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PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT

(CONTRACT AID/NE-C-1701)

SIXTH SEMI-ANNUAL REPORT

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INTRODUCTION

Three years of the AID/Purdue University Institutes Development Project have now been completed. The program commenced on August 25, 1980, when Purdue entered into a contract with the Agency for International Development (AID) to provide technical assistance and training to three university institutes in Portugal. The institutes are:

- the Instituto Universitario de Tras-os-Montes e Alto Douro (IUTAD) at Vila Real, Portugal,
- the Institute Universitario da Beira Interior (IUBI) at Covilha, Portugal, and
- the Universidade de Evora (UE) at Evora, Portugal.

The general objectives of the project are to assist the institutes to establish sound teaching programs; assess regional development needs and constraints; develop organizational structure for regional extension activities; establish teaching/learning resource centers; provide education and training for the adult rural populations; and develop formal and nonformal training for new and existing teachers as well as professionals.

To meet the objectives of the contract, Purdue was asked to provide a limited number of long-term professional agricultural, business and marketing educators and scientists and a relatively large number

of short-term agricultural, textile and management scientists in order to provide assistance for specific needs of the three cooperating Portuguese universities. Further, Purdue was asked to plan and administer academic and nonacademic training programs to be carried out in the United States for faculty from the three university institutes.

Since the university at Covilha is heavily involved in technical and managerial aspects of the textile industry, Purdue entered into a subcontract with Clemson University to provide technical assistance and training for this specific area.

Backstopping for the project and staff in the field is provided by project coordinators at Purdue and Clemson Universities and an administrative assistant located at Purdue.

SUBSTANTIVE REPORT

Status of Work

Project activities appear to be progressing well and according to the schedules of the contract. Four advisors have returned from long-term assignments at IUTAD, IUBI and UE. One long-term advisor is still in-residence at Covilha. During this six-month period, six advisors completed short-term assignments in Portugal and eleven trainees came to the United States for training.

The original contract required Purdue to provide 263 person months (PM's) of technical assistance and 216 person months of training--a total input of 449 person months. During subsequent years, the schedules have been revised and now reflect a total of 664 PM's (226.5 of technical assistance and 417.5 of training). Since the total dollar

budget will not be increased to cover the additional person months, this level of assistance can only be achieved if it is possible to keep the cost of each nonacademic training program to around \$3000 and all dollar costs for short-term advisors to an average \$4500. At the last annual review meeting it was decided to eliminate the Joint Institutes portion of the program, thus freeing up 26 person months of technical assistance and training for other areas. It is hoped that these changes will enable the contractor to provide the increased number of person months within the dollar budget. Man months of training and/or advisors may have to be adjusted downward towards the end of the program depending on costs. It must be noted that while costs are important overall, they are not considered when individual selections of advisors or trainees are made in Portugal.

Activities and Accomplishments

It is becoming increasingly difficult to accurately assess progress made at the three university institutes since most of the long-term advisors have returned home. In the past, we depended largely on this type of information being provided in the advisors' monthly and quarterly reports. Our main source of information now comes from short-term advisors returning from the field. They have reported, in almost every instance, that progress is being made, in their estimation, in the teaching/research programs and in extension activities at each of the universities, but especially at IUTAD.

Purdue University was pleased to host Dr. Fernando Real, Reitor at the Instituto Universitario de Tras-os-Montes e Alto Douro, Vila Real, from May 10 through June 15, 1983. In an administrative capacity, he

met with Purdue's on-campus project coordinators and administrators to discuss project activities, the schedules of advisors and trainees, program budgetary matters, and to further familiarize himself with the Land-Grant college system. He visited a number of staff members of the School of Agriculture who have been identified for upcoming assignments at IUTAD during the remainder of 1983. He spent a good deal of time with Purdue specialists to discuss IUTAD's plan to develop a teaching/learning resource center. He visited Purdue farms and county extension offices. Dr. Real spent three days at the University of Wisconsin visiting with bolsistas from Vila Real and with their counselors at Wisconsin. He also met with specialists at the University of Wisconsin's Teaching/Learning Resource Center.

Additional PL480 funds were made available to the three institutions early this year which were principally earmarked for the establishment of Teaching/Learning Resource Centers (T/LRC's). Two short-term advisors were at IUTAD during the summer to assist with the development of plans for their T/LRC. They located a suitable building to house the Center, drew up floor plans and made suggestions for its renovation; prepared a description of new equipment and furniture that would be needed; inventoried existing equipment and furniture that could be utilized in the new Center; and discussed staffing requirements. They presented seminars for IUTAD and IUBI staff to help them gain a better understanding of basic communications theory and the potential role of the T/LRC. One of the IUBI faculty members who attended the seminars is currently in the United States to receive further training associated with T/LRC's. It is anticipated that IUTAD's new Center will be installed in the new building and will be partially operational by the summer of 1984.

A substantial amount of computer software and supplies was purchased and shipped to IUBI during the past six months. Some of the software will be used for classes scheduled for IUBI faculty this fall. The classes will cover computer literacy, basic language, operation of hardware and software operations.

Faculty at the university institutes, especially at IUTAD and IUBI, now have the opportunity to earn graduate credit from Purdue and Clemson Universities. Clemson recently approved offering graduate credit for specific courses taught by short-term advisors from Clemson. Last fall 13 IUTAD staff members received graduate credit from Purdue after attending and fulfilling specific requirements of a seminar offered in Portugal by Purdue faculty. Two more courses for credit are scheduled for this fall, one at IUTAD and one at IUBI.

A revised budget and a request to extend the project to December 31, 1985, was submitted by Purdue to AID/Washington for approval. The extension was agreed to by USAID/Lisbon, the Portuguese Ministry of Education and the university institutes at the annual review meeting held in February 1983. Technical assistance activities are to be completed by July 1985 and training will continue until the end of December 1985, provided funds are available.

Both IUTAD and UE have made reasonably smooth transitions into this phase of the project in which it must be operated without the benefit of long-term advisors. Clearly, the advisors are missed and adjustments had to be made. Communication and information flow are not as complete as previously.

A phase of increased research and public service work is underway at IUBI. This is being accomplished by further developing the senior

faculty capabilities as researchers and publishers. Further, a seminar is being planned for the Fall of 1983 and a series of annual seminars are being designed specifically for the textile industry in the Covilha region.

Plans for the Next Six Months

Attention will continue to focus on securing advisors for short-term assignments in Portugal and planning/administering academic and technical training programs in the United States for Portuguese staff. Considerable effort will be expended in predeparture preparation for seven advisors who will leave for Portugal between September 15 and October 14. Likewise, a good deal of administrative time will be expended in preparing for five short-term and two long-term trainees who are scheduled to arrive over the next six months.

Procedures will need to be established to handle in-country administration of the project since the last long-term advisor will be returning to the United States at the end of 1983. It is our recommendation that quarterly visits be made annually by one of Purdue's project administrators. Each visit would be for a period of approximately two weeks. The administrator would visit each of the three sites and discuss program activities and plans with the university institutes staff. Meetings would also be held with USAID personnel. One of the quarterly visits would coincide with the Annual Project Review Meeting. We believe the trips are essential to ensure continued progress, facilitate communications and resolve problems that might arise.

Another activity that should be initiated in the near future is to investigate the possibility of continuing some program of work with the institutes after the current AID contract terminates. Discussions will

be held with each of the three cooperating institutes to inquire of their interest. It will also be necessary to explore with other organizations and agencies the possibility of funding such a continued work. We recommend that the agenda for the 1984 Annual Project Review Meeting include discussions of such program continuation.

Problems Encountered and Recommendations

We believe that an increased effort should be made to strengthen cooperation between the PROCALFER Project and the Purdue/AID Portugal Project. The two programs have cooperated in the past by sharing short-term advisors who are on assignment in Portugal. It appears, however, that this effort could be further strengthened by improved communications.

For example, on August 10 our office received a request from USDA/OICD for advisors to serve on the PROCALFER project. The advisors were to possess experience in forage harvesting equipment, silo construction, silage preparation and agricultural farm machinery. They were to arrive in Portugal no later than September 1, 1983. We informed USDA/OICD that two advisors with the required qualifications would be in Portugal during September and October for the Purdue/AID Portugal project. We further advised USDA/OICD that had we known earlier they were seeking individuals with these qualifications, it might have been possible to arrange a joint assignment.

We suggest that in the future, PROCALFER provide a good deal more lead time when requesting advisors. We have agreed to provide USDA/OICD with the names of advisors scheduled for visits under our contract in order to improve utilization of advisors in the future.

Another area which has caused considerable difficulty during the past six months has been the scheduling of advisors for IUBI. When the 1983 schedules were approved at the Annugal Project Review Meetings, we proceeded to identify people for IUBI according to those schedules. However, during the ensuing months revisions and cuts were made in the advisory schedules which created a good deal of confusion. This proved to be an embarrassment to both Purdue and Clemson since several advisors has made firm commitments to serve at Covilha and we had to tell them that their assignment had been cut. As a result, only one faculty member from Clemson served at IUBI during the past six months.

In addition, many of the IUBI staff are away from Covilha pursuing advance degree training and usually there are only four or five available staff to work with the advisor. In order to fully utilize visiting advisors, it would appear to be more desirable to schedule them when an optimum number of IUBI faculty are present.

Obtaining special approvals from AID/W continues to take an excessive amount of time. As an example, we requested approval for educational travel from AID/W on May 18, 1983. To date, we have not been informed if the request was allowed or disallowed. Likewise, it is not unusual to wait two months for approval of short-term staff appointments. Considerable time and energy is expended in follow-up with the AID Contract Office. Our staff in the field and Portuguese colleagues cannot understand why it takes so long to receive a reply and are uncertain as to how they should proceed.

As stated in earlier reports, issuing airline tickets from Portugal for international travel continues to be a cumbersome procedure. During the last six months, several advisors requested return flights through London instead of from Lisbon. The advisors agreed to personally pay

for transportation costs from Portugal to London and special fares were available which increased the cost of the ticket by only a few dollars. Evidently, the university institutes do not always have access to information concerning special rates because they would not issue the ticket via London due to excessive additional cost. After numerous telexes, we convinced them that the cost would be approximately the same and we provided them with the name of the air carries and flight numbers to use to obtain the special rate. With this information, the tickets were issued as requested.

If prepaid tickets must continue to be sent from Portugal, it would be useful if they could be issued as negotiable, open tickets so that reservations could be made in the U.S. and anticipated side trips (at the advisors' expense) could be incorporated into the tickets. Further, minor changes may be necessary in travel plans, which may be totally impossible when non-negotiable tickets are issued. Thus, substantial time and energy can be expended in getting the tickets modified.

ADMINISTRATIVE REPORT

Personnel Employed Under the Contract

In order to assist the university institutes strengthen their educational and research capabilities, a number of advisors have provided technical assistance to the faculty of the three institutions. Appendix A provides a list of long- and short-term advisors who have been employed under the contract from the beginning of the program through August 25, 1983. Advisors who have participated in the project during this reporting period, plus a brief summary of their activities, follows.

Long-term Professional Staff

Dr. Thomas H. Gunter, continues to serve at the Instituto Universitario da Beira Interior at Covilha as the technical advisor and as Purdue's incountry project coordinator. Dr. Gunter commenced his assignment in Portugal on January 17, 1983.

Administrative duties occupied a large amount of Dr. Gunter's time during the past six months. He met with AID personnel to discuss project issues on numerous occasions. He presented a seminar for IUBI Management/Economics faculty in March; commenced marketing strategy classes in May; conducted a project planning seminar at Porto University; and he and two IUBI staff members participated in the Teaching/Learning Resource Center workshop which was held at IUTAD in June 1983.

Dr. Gunter assisted with arrangements for English language instruction at IUBI for staff planning on coming to the U.S. for training. He visited textile plants in the Covilha region; ordered a substantial amount of software for the IUBI computers; assisted trainees with pre-departure preparations; and revised advisor and trainee schedules for the remaining years of the project.

As incountry project coordinator, he visited monthly the other two participating university institutes to assist them with project plans and activities.

Tentative plans call for Dr. Gunter to end his tour-of-duty on December 15, 1983.

Dr. John H. Sanders completed a 25-month assignment at the Universidade de Evora and returned to Purdue on March 29, 1983. He served as technical advisor and project coordinator at Evora.

Dr. Sanders spent most of his final month preparing for his departure. He met with UE administrators, faculty and his Portuguese colleagues

to brief them on current project activities in order to ensure a smooth transition after his departure.

Short-term Professional Staff

Dr. Michael Collins, Department of Agronomy, University of Wisconsin, returned to IUTAD for a second assignment in 1983--from February 21 through March 28.

Dr. Collins provided technical assistance in the area of forage management and quality. Specifically, he supported research being conducted by Eng. Armando F. Ferreira through field and laboratory experiments dealing with corn silage. He also advised other IUTAD staff who were working on forage production and utilization.

Objectives of the assignment fulfilled by Dr. Collins were:

- (1) assisted A.F. Ferreira prepare dissertation data for analysis and interpretation;
- (2) establish the capability for plant tissue analysis in the Animal Science research labs at IUTAD;
- (3) prepared and presented a seminar based on forage research in the Department of Agronomy at the University of Wisconsin as it related to current and needed research at IUTAD;
- (4) reviewed plans for studies to be initiated during 1983; and
- (5) advised on future research needs.

Dr. Howard M. Taylor, Department of Plant and Soil Science, Texas Tech University, arrived at the Universidade de Evora on April 15 and remained until June 1, 1983. He served as a crop science advisor.

Dr. Taylor was asked to provide knowledge from his experience derived in other Mediterranean-type climates in order to suggest ways to reduce plant water stress through modified plant rooting in Alentejo soils.

The advisor assisted his Portuguese counterpart, Maria do Rosario Oliveira, to measure root system development and determine how soil conditions affect rooting patterns in Mediterranean climates. He recommended methods to more rapidly measure root growth and to increase the number of measurements in a given time period. Dr. Taylor also recommended and attempted to locate equipment and materials which would enable this technology to be put into practical use.

He assisted in developing the research of Eng. Mario de Carvalho, Eng. Antonio M. Calado and Prof. Carlos A.M. Portas. Dr. Taylor visited the soils group of the Ministry of Agriculture at Oeiras, the Plant Breeding Station at Alves and PNUD personnel to investigate ways of improving research/extension ties with the UE. He presented three seminars for the Agronomy Departments at the University of Lisbon and the University of Evora.

Dr. Edward D. Carter, Department of Agronomy, University of Adelaide, South Australia. Dr. Carter completed a one-month assignment at the University of Evora in 1982 and was asked to return again in 1983. He accepted the invitation and served as a forage specialist from April 15 through May 16, 1983.

The first week was spent with UE researchers, visiting UE and other farms and experimental sites in the region and presenting a seminar on "New Pastures Technology for Mediterranean Zones Such as the Alentejo."

From April 22 to 24, Dr. Carter visited Vila Real where he met with Crop Science Department staff to discuss work plans and research programs for increasing forage production and pastures in the Tras-os-Montes region. He toured the soils, animal pathology and animal nutrition

laboratories of IUTAD; area farms; subclover pastures of the Izeda region; and met with the Regional Directors of Tras-os-Montes.

After his return to Evora, Dr. Carter held discussions and evaluated ongoing research with staff of the Departments of Animal Science, Crop Science, Natural Science, Economics and Chemistry.

He presented a seminar for PROCALFER and University of Evora personnel on May 2. Dr. Carter helped to organize and participated in a five day workshop/seminar which was sponsored by PROCALFER and UE.

Dr. Jules Janick, Department of Horticulture, Purdue University, served as a short-term advisor at the University of Evora from May 11 to June 11, 1983, as a follow-up to his visit in 1981. His Portuguese counterpart was Dr. Carlos A.M. Portas, but he also worked closely with Engs. J.A. Araujo, A.M. Calado and A.A. Monteiro.

Dr. Janick advised University of Evora on the subject of horticultural production systems. He investigated the potential for horticulture research in Portugal with emphasis on the Alentejo; coordinated a joint research paper on the green oak; introduced new germplasm (bean, tomato, and jojoba); discussed coordination between the GTZ and AID research programs; and conferred with horticultural staff concerning their research programs.

Dr. Janick prepared an inventory of germplasm and developed a system to classify grapes by leaf shapes. He observed peach plantings being grown with trickle irrigation and visited Monte Branco (where the largest fruit farm in Europe is located), fruit farms, greenhouses and field trials of melons and potatoes.

He presented two seminars during his visit. One addressed the subject of tissue culture and was presented at UE. The other was held at

the National Fruit Station at Alcobaca and covered tissue culture and crop production.

Prof. Horace Tyler, Assistant Head of Agricultural Information, and Prof. David Moses, Assistant Director for Undergraduate Library Services, both from Purdue University, comprised an advisory team to develop plans for the implementation of a Teaching/Learning Resource Center (T/LRC) at the University Institute of Vila Real. Professor Tyler was at IUTAD from June 5 through 25, 1983, and Professor Moses was there from June 5 through July 29, 1983.

Professor Tyler was responsible for providing specific information on communications (methods of social communication, preparation of news releases, printing of material, and processes and overall philosophy of communications). Professor Moses assisted with plans for equipping and staffing the T/LRC.

Their program was divided into two phases. The first phase (the first three weeks) was spent collecting information and discussing communication theories and possibilities. The second phase (the last five weeks) covered: (1) identifying an appropriate building to house the new T/LRC and plans for remodeling the building; (2) developing floor plans for the placement of equipment, offices, shelving and furniture; (3) drawing up an organizational chart for staffing of the T/LRC; and (4) listing equipment currently available for use and a description of new equipment that should be purchased, including vendors, specifications and priorities.

Professors Tyler and Moses presented two workshops while at IUTAD. One was held on June 22 for individuals from IUTAD, IUBI, DRTM and LNETI

which covered basic communications. The other was presented on June 23 for IUTAD staff and dealt with internal communication problems.

Dr. Day L. Bassett, Department of Agricultural Engineering, Washington State University, commenced a six-week assignment at IUTAD on July 15, 1983. He worked directly with Maria de Lurdes Miranda Fernandes on hydraulics and soil erosion.

Since water is a limiting factor for crop production in the Tras-os-Montes region, Dr. Bassett was asked to establish guidelines for better utilization of water in terms of water flow and delivery systems. He advised staff on programming studies and implemented furrow and sprinkler irrigation field trials in distinct areas of the Tras-os-Montes region. He visited various irrigated areas and small water development projects near Chaves, Montelegra and Mirandella.

Dr. Bassett evaluated the needs of the Department of Rural Engineering and provided a list of equipment and materials needed for teaching and research in hydraulics. He also studied and made recommendations concerning facilities and staff that would be needed by the department in order to accomplish their goals.

Advisors Scheduled During Next Six Months

Eight short-term advisors have been identified for assignments at the three cooperating institutes. They are:

- Dr. William Friday, Department of Agricultural Engineering, Purdue University -- two months at IUTAD in area of agricultural machinery;
- Dr. Truman Martin, Department of Animal Sciences, Purdue University-- 6 weeks at IUTAD in research methods and approaches;
- Dr. Victor Lechtenberg, Associate Director, Agricultural Experiment Station, Purdue University--6 weeks at IUTAD in research methods and approaches;

- Dr. Donald Franzmeier, Department of Agronomy, Purdue University--1 month at IUTAD in area of soil survey and mapping;
- Dr. Clinton Whitehurst, Department of Management, Clemson University--4 months at IUBI in general management;
- Dr. David Bache, Department of Agricultural Economics, Purdue University--1 month at UE in farm management/farm accounting;
- Dr. Edwin Monke, Department of Agricultural Engineering, Purdue University--1 month at UE in irrigation and drainage;
- Dr. William McGuire, Crop Science Department, University of Oregon--1 month at UE in the area of forages and pastures.

On-campus Staff--Purdue and Clemson Universities

Dr. James L. Collom and Vivian L. Rider continue to hold the positions of project on-campus coordinator and administrative assistant, respectively, at Purdue University. Dr. Hassan M. Behery remains as project coordinator at Clemson University under the Purdue/Clemson subcontract.

Educational and Training Programs

As stated in the last semi-annual report, both the academic and technical training programs have expanded considerably. During the last six months, two degree candidates reached the limit of training funds allocated to them under the project. They were provided project assistance for only part of the required period to complete degrees and were forced to seek alternative funding. Fortunately they were able to find such funding and are continuing to pursue work towards their degrees.

The following identifies trainee programs commenced or continued during this reporting period.

Academic Training

Jaime Sales-Luis, Instituto Universitario de Tras-os-Montes e Alto Douro, September 19, 1982 - June 19, 1983. Mr. Luis received a nine-

month scholarship from project funds to pursue an M.S. degree in Forest Mensuration and Management at Oregon State University. Since the scholarship expired on June 19, 1983, Mr. Luis secured private funds to continue his training and expects to receive his degree in June 1984.

Eduardo Figueira, University of Evora, January 4, 1983 - January 1985. Mr. Figueira is making excellent progress in his program at the University of Wisconsin where he is pursuing the M.S. in Extension Education. He visited the Purdue University campus during the summer of 1983 to meet with project administrators and extension specialists.

Maria Ermelinda Pinheiro, University of Evora, August 16, 1982 - November 16, 1983. Mrs. Pinheiro continues her work toward the M.S. in agronomy at Iowa State University. She is a superior student and is making rapid progress.

Jose Mendes Lucas, Instituto Universitario da Beira Interior, Covilha, August 16, 1983. Jose Lucas completed the M.S. degree in color science at Clemson University in June 1983 under the Purdue/AID Portugal program. He received outside funding to support studies for a Ph.D. degree from Clemson. It is anticipated he will receive his Ph.D. in December 1983.

Alberto A.F. Pereira, Instituto Universitario da Beira Interior, Covilha, August 8, 1983 - March 1985. Mr. Pereira is studying for the M.S. in Management at Clemson University.

Joao Lisboa, Instituto Universitario da Beira Interior, Covilha, August 8, 1983 - March 1985. Mr. Lisboa commenced his studies for an M.S. in Management at Clemson University in August 1983.

Mario F. Nunes, Instituto Universitario da Beira Interior, Covilha, January 4, 1983 - August 1984. Mr. Nunes is currently studying for the M.S. degree in Textile Science at Clemson University.

Mario de Prata Barros, Instituto Universitario da Beira Interior, Covilha, January 4, 1983 - August 1984. Mr. Barros continues studies for an M.S. degree in Management at Clemson University.

Non-academic Training

Arlete M. Ferreira, Instituto Universitario de Tras-os-Montes e Alto Douro, April 8 - July 8, 1983. Ms. Ferreira had a three month program in the Department of Viticulture and Enology at the University of California, Davis, under the direction of Dr. Roger Boulton. The training activities included visits to wineries, attendance at the American Society of Enology meetings and work in Dr. Boulton's laboratory. The focus of her research was microbiology of wines and malolactic fermentation.

Antonio Machado, Instituto Universitario de Tras-os-Montes e Alto Douro, June 15 - August 12, 1983. Mr. Machado spent two months at Purdue working with Prof. William Friday. The focus of his training involved finding the most economically and technically feasible solutions to the problems of upgrading and building the facilities on farms in the Tras-os-Montes, especially buildings used for animal husbandry and agriculture. He worked closely with extension specialists on programs and extension activities and participated in many farm and industry visits. He also attended the American Society of Agriculture Engineering meetings in Bozeman, Montana.

Carlos Abreau, Instituto Universitario de Tras-os-Montes e Alto Douro, June 8 - August 6, 1983. Mr. Abreau studied Septoria diseases of wheat during his U.S. training. He spent six weeks at Purdue working under the direction of Dr. Gregory Shaner in the wheat nurseries and greenhouses. He spent two weeks at the University of Georgia working with Dr. Barry Cunfer on techniques for research on Septoria nodorum on small grains. Mr. Abreu also attended the International Workshop on Septoria Diseases of Cereals (August 2-4) at Bozeman, Montana. Through this program, Mr. Abreau gained valuable knowledge of epidemiology techniques for field and greenhouse inoculations relating to the overwintering of the Septoria agent.

Fernando Martins, Instituto Universitario de Tras-os-Montes e Alto Douro, July 5 - September 7, 1983. The focus of Mr. Martins program was on the principles and practices of potato production and the problems associated with production; i.e., low yields and lack of virus free seed. Mr. Martins had a very active program in the U.S. where he visited a potato research station in North Carolina and several other research programs in Wisconsin, Oregon and Washington. Pan American Seed Company provided a two-day program for him at their facility in Chicago, Illinois. He attended the Potato Association of America meetings in Lansing, Michigan, where he met with many top researchers and visited important ongoing potato production research in the State of Michigan. Mr. Martins is currently working at Purdue with Dr. Homer Erickson, Department of Horticulture.

Eduardo Rosa, Instituto Universitario de Tras-os-Montes e Alto Douro, July 5 - October 2, 1983. Mr. Rosa attended the Vegetable Production and Marketing Workshop at Rutgers University on July 11 - August 19. The

workshop provided training in the principles and practices of producing, harvesting and marketing vegetable crops. Special emphasis was placed on developments and techniques adapted to small farms. Mr. Rosa stayed on at Rutgers and is completing a research project under the direction of Dr. Steve Garrison, Department of Horticulture. The research entails measuring the effect of various growing conditions on chlorophyll content and nutritional value of lettuce and cole crops.

Jorge Azevedo, Instituto Universitario de Tras-os-Montes e Alto Douro, June 18 - September 22, 1983. Mr. Azevedo attended a six-week course on "Small Ruminant Production," at California State Polytechnic University, Pomona, California. The course focused on all aspects of management for sheep and goat herds for meat, milk and wool production, both in confinement and grazing systems. After the short course, he attended the American Society of Animal Science meetings in Pullman, Washington. From the meetings, he attended a two-week training session at the International Sheep and Goat Institute at Utah State University under the direction of Dr. Warren Foote. Mr. Azevedo will arrive at Purdue in late August and work under the direction of Professors Truman Martin, James Outhouse and Robert Hudgins until his departure on September 22. While at Purdue, he will visit farms, participate in extension activities and work on research projects devoted to the physiological aspects of meat, milk and wool production.

Ofelio Bento, Universidade de Evora, May 15 - July 17, 1983. Ms. Bento spent two months at Purdue University working on the nutritive value of forages and livestock nutrition. Her academic advisors were Dr. Charles Rhykerd, Department of Agronomy and Dr. Carl Noller, Animal Science Department. The program consisted of training in silage making,

collecting silage samples, evaluating silage quality and nutritive value, and determining its utilization in milk and meat production. Ms. Bento attended the American Society of Dairy Science meetings at Madison, Wisconsin. She visited many farms and attended field days to supplement her laboratory work while at Purdue.

Jose Tirapicos Nunes, Universidade de Evora, July 16 - December 10, 1983. Mr. Nunes is enrolled in a program focusing on the reproduction and fertility of farm animals. During the first part of his program, he visited with many scientists at Purdue in the Department of Animal Sciences and in the School of Veterinary Medicine. Mr. Nunes visited farms, research stations and participated in extension activities. He attended the American Society of Animal Science meetings in Pullman, Washington; a two-week training session at the International Sheep and Goat Institute at Utah State University; visited Texas A&M University where he met with beef and dairy cattle reproduction and fertility specialists and observed embryo transfer research; and toured the Granada Land and Cattle Company where embryo transfer is done commercially. At the USDA Sheep Experiment Station in Dubois, Idaho, he spent two weeks learning techniques of semen collection and semen evaluation. From September until December, Mr. Nunes will be training under the direction of Dr. R. G. Saache, Department of Dairy Science, Virginia Polytechnic Institute where he will be enrolled in classes on physiology and reproduction and will participate in research reproduction.

Jose Avo, Universidade de Evora, July 22 - December 17, 1983. Mr. Avo attended the American Society of Animal Science meetings in Pullman, Washington. He participated in a two-week workshop at the International Sheep and Goat Research Center at Utah State University

and visited the Texas State Sheep and Goat Research Center in San Angelo. During the fall semester, Mr. Avo will be enrolled in classes in Purdue's Animal Sciences Department. The focus of his training will be sheep improvement programs, genetics and sheep management.

Carlos Roquete, Universidade de Evora, July 22 - December 17, 1983. Mr. Roquete attended the American Society of Animal Science meetings in Pullman, Washington; participated in a two-week workshop at the International Sheep and Goat Research Center at Utah State University; and visited Texas A&M University. At Texas A&M, he conferred with beef production and management specialists and toured the Granada Land and Cattle Company production facilities. During the fall semester, Mr. Roquete will be enrolled in classes at Purdue covering computer science, statistics and beef production. The focus of Mr. Roquete's program has been on research techniques which will improve the productivity of cattle and sheep.

Appendix B provides a list of trainees who have completed or are currently enrolled in academic and technical programs as of August 25, 1983. Trainees scheduled to arrive in the U.S. during the next six months are:

- Virgilio Alves, IUTAD, will arrive in September 1983 for technical training;
- Nuno Magalhaes, IUTAD, is scheduled to arrive in September 1983 to commence a technical training program;
- Carlos Marques, UE, will commence an academic program in January 1984;
- Amilcar Serrao, UE, will arrive in January 1984 to begin academic training;
- Nicolau Raposo, IUBI, will receive technical training beginning in October 1983.

Expenditures -- Dollar Budget

Estimated expenditures and encumbrances against the dollar budget are expected to total \$1,657,623 by the end of September 1983. After this amount is deducted from the total contract funds of \$2,897,425, it is estimated that the balance at the end of September 1983 will be approximately \$1,239,802.

Actual expenditures for previous quarters and estimated expenditures for years 3 and 4 are not provided since the budget is still being negotiated and revised.

A listing of expenditures during the quarter June 30 to September 30, 1983 is provided in this report as Table 1.

TABLE 1

Estimated Dollar Budget Expenditures
Spent/Committed Through 9/30/83

1. Salaries and Wages	\$719,910
2. Fringe Benefits	134,385
3. Education Allowance	2,153
4. Travel	11,916
5. Participant Training	332,698
6. Other Direct Costs	96,246
7. Indirect Costs	360,315
	<hr/>
TOTAL	\$1,657,623

TOTAL CONTRACT*	\$2,897,425
LESS EXPENDITURES**	1,657,623
PROJECTED BALANCE	1,239,802
(as of 9/30/83)	

* Contract Budget--The items comprising the \$2,897,425 are under negotiation; AID/W approval pending.

** Actual Purdue expenditures through 8/31/83 only; actual Clemson expenditures through 7/31/83 only. All other expenditures through 9/30/83 are estimated.

APPENDIX A

Advisors who Have Completed Assignments in Portugal from
August 25, 1980 - August 25, 1983

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PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT
(Contract AID/NE-C-1701)

Advisory Assignments Completed

Name	Area	University	Dates	PM
BROWN, Amanda	Family Resource Management	UE	9/15/80 - 12/15/80	3.00
THOMPSON, Robert	Agricultural Economics	UE	4/18/81 - 5/23/81*	1.00
RHYKERD, Charles	Forages	UE	6/14/81 - 8/5/81*	.50
JANICK, Jules	Horticulture	UE	9/10/81 - 10/10/81	1.00
THOMPSON, Robert	Agricultural Economics	IUTAD	4/18/81 - 5/23/81*	.25
RHYKERD, Charles	Forages	IUTAD	6/14/81 - 8/5/81*	1.75
LA ROCHE, Evan	Textile Technology & Management	IUBI	2/3/81 - 6/1/81	4.00
BEHERY, Hassan	Non-woven Technology	IUBI	5/15/81 - 7/15/81	2.00
PRICER, Robert	Industrial Management (Budget Techniques)	IUBI	6/4/81 - 7/3/81	1.00
FRIST, Robert	Management (Agrobusiness)	IUBI	6/4/81 - 7/3/81	1.00
ATKINSON, Julian	Purdue Project Coordinator	IUBI	9/30/80 - 12/21/81	15.00
JOHNSON, Dennis	Land Use Planning & Regional Development	UE	1/2/82 - 3/3/82	2.00
CARTER, Edward	Forages	UE	5/8/82 - 6/6/82	1.00
HEADY, Earl	Economics/Management	UE	6/12/82 - 7/23/82	1.25
RHYKERD, Charles	Forages	UE	10/3/82 - 12/19/82	2.75
OUTHOUSE, James	Production & Management of Sheep	UE	11/29/82 - 12/8/82*	.25
MARTIN, Truman	Artificial Breeding and Reproduction	UE	11/29/82 - 12/8/82*	.25

* Advisors shared by UE and IUTAD during same trip.

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PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT
(Contract AID/NE-C-1701)

Advisory Assignments Completed

Name	Area	University	Dates	PM
TAYLOR, Robert	Farm Management & Production Economics	IUTAD	5/9/82 - 6/15/82	1.25
MARTIN, Marshall	Policy and International Trade	IUTAD	5/9/82 - 6/15/82	1.25
GAROYAN, Leon	Management of Agricultural Cooperatives	IUTAD	5/15/82 - 6/15/82	1.00
COLLINS, Michael	Forages	IUTAD	7/17/82 - 8/7/82	.75
OUTHOUSE, James	Production & Management of Sheep	IUTAD	9/20/82 - 11/28/82*	2.25
MARTIN, Truman	Artificial Breeding & Reproduction	IUTAD	10/11/82 - 11/28/82*	1.75
BUNTING, Stephen	Forestry	IUTAD	10/15/82 - 12/12/82	2.00
EDIE, Dan	Rheology	IUBI	5/1/82 - 6/30/82	2.00
BEHERY, Hassan	Textile and Fiber Physics	IUBI	6/1/82 - 7/15/82	1.50
SPENCER, Garth	Physical Chemistry of Polymers	IUBI	10/22/82 - 12/22/82	2.00
FOLEY, John	Purdue Project Coordinator	IUTAD	8/20/80 - 11/2/82	27.00
AHLRICHES, James	Visiting Scientist--soil and agr. sciences	IUTAD	1/26/81 - 1/26/83	24.00
SANDERS, John	Purdue Project Coordinator	UE	3/11/81 - 3/29/83	24.50
CARTER, Edward	Forages	UE	4/16/83 - 5/16/83	1.00
TAYLOR, Howard	Crop Production	UE	4/14/83 - 6/1/83	1.50
JANICK, Jules	Horticulture	UE	5/11/83 - 6/9/83	1.00
COLLINS, Michael	Forages Nutritive Value Testing	IUTAD	2/21/83 - 3/28/83	1.25
TYLER, Horace	Teaching/Learning Resource Center	IUTAD	6/5/83 - 6/25/83	.75
MOSES, David	Teaching/Learning Resource Center	IUTAD	6/5/83 - 7/29/83	1.75
BASSETT, Day	Hydraulics and Soil Erosion	IUTAD	7/15/83 - 8/26/83	1.50

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APPENDIX B

Training Programs Completed or in Progress from
August 25, 1980 - August 25, 1983

PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT
(Contract AID/NE-C-1701)

Participants -- IUBI

Name	Period of Training	Area of Training	Institutions
Passos MORGADO	7/15/80 - 7/28/80	Textile Engineering/Regional Planning Project	Purdue and Clemson Universities
Fernando de JESUS	7/15/80 - 7/28/80	Textile Engineering/Regional Planning Project	Purdue and Clemson Universities
Jose Mendes LUCAS	8/16/81 - 6/30/83 (MS)*	Color Science	Clemson University
Joao LISBOA	8/29/81 - 1/31/82**	Business Management	Univ. of Wisconsin
Maria AMORIM	8/15/82 - 10/22/82	Textile Production/Polymers	Clemson University
Jose	8/15/82 - 10/22/82	Textile Chemistry/Effluent Treatment	Clemson University
Alberto PEREIRA	8/8/83 - 3/85 (MS)	Administration and Decision Making (Management)	Clemson University
Mario NUNES	1/4/83 - 8/84 (MS)	Textile Science/Rheology	Clemson University
Mario de Prata BARROS	1/4/83 - 8/84 (MS)	Management	Clemson University
Joao LISBOA	8/8/83 - 3/85** (MS)	Management	Clemson University

* From 7/1/83 through 12/1983, Lucas will complete MS degree from outside funding.

** Lisboa commenced MS program on 8/24/81 but dropped in 1/31/82; he enrolled at Clemson to commence MS program on 8/8/83.

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PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT
(Contract AID/NE-C-1701)

Participants -- IUTAD

Name	Period of Training	Area of Training	Institutions
Virgilia P. ANDRADE	6/30/80 - 7/17/80	Livestock Extension	Purdue University
Orlando ALMEIDA	6/30/80 - 7/17/80	Livestock Extension	Purdue University
Teles M. OLIVEIRA	1/1/81 - 12/31/81 (MS)	Soil Conservation & Tillage	Univ. of Wisconsin
Carlos P. SEQUEIRA	1/1/81 - 12/31/81 (MS)	Animal Nutrition	Cornell University
Francisco REGO	8/22/81 - 12/19/81	Forestry	University of Idaho
Artur CRISTOVAO	9/7/81 - 10/24/81	Rural Extension	Purdue & Univ. of Wisconsin
Jaime Sales LUIS	9/20/82 - 6/19/83 (MS)*	Forest Management	Oregon State University
Nuno MOREIRA	7/19/82 - 8/30/82	Forage Production	Purdue Univ., Univ of Wisconsin, Univ. of California-Davis
Alberto SANTOS	7/4/82 - 8/1/82	Micropropagation of Nut Trees	Universities of Purdue, Florida, Georgia, Missouri, California-Davis & Oregon
Jorge COLACO	8/2/82 - 9/30/82	Livestock Reproduction	Purdue Univ., No. Carolina State Univ, Univ. of Illinois & Canada meetings
Alberto CARDOSO	8/1/82 - 11/30/82	Cooperative Organization	Purdue Univ. & U. of Wisc.
Armando Afonso MARTINS	9/4/82 - 11/3/82	Soil Mapping	Purdue University
Jose POTES	8/1/82 - 9/26/82	Animal Reproduction	Purdue Univ. & Canada meetings
Arlete M. FERREIRA	4/8/83 - 7/8/83	Enology	Univ. of California-Davis

*From 6/20/83 until 6/19/83 pursued MS under project funding; received outside funding to complete M.S. program in 6/1984.

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PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT
(Contract AID/NE-C-1701)

Participants -- IUTAD (continued)

Name	Period of Training	Area of Training	Institutions
Fernando N.F. REAL	5/10/83 - 6/15/83	Teaching/Learning Resource Center & Coop. Extension	Purdue Univ. Univ. of Wisconsin
Antonio MACHADO	6/15/83 - 8/12/83	Farm Buildings	Purdue Univ., Agr. Eng. Meetings, Bozeman, MO.
Carlos ABREU	6/8/83 - 8/6/83	Plant Pathology	Purdue Univ, Univ. of Georgia, Int'l. workshop, Bozeman, MO.
Fernando MARTINS	7/5/83 - 9/7/83	Potato Production	Purdue Univ., No. Carolina Research Ctr., Universities of Wisconsin, Oregon, Washington & Potato Assoc. Meetings at Lansing, MI
Eduardo ROSA	7/5/83 - 10/2/83	Horticulture	Rutgers University
Jorge AZEVEDO	6/18/83 - 9/22/83	Small Ruminant Production	California State Polytechnic Univ., Utah State & Purdue Universities, Ani. Sci. Meeting at Pullman, WA.

PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT
(Contract AID/NE-C-1701)

Participants -- UE

Name	Period of Training	Area of Training	Institutions
Maria Jose BARRISCO	9/1/81 - 9/3/81	Equine Reproduction	Texas Stock Breeders, Universities of Purdue, Colorado State, N. Mexico, and California-Davis
Maria das Mercedes COVAS	6/15/81 - 8/15/81	Home Economics	Univ. of Georgia
Victor M.C. DORDIO	6/1/81 - 9/1/81	Farm Management & Finance	Iowa State, Purdue Univ.
Artur A.M. MARINHO	8/31/81 - 12/4/81	Microbiology of Animal Nutrition	Nat'l. Animal Center, Ames, Iowa, Purdue, Virginia Polytech
M. Leonor CARVALHO	8/24/81 - 12/19/81	Regional Implications of EEC Entrance	Purdue University
Ana Maria VASCONCELOS	1/4/82 - 3/25/82	Wine Quality & Grape Production	University of Calif.-Davis
Maria Benedita CECILIO	1/4/82 - 6/13/82	Economics of Ag Technology	Univ. of Minnesota
Ricardo P. SERRALHEIRO	7/31/82 - 10/30/82	Irrigation	Univ. of Arizona, Utah State, Colorado State, California- Davis, Irrigation Conference at Jackson, MS
Manuel O.C. ABREU	8/15/82 - 12/12/82	Animal Nutrition	Texas A&M
Ermelinda V.L. PINHEIRO	8/16/82 - 11/16/83 (MS)	Forage Production	Iowa State University
Francisco M. RAMOS	8/17/82 - 12/18/82	Extension Methods & Farm Mgmt.	Univ. of Wisconsin
M. Manuela M. BATISTA	9/18/82 - 12/5/82	Soil Chemistry/Soil Laboratory Management	No. Carolina State, Univer- sities of Arizona & Cali- fornia-Riverside, Soil Sci. Meetings at Los Angeles, CA

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PORTUGAL UNIVERSITY INSTITUTES DEVELOPMENT PROJECT
(Contract AID/NE-C-1701)

Participants -- UE (continued)

Name	Period of Training	Area of Training	Institutions
Eduardo FIGUEIRA	1/4/83 - 1/85	(MS) Extension Education	Univ. of Wisconsin
Ofelio BENTO	5/15/83 - 7/17/83	Livestock Nutrition	Purdue Univ., Dairy Science Meetings at Madison, WI
Jose Tirapicos NUNES	7/16/83 - 12/10/83	Livestock Production	Purdue, Utah State, Texas A&M, Virginia Polytech/USDA Sheep Exp. Station, Idaho, Ani. Sci. Meetings at Pullman, WA
Jose AVO	7/22/83 - 12/17/83	Livestock Management (Sheep)	Utah State, Purdue, Texas A&M, Ani. Sci. Meetings at Pullman, WA
Carlos ROQUETE	7/22/83 - 12/17/83	Livestock Management (Beef)	Utah State, Texas A&M, Purdue, Ani. Sci. Meetings at Pullman, WA

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