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**PURDUE UNIVERSITY**

**International Education and Research  
International Programs in Agriculture**

**IE&R** 

**IPIA** 

**PORTUGAL UNIVERSITY  
INSTITUTES  
DEVELOPMENT PROJECT**

**(Contract AID/NE-C-1701)**

**FIFTH SEMI-ANNUAL REPORT  
August 25, 1982 to February 25, 1983**

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PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT

(CONTRACT AID/NE-C-1701)

FIFTH SEMI-ANNUAL REPORT

AUGUST 25, 1982 TO FEBRUARY 25, 1983

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INTRODUCTION

The Portugal University Institutes Development Project commenced on August 25, 1980, when a contract was awarded to Purdue University by the Agency for International Development (AID) to administer the program.

Purdue was charged with the responsibility of providing technical assistance and training to three Portuguese university institutes in order to strengthen their educational, research and extension capabilities. The cooperating institutes are: the Universidade de Evora (UE) at Evora, the Instituto Universitario da Beira Interior (IUBI) located at Covilha, and the Instituto Universitario de Tras-os-Montes e Alto Douro at Vila Real.

To achieve the objectives of the program, Purdue was originally requested to provide 263 person months of technical assistance and 216 person months of training during the four-year program. However, over the past several years, the schedules were revised and the total person months to be provided are 226.5 of technical assistance and 417.5 of training, an increase of 165 person months.

This report covers project activities carried out during the past six months.

## SUBSTANTIVE REPORT

### Status of Work

During the first year, the program was a little slow in getting started. This was due partly to establishing procedures, identifying a long-term advisor for Evora, setting up training programs and locating short-term advisors. Since then, the program has accelerated and appears to be on target.

Two long-term advisors have each completed two-year assignments at Vila Real and one has completed a 14-month tour-of-duty at Covilha. Two long-term advisors are currently in residence at two of the institutes-- one at IUBI and one at UE.

Short-term advisors have, to date, provided 42 person months of technical assistance in a variety of disciplines. In addition, 51 person months of academic training and 71 person months of non-academic training have been provided or are in the process of being provided.

### Progress Made

As stated above, a number of short-term advisors have provided technical assistance to the faculty at each of the University Institutes. Each advisor is required to submit an end-of-tour report to the University Institute where he served and also to Purdue. A section of the report covers the identification of and the advisors' recommendations for solution of problems encountered. The advisors report that their suggestions and recommendations have been well received by the Portuguese and that they are eager to learn. The Portuguese report that, in almost every case, the advisors' visits were helpful and informative.

Equally, both academic and non-academic training programs are well underway. From evaluation sheets completed at the end of their programs, most trainees expressed satisfaction with their training. Several non-academic trainees have returned to the U.S. to enroll in academic programs. Others have requested to return for further non-academic training.

Considerable expansion of the training programs has occurred. As is appropriate for an institutional development project, significant emphasis is now being placed on the development of the permanent staff of the three institutes. A number of people are enrolled in graduate programs in the U.S., both at the M.S. and Ph.D. level. Others are being trained through specific short-term programs in the U.S. which are created specifically to meet their needs. Some of these include a quarter or a semester of graduate courses in selected areas, while others provide orientation for development of a research program in Portugal. Both of these kinds of activities can contribute to the completion of Portuguese based programs leading to advanced degrees.

Many trainees receive specific training in research and/or extension and teaching methodologies and approaches which will be useful in Portugal.

English language instruction is now provided at each of the University Institutes to meet the specific needs of individuals scheduled for training in the U.S. A number of obstacles had to be overcome in order to provide language instruction. For example, it was difficult to find an experienced instructor and the cost for such instruction is quite high.

A second course for Purdue credit was offered at IUTAD in October 1982. Two short-term advisors presented the course on livestock breeding, genetics and selection methods. Of the 60 attendees, 13 completed the necessary requirements to receive credit. Another course for credit is being planned by IUTAD for the fall of 1983.

One of the long-term advisors initiated the first cooperative study for cereal production comparison between fertility, plant breeding, economics and extension groups at IUTAD and nine farmers. This effort is important because it establishes cooperative work between agronomic and economic extension staff and moves some of the work to the regional farms.

Contributions of scientific journals and textbooks continued during this period. Professors Robert Taylor and Leon Garoyan donated 36 agricultural economics textbooks; Professor Truman Martin and his Purdue colleagues donated 20 books on breeding and statistics; Dr. Marvin Phillips contributed a complete set of the Journal of Environmental Quality, Soil Science Society of America journals, Crop Science journals, Agronomy journals and Agronomic Education journals to Vila Real. Professor James Outhouse donated 36 textbooks to the University of Evora and his personal set of the Journal of Animal Science to IUTAD. Complete sets of nine journals in major agricultural areas have been donated so far. The economic and educational value of the books and journals should help strengthen and expand the institutions' libraries.

A long-term project coordinator for IUBI was identified and is now in residence at Covilha. Dr. Thomas H. Gunter arrived in Portugal on January 17, 1982, and will remain for one year. His arrival was most timely since the other long-term advisors will have returned to the United States by the end of March 1983. Dr. Gunter will then assume the duties as overall project coordinator in addition to his responsibilities at Covilha.

Cooperative activities between the USDA/PROCALFER and the AID/Purdue Portugal Institutes Project continue. Both programs have shared visiting advisors. PROCALFER provided a portion of the funding for the Extension

Training Short Course held at Purdue in September 1982. AID/Purdue Portugal Institutes short-term advisors have presented seminars for PROCALFER personnel and vice versa. PROCALFER also provided funding for several long-term training programs for faculty from two of the University Institutes. The cooperative effort should help strengthen both programs.

Routine procedures are now established for handling travel arrangements and programs for short-term advisors and trainees. During the early months of the project, a fair amount of confusion existed in these areas, but most of it has now been eliminated. Even though Purdue's project coordinators are no longer at two of the institutes, travel and logistical arrangements are being made effectively by their Portuguese counterparts.

In order to supply the University Institutes with needed research material and supplies that cannot be easily obtained in Portugal, a variety of commodities and publications have been purchased from the dollar budget and shipped to Portugal. For example, research supplies and audio-visual tapes were sent to Vila Real; office supplies and voltage regulators were ordered by Covilha; and numerous publications and reprints were sent to each of the institutes.

In summary, we believe that significant progress is being made at each of the University Institutes in regard to project objectives. Staff development is taking place in a variety of disciplines; teaching and research programs are being strengthened through training programs in the U.S. and visits to the University Institutes by short-term advisors; and extension programs are being further developed to assist the farmers, cooperatives, private industry and governmental agencies.

Plans for the Next Six Months

It is anticipated that a number of activities will be initiated or carried out during the next six months.

Top priority will be given to the completion and submission of a revised budget to cover the remaining years of the contract. Budget negotiations began during the Annual Review meetings in February and are continuing in an effort to balance the budget and still retain the scheduled staff inputs for technical assistance and training.

Dr. Fernando Real, Reitor at Vila Real was invited to visit Purdue and meet with project administrators and faculty. Dr. Real and his wife accepted the invitation and plan to arrive at Purdue in May for a two-week stay. Preparations are currently underway for their visit.

Since 18 short-term advisors and 26 short-term and 3 long-term trainees are scheduled during the remainder of 1983, a good deal of time will be devoted to completing arrangements for their visits. Additional time will be spent in identifying advisors and developing training programs.

## PROBLEMS AND RECOMMENDATIONS

The program has progressed with relatively few problems. However, a few concerns and difficulties still remain which we believe should be mentioned. Several have already been identified in earlier reports, but since no resolution has been found, we believe they are worth repeating.

Prepaid ticket authorizations (PTA's) for advisors traveling to Portugal continue to cause frustration and consume an excessive amount of administrative time. Some of the PTA's arrive on time, but others are delayed. A more recent problem concerns duplicate reservations. When flight itineraries are arranged in the U.S., reservations are made at that time. When the PTA's are issued in Portugal, reservations are also made. This means that two sets of reservations appear for the same person and one must be cancelled out. In several cases, both sets of reservations were cancelled. Fortunately, we have so far been able to reinstate one of the reservations before the flight was full. The process of issuing PTA's from Portugal continues to be complicated and cumbersome. Our suggestion to transfer the cost of international travel to the dollar budget was not accepted. As far as we can determine, this seems to be the only logical solution. We expect this problem will continue to cause confusion and difficulty as well as consume an excessive amount of administrative effort, as a result.

Another cause for concern is that no allowance is made or approval granted to compensate short-term advisors for predeparture preparation. In most cases, predeparture preparation time is not needed. However, when an advisor is asked to teach a course at one of the institutes in Portugal, a good deal of time is needed for preparation, even though the advisor may teach a similar course at his home institution. Except for a

few instances, requests for approval to compensate an advisor for such time has been disallowed by AID/Washington. We recommend that this be reconsidered and, where warranted, up to one week be approved.

The late arrival at Purdue of scopes-of-work has made it difficult to identify appropriate short-term advisors for specific assignments. It is difficult to identify and interview candidates for positions without first knowing what duties the Institutes expect them to carry out. The first question a candidate usually asks is: "What will I be expected to do." It is embarrassing and awkward not to be able to respond in a knowledgeable manner. The full scope-of-work usually does not arrive until after an individual has been identified and the University Institute and USAID/Lisbon has approved the appointment. A line or two concerning proposed activities are usually included in the yearly schedules, but they are not descriptive enough for hiring project staff. It is our recommendation that a full scope-of-work accompany the schedules for years 1984 and 1985. Individuals can then be identified who would be more likely to carry out the duties expected of them.

An additional problem relates to salary and appointment approvals. Despite early requests, it has been common for appointment and salary approvals to be forthcoming from Washington only after repeated reminders and generally at the last minute before departure. This makes arrangements for staff assignments very difficult. Further, the Institutes have often identified specific individuals for assignments who may have salaries at levels which require AID approvals. Difficulty in getting such approvals has jeopardized several assignments and may make it impossible in the long run to obtain those individuals most sought by the Institutes.

## ADMINISTRATIVE REPORT

### Personnel Employed Under the Contract

Staff inputs, as required by the contract, have been or are in the process of being satisfied. All administrative positions and long-term advisory positions are completed or filled. Approximately half of the short-term advisors have been provided to the three University Institutes.

Following is a list of contract employees and a brief description of their activities during the past six months.

#### Long-term Professional Staff

During this reporting period, two advisors completed and one commenced long-term assignments. They are:

Prof. John R. Foley, Cooperative Extension Service, Purdue University. Professor Foley served at Vila Real as the project coordinator from August 20, 1980 until October 20, 1982. From January 1982 until the end of his assignment, he also served as Purdue's incountry, overall project coordinator. Professor Foley was originally scheduled to return to the U.S. on August 20, 1982, but he was offered a two month extension which he accepted.

Most of his remaining time at Vila Real was spent in wrap up activities in order to ensure an orderly transition after his departure. He briefed Dr. Jose Torres Pereira, his Portuguese counterpart, and Dr. James Ahlrichs on administrative duties they would be responsible for after his departure. The remainder of the month was devoted to arranging for the animal science course to be presented by two Purdue advisors in October. When the advisors arrived in October, he served as their host by meeting

them in Lisbon and, for one week, touring the University of Evora and the sheep, goat and livestock production facilities between Lisbon and Vila Real.

His final week in Portugal was spent packing personal belongings and attending farewell events arranged by Portuguese friends and colleagues.

Dr. John H. Sanders, Department of Agricultural Economics, Purdue. Dr. Sanders continues to serve as the project coordinator at the University of Evora. He will complete his two year assignment in March 1983.

In addition to his numerous administrative activities, Dr. Sanders arranged for the visits of three short-term advisors, the head of the wine department at the University of California/Davis, a PROCALFER consultant, and an informal visit by an agronomist from Oregon State University. He arranged several seminars that were presented by the visiting scientists.

He initiated a study group workshop on farm records, a priority area at the University of Evora, with various people in the management department. Later, he participated in interviews with ten farmers and developed field notes, cost and price data, and presented the information to the farm management and farm accounts group. Dr. Sanders assisted two UE staff members prepare and submit papers to the Portuguese Economists Convention. He assisted with departure preparations for three UE trainees to attend the Extension Training Short Course held at Purdue.

Dr. Sanders attended the Annual Review meetings held in Lisbon and co-hosted the review team at Evora.

Dr. Thomas H. Gunter, School of Management, Purdue University, accepted the position of overall project coordinator and technical

advisor at the University Institute of Covilha. Dr. Gunter arrived at Covilha on January 18, 1983, for a one year assignment.

The remainder of January and most of February was spent getting acquainted with IUBI staff and familiarizing himself with the University Institute and the Covilha region.

He visited Evora and Vila Real in February as a member of the Annual Project Review visitation team and attended the review meetings in Lisbon. A second series of meetings were held late in February at IUTAD, UE, and IUBI which resulted in establishing a preliminary schedule for short-term advisors and trainees for 1983-84.

Dr. Gunter advised IUBI staff on research in their field of specialization in an effort to identify specific courses which could be given for credit by the visiting advisors to help fulfill M.S. requirements for trainees coming to the United States. Dr. Gunter circulated an announcement to the faculty requesting expressions of interest in an attempt to establish language instruction at IUBI.

Dr. James L. Ahlrichs, Department of Agronomy, Purdue University, completed his two year assignment at IUTAD and returned to the United States January 19, 1983. He was invited by IUTAD to extend his stay but was unable to do so because of teaching and research commitments at Purdue.

Dr. Ahlrichs assumed part of the administrative duties carried out by Professor Foley before his departure. These activities occupied a large amount of his time from November until mid-January.

Several IUTAD faculty members and Dr. Ahlrichs attended the International Animal Breeding and Improvement Conference held in Madrid, Spain in October 1982. One of the leading U.S. sheep and goat experts, Dr. C. Terrill, accompanied them back to Vila Real to observe IUTAD's sheep and

goat research. He conferred with other faculty members and presented a seminar.

Dr. Ahlrichs and his Portuguese colleagues completed samplings of forages and soils from vineyards to help clarify nutritional deficiencies. He assisted one staff member obtain literature on potatoes and another staff member with his work on nitrogen analysis.

Considerable time was spent in finalizing schedules for trainees and advisors for 1983 and 1984.

Both Dr. Ahlrichs and Professor Foley stated their experiences had been most rewarding, the Portuguese were warm, gracious people and were most eager to assist them in every way. They both expressed regret at having to leave their Portuguese friends and the project in the midst of so much activity.

#### Short-term Professional Staff

During the past six months, five individuals completed advisory assignments and one is still in Portugal. The following provides a brief summary of their accomplishments.

Dr. James B. Outhouse, Department of Animal Science, Purdue, was in Portugal from September 20 to December 16, 1982. The first two months were spent at Vila Real and a little over one week was spent at the University of Evora.

Dr. Outhouse was met by Professor Foley in Lisbon and on their trip to Vila Real visited the University of Evora and their farms, the Government Research Center of Coudelaria de Alter, the National Research Station for Livestock at Fonte Boa, and the area producing Serra Cheese, the best sheep cheese in Portugal.

While at Vila Real, he visited livestock research farms and stations. Dr. Outhouse and Dr. Truman Martin offered a seminar (Animal Science 691) for one hour of Purdue graduate credit. Dr. Outhouse presented 15 lectures during the seminar on sheep management, reproduction, nutrition, milk production and carcass evaluation. Approximately 60 people attended the course and, of that number, 13 received credit for the course.

At Evora, he met with the Reitor of UE and faculty of the departments of Rural Extension and Animal Science. He observed their sheep research study and toured UE and university, government and privately owned livestock farms. On December 7 he presented a seminar for 35 UE staff and students entitled, "Management and Nutrition for Improving Sheep Production."

Dr. Outhouse participated in a jointly sponsored USAID/PROCALFER seminar held in Lisbon on December 14. He presented a paper on nutrition and management in the production of sheep in Portugal. The seminar was attended by approximately 175 representatives from IUTAD, UE, PROCALFER, MAP, and the national research stations.

The University of Evora invited Dr. Outhouse to return in 1984 for another one month assignment.

Dr. Truman G. Martin, Department of Animal Science, Purdue, arrived at Vila Real on October 11, 1982. He served as an advisor in the area of genetic improvement of livestock, research methods and data analysis.

He spent the first week preparing for the three-week animal course seminar (described above under Outhouse) which was offered for credit at IUTAD. During the course, he presented 15 hours of lectures on animal breeding. In addition, he visited IUTAD classes and offered advice and assistance on ways to strengthen their teaching programs. Consultations were held on general and specific problems encountered in selecting

research topics, designing experiments and analyzing data. In order to acquire information on the status of animal improvement programs in Portugal, Dr. Martin visited farms, research stations and personnel involved in research and extension programs.

On November 30, Dr. Martin traveled to Evora and spent eight days visiting UE and privately owned farms and the Lazirias Station, the largest state-owned farm in Portugal. Meetings were held with the Animal Science Department staff to discuss their research and extension programs.

Dr. Martin left Evora on December 8, met with USAID/Lisbon and PROCALFER personnel on December 9 and returned to the United States on December 10.

IUTAD extended an invitation for Dr. Martin to return in 1984 for six weeks to present another course for credit.

Dr. Charles L. Rhykerd, Department of Agronomy, Purdue, returned to Portugal for a second assignment on October 3, 1982. Except for eleven days, Dr. Rhykerd spent two-and-one-half months at the University of Evora.

From November 8 to December 6, he taught a forage management course to 60 UE students. Dr. Rhykerd prepared three papers which were later presented at seminars. One paper, "Identifying Priorities to Increase Pasture and Forage Production in Portugal," was given at the USAID/Lisbon-PROCALFER sponsored seminar held in Lisbon on December 14. The second paper covered expanding wheat acreage in Portugal and the third outlined an experiment to study the influence of stocking rates of sheep on soil fertility.

Dr. Rhykerd visited Vila Real from December 8 to December 13 where he conferred with agronomy staff members concerning their on-going research.

Approximately 250 forage samples were collected while he was at IUTAD and Dr. Rhykerd brought them back to Purdue for analyses. Very few mineral analyses of forage crops are available in Portugal and this information

should be extremely useful to the Portuguese in identifying various soil mineral deficiencies.

Dr. Rhykerd was asked to return to Evora in the fall of 1983 and to Vila Real in 1984 for short-term assignments.

Dr. Garth H. Spencer, Department of Chemistry, Clemson University. The objective of Dr. Spencer's visit was to assist the Department of Chemistry at IUBI to establish research activities and develop orientation toward polymer chemistry in courses, research and extension.

Dr. Spencer taught a course in 20 lectures on "Physical Chemistry of Polymers," which was attended by faculty of the IUBI Chemistry Department. He initiated, with his Portuguese counterparts, a research project on the structural features of polyester fibers.

For the extension portion of his visit, Dr. Spencer toured the Textile Institute of Covilha, two wool fabric producers, a manufacturer and processor of polyester, and a producer of polyester and acrylic fabrics.

He presented one of the six lectures at a seminar held at IUBI on December 13. Thirty participants from throughout Portugal and ten from IUBI attended the seminar.

Dr. Stephen C. Bunting, College of Forestry, University of Idaho, was at Vila Real from October 16 to December 12, 1982. He was first introduced to the IUTAD faculty and research being conducted in the areas of fire and range management, animal science and forestry. He assisted the IUTAD Forestry Department staff with on-going research and development programs related to prescribed burning and range management.

A three day field trip to the Minho Region allowed Dr. Bunting to examine burning practices and range, pasture and forestry management

techniques being utilized. Another three day field trip took Dr. Bunting to the Tras-os-Montes region from November 2 - 5 where he observed the use of prescribed fire in the establishment of pasture and reforestation projects. During both trips, he discussed current practices being used and the need for research in these areas with IUTAD and Forest Service personnel.

He suggested to the Forest Service that they sponsor a workshop for Forest Guards in order to train them in sampling techniques and the reasons for collecting fire data. The one-day workshop was held on November 9 with Dr. Bunting participating in the workshop. He also presented two lectures to the range management class at IUTAD. One seminar covered range management systems in the U.S. and the other described vegetation in the western United States.

IUTAD has requested that Dr. Bunting return for another two month assignment in 1984.

Dr. Michael Collins, Department of Agronomy, University of Wisconsin, is currently on a five week assignment at IUTAD. He departed from the United States on February 21 and is due to return on March 28, 1983. This is Dr. Collins' second visit to IUTAD as an advisor in the area of forage nutritive testing. A more detailed description of his activities will be provided in the next semi-annual report.

Dr. D. Woods Thomas and Dr. Thomas D. Efland attended the Annual Project Review Meetings, held in Lisbon during February 1983, as Purdue and Clemson University representatives. Dr. Thomas is Associate Dean and Director of International Programs in Agriculture and International Education and Research at Purdue. Dr. Efland is Associate Dean and Director of Research at Clemson.

Prior to the review meetings, Drs. Thomas and Efland, along with other members of the review team, visited each of the Portuguese University Institutes. They toured the universities and surrounding regions, met with administrators and faculty to discuss program activities the project's impact on the universities.

The review meetings were held in Lisbon from February 16 to 18. The attendees were representatives from USAID, the Ministry of Education, the three University Institutes, Purdue and Clemson Universities. Each of the institute representatives reported on the status of the program at their respective institution and provided 1983/84 technical assistance and training schedules. The group reviewed the status of the overall project, identified problem areas and suggested possible solutions.

#### Scheduled Short-term Advisors

Sixteen short-term advisors are scheduled to arrive in Portugal during the remainder of 1983. Those identified so far include:

- Dr. Edward Carter, one month at UE; Forages
- Dr. Jules Janick, one month at UE; Horticulture
- Dr. Howard Taylor, six weeks at UE; Crop Production
- Dr. Don Franzmeier, one month at IUTAD; Soil Survey and Mapping
- Prof. Horace Tyler, three weeks at IUTAD; Teaching/Learning Resource Center
- Prof. David Moses, two months at IUTAD; Teaching/Learning Resource Center
- Dr. Clinton Whitehurst, four-and-a-half months at IUBI; General Management
- Dr. J. M. McDonald, two months at IUBI; Budget Techniques

Efforts continue to identify the remaining eight advisors scheduled for 1983.

On-campus Staff -- Purdue and Clemson Universities

There have been no changes in the on-campus administrative staff. Dr. James L. Collom serves as the project coordinator at Purdue. Vivian L. Rider remains as administrative assistant at Purdue. Dr. Hassan Behery is the on-campus program coordinator at Clemson University under the Purdue/Clemson subcontract.

Educational and Training Programs

Approximately 71 person months of non-academic and 51 person months of academic training have been provided through training programs in the United States since the beginning of the project. In addition, two training workshops were held during this time, one in Portugal and one at Purdue.

A listing of training programs completed or in progress during the last six months follows:

Non-academic Training

Jorge Colaco, Vila Real -- August 2 to September 30, 1982.

Mr. Colaco's program in the area of animal breeding and genetics was carried out primarily at Purdue University. However, two weeks were spent at North Carolina State University and one week was spent at the University of Illinois. His program focused on the effectiveness of sire selection, the processes used for sire evaluation and aspects of quantitative genetics. Special attention was given to the study of genetics for increasing production.

Alberto Cardoso, Vila Real -- August 1 to November 30, 1982

Mr. Cardoso's first two weeks of training were spent at Purdue University. He attended the annual meeting of the National Institute on Cooperative Education

during the first week. The second week was spent with specialists in the Department of Agricultural Economics discussing the financial structure of marketing and purchasing cooperatives. He also visited the Farm Bureau Cooperative.

Mr. Cardoso then moved to Madison, Wisconsin where he attended the 1982 Cooperative Education and Management Seminar at the University Center for Cooperatives. He ranked in the top 10 percent of his class and gave an outstanding seminar on the structure and function of cooperatives in Portugal, their problems and possible solutions.

Afonso Martins, Vila Real -- September 4 to November 3, 1982.

The focus of Mr. Martins' program was Soil Science, including such topics as soil classification and mapping, soil physical characterization, maintenance and improvement, soils teaching, and the role of organic matter in the improvement of soil fertility. He completed his training in Indiana, at Purdue and in Switzerland County. Mr. Martins presented a very informative seminar to the Agronomy Department at Purdue on the topics of the University of Tras-os-Montes, the soils of Northern Portugal and their use.

Jose Potes, Vila Real -- August 1 to September 26, 1982.

Mr. Potes spent two months at Purdue studying the most recent research on animal production and the techniques used in artificial insemination. He carried out a special research project measuring levels of gonadotropic and steroid hormones. In addition, he studied reproductive physiology and new developments in embryo transfer. He attended the annual meetings of the American Society of Animal Science in Ontario, Canada.

Ricardo P. Serralheiro, Evora -- July 31 to October 30, 1982.

Controlled flood irrigation methods was the topic of the study tour for Mr. Serralheiro. He studied and worked with people at several locations in the U.S. to learn the parameters that determine furrow and strip flow, the latest findings on infiltrability and solutions to the problems of surface seals and soil erosion by irrigation water. The design of mathematical models of flow on soils common to the south of Portugal was of special interest to Mr. Serralheiro. The training sites included: U.S. Water Conservation Laboratory, Pheonix, AZ and the universities of Arizona, Colorado State, Utah State, California/Davis as well as attending the Ninth Technical Conference on Irrigation, Drainage and Flood Control at Jackson, Mississippi.

Manuel O. Abreu, Evora -- August 13 to December 20, 1982.

Mr. Abreu teaches Animal Nutrition at the University of Evora. His work (determining the nutritive value of forages and pastures) is important for reaching Portugal's goal of improving ruminant animal production by increasing the use of pastures and forages and decreasing the intake of grain. Mr. Abreu spent five months at Texas A & M University in the Department of Animal Science. He audited classes and carried out research under the direction of Dr. William Ellis.

Francisco Ramos, Evora -- September 8 to December 19, 1982.

Mr. Ramos' training in the area of Extension Education primarily took place at the University of Wisconsin where he attended a short course dealing with that subject. The course focused on the role of extension in overall agriculture and rural development, extension techniques used for transferring the latest research findings to rural families, and various programs

of other government and private groups which complement and support extension work. The course lasted ten weeks. Mr. Ramos spent two weeks at Purdue meeting with professionals in the Cooperative Extension Service and with professors of Sociology and Anthropology. He spent several days at Cornell University discussing farming systems research. The last activity of his program was to attend the American Anthropological Association meetings in Washington, D.C.

Manuela M. Batista, Evora -- September 18 to December 5, 1982.

With the establishment of a new soils laboratory at Evora, Ms. Batista's training focused on learning more about the research and service carried out by such laboratories in the U.S. Special emphasis was placed on techniques for soil sample collection and preparation (removal of Fe and Al oxides). Methods for determining Mo absorption on treated and untreated soils, as well as concentrations of extractable Fe and Al, were studied. Ms. Batista's program was carried out at North Carolina State University, Utah State University, University of Arizona, and University of California, Riverside. She also participated in the American Society of Soil Science meetings in Los Angeles, California.

Academic Training (all programs currently in progress)

Jaime Sales-Luis, Vila Real -- September 19, 1982 to June 19, 1983.

Mr. Luis began work on his M.S. degree in Forest Mensuration and Management at Oregon State University in September 1982. He is making fine progress toward the degree and hopes to finish in the spring of 1984. His scholarship is for nine months, ending June 19, 1983.

Eduardo Figueira, Evora -- January 1983 to January 1984.

Mr. Figueira began his 24 month scholarship in January 1983. He is pursuing the M.S. degree in Extension Education at the University of Wisconsin. His curriculum places special emphasis on continuing and vocational education.

Maria Ermelinda Pinheiro, Evora -- August 16, 1982 to November 16, 1983.

Mrs. Pinheiro began an academic program in August of 1982 at Iowa State University. She is pursuing the Master of Science degree in Agronomy in the area of forage production. She is making excellent progress.

Jose Mendes Lucas, Covilha -- August 16, 1981 to December 1, 1983.

Mr. Lucas continues to make excellent progress towards an M.S. degree in Color Science at Clemson University.

Alberto A. F. Pereira, Covilha -- January 1983 to August 1984.

Mr. Pereira is currently at Clemson University where he is studying for an M.S. degree in Management.

Mario F. Nunes, Covilha -- January 1983 to August 1984.

Mr. Nunes is pursuing the M.S. degree in Textile Science at Clemson University.

Mario de Prata Barros, Covilha -- January 1983 to August 1984.

Mr. Barros is studying for an M.S. degree in Management at Clemson University.

### Extension Training Short Course

Eleven extension workers from seven separate villages in Portugal attended an Extension Training Short Course held at Purdue and the University of Wisconsin from September 23 through October 29, 1982. The short course was jointly funded by USDA/PROCALFER and the AID/Purdue Portugal University Institutes Development Project.

The objective of the course was to provide first-hand experience in local extension methodology, service techniques and how extension operates in the land-grant system.

Dr. Robert Troyer, former assistant director of personnel and training for the Indiana Cooperative Extension Service, served as the training coordinator. Dr. Robert Pricer, Director of the Small Business Development Center at the University of Wisconsin, arranged the program at Madison.

Workshops were held to explore extension organization, program planning, working with low income people, extension committees and volunteers, to name a few. Presentations were given by extension specialists. One of the presentations which proved to be an excellent exercise and of particular interest to the trainees was devoted to the writing of extension publications.

Tours were conducted at county extension facilities in Indiana and the Farm Bureau Cooperative at Indianapolis. The trainees also visited the Purdue 4-H Center, agronomy farm, meat laboratories, computer center, livestock facilities and horticultural orchards. They attended the Farm Progress Show at Remington, Indiana, and the Annual Extension Workers Conference held at Purdue.

From October 1 through October 8, the participants were at the University of Wisconsin. An excellent program had been planned for them by

At the end of the course, each participant was requested to submit an evaluation of the program. The responses indicated that the program had been most beneficial and it provided a good view of U.S. extension activities and how they could be applied to extension work being conducted in Portugal. The program ended on October 29 with a banquet and graduation ceremony. Each person received a certificate for completing the course.

This program constituted a follow-up to an earlier extension training program given in Portugal to representatives of the Ministry of Agriculture and the University Institutes, also coordinated by Purdue.

#### Expenditures -- Dollar Budget

Actual expenditures and encumbrances from the dollar budget totaled \$1,294,879 as of December 31, 1982. It is estimated that by the end of this reporting period expenditures will total approximately \$1,500,000. A copy of the Quarterly Expenditure Report for the period ending December 31, 1982, is attached as Table 1.

It is anticipated that adjustments will need to be made in the dollar budget since staff inputs for both technical assistance and training have been substantially increased but no additional funds have been allocated to cover these costs. Negotiations are currently underway between USAID/Lisbon and Purdue to balance the budget. The revised version will then be submitted to AID/Washington for approval.

**TABLE 1**

**Dollar Budget  
Portugal University Institutes Development Project  
Life of Project Funding, 1980-1984**

Dollar Budget, Portugal University Institutes Development Project  
Life of Project Funding, 1980-1984

	Total 4 Year Budget	Year 1 Budget	Year 2** Budget	Spent/ Committed Thru 12/31/82	Balance Years 1 and 2	Year 3** Budget	Year 4** Budget	Four Year Balance
Salaries and Wages	\$1,152,472	\$362,010	\$ 451,036	\$ 606,880	\$206,166	\$246,413	\$ 93,013	\$ 545,592
Fringe Benefits	330,543	107,054	127,669	107,293	127,430	70,545	25,275	223,250
Travel & Transportation	43,015	16,175	9,670	10,693	15,152	13,170	4,000	32,322
Participant Training	629,695	152,250	245,775	177,720	220,305	87,820	143,850	451,975
Other Direct Costs	46,700	15,500	15,500	90,325	(59,325)	11,400	4,300	(43,625)
Indirect Costs	<u>695,000</u>	<u>217,295</u>	<u>262,813</u>	<u>301,968</u>	<u>178,140</u>	<u>152,387</u>	<u>62,505</u>	<u>393,032</u>
TOTAL	\$2,897,425	\$870,284	\$1,112,463	\$1,294,879	\$687,868	\$581,735	\$332,943	\$1,602,546

\*Actual expenses for Purdue portion of contract thru 11/30/82 only. Purdue 12/82 expenses estimated. Clemson subcontract only billed for expenses through 9/30/82, so figures shown include estimates for Clemson for 10/82 through 12/82.

\*\*Calculations based on original contract budget, not on revised budget figures submitted by AID/W and AID/Lisbon on 12/18/81.

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