 4.B.4. of the Authorization is deleted in its entirety and replaced with the following: "Disbursements Under Annual (or Provisional) Work Plans. Prior to the disbursement of funds under the Grant, or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made for the local costs of ISAR for each ISAR operational year, the Cooperating Country will, except as A.I.D. may otherwise agree in writing, furnish to A.I.D. an Annual Work Plan, approved by ISAR by July 1 of each operational year, for such activities covering that period, in form and substance satisfactory to A.I.D."

Covenants 4.C.2. of the Authorization is deleted in its entirety and replaced with the following: "The Cooperating Country will assure project coordination at all levels including developing collaborative working relationships between the parties at the national, prefectural and communal levels."

Covenant 4.C.3 of the Authorization is deleted and replaced with the following: "Coordination and Cooperation Arrangements: That the Implementing Agency, ISAR, shall utilize its Conseil d'Administration to assure that Project Annual Work Plans conform with national research priorities and agenda and that Project activities are integrated with the national activities of the Implementing Agency. The Conseil d'Administration will assure that the Annual Work Plans are reviewed and that the results of this review are communicated to A.I.D. on a timely basis."

Covenant 4.C.4. of the Authorization is deleted and replaced with the following: "Counterpart Personnel: That the Cooperating Country shall promptly recruit and hire or reassign Rwandan personnel necessary to effectively implement the Project in a timely manner and in conformance with the Annual Work Plans. To that end, the Cooperating Country shall covenant that a minimum of one A0 level personnel shall be provided for each long-term expatriate advisor and that A2 level personnel shall not be less than seven (7). The Cooperating Country will make its best effort to recruit and employ women as counterparts at all levels.

ANNEX 1.

ENGINEERING ANALYSIS & 611 (A) CONSIDERATIONS

1. Rationale:

In order to accommodate an increase in professional staff (seven senior - level local officers) under the project, four (4) duplex-houses have been planned to be built at Rwerere. An annex to the laboratory will be built to provide adequate space for a cold chamber. A water supply system consisting of roof catchment of rain water, cisterns and connections to the alternate spring source and pumping system will be provided to these buildings and to the several pipes for trial fields which will be installed as per attachment "A".

In addition, eight (8) warehouses will be built at the research sites to provide storage for seeds, harvests, and agricultural implements.

2. Description of buildings; Refer to attached sketch, attachment "A"

To accommodate the growth of the project and in order to respond to its physical needs, the following additional construction activities will be built:

- a) Four (4) duplex-houses of approximately one hundred sixty (160) square meters each. Every unit will have four bedrooms, two kitchens, two dining, two bathrooms, etc.
- b) An annex to the laboratory of approximately fifty (50) square meters;
- c) four (4) individual roof catchment systems complete with cisterns, hand pumps. The cisterns will be of approximately six (6) cubic meters each for each of the (4) houses. Several pipes for trial fields will be built in the vicinity as shown in attachment "A";
- d) eight (8) warehouse-type grain storage units of approximately one hundred (100) square meters each.

3. Location and siting of buildings:

The four new houses will be located next to the existing training center at Rwerere. Access will be created from the main road fronting the existing center. The annex will be an extension to the existing laboratory. Electricity for these buildings will be provided by the existing generators at the site. Water will be provided from the roof catchment cisterns, and from the alternate spring source and pumping system during the dry season.

The construction materials for these houses will be galvanized roofing and brick walls. The annex to the laboratory will be built of stone walls galvanized roofing in order to harmonize with the AID funded offices.

The sites for the eight warehouses have not been selected. The following criteria shall be considered in actual site selection:

- Availability of flat or gently sloped land. Good drainage away from buildings, minimum wind and rain exposure.
- Availability of access roads to the proposed sites and nearness to the community.

4. Construction plans and specifications:

The preparation of construction drawings and IFB documents will be made by a private architect based on the existing plans of the Gituza Forestry Project (698-0502.96-02) for the duplex houses and the Local Crop Storage Project (696-0107) for the warehouse with some minor modifications to adapt to the sites and AID seismic regulations. These drawings will incorporate, as recommended by REDSO/Eng, the minimum seismic considerations thus insuring the building's resistance to seismic forces. The buildings will have reinforced floor beams tying footings together, reinforced columns and reinforced ring beams. OAR/Rwanda, with REDSO engineering assistance, will approve all plans, technical specifications, tender documents and cost estimates prepared by the private architect. Since the GOR is unable to pay for the services of this architect, AID will have to bear the design costs. This cost is reflected in the budget below under item 6, Architect services.

5. Construction methodology:

Host country contracting procedures will be used by the GOR to advertise, evaluate and award a contract to build the above-mentioned construction activities. Because of their simplicity and size, these buildings will be built using the capabilities of local contractors. An A.I.D. engineer will assist ISAR in supervising the construction.

6. Construction Supervision:

During the short construction period, approximately six months, ISAR, with A.I.D. assistance, will supervise the contractor's operation to insure compliance with plans and specifications.

7. Disbursement Scheme:

ISAR will prepare, based upon the supervisory work mentioned above, the progress payments due to the contractors. AID will approve the payment request and pay directly to the contractor on behalf of the GOR. The OAR/Rwanda Controller and RFMC will work out the details to insure timely disbursements against contractor's performance.

8. Construction Estimate:

The current construction cost of similar type structures in Rwanda is approximately RWF 25,000 to 30,000 per square meter. The approximate cost of these buildings is broken down as follows:

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1) Four duplex-houses, 160 sq. mts each at RWF 25,000/sq. mt. 4 X 160 X 25,000	RWF 16,000,000
2) Annex of laboratory, 50 sq. mts at RWF 30,000/sq. mt. 50 X 30,000	RWF 1,500,000
3) Four Storm water-cisterns, connections and pipes	RWF 3,000,000
4) Eight warehouses, 100 sq. mts each at RWF 15,000/sq. mt. 8 X 100 X 15,000	RWF 12,000,000
5)	
SUB-TOTAL	
6) Architect Services	RWF 32,500,000
	RWF 300,000
TOTAL	
	RWF 32,800,000
At RWF 75 to IUS\$	\$437,333
Say	\$440,000

9. A.I.D. Monitoring:

Prior to the release to the prospective bidders, all bidding documents shall be reviewed by the OAR/R Engineer and approved by the A.I.D. Representative. Prior to the award of the contract, the OAR/R Engineer shall review and the A.I.D. Representative shall approve the bidding procedure and bid analysis. The OAR/R Engineer shall make regular inspections to monitor construction quality and progress. Additionally, REDSO engineering assistance will be provided, on a regular basis, to the OAR/Rwanda.

10. 611 (A) Considerations:

Sufficient experience has been gained by the GOR in the preparation of constructions drawings, overall planning, cost estimating and construction supervision that OAR/R is confident that the GOR is capable of contracting for this activity, and with AID monitoring, to supervise the construction. Although final plans, specifications and cost estimates have not yet been prepared, the construction is similar enough to other activities financed by A.I.D. recently at the project site and elsewhere in Rwanda to provide a reasonably firm estimate of the cost to the U.S. Government.

Draft: D. T. Viet, OAR/R Engineer
C. Crowe, REDSO Engineer

ANNEX 2

Rwanda FSRP Contract Budget Review

(Final Version: 21 October 1987)

COMMODITIES

Detail	Ref #	3	4	5	TOTAL PROJECTED EXPENDITURES
A. Items on initial list not yet procured.					
1. 1 Small Plot thresher - e \$12,000	1001		12,000		12,000
2. 1 Set spares parts for thresher 10.0% of initial cost:	1002		1,200		1,200
3. 1 Shredder e \$250	1004		250		250
4. 1 35 mm camera w/case e \$350	1196		350		350
5. 1 flash for camera e \$100	1197		100		100
6. 1 telephoto lens e \$200	1198		200		200
7. 1 Wide angle lens e \$150	1199		150		150
8. 1 Macro lens e \$150			150		150
9. 1 tripod e \$100	1200		100		100
10. 1 Carousel slide proj. w/case e \$750	1202		750		750
11. 3 spare bulbs e \$30	1203		90		90
12. 12 80-slide trays e \$8	1204		100		100
13. 1 60" x 60" screen e \$150	1208		150		150
14. 2 projector stands e \$125	1210		250		250

Rwanda FSRP Contract Budget Review

(Final Version: 21 October 1987)

Detail	Ref #	3	4	5	TOTAL
					PROJECTED EXPENDITURES
A. Items on initial list not yet procured (Continued..)					
15. 1 overhead projector @ \$600	1211		600		600
16. 3 spare bulbs @ \$30	1212		90		90
17. 10 boxes transparencies @ \$10	1213		100		100
18. 1 portable gas- powered generator @ \$850	1214		850		850
19. 1 AC/DC cassette player w/ slide sync. @ \$250	1215		250		250
20. 2 sm. cassette player for field @ \$50	1216		100		100
21. Video unit	1233				
1 Camera/recorder @ \$1,500			1,500		1,500
1 Player @ \$400			400		400
1 Monitor @ \$400			400		400
1 Tripod for camera @ \$100			100		100
1 Stand for player and Monitor @ \$100			100		100
22. 25 Video Tapes @ \$7.50	1234		190		190
23. Books, reviews, Journals, etc.	1242 1243		30,000	8,000	38,000
TOTALS:		0	50,520	8,000	58,520

Detail	Ref #	3	4	5	TOTAL PROJECTED EXPENDITURES
B. Additional units of items already procured or already on procurement list.					
1. 30 Sprayers ("Pulerisateurs")					
@ \$190			5,700		5,700
Ref. SECID pro- curement #:					
2. 1 100 kg. scales estimated					
@ \$630			630		630
Ref. SECID pro- curement #'s:	1032-4 1091,2				
3. 2 Drying Machines ("Machines a secher")					
@ \$625			1,250		1,250
Ref. SECID pro- curement #:	1096				
4. Additional Small Tools/other inputs					
Ref. SECID pro- curement #'s:	Various		25,300		25,300
5. Additional lab consumables .					
Ref. SECID pro- curement #'s:	Various		6,330	6,330	12,660
TOTALS:		0	39,210	6,330	45,540
C. Other items not currently on procurement list					
1. 1 Small winnowing machine					
@ \$600			600		600
2. 1 Potato calibrator/ sorter					
@ \$6,250			6,250		6,250
3. 1 Corn Sheller					
@ \$3,800			3,800		3,800

Detail	Ref #	3	4	5	TOTAL PROJECTED EXPENDITURES
C. Other items not currently on procurement list (Continued..)					
4. 5 Hand lenses @ \$25			130		130
5. Various Library/ equip/furn.		3,200	3,200		6,400
6. Various Guest House equip/furn.		3,200	3,200		6,400
7. 2 Sets house furn for AO/AI @ \$10,000		10,000	10,000		20,000
8. 1 20-passenger minibus @ \$25,000			25,000		25,000
9. 1 5-tonne truck @ \$25,300			25,300		25,300
10. 4 Vehicles @ \$22,500		45,000	45,000		90,000
11. 1 60 KVA Generator Unit @ \$30,000			30,000		30,000
12. 1 Set spares for genera- tor @: 15.0% of initial cost			4,500		4,500
13. 1 Backup Water Pump @ \$12,500			12,500		12,500
14. 40 Bicycles @ \$190			7,600		7,600
15. 7 Motorcycles @ \$2,000			14,000		14,000
16. 5 Scientific Calculators @ \$175			880		880
17. 2 Growth cabinets (Incubators) @ \$8,000			16,000		16,000

Rwanda FSFP Contract Budget Review (Final Version: 21 October 1987)

Detail	Ref #	3	4	5	TOTAL PROJECTED EXPENDITURES
C. Other items not currently on procurement list (Continued..)					
18. 1 Nitrogen analysis Kjeltac auto system II					
@ \$10,000			10,000		10,000
19. 1 Seed counter Numigral					
@ \$5,000			5,000		5,000
20. 1 Autoclave					
@ \$10,000			10,000		10,000
21. 1 Research microscope					
@ \$10,000			10,000		10,000
22. 1 Research stereoscope					
@ \$5,000			5,000		5,000
23. 4 2-man cross-cut saws					
@ \$100			400		400
24. 12 Axes					
@ \$25			300		300
25. 1 Small stationary generator for cold room					
2 Window 12,000 BTU Air cond. units					
Miscellaneous equip. for cold room			6,300		6,300
26. 4 Portable weather stations					
@ \$3,500			14,000		14,000
TOTALS:		61,400	268,960	0	330,360
TOTAL PROJECTION:		61,400	358,690	14,330	434,420
Shipping, etc, @ 35.0% of total		21,490	125,540	5,020	152,050
TOTAL:		82,890	484,230	19,350	586,470

ANNEX 3
DETAILED BUDGETS

RWANDA FSRP - SUMMARY STATUS TO END OF PROJECT

(Final Version: 21 October 1987)

Detail		Amount (,000 RWF)	Amount (\$)
1. ISAR-Administered Funds			
Budget Provisions:			
A. Personnel:			
Cadre A0/A1:			
3 Postions (Par.)	12.0 Man/Mo.	600.0	7,590
Cadre A2:			
8 Positions	192 Man/Mo.	4,920.0	62,280
Cadre A3			
4 Positions	96 man/mo.	1,774.0	22,460
Appointes			
27 total positions	648 man/mo.	6,048.4	76,560
TOTAL CADRES:		13,342.4	168,890.0
B. Travailleuers			
Journaliers			
10 persons	4,800 man/days	544.0	6,890
TOTAL STAFF:		13,886.4	175,780.0
C. Vehicle Operation			
10 Vehicles @	2,500 km/mo.	15,380.0	194,680
7 Motos @	1,000	1,720.0	21,770
TOTAL VEHICLE/MOTO OPERATION		17,100.0	216,450.0
D. Generator Operation			
16 hours per day		3,360.0	42,530
TOTAL BUDGET PROVISIONS:		34,346.4	434,800
OTHER ISAR-ADMINISTERED EXPENDITURES			
A. Sites Multilocaux	8 Sites	1,200.0	16,200
B. Fosse de Stockage de fumier	1	1,000.0	12,700
C. Road Maintenance:			
Kirambo/Rwerere		1,000.0	12,700

RWANDA FSRP - SUMMARY STATUS TO END OF PROJECT

(Final Version: 21 October 1987)

Detail		Amount (,000 RWF)	Amount (\$)
OTHER ISAR-ADMINISTERED EXPENDITURES (Continued..)			
D. Corrals sites multilocaux	8	400.0	5,100
E. Special Studies UNR		7,900.0	100,000
TOTAL ISAR-ADMINISTERED FUNDS:		45,926.4	581,500
2. University of Arkansas Contract Administered Funds			
A. Technical Services		220,132.7	2,786,490
B. Training		152,461.6	1,929,894
C. Special Studies/Research (International Costs)		5,925.0	75,000 +100
D. Evaluation		2,573.8	32,580
E. Commodities		46,331.1	586,470
F. Local Costs		40,982.0	518,760
TOTAL U. of A. CONTRACT:		460,406.2	5,929,194 +100
NOTE: Amount directly for Research: 4,713,244 79.5%			
Amount for Administration: 1,215,950 20.5%			
		5,929,194	100.0%
3. AID-Administered Funds			
A. A/2 Housing		15,800.0	200,000
B. Lab Annex/Chambre Froid		2,000.0	25,320
C. Hangars sur sites Multilocaux		8,000.0	101,270
D. Adduction d'eau		3,000.0	37,970
E. Rural Infrastructure		47,400.0	600,000 +150
F. Others		72,405.7	916,531
TOTAL AID-ADMINISTERED FUNDS		148,605.7	1,881,091
GRAND TOTALS:		662,938.5	8,391,715

ISAR General FSRP Budget Provisions 1988-1991

(Final Version: 21 October 1987)

Inflation: 5.0% /annuelle

CATEGORIE BUDGETAIRE	UNITE	COUT/ UNITE (000,s)	ISAR Bud. Prov. (Quant./year)			Total Quantity (2 yrs.)	Project Year		ISAR Total Costs	
			Admin.	Reserche	TOTAL		4 (1988)	5 (1989)		
Personnel										
Cadre A0, A1	h/mois	48.0	12.0	0.0	12.0	24.0		600.0	600.0	
Cadre A2	"	25.0	96.0	0.0	96.0	192.0	2,400.0	2,520.0	4,920.0	
Cadre A3	"	18.0	12.0	36.0	48.0	96.0	864.0	910.0	1,774.0	
Appointes	"	9.1	324.0	0.0	324.0	648.0	2,948.4	3,100.0	6,048.4	
SOUS-TOTAUX PERSONNEL			444.0	36.0	480.0	960.0	6,212.4	7,130.0	13,342.4	
Travailleurs-Gardiens										
Journalier	h/jour	0.110	2,400	0	2,400	4,800	264.0	280.0	544.0	
Saisonnier	"	0.100			0	0	0.0	0.0	0.0	
Polyvalent	"				0	0	0.0	0.0	0.0	
SOUS-TOTAUX T/G			2,400	0	2,400	4,800	264.0	280.0	544.0	
Indemnites-Mission										
A l'Etranger	jour	6.0	0	0	0				0.0	
Administrateurs	"	4.5			0				0.0	
Cadres-Techniciens	"	2.5			0				0.0	
Chauffeurs	"	1.3			0				0.0	
SOUS-TOTAUX I/M			0.0	0.0	0.0				0.0	
Kilometres										
10 Vehicles @ 2,500	Km/no.	0.025	30,000	270,000	300,000	600,000	7,500.0	7,880.0	15,380.0	
7 Motos @ 1,000	"	0.010		84,000	84,000	168,000	840.0	880.0	1,720.0	
SOUS-TOTAUX KILOMETRES			30,000	354,000	384,000	768,000	8,340.0	8,760.0	17,100.0	
Generator Operation										
16 hrs./day	Heure	0.280	1,460	4,380	5,840	11,680	1,640.0	1,720.0	3,360.0	
TOTAUX GENERAUX (RWF)							16,456.4	17,890.0	34,346.4	
TOTAUX GENERAUX - DOLLARS @							79 Rwf/\$	208,300.0	226,500.0	434,800.0
OTHER ITEMS										
II. Terrain	site	160		8	8	8	1,280.0		1,280.0	
III. Infrastructures										
- A2/A3 houses	Duplex	3,950		4	4	4	15,800.0		15,800.0	
- fosses de stockage du fumier en sta.	unit	1,000		1	1	1	1,000.0		1,000.0	

ISAR General FSRP Budget Provisions 1988-1991

(Final Version: 21 October 1987)

CATEGORIE BUDGETAIRE	UNITE	COUT/ UNITE (000,s)	Admin.	Amount Quantity Reserche	TOTAL	Total Quantity (2 yrs.)	Project Year		ISAR Total Costs
							4 (1988)	5 (1989)	
III. Infrastructures (Continued..)									
- Hangars sur sites (Storage bldgs.)	Bldg.	1,000		8	8	8	8,000.0		8,000.0
- Corrals on each site	each	50		8	8	8	400.0		400.0
- Lab annex/ Chambre Froid	unit	2,000		1	1	1	2,000.0		2,000.0
- Road maintenance Kirambo/Rwerere							500.0	500.0	1,000.0
- Adduction d'eau	System	3,000	1		1	1	3,000.0		3,000.0
Sub-total infrastructure:							30,700.0	500.0	31,200.0
IV. Commodities									
Detail per U of A Commodity list									
- Commodity Cost							33,187.1	1,132.1	34,319.2
- Shipping, handling, insurance, etc.							11,615.4	396.5	12,011.9
TOTAL COMMODITIES:							44,802.5	1,528.6	46,331.1
V. Special Studies									
							3,950.0	3,950.0	7,900.0
GRAND TOTALS (RwF):							95,908.9	23,868.6	119,777.5
GRAND TOTALS (Dollars) @: 79 RwF/\$							1,214,000	302,100	1,516,200

University of Arkansas FSRP Contract

EXPENDITURE PROJECTION SUMMARY TO JANUARY 20, 1990

(Final version: 21 October 1987)

DETAIL	Person Months To EoC	3	4	5	6	7	8	TOTALS
1. Technical Services								
A. Long-term expatriate								
Field Staff	131.5	247,360	530,440	520,250	0	0	0	1,298,050
B. Short-term								
Field Staff	24.8	54,030	106,260	112,900	0	0	0	273,190
C. Campus Support								
D. Indirect Costs	138.9	107,140	210,635	217,215	0	0	0	534,990
TOTALS:	295.2	547,800	1,114,175	1,124,515	0	0	0	2,786,490
3. Training								
A. Long-term Academic								
B. Short-term, non-degree		316,680	322,137	562,004	465,593	213,079	60,788	1,940,281
C. In-Country								
		43,594	66,339	84,329	0	0	0	194,262
		28,003	12,840	7,843	0	0	0	48,685
TOTALS: (Fr. Yr. 1)		388,277	401,316	654,176	465,593	213,079	60,788	2,183,228
MINUS: Expend. to 6/30/87:		(253,334)						(253,334)
		134,943	401,316	654,176	465,593	213,079	60,788	1,929,894
5. Special Studies/Research								
			35,000	40,000				75,000
6. Evaluation								
			32,580					32,580
7. Commodities								
		82,890	484,230	19,350				586,470
8. Local Costs								
A. Personnel								
B. Fuel, Maintenance		42,070	71,350	75,980	0	0	0	189,400
C. Travel exp.		5,150	9,150	9,880	0	0	0	24,180
D. Other		15,960	42,600	40,720	0	0	0	99,280
TOTALS:		42,860	79,900	83,140	0	0	0	205,900
TOTALS:		106,040	203,000	209,720	0	0	0	518,760
TOTAL PROJECTED EXPENDITURES		871,673	2,270,301	2,047,761	465,593	213,079	60,788	5,929,194

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SUMMARY

CATEGORIE BUDGETAIRE	Total Cost	
	RwF	Dollars
1. ISAR-Administered funds		
- Budget Provisions	34,346.4	434,800
- Terrain for Site Preparation	1,280.0	16,200
- Fosse de stockage du fumier en station	1,000.0	12,700
- Road Maintenance Kirambo/Rwerere	1,000.0	12,700
- Corrals on each site	400.0	5,100
- Special Studies	7,900.0	100,000
TOTALS:	45,926.4	581,500
2. AID-Administered funds		
- A2-A3 Houses (4 duplex units)	15,800.0	200,000
- Lab annex/chambre froid	2,000.0	25,300
- Hangars sur sites (Storage bldgs.)	8,000.0	101,300
- Adduction d'eau	3,000.0	38,000
TOTALS:	28,800.0	364,600
3. Contract-Administered funds		
- Commodity Cost	34,319.2	434,420
- Shipping, handling, insurance, etc.	12,011.9	152,050
	46,331.1	586,470
GRAND TOTALS:	121,057.5	1,532,570