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PURDUE UNIVERSITY
International Education and Research
International Programs in Agriculture



**PORTUGAL UNIVERSITY
INSTITUTES
DEVELOPMENT PROJECT**

(Contract AID/NE-C-1701)

**REPORT ON
SHORT-TERM STAFF ASSIGNMENT**

**Submitted by
PROF. CLIFFORD D. SPIES
Professor Emeritus
Department of Agronomy
Purdue University**

August 16 through December 11, 1985

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INSTITUTO UNIVERSITARIO DE TRAS-OS-MONTES E ALTO DOURO (IUTAD)

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- *Prof. Jose Manuel Gaspar Torres Pereira*
Portuguese Project Coordinator, IUTAD
- *Eng^o Artur Fernando Arede Correia Cristovao*
Head, Teaching Learning Resource Center, IUTAD
- *Eng^o Fernando Madureira*
Director of Regional Extension Services, DRTM
- *Sra. Maria Helena Malheiro de Sousa da Silva Ventura*
Typist, Teaching Learning Resource Center, IUTAD

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REPORT OF ACTIVITIES AT THE
INSTITUTO UNIVERSITARIO DE TRAS-OS-MONTES E ALTO DOURO (IUTAD)
VILA REAL, PORTUGAL

AREA OF CONSULTANCY

The consultant served as a liaison between IUTAD and the Regional Extension Services of the Portuguese Ministry of Agriculture with the long term objectives of expanding extension information available in the Tras-os-Montes region and in designing approaches that would elevate the technical knowledge, capability and effectiveness of the extension staff.

SPECIFIC OBJECTIVES OF THE CONSULTANCY

This consultancy is one of the last to be programmed as a part of the Purdue University contract with the United States Agency for International Development (USAID) to provide technical advice and program assistance to the government of Portugal in the strengthening of the Instituto Universitario de Tras-os-Montes e Alto Douro (IUTAD) located at Vila Real, Portugal. The primary objective has been to develop a plan which will strengthen the extension program and activities in northern Portugal through the personnel and services of IUTAD and the Regional Agricultural Services of the Portuguese Ministry of Agriculture. Specific attention has been devoted to how IUTAD's newly established Teaching Learning Resource Center (TLRC) can become involved in and contribute to the program.

Activities listed in the short-term advisor assignment for this consultancy included the following:

1. Review the extension services now provided by and through the Regional Agricultural Services for the Tras-os-Montes e Alto Douro region.
2. Review extension services currently being provided by IUTAD.
3. Identification of areas in which technical expertise, information, technology development/adaptation is, or is likely to be, present at IUTAD and which needs to be extended.
4. Analysis of the channels and methodologies whereby information and technology can be passed through the TLRC to local extension agents and individual farmers.
5. Identification of specific actions that seem to be necessary by IUTAD and by the Regional Agricultural Services, and jointly, in order to create effective service-oriented linkages between the technical resources of IUTAD and the field extension knowledge requirements.
6. Make specific recommendations to begin implementation of these actions.
7. Identify and describe several specific pilot cases which can be used to test, demonstrate and help develop the initial linkage concepts and develop specific plans for those cases.

These are encompassed in the Project Implementation Plan submitted by Purdue University in the 1981 Project Objectives, Item 4: "To develop internal institutional support mechanisms and external linkages essential to the expansion of extension activities relevant to the needs in agriculture, industry, business and community development."

IDENTIFICATION OF PORTUGUESE COUNTERPARTS

Although contacts were made with many of the staff of IUTAD during the consultancy, the following staff were those officially involved in various phases of gathering information and developing plans.

- *Prof. Fernando Nunes Real, Rector, IUTAD*

Contacts were made with Professor Real concerning the overall potentials of expansion of extension activities and programs both within and outside of IUTAD. Professor Real was particularly involved in discussions regarding involvement of IUTAD staff in extension activities.

- *Eng^o Artur Cristovao, Head, TLRC at IUTAD*

Eng^o Cristovao served as the primary counterpart and contact during this consultants stay at IUTAD. Conferences and discussions were held with him regarding operation and management of the TLRC and its role at the University. He was instrumental in arranging for contact with local extension agents and the extension administrators in the Tras-os-Montes region.

- *Prof. Jose Torres Pereira, Project Coordinator, IUTAD*

Professor Pereira was consulted on matters of protocol and policy.

ACCOMPLISHMENTS OF ASSIGNMENT OBJECTIVES

Details pertaining to accomplishments of the objectives specified in this assignment are contained in the section "Identification of Problems Encountered and General Observations" and in Appendices A through D included in this report. A report summarizing the assignment objectives and recommended actions was prepared and presented to the IUTAD staff at a seminar on December 5. A copy of the report (seminar) outline is attached to this report in Appendix E.

Accomplishments were less than hoped for, as explained in the section on problems encountered.

SPECIFIC ACTIONS NEEDED TO CREATE EFFECTIVE LINKAGES BETWEEN IUTAD AND DRTM EXTENSION STAFF

Actions Needed to Create Linkages

The most important actions which will contribute to the expansion and effectiveness of linkages between IUTAD, DRTM and the people of the Tras-os-Montes region are those which are exhibited by each person involved.

The manner in which individuals view and use the following three attributes will have a significant impact upon the effectiveness and success (or failure) of any proposed program of action.

Attitude: A positive attitude is essential. Even the best of ideas or programs become ineffective if the attitudes of those involved are negative. Many apparent obstacles will disappear in the presence of positive attitudes.

Desire: Everyone must have a desire to share, to learn, to serve. People who possess these desires can accomplish much.

Commitment: Dictionaries define "commitment" as follows:
1) state of being obligated or bound; 2) a decisive moral choice that involves a person in a definite course of action; and 3) a promise to do something. The degree to which individuals abide by these definitions will have an influence upon the success or failure of any proposed action.

Specific Actions needed by IUTAD

1. *Organize an Effectively Functioning TLRC*

By far, the most important action for IUTAD administration to take in establishing a working linkage between the University and Extension is to bring the TLRC into full and effective operation.

Four conditions must be met for this to become a reality. First, all TLRC staff positions described by Prof. David Moses must be filled. At the present time, it is most critical to fill the positions of Editor and Chief of the library section. Future attention will need to be directed towards the printing services and the audio-visual sections. Secondly, the Administrative and Advisory Committees proposed by Moses must be established by the IUTAD administration and put into effective operation by the Head of the TLRC. (NOTE: The process for selecting the Advisory Committee had been initiated before the departure of this consultant.) Third, the TLRC cannot be fully effective until it can move into Building No. 2 which must be remodeled. It is doubtful that remodeling will be completed before the middle of 1986. Finally, to meet the increasing demands of the future, it will be essential for the Head of the TLRC to have a firm basic budget to cover all aspects of the operation. The IUTAD administration and the Head of the TLRC should begin immediately to incorporate the suggestions made by Professor Moses in Appendix F of his 1984 report. The TLRC budget for the 1987 calendar year should be developed on this plan.

2. *Reorganize the Publication Committee Structure*

Professor William Friday provided the initiative for IUTAD staff to begin writing 4-6 page extension type leaflets. At that time, a two committee structure was established to facilitate the process. It is now apparent that a revision is needed to improve the efficiency of the system. Accordingly, the following suggestion has been proposed by the IUTAD staff members who are involved with the preparation of the extension type publications.

Editorial Committee:

- TLRC - Head, Artur Cristovao, Chairman (until Editor position is filled)
- IUTAD - Antonio Machado
- IUTAD - Jorge Azevedo
- DRTM - These two positions to be filled from a pool list of specialists and extension agents

The function of this committee will be to establish policy guidelines and to serve in a coordinating capacity when Pilot Case I (see Appendix D) becomes operational.

Review Committee:

- TLRC - Alberto Cardoso, Chairman
- IUTAD - Carlos Abreau
- DRTM - Specialist in subject matter field of the publication
- DRTM - Extension agent interested in subject matter field of the publication

This committee would review content and form for each publication. The DRTM membership would depend upon the topic of the publication and would change from one publication topic to another. Continuity of information provided by IUTAD to extension users would be assured and provision made for participation of both IUTAD and DRTM staff.

3. *Schedule Classes Early*

Difficulties frequently arise in trying to schedule an IUTAD staff member for participation in an extension agent training session. This is due to uncertainties in staff teaching schedules. The hours for teaching a class are not known by the staff member until two or three days before the start of a semester. On the other hand, extension training schedules are generally prepared in advance on a three month basis--January, April, July and October. No advance scheduling of IUTAD staff can be made for the October period and only for one month of the January period. If class schedules were available at mid-semester for the following semester this problem could be avoided.

Specific Actions Needed by DRTM

1. *Expand Extension Agent Training*

One of the principle handicaps that limits the effectiveness of the local extension agent is his lack of technical training and knowledge. Some have only one year of schooling beyond the high

school level and essentially none with more than two years of education beyond high school.

A minimal level training program exists on paper but even that is often lacking in implementation. For example, a nationally designed "Training and Visit" program is technically sound but functions regularly in only two of the ten zones in the Tras-os-Montes regions (Vila Pouca and Mogadouro), is fairly effective in two other zones but is essentially ineffective in six (60 percent) of the zones.

One zone in the region set aside one day per week for local extension agent training programs for 1985. At the end of September not even one of the weekly programs had been held. No one reason alone can account for this magnitude of short-comings. Even though the recently appointed Extension Training Coordinator for the Tras-os-Montes region is a very capable individual, there is not likely to be any major improvement in the agent training accomplishments until there is a greater recognition of extension in the Ministry of Agriculture at both the national and regional levels.

The following paragraphs of this section of the report and Pilot Case 2 in Appendix D contain specific suggestions that could improve the knowledge level of the local extension agents in the region.

2. *Reduce Extension Specialist Turnover*

The length of employment for extension specialists in the Tras-os-Montes region is reportedly less than for the rest of the country. Specific data is difficult to obtain but 15 regional specialists in the Tras-os-Montes region have resigned in the last year. Many specialists leave for private employment after four to six years in extension.

Even though university graduates may obtain good and adequate technical knowledge in their courses, a period of three to five years is required for them to develop into productive individuals.

What is happening in the Tras-os-Montes region is that the Portuguese government is, in effect, subsidizing private industry by providing them with a continuous supply of educated and trained

employees. The four to six year period in extension is really a training program for industry. The Extension Service, the Portuguese government and the people of Portugal cannot afford this luxury.

Apparently the principle reason for specialists leaving extension is lack of security in their job. They are hired on a temporary basis (Federal law has established a ceiling on number of employees) and do not have the status and privileges of a permanent employee. Also, the Tras-os-Montes region is the most isolated region in the country but salaries are equal throughout Portugal.

A stable staff of extension specialists in the region is essential to the improvement of agriculture in the region through better trained extension agents and better informed farmers. It is imperative that steps be taken at the regional and national level to assure permanent status and compensatory salaries for extension specialists in the Tras-os-Montes region.

3. Develop Strong Regional Training Centers

As mentioned in Appendix A, there are five Regional Training Centers in Tras-os-Montes that are in various stages of development and operation. The Director of Agriculture for the Tras-os-Montes region should devote more financial support to the operation of these centers. The Director of Regional Extension Services is capable of developing strong programs at each of these Centers if he has adequate support. More is mentioned about operation of these Centers below.

Specific Actions Needed Jointly by IUTAD and DRTM

First, a general comment or two. The administration at IUTAD and the regional level of the Ministry of Agriculture will need to continuously encourage their staffs to cooperate with each other and to remind them of the importance of the three attributes mentioned at the beginning of this section. It is not enough to say one time "cooperate" and then expect it to happen all the time in the future. Repeated emphasis on the importance of cooperation is

necessary as well as giving continuous encouragement not to give up when attempts at cooperation fail.

Administrators themselves must set an example for cooperation. They must also be active in searching for additional opportunities for cooperation in the region. Close cooperation will strengthen both IUTAD and DRTM.

1. *Provide Opportunity for Extension Agents to Enroll in Undergraduate Courses at IUTAD*

The lack of technical training is a serious handicap to most local extension agents as mentioned in Appendix A. Extension agents should have an opportunity early in their employment to obtain additional academic training. This could range from a limited number of courses in a specified subject matter area to an undergraduate degree--the latter would not be expected except in rare cases (a university degree is a requirement for advancement to specialist or administrative positions in extension).

2. *Develop Joint IUTAD-DRTM Research Projects*

It is obvious that the IUTAD staff needs assistance in conducting off campus research projects, and most of the field and animal research must be located off campus because of space limitations. Because of the diversity of agriculture in the Tras-os-Montes region, it is also necessary that many of the research staff at the Ministry of Agriculture's Experimental Station at Mirandela also conduct research away from that central location. This situation, coupled with the shortage of research funds, point out the importance of cooperation in conducting research to obtain the maximum impact in the region.

Following are some suggestions that the administrators at IUTAD and DRTM should put into practice to assure maximum cooperation in research activities in the region(see also Pilot Case 4, Appendix D-10).

- a) An annual joint review (2-3 day meeting) of research projects in the region. Administrators and staff of

both entities to participate. Can alternate locations (IUTAD and DRTM) of the meeting. This could involve visits to field projects.

- b) Before new projects are approved by either entity, check with the other to solicit cooperation from interested staff.
- c) Publish a list of research projects at each entity on annual basis and exchange and circulate the list so staff at both IUTAD and DRTM have a better understanding of research in progress at each institution or location.

3. *Use More Effectively the Professional Training Centers for Both Extension Training (Farmers and Agents) and Research (See also Pilot Case 3, Appendix D-8)*

- a) Agent Training--The Extension Training Coordinator for DRTM should make a request to IUTAD (through TLRC) for staff to conduct at least one training session per year for extension agents at each of the five Centers in the Tras-os-Montes region.
- b) Research--Where facilities exist for either crop or livestock research, both IUTAD and DRTM staff should strive to establish projects. The projects could serve as a field laboratory for farmers and agents attending training sessions. There would also be the possibility that the farmers and/or agents could provide some of the labor needed for the research projects (providing a working-learning situation) during the course of the year.

4. *Use Field Research Sites for Extension Training*

Both DRTM researchers and IUTAD staff (through TLRC) should provide a list each year of the field research projects (and coordinators) in the Tras-os-Montes region to the Regional Extension Training Coordinator. The Training Coordinator in turn should then work with research staff to work out a schedule of visits to selected projects by extension agents (and farmers where appropriate).

In some situations, Mini-Field Days could develop. (See Pilot Case 2, Appendix D-5, for more details.)

Because of the logistics involved in carrying out this activity it would be advisable to start with visits to no more than four projects the first year. It is better to do a few well than to do many poorly.

5. *Create Joint Appointments for Extension Specialists*

Joint appointments between the two Ministries (Agriculture and Education) may seem like an impossible and unworkable expectation but there are several conditions that justify such cooperation in the Tras-os-Montes region.

- a) Time available for extension activities will be very limited for the younger IUTAD staff due to research and teaching responsibilities. The research requirements for doctoral programs are basic in nature and necessitate a heavy time commitment in addition to the applied research projects they are expected to maintain.
- b) Neither IUTAD or DRTM alone can afford a staff of extension specialists to cover all sectors of agriculture. Together, they should be able to hire (and keep) a sufficient number of specialists to extend the research results that each generates.

Security of employment and tenure would be essential to keeping specialists in extension work.

- c) Extension specialists with joint appointment could serve to tie IUTAD and DRTM closer together which would avoid duplications and gaps in programs and increase effectiveness in the region.
- d) The potential problem of competitive feelings between a DRTM specialist and an IUTAD staff member would be avoided.

IDENTIFICATION OF PROBLEMS ENCOUNTERED AND GENERAL OBSERVATIONS

Before commenting on the problems that were encountered, it is important to point out two factors which have a bearing on the situation. First, agriculture in Portugal, as in most other countries, must compete with all of the other segments of the economy for a share of limited financial resources. On one hand this necessitates a strong administrative leadership, while on the other, a recognition that it is impossible to obtain everything that is wanted or asked for.

Secondly, IUTAD is a young institution but it has made spectacular growth in its relatively short existence as a university. Also, the agricultural extension concept is comparatively new in Portugal compared to such countries as England and the United States.

It is to be expected that "growing pains" would be experienced as part of the expansion process. Even so, such pains are easier to endure than those associated with reduction in size.

1. It is the opinion of this consultant that one of the overriding deterrents to the development of effective linkages for extension activities between IUTAD and DRTM is that the two entities come under the jurisdiction of different Ministries--Ministry of Education for IUTAD and Ministry of Agriculture for DRTM. Extension responsibilities are assigned to the Ministry of Agriculture and this situation will not change. The effect ranges from each ignoring the action or program of the other to extreme jealousy and competition for recognition.

An example of the dilemma--the Director of Extension Services in the region reports that sometimes when he contacts IUTAD staff for assistance or participation on an extension program in the region, the staff member will agree but imply that he should be paid for the service since he is not an extension employee and it would require extra work. Extension staff who participate

on the same program resent someone appearing on a program and being paid "twice." The Director also reports that he does not have a budget to pay "extra." Then there is reciprocation when an extension specialist or research staff of the Ministry of Agriculture is requested to appear on an IUTAD organized and sponsored program. The contention is that such programs are "teaching programs" and consequently refuse to participate on the basis that they are not teachers and therefore they would be doing extra work with no extra pay. Not all situations are like this but there seems to be more friction than harmony.

Protocols are in existence that provide for joint planning, conducting and financing special projects in teaching, research, and extension between IUTAD and DRTM. Very little joint activity takes place due to a lack of initiative on the part of both entities although there seems to be more interest in cooperation on the part of IUTAD.

An associated problem is the uncertainty of tenure for the Regional Director of Agriculture. Governments change frequently in Portugal and when they do there is also a change in Regional Directors along with a change in emphasis of programs. The present Regional Director is not enthusiastic about expanding cooperation between Ministry staff and other entities and further has only minimal interest in extension. Part of the reason for low interest in extension may be attributed to the high number of vacant positions throughout the regional level. In fact this should stimulate interest in cooperation rather than reduce it.

Two documents were signed on March 13, 1982 that created provisions for adequate linkage mechanisms between IUTAD and DRTM. The first is a statewide agreement between the Ministry of Education and universities (MEU) and the Ministry of Agriculture, Commerce and Fishing (MACP) providing for joint agricultural development programs by regions. The second, between DRTM and IUTAD merely acknowledges the provisions in the agreement between the ministries.

Provisions call for a Coordinating Group of six members, three each from IUTAD and DRTM. They are charged with eleven specific responsibilities. The item which has the most significance to the extension linkage concept is as follows:

"Item C--For the mutual logistic support in the realization (conducting) of activities in teaching, research and extension." There are references to other activities as well--seminars, colloquiums, conferences, exchange visits, exchange of items of mutual interest, reciprocal support in establishing laboratories, offices, experimental stations and preparation (training) of personnel.

Governments, Ministry organization and personnel have changed since 1982 and apparently there is no feeling of obligation to honor previous agreements. This is very unfortunate because the activities set forth in the 1982 agreements provide for the essential linkages that would result in effective development of agriculture in the Tras-os-Montes region.

2. A second major problem encountered was the lack of sufficient staff and staff time necessary to develop linkages. Indirectly this is due to the lack of funds available to both IUTAD and DRTM. Examples:

- a) IUTAD has not yet filled key positions in the TLRC, partially due to a lack of funds. Those who are on board are expected to carry a full load of teaching and/or research in addition to their TLRC responsibilities.
- b) Almost fifty percent of the local extension agent positions in the region are unfilled because of a lack of funds. Many of those positions that are filled are on a year-to-year contract basis and are not permanent employees.
- c) Many of the extension specialist positions at the regional level are now vacant because they could earn more in private industry and did not have permanent status in the Ministry.

- d) There are no firm departmental budgets at IUTAD. The purchase of even small items must be approved by top administration. Advance planning of an activity that requires funds is risky due to uncertainty of funds. Research projects that have specific funding are essentially the only examples where firm budgets exist. Most linkage activities involve expenditures for materials or services for which there is no specific amount of assured funds.
- e) Apparently there is no short-term expectations for a specific TLRC operating budget (beyond personnel). It will be difficult to develop effective and continuing linkages in the absence of a specific budget.

The potential for rectifying the problems that exist in this area lie primarily in the political arena. The most important change that is needed is to obtain permanent employee status for local extension agents and extension specialists. This would do much to reduce employees searching for other employment and leaving extension at the first good opportunity. All segments of the population should unite in their efforts to convince the government that it is false economy to hire employees on a temporary basis then have them leave once they gain experience and additional training.

On the staffing problem, the best possibility of accomplishing improvement in this situation would be for IUTAD and DRTM to join forces in first planning what additional staff is most needed by each and then supporting each other in proposals to the respective Ministries. State approval for additional staff to either entity is more likely if both demonstrate evidence that they are cooperating closely in the development of the Tras-os-Montes region.

3. Development and expansion of linkage activities is also hampered by the lack of an "Extension Chain of Command" at IUTAD

which in turn, influences interaction between IUTAD and DRTM. There is a channel for interaction at the very top between the Reitor and the Regional Director of Agriculture, but there is no clear pathway for communication and program development below this at IUTAD. There is no Director of Extension and no staff of extension specialists. Department Heads do not have any extension responsibility as in the U.S. Land Grant System and the Head of TLRC does not have any extension administrative authority. He can facilitate extension type activities but that is essentially the limit of his extension function.

The Reitor has recognized that both additional facilities for teaching and expanded research programs are necessary for IUTAD to more effectively serve the region. He has worked extremely hard to obtain building funds and research grants and has been very successful in his endeavors.

Additional attention will need to be directed towards strengthening the administrative structure as the University continues to grow. Department heads must be strong enough to assume more administrative responsibilities, some that are now carried out by the three Administrative, Scientific and Teaching (pedagogical) Councils.

Currently, department heads at IUTAD function more as a department administrative assistant. A staff member who serves as department head continues with a full load of teaching and research responsibilities but no additional remuneration. It is difficult to get staff to serve in this capacity. In fact the Economics and Sociology departments are said to be operating without a department head. It should also be pointed out that there are staff members who have the idea that being a professor should involve only teaching a class or conducting research. They fail to recognize that there are other aspects to a healthy academia.

There is also a need to formalize the extension component of IUTAD in some manner that will enable continuity of extension functions. One possibility would be for a department representative

on the TLRC Advisory Committee to also be designated as the departments extension representative. This would tie the TLRC closer to extension and should improve the effectiveness of extension efforts within IUTAD. It may be necessary to select some term other than "extension" to reduce suspicion in DRTM and avoid confusion to the general public.

4. There have been instances where IUTAD staff have not communicated effectively when speaking at extension meetings. They use terms that are too technical for their audience and the result is dissatisfaction for both the speaker and the audience. The speaker reports "they did not pay attention" and the audience complains "we could not understand." The TLRC can be instrumental in correcting this problem by preparing and distributing to the staff guidelines on how to communicate effectively with different audiences. Also, seminars could be held to demonstrate good and poor techniques. Staff who have a reputation of communicating effectively with extension audiences should be part of the seminar program along with communication specialists of DRTM or the State Extension Office in Lisbon.

5. Other problems encountered which influenced the effectiveness of the consultancy were:

- a) Making initial contacts. Difficulties were frequently encountered in initial attempts to contact IUTAD staff members on the telephone. If the staff member was away from the office it was difficult to obtain information about when he would return and also difficult to leave messages to have calls returned. Most of the difficulty was due to the inadequate telephone system at the University. If a call was not answered, then any message would have to be left with the telephone operator, in most cases, rather than with a secretary. Only if the telephone operator saw the staff member come in the building would the message be delivered. It would be impossible for staff members to always check in and out

of the building with the telephone operator and the secretary. Many hours were spent attempting to make contact via telephone that should have been accomplished in minutes. Frequently it was necessary to go to the building and leave a message on the staff members door.

Even more difficulty was experienced in making contact with Ministry of Agriculture staff in the region. Two instances were particularly frustrating. A date was set to visit local irrigation renovation projects with a regional engineer and IUTAD staff but the date was postponed three times. One day the engineer appeared unexpectedly, the IUTAD staff knew he was coming but had not informed this consultant who had other appointments that could not be cancelled. The second instance involved an attempt to visit dairy parlor installations in the region. The consultant's counterpart made contact with the regional specialist in charge of the project and set a date to meet him at his office in Chaves--an hours drive from Vila Real. Upon our arrival at the specialists office, he could not be located. After making several inquiries, it was learned that he was in Lisbon for a meeting.

Contacts with the Director of Regional Extension Services and the Regional Extension Training Coordinator were successful with no problems encountered.

- b) Counterparts involvement in Ph.D. research. No advance information was provided to the consultant that his counterpart would be extensively involved in making trips away from IUTAD to gather data for his research program that was not yet completed. This reduced time available to work together early in the consultancy in developing plans. It also greatly reduced the number of contacts with regional extension staff that could be made during

the first half of the consultancy when such contacts would have been of the greatest value.

In retrospect, it also would have been helpful for the consultant to have had some contact with his counterpart's major professor at the University of Wisconsin before coming to Vila Real on this assignment.

- c) Extent of Portuguese Vacation Periods. It was the understanding of the consultant that IUTAD staff would all be back from vacation by the end of August. Some key staff members were not able to be contacted until just before classes started in October--nearly two months into the consultancy. This made it difficult to obtain essential information for the consultant's assignment.

APPENDIX A

Review of Extension Services Provided by
and Through DRTM and IUTAD

REVIEW OF EXTENSION SERVICES PROVIDED BY
AND THROUGH DRTM AND IUTAD

- A. Review of the extension services provided by and through the Tras-os-Montes Regional Agricultural Services of the Portuguese Ministry of Agriculture

Background

Extension work in the Tras-os-Montes region is conducted through 30 local offices that are organized in 10 zones. The regional staffing schedule lists 20 administrators, two for each zone, a field staff of 142 local extension agents and 75 zone specialists (training monitors or para professionals). The staffing schedule also provides for regional specialists in 9 subject matter areas.

The principle crop and livestock enterprise in the Tras-os-Montes region are as follows:

Crops:

Wine	Vegetables
Cereals	Lupines
Forages and Pastures	Chestnuts
Potatoes	Olives
Fruits	Almonds

Livestock:

Beef	Sheep
Dairy	Goats

There are also scattered areas of pine forests and one of the main tobacco producing areas of Portugal is located in the southeast part of the region.

The national extension plan contains a list of 13 general areas of agricultural production in which extension agents are to provide technical information and leadership. Extension agents are also expected to provide supporting action in 18 specific areas, many of them are closely related to the production phase of agriculture.

In the Tras-os-Montes region, expertise is expected, and needed, in 7 of the 13 main areas of action and in all 18 of the supporting areas.

Unfortunately, the level of expertise is low in almost all of the main and supporting action areas of extension programs in the Tras-os-Montes region.

The main and supporting areas of the national plan are listed on page A-9.

Training Programs for Farmers and Extension Agents

The training unit of the Tras-os-Montes Regional Extension Service consists of a staff of three--a coordinator and two assistants. They are responsible for the training programs carried on both for farmers and for extension agents.

In March of each year, the National Extension Office in Lisbon sends out a list of topics (rather standard from year-to-year) for training during the following calendar year. The regional training unit selects topics appropriate for their region, along with an estimated number of courses and number of participants per course.

Zone administrators are contacted in November and December to select from the regional list the courses that they desire in their zones. The regional unit works with the zonal administrators in planning the course outline and schedule. The topics selected for the Tras-os-Montes region in 1986 are listed on page A-11. A sample of a course schedule appears on pages A-12 and A-13.

Regional Training Centers

Five professional training centers are in various stages of planning, construction and operation in the Tras-os-Montes region. They are located at, or near, Montalegre, Vidago, Mirandela, Malhadas, and Lamego. Funding for the centers at Vidago and Malhadas is through the World Bank and all five will be operated by the DRTM.

The primary purpose of these centers is to provide training facilities for farmers and extension agents. It is anticipated that they will also be able to be used for local non-agricultural training programs in the communities.

A visit was made to the facility under construction at Vidago. When completed, it will be a well-equipped center having classrooms,

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laboratories, mechanic shop and meeting rooms. Excellent teaching aids are also provided which include livestock anatomy models, TV monitors for showing video tapes, and a tractor especially constructed to exhibit many of the internal moving parts. The facilities also include a kitchen, dining room, sleeping quarters for 40 people, an exercise area (soccer field) and eventually a swimming pool.

At this location there are 15 hectares of land that can serve as a field laboratory for crops and livestock. In addition, some field research is being conducted by staff from the Ministry of Agriculture and this would be of interest and value to participants attending training programs at Vidago.

These centers provide an excellent opportunity to develop linkages between DRTM and TLRC/IUTAD. A well organized and efficiently functioning TLRC can provide technical services as well as serving as a coordinating link for scheduling IUTAD staff for participation in extension agent training programs organized through the training section of DRTM.

Advance planning and scheduling are two important keys to the establishment of a successful linkage for extension agent training programs at these centers. It will also be extremely important that all parties involved make every effort to honor commitments. These are points which too often are not taken seriously and thus cause frustration and even resentment which, in turn, lead to ineffectiveness.

See Appendix D-8, Pilot Case 3, "Using Regional Professional Training Centers to Develop Linkage Concepts Between IUTAD and DRTM."

Extension Agents

The most effective local agents are those who were raised on a farm and are natives of the region or zone in which they work. Farmer recognition and credibility in the family name serves as a good introduction of the agent and enhances the acceptance of suggestions made by that agent.

Many of the local agents have only the equivalent of a 2 year agriculture course and that may have been of only mediocre quality.

This fact, coupled with the lack of a farm background that hampers many, makes it very difficult for the local agent to gain acceptance in the community.

Training programs for agents exist on paper but execution is often lacking. In one zone in the region one day per week is set aside in the annual plan of work in 1985 for professional improvement to be conducted by a specialist. Not one of the scheduled training programs had occurred at the end of the first nine months. That amounts to 38 consecutive failures in improving the technological level of local agents.

Another factor that is a serious deterrent to an effective extension program in the region is that only 54 percent of the local extension positions are filled and over half of those are on a year-to-year contract rather than on a permanent basis.

Extension Specialists

Effectiveness of extension specialist programs in the region is very low for several reasons. There is a serious problem of retaining specialists. Even though a young specialist may have an adequate technological background (i.e., a graduate of an agricultural university such as IUTAD) it requires 3 to 5 years to establish credibility and develop an effective program. Unfortunately, there is a high tendency for specialists to leave the Extension Service after 4 to 6 years and accept employment in the private sector.

Young specialists enter the Extension Service with a high level of interest and enthusiasm. It appears that the best ones leave and those that remain eventually lose their enthusiasm because of bureaucracy and even fail to maintain contact with IUTAD staff with whom they had worked when they were students.

Special Programs

Two of the projects within the Tras-os-Montes Integrated Rural Development Program (PDRITM) involve local extension agents.

1. Renovation of Small Irrigation Systems -- Local extension agents have cooperated with Ministry of Agriculture staff in arranging for meetings with local groups of farmers to discuss the program and determine the level of interest in the community. Plans are to improve 10 percent (150) of the small systems in the region with the Ministry (through a World Bank Loan) to furnish materials and technical assistance with local farmers furnishing the non-specialized labor.

Requests for assistance are being received faster than technical assistance can be provided indicating that extension has been active, as well as effective, and that people want to improve existing irrigation systems and to increase the efficiency of their limited water supply.

Apparently, the IUTAD staff involved in irrigation research knew little or nothing about this project which was started in 1980 which illustrates the lack of communication that sometimes exists between the University and the Ministry of Agriculture. It is the opinion of IUTAD staff who have seen some of the renovated projects that, although delivery systems had been substantially improved, the storage capacity of the systems could have been greatly increased with additional labor but little or no extra material costs.

2. Design and Installation of Milking Parlors -- Information obtained about this project was very limited. Attempts were unsuccessful to arrange visits to communities to view installations with the Ministry of Agriculture person in charge of designing and installation.

One installation was visited in a contact with a local agent who is active in the project. It is evident that local agents are involved jointly with the Ministry personnel in this project.

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B. Review of the Extension Service Provided by IUTAD

Extension services provided by IUTAD are divided into two broad areas: 1) Adult education and training, and 2) Services.

Adult Education and Training

There is no separate or specific extension entity in the organic structure of IUTAD as exist in the Land Grant System in the United States. Consequently there is no structured system in the University for planning and/or financing extension type activities and programs.

In the absence of any type of extension appointment or support, any time or effort that staff devote to extension activities must be in addition to their teaching and research responsibilities. In spite of this, several staff members exhibit a definite willingness and eagerness to participate in extension activities.

a) World Bank Project Reports:

A stipulation in each of IUTAD's 13 applied agricultural research proposals within PDRITM is as follows:

"At least once a year a joint team of collaborators will present a seminar to appropriate people engaged in the Tras-os-Montes Rural Development Project and particularly to the extension staff."

Most of these projects began in 1984 and the first seminar was held in April 1985. See page A-10 for a schedule of the seminar. Projects are to continue through 1987 so there will be three more annual seminars to be scheduled.

A possible problem encountered with the 1985 seminar is also mentioned in an earlier section of this report entitled "Identification of Problems Encountered and General Observations." Although acceptance of the reports was generally favorable there was some feeling that presentations were too technical for the level of training that most extension agents have. Staff who make reports on

their projects should concentrate on presenting objectives and short summaries of results to date and not attempt to give detailed results.

b) Rural Extension Course:

The Economics Department offers a course on Rural Extension to all students the second semester of their fourth year. The course is one of the few courses on extension taught in Portuguese universities. The instructor, Artur Cristovao, received his M.S. degree in Extension Education at the University of Wisconsin and will soon complete his Ph.D. there in the same subject matter area. For his thesis study, he is gathering information about the degree of farmer involvement in planning extension programs in Portugal.

His course is comprehensive, covering the concepts of rural extension and how it is organized in Portugal. Visits to local extension offices are included as part of the course.

Students graduating from IUTAD will have a better understanding of rural extension and how it should function and will have an advantage over students from other universities in Portugal. IUTAD graduates are in demand for extension specialist positions in the Ministry of Agriculture throughout Portugal. Hopefully they will stay in extension work and make it a more effective unit in the future as a result of their introduction to extension at IUTAD or Evora.

c) Unesco Professional Improvement Course:

A two week professional training (improvement) course has been organized by the Animal Science Department through the auspices of UNESCO. Program speakers include both IUTAD staff and DRTM personnel which, therefore, demonstrates elements of collaboration. Difficulties have arisen in scheduling which resulted in two postponements. The first

postponement occurred when it became apparent that several speakers would be on vacation. The second postponement resulted from low farmer preregistration (dates coincided with potato and small grain harvest). Coordinators should have been able to anticipate such obvious conflicts and have scheduled around them.

These events (postponements) serve as a clear example of how important careful planning and dedicated commitment are to the success and effectiveness of a program.

d) Extension Activities of Individual Staff Members:

Staff members at IUTAD are frequently contacted by a variety of individuals and groups to conduct educational training sessions that range from one-half to four days in length. Among the most frequent users of IUTAD staff for these activities are: DRTM, cooperatives and local governing bodies.

A recent extension activity that was stimulated by the consultancy of Prof. William H. Friday is that of preparing educational leaflets or bulletins. Interest is expanding and is discussed in more detail in this report under the section "Specific Actions Needed to Create Effective Linkages Between IUTAD and DRTM Extension Staff" (page 4) and also as Pilot Case 1 in Appendix D-1.

Support Services to the Community

At IUTAD support services are considered to be part of the extension function and activity of the institution and "Community" can be defined as the Tras-os-Montes region.

There are six support services in existence at IUTAD:

- a) Library Services for non-IUTAD staff or students (TLRC)
- b) Animal disease laboratory
 - Microbiology
 - Parasites
 - Anatomy

- c) Wine quality testing
- d) Soil and plant analysis laboratory
 - Soils
 - Plants
 - Limestone
- e) Plant disease diagnosis
- f) Animal production
 - Raising and testing bulls for sale in the region.

Main Areas of Action Listed in the National Plan for Extension in Portugal

- 1. Cereal Production
 - 2. Forage and Pasture Production
 - 3. Horticulture (Vegetables)
 - 4. Grape and Wine Production
 - 5. New Crops
 - 6. Beef Production
 - 7. Small Ruminant Production
 - 8. Citrus Production
 - 9. Horticulture Industry
 - 10. Milk Production
 - 11. Swine Production
 - 12. Poultry Production
 - 13. Bee Culture
- } Not of major importance in the Tras-os-Montes region.

Supporting Areas of Action Listed in National Plan for Extension in Portugal

- 1. Animal Nutrition
- 2. Milk Hygiene
- 3. Milking Parlors and Machines
- 4. Animal Sanitation
- 5. Farm Building Construction
- 6. Irrigation Techniques
- 7. Agricultural Implements and Mechanization
- 8. Soil Conservation
- 9. Plant Diseases
- 10. Fertilization
- 11. Accounting and Management of Farm Business
- 12. Credit and Investment
- 13. Insurance
- 14. Young Farmers Organizations
- 15. Agricultural Organizations
- 16. Rural Family
- 17. Research and Demonstration Plots
- 18. Mechanization Courses for Farmers

PROGRAMA DAS SESSÕES

DIA 11 DE ABRIL (5.ª FEIRA)

- 09h45 -- Abertura
- 10h00 -- Apresentação da situação do Projecto n.º 4 "Produção de Forragens e Pastagens nas Áreas de Sequeiro Mediterrânico de Trás-os-Montes"
— *Eng. Nuno Moreira*
- 11h00 -- Intervalo
- 11h15 -- Debate
- 12h30 -- Almoço
- 14h00 -- Apresentação da situação do Projecto n.º 8 "Melhoramento da Produção Ovína"
— *Eng. Jorge Azevedo*
- 15h00 -- Intervalo
- 15h15 -- Debate
- 16h15 -- Apresentação da situação do Projecto n.º 3 "Produção e Utilização de Forragens em Prados Temporários de Regadio e Lameiros"
— *Eng. Armando Mascarenhas*
- 17h15 -- Intervalo
- 17h30 -- Debate

DIA 12 DE ABRIL (6.ª FEIRA)

- 09h45 -- Abertura
- 10h00 -- Apresentação da situação do Projecto n.º 1 "Estudos de Adaptação de Algumas Cultivares de Trigo, Centeio e Triticale e a Obtenção de Novas Variedades Melhoradas"
— *Eng. Henrique Guedes Pinto*
- 11h00 -- Intervalo
- 11h15 -- Debate
- 12h30 -- Almoço
- 14h00 -- Apresentação da situação do Projecto n.º 6 "Fertilização em Triticale, Centeio e Trigo" e dos trabalhos em curso relacionados com o PIC (Projecto de Inovação em Cereais)
— *Eng. João Coutinho*
— *Eng. José Portela*
- 15h00 -- Intervalo
- 15h15 -- Debate

DIA 18 DE ABRIL (5.ª FEIRA)

- 09h45 -- Abertura
- 10h00 -- Apresentação da situação do Projecto n.º 7 "Definição d. um Modelo Agrícola para Implementar a Produção de Leite nas Terras Altas"
— *Eng. Carlos Sequeira*
- 11h00 -- Intervalo
- 11h15 -- Debate
- 12h30 -- Almoço
- 14h00 -- Apresentação da situação do Projecto n.º 9 "Desenvolvimento de Recomendação Alimentares Para Ruminantes"
— *Eng. Arnaldo Silva*
- 15h00 -- Intervalo
- 15h15 -- Debate
- 16h15 -- Apresentação da situação do Projecto n.º 11 "A Produtividade e a Rentabilidade dos Bovinos Locais"
— *Eng. Virgílio Alves*
- 17h15 -- Intervalo
- 17h30 -- Debate

DIA 19 DE ABRIL (6.ª FEIRA)

- 09h45 -- Abertura
- 10h00 -- Apresentação da situação do Projecto n.º 5 "Nemátodos da Batateira — Macrozonagem do Nemátodo Dourado da Batateira e Estudo de Técnicas de Controlo"
— *Eng. Fernando Martins*
- 11h00 -- Intervalo
- 11h15 -- Debate
- 12h30 -- Almoço
- 14h00 -- Apresentação da situação do Projecto n.º 2 "Melhoramento de Castas da Região do Douro — Estudo sobre a sua Fertilidade e Produtividade"
— *Eng. Nuno Magalhães*
- 15h00 -- Intervalo
- 15h15 -- Debate

PROFESSIONAL TRAINING PROGRAM - 1986

TRAS-OS-MONTES REGION

COURSES	NUMBER	DURATION (Days)	NUMBER of PARTICIPANTS
<i>Farmers</i>			
Young Farmers	5	75	100
Farm Business	5	60	100
Accounting and Management	5	15	50
Mechanization	36	30	360
Fruits	8	25	80
Almonds	4	25	40
Cultivatated	4	10	40
Olives	10	25	100
Grapes	7	10	10
Potatoes	1	10	10
Irrigation	2	5	20
Goats	1	15	10
Sheep	1	15	10
Dairy and Forages	1	20	10
Beef and Forages	1	15	10
Bees	5	30	50
Fertilization	1	10	10
Plant Protection	2	10	20
TOTAL	99	405	1.030
<i>Extension Agents and Zone Specialists</i>			
Extension Agents	1	60	20
Grape Production	1	5	20
Soil Fertility	1	5	20
Forages and Pastures	2	5	40
Dairy Production	2	5	40
Beef Production	2	5	40
Small Ruminants	1	5	20
Potato Production	1	5	10
Irrigation	1	5	20
Olive Production	1	5	20
Bee Production	2	15	40
TOTAL	15	120	290
<i>Regional Specialists</i>			
Teaching Methods	1	10	20
Farm Business and Management	1	30	4
Credit	1	25	20
Cooperative Credit and Management	1	40	6
Grape Production	1	15	9
Fruit Production	1	20	6
Olive Production	1	20	9
Dry Fruits (Almonds)	1	20	9
Fertility and Fertilization	1	20	10
Plant Protection	1	20	15
Goat Production	1	20	3
Sheep Production	1	20	3
Livestock Assistance	1	30	20
TOTAL	13	290	134
<i>Others</i>			
Directors Cooperatives	3	2	75
Accounting and Management of Cooperatives	1	30	30
Supervisors	1	20	5
Receptionists	1	5	20
Professional Training Coordinators	1	20	4
TOTAL	7	77	134
GRAND TOTAL	134	892	1.588

CENTRO DO BARROSO

NÚMERO DE HORAS POR TEMA

TEMAS	HORAS	
Aritmética	12	
Português	12	
Agricultura Geral	24	
Agrimensura	24	
Associativismo	12	
Apicultura	12	
Iniciação à Economia	6	
Organização do Trab.	6	
Contabilidade	42	TOTAL - 435 horas
Culturas da Região	9	
Caracterização da Região (Relacionado c/ o PDRITM)	3	
Forragens e Pastag.	6	
Mecanização	120	
Pecuária	90	
Organização Suv.M.A.	3	
Crédito e Seguros	3	
Silvicultura	3	
Horticultura	3	
Gestão	15	
Alimentação e Nutri.	6	
Fitossanidade	12	
C.E.E.	3	
	6	Acolhimento e recepção
	3	Encerramento

SAMPLE OF A COURSE SCHEDULE

NOVEMBRO

Horas	SEG.	TER.	QUA.	QUI.	SEX.
9.00	11	12	13	14	15
10.00	Contabilidade Agrícola	Pecuária Mecanização	Mecanização Pecuária	Pecuária Mecanização	Mecanização Pecuária
10.30					
11.00					
12.00					

ALMOÇO

14.00	Contabilidade Agrícola	Pecuária Mecanização	Mecanização Pecuária	Pecuária Mecanização	Mecanização Pecuária
15.00					
15.30					
16.00					
17.00					

NOVEMBRO

SEG.	TER.	QUA.	QUI.	SEX.
18	19	20	21	22
Contabilidade Agrícola	Agricultura Geral	Pecuária Mecanização	Mecanização Pecuária	Pecuária Mecanização

ALMOÇO

Crédito e Seguros	Agrimensura	Pecuária Mecanização	Mecanização Pecuária	Mecanização Pecuária

NOVEMBRO

SEG.	TER.	QUA.	QUI.	SEX.
25	26	27	28	29
Agricultura Geral (Fertilidade de Solos)	Contabilidade Agrícola	Pecuária Mecanização	Mecanização Pecuária	Pecuária Mecanização

ALMOÇO

Agrimensura	Contabilidade Agrícola	Mecanização Pecuária	Pecuária Mecanização	Mecanização Pecuária

APPENDIX B

Information and Areas of Technical Expertise at
IUTAD Suitable for Extension Purposes

INFORMATION AND AREAS OF TECHNICAL EXPERTISE AT
IUTAD SUITABLE FOR EXTENSION PURPOSES

Areas of Technical Expertise at IUTAD

The IUTAD administration has both encouraged and insisted that younger staff members prepare and submit proposals to obtain outside funding for some of their research projects. Many have been successful and much of the current research at the University is being funded by sources including the World Bank, the German Research Foundation and the European Common Market.

There are thirteen research projects at IUTAD that are part of the Integrated Rural Development Project of the Tras-os-Montes region (PDRITM) being funded through the World Bank. Titles of the projects are as follows:

1. Adaptation Studies of Some Cultivars of Wheat, Rye, and Triticale and Development of New Improved Varieties.
2. Breeding of Port Wine Varieties--Studies About Their Fertility and Production.
3. Forage Production and the Utilization of Irrigated Temporary Pastures and Permanent Pastures.
4. Forage and Pasture Production in the Dry Mediterranean Areas of the Tras-os-Montes region.
5. Survey of the Golden Potato Nematode and Study of Control Techniques.
6. Fertilization of Triticale, Rye and Wheat.
7. Definition of an Agricultural Model to Increase Milk Production in the Highlands in Tras-os-Montes.
8. Improvement of Sheep Production.
9. Development of Feeding Guidelines for Ruminants Based on Local Feedstuffs.
10. Establishment and Functioning of the Evaluation Unit of the Tras-os-Montes Rural Development Project.
11. Development of Animal Production--Performance Testing.

12. Classification and Mapping of Soils (tentative).
13. Irrigation Methods--Evaluation and Improvement of Traditional Methods and Determination of Water Requirements for Crops.

The World Bank projects are multi-year in scope with stipulations for annual reports and a final report at the end of each project. There is also a provision to report results at an annual seminar primarily for extension agents (see Appendix A-10).

Many of the research projects at IUTAD are both interdisciplinary and interdepartmental in context which promotes communication and cooperation between staff members. There is more of a spirit of camaraderie at IUTAD than reportedly exists at other universities or experiment stations in Portugal. This improves both quality and quantity of research activity.

Titles of research projects are published in the ANUARIO (Annual Report) of IUTAD. The most recent report available was a combined report for 1982 and 1983.

From contacts made with IUTAD staff during this consultancy the following departments have, or will have, information of immediate extension value to the Tras-os-Montes region:

- Biology
 - Genetics Division
- Economics and Sociology
 - Farm Management
 - Marketing
 - Extension Methods
 - Evaluation
 - Sociology
- Plant Science and Agricultural Engineering
 - Cereals
 - Forages and Pastures (also in Animal Science)
 - Potatoes
 - Vegetable Crops
 - Grapes
 - Fruit Crops
 - Farm Machinery
 - Farm Buildings
 - Irrigation

- Forestry
 - Improvement and Management
 - Fire Control
- Geosciences
 - Soils Division
- Microbiology and Food Science
- Animal Health
- Plant Protection
- Animal Science
 - Cattle, Beef and Dairy
 - Sheep and Goats
 - Animal Nutrition
 - Production and Utilization of Forages
 - Fish Culture

APPENDIX C

Channels and Methodologies for Passing Information
and Technology Through TLRC

CHANNELS AND METHODOLOGIES FOR PASSING INFORMATION
AND TECHNOLOGY THROUGH TLRC

The TLRC has the capability of using several services and mechanisms for passing information to, and for, potential users in the Tras-os-Montes region. At the same time it is important to recognize that both human and financial resources of the TLRC are, and will continue to be, very limited. Therefore, it will be essential to allocate resources in a manner that will result in the maximum impact.

An increase in the demand for services of the TLRC will occur as the linkages between IUTAD and external agencies and organizations become more effective. Departments within the University will also be requesting more services from the TLRC in the near future. Very careful planning will be necessary to assure that services will be provided on an equal and just basis.

Publications

Extension agents in the Tras-os-Montes regions have very limited access to subject matter guides and reference material. One of the most important services that the TLRC can provide will be to assist in the preparation of short, informative bulletins by IUTAD and DRTM personnel that extension agents can use in building a reference file.

Prof. William H. Friday worked with several staff members in preparing 4-6 page leaflets during his consultations at IUTAD. The text was written in non-technical terms and utilized pictures, diagrams, graphs and short data tables. Not only is this type of publication an excellent reference source for extension agents but the authors also use them effectively for classroom teaching purposes.

Staff members who have prepared these publications are satisfied with the results. They exhibit a definite interest and enthusiasm in preparing more in the future even though the hours required

to write them must be taken out of an already busy research and teaching schedule.

It is anticipated that the demand for these extension leaflets will increase greatly as a result of the linkage developed in Pilot Case 1 in Appendix D-1.

The administrative staff of IUTAD must recognize the importance of having the TLRC completely staffed and operating effectively in order to provide the publication services that will be requested by the staff in the various departments at the University.

Currently the editorial phase of preparing these leaflets is being conducted by a committee consisting of three IUTAD staff members and two of the staff of DRTM. This committee has performed a creditable job in establishing general guidelines and standards for authors to use in writing and publishing extension leaflets. However, as the interest and demand for these leaflets increases, the required editorial work will create an excessive burden on the committee. Delays or breakdowns in the editorial process will be inevitable. A resulting consequence would be accompanying delays in publication and delivery of the leaflets. This, in turn would cause negative reactions in the linkage progress because DRTM personnel would have doubts about the ability of IUTAD to deliver the publications on schedule.

To have assurances that the TLRC-IUTAD will be effective in the production and delivery of publications needed and requested by the extension agents in DRTM, it is essential that the IUTAD administration move forward at the earliest possible opportunity to locate and hire a qualified editor for the staff of the TLRC. It is likely that additional training for writing in the extension "style" will be needed by whoever fills the position. Such action is needed in addition to the suggested committee changes that were made earlier in this report (page 5, item 2--Reorganize the Publication Committee Structure).

The primary extension function of the editor will be to consult with authors about the organization and preparation of material

for their publication. This will include assistance in defining the objectives of the publication and selecting the appropriate format to achieve those objectives.

It will also be important to develop a definite funding procedure to cover the labor and material costs of printing the extension publications. Nothing will destroy the writing initiative of an author faster, after spending many hours of extra time preparing a manuscript, than to find out that there are no funds for publication. Possibilities of obtaining financial cooperation from the extension section of DRTM should be explored since they will be the main consumer of many of the publications. Provisions for cost-sharing exist in signed protocols between IUTAD and DRTM.

Slides

There are several aspects of 2 x 2 slide preparation and production in which the TLRC can provide valuable services that would greatly enhance the comprehension of slide presentations.

- *The Use of Diazachrome Technique.*

Comprehension of slide presentations can be increased by using slides that contain outline statements, simple data charts, graphs and tables. Slides containing this type of information can be easily prepared by use of the diazachrome procedure. There are advantages for both the person presenting the material and the audience. The presenter saves time and increases his accuracy of statements. For the audience, the advantage is increased comprehension and retention of the information presented.

Examples of information typed in a suitable form to be photographed for a diazachrome slide are presented on pages C-10, C-11, C-12 and C-13.

- *Labeling of Subject Matter Being Photographed.*

Services that should be available in the TLRC could improve the effectiveness of many of the slides taken by IUTAD staff. A few simple labels or signs on the material

to be photographed can greatly increase the teaching power of a slide (photograph). A minimum amount of time and effort in advance planning of the message that is to be conveyed would pay big dividends.

For example, the objective is to show small differences between two varieties of a crop that are adjacent to each other in field plots. It might be difficult for the viewer to see the differences without a substantial explanation by the person showing an unlabeled slide. However, if a sign had been prepared in advance listing the differences and then placed in between the plots before the picture was taken the intended message would be more quickly and clearly understood by the viewer with a minimum of explanation.

Personnel in the design section of the TLRC should become familiar with sign making and proper lettering to provide useful material for use by IUTAD staff.

- *General Photographic Techniques.*

Some IUTAD staff members take excellent slides that are effective for teaching and extension purposes, others do not. The TLRC should have a staff qualified to present a "Photographic Workshop" for the IUTAD staff. Outside professional assistance would likely be needed to present some of the topics in such a workshop.

Other Audio-Visual Material

- *Acetate Overlays (Transparencies)*

Staff members at IUTAD make extensive and intensive use of transparencies in the classroom as well as in seminars and workshops. Two aspects of potential future TLRC activity in this sector are as follows:

1. Quality of Appearance: The general procedure for people who use transparencies is to wait until the last minute to prepare them and to write them out by hand. Some people can prepare neat overlays by hand but most people

cannot. A poorly prepared overlay is not only unattractive but it may also be difficult to read and understand. Adequate facilities exist in the TLRC for preparation of top quality transparencies. Equipment includes:

- U-BIX 160 RE Photocopier that has an enlarging capacity of 40 percent so that transparencies with adequate size letters can be prepared by typing material with normal size type and enlarging once or twice.
- A 3M 7401 Lettering System with discs of 3/8 and 1/2 inch letters.
- A 3M 4500 Transparency Maker with acetate sheets for 4 different colors or transparencies.
- Various colored acetate sheets which can be attached to cardboard transparency mounts.

The high temperature acetate sheets required for making transparencies with this equipment range from 50 to 300 percent more in cost than ordinary sheets for writing on with colored pens or wax pencils. Because of these higher costs, the use of this equipment should be primarily for transparencies that have a definite potential for much reuse or for use in situations where it is important to show a high quality image of the institution and/or its staff.

2. Economics of Quantity Purchase: Administration should seek quantity price quotations from vendors and determine if there are economies involved. If there are, then quantities could be purchased for distribution through TLRC.

- *Charts and Signs*

When "Field Days" become a more extensive activity at IUTAD and the Regional Extension Service, then the TLRC should be staffed and equipped to provide service in designing and preparing attractive and legible charts.

As TLRC (or the design section of IUTAD) becomes involved in more chart making it will be necessary to develop a priority system to assure that resources are used to the best advantage, i.e., top priority to charts that will have repeated usage and low priority to those that will be used only once.

Another need will be for the Chief of the Audio-Visual Section of TLRC to procure laminating equipment to weatherproof the charts and signs. This process will also aid in making them more durable and prolong their life and utility.

- *Portable Display Panels*

The Printing Services and Design Section of IUTAD prepared a well designed, attractive and informative set of display panels for the inauguration of the Geosciences Building. This verifies the existence of qualified expertise to provide this type of service at the University.

Panels of the size used in the display (approximately 1 x 2 m) are too large to be considered portable or suitable for outdoor use. A more versatile and viable alternative to these more or less stationary panels would be three-section wooden panels, hinged so that they can be folded together for transporting in an automobile. When folded, the size is reduced by 50 percent and pictures and printing are protected in transit. When unfolded and placed on a table, they are self supporting. A photo example is shown on pages C-14 and C-15.

The primary educational function of a display is to capture the attention of viewers and to stimulate them to seek more information about the subject of the display. They serve as "motivators."

There are many opportunities for interaction between TLRC/IUTAD/DRTM in selecting topics, planning the design, constructing and using portable displays in the Tras-os-Montes

region. At the beginning it would be best to construct displays with nonseasonal topics to permit the development of a functional system for rotating the displays among the local or regional extension offices in the region. Storage and maintenance arrangements could be jointly agreed upon between TLRC and the Director of Regional Extension Services.

As new displays are prepared, each one should be photographed and copies of the pictures distributed on a regular schedule at least to all zone offices or, preferably, to each local office.

- *Videotapes*

Videotaping equipment that the TLRC possesses at the present time is very minimal. Even though two of the staff have attended a television training course in television, they have no experience in videotaping as all equipment is currently in storage until they move to their new facilities.

Only after TLRC becomes fully staffed, adequately trained, and firmly established and operational can it be expected to make much of a contribution in planning and producing videotapes at IUTAD.

Several staff members have expressed interest in developing videotapes and are moving ahead in planning stages (see Appendix D, page D-12, Pilot Case 5) for preparing a videotape in their subject matter area. Even though the quality of a videotape for teaching extension purposes does not have to be equal in quality to that for a public TV station, it will still require much effort and time for a satisfactory product. It will be more important to do a few tapes in a good manner than to do many tapes poorly. Ideally, to be of most value to the entire region, the topics for videotapes should be selected jointly by IUTAD and Regional Extension Service staff.

Audio-Tutorial Services

Both the study center and the learning laboratory of the TLRC will contain audio-tutorial equipment and facilities that can also be used in small group training sessions for extension agents and other nonstudent clientele. Much of the material that the staff will prepare for classroom purposes will be suitable for workshop training sessions with only minor modifications.

The Head of the TLRC should be informed when an IUTAD staff member completes an audio-tutorial program. In turn, the Extension Training Coordinator for DRTM would be informed and invited to review it with an extension agent or a regional subject matter specialist to assess the program's potential and suitability as training material for extension agents. The Extension Training Coordinator would designate an extension agent (or specialist) to work with the IUTAD staff author in making the modifications in the program so that it could be used in extension training sessions.

Seminars, Workshops

Most of the topics discussed in this section will require that IUTAD staff receive some special training. The administrative committee of the TLRC should develop seminars and/or workshops on appropriate topics. This exercise will not only result in a better trained academic staff but it will also improve communications between the academic staff and TLRC and improve the efficiency of everyone.

Budget and Financing

All of the services mentioned in this section will require the expenditure of funds; however, finances at IUTAD are not limited. The TLRC is a new part of the University although parts of it have been in existence in other sections of the University. If the TLRC is to provide the services that are intended and expected of it, the cost will be much greater than in the past. To provide equity and balance in the operation of the TLRC, it will be important to

establish a budget for the various sections so that the Chief of each section--Library, Printing and Audio-Visual--will know what and how much they can do.

HOW PEOPLE ARE USING SPLIT
APPLICATIONS TODAY

CORN YIELD AS INFLUENCED BY N RATE AND TIME OF APPLI-
CATION AT WASECA, MINNESOTA.

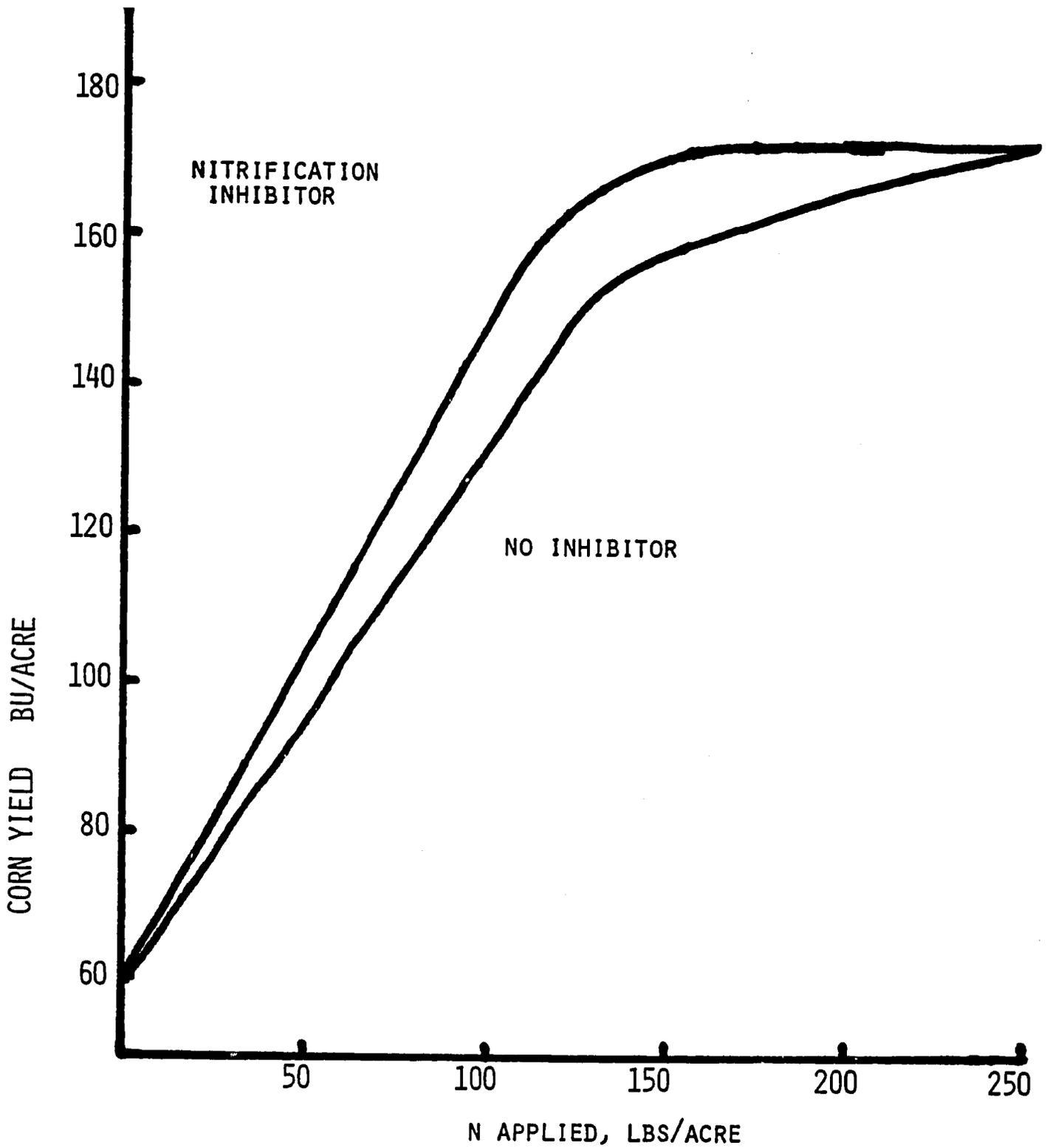
N RATE LB. N/ACRE	TIME OF APPLICATION	GRAIN YIELD 1978-1980
0	----	61
120	FALL	117
120	SPRING	142
120	SIDEDRESS	151
180	FALL	145
180	SPRING	157
180	SIDEDRESS	166

SOURCE: RANDALL, 1980.

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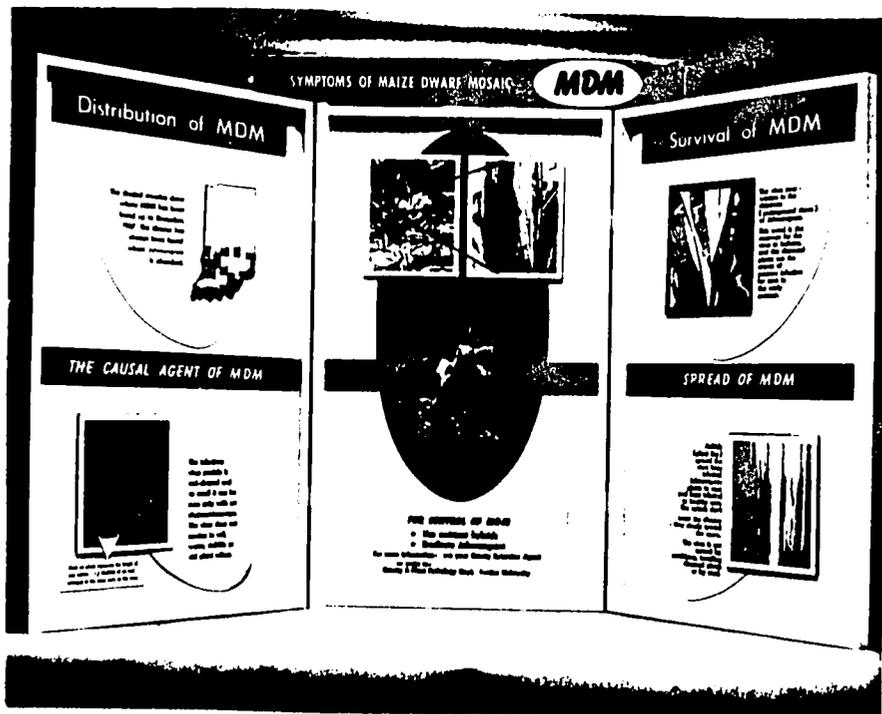
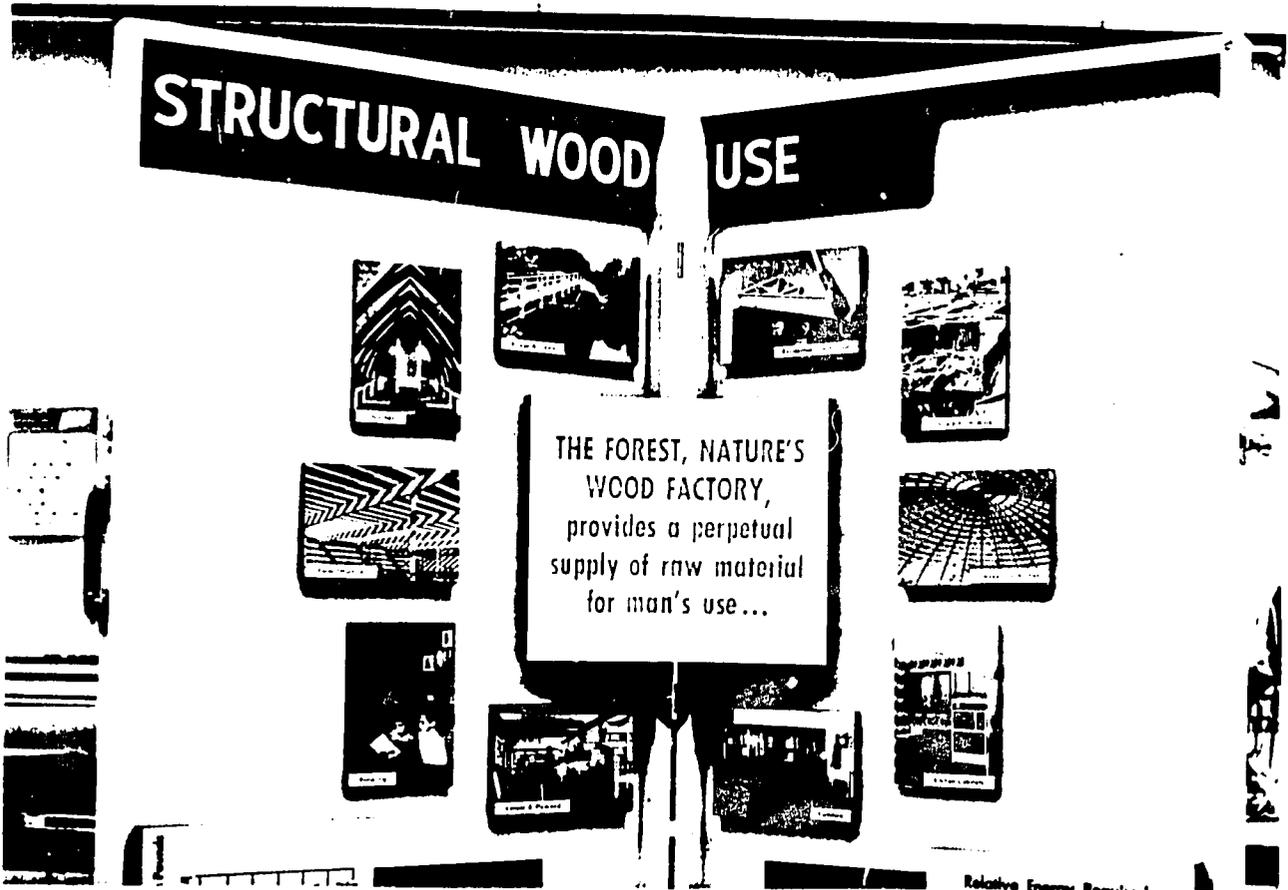
OBJECTIVES:

1. REVIEW HOW N FERTILIZERS REACT IN SOILS AND HOW THIS MAY INFLUENCE N LOSS.
2. REVIEW WHEN NITROGEN IS TAKEN UP BY CORN.
3. REVIEW SOME OF THE MORE RECENT RESEARCH AND IDEAS ON NITROGEN TIMING.
4. SUMMARIZE THIS INFORMATION AS TO WHERE NITROGEN TIMING MAY BE HELPFUL IN IMPROVING N USE EFFICIENCY.

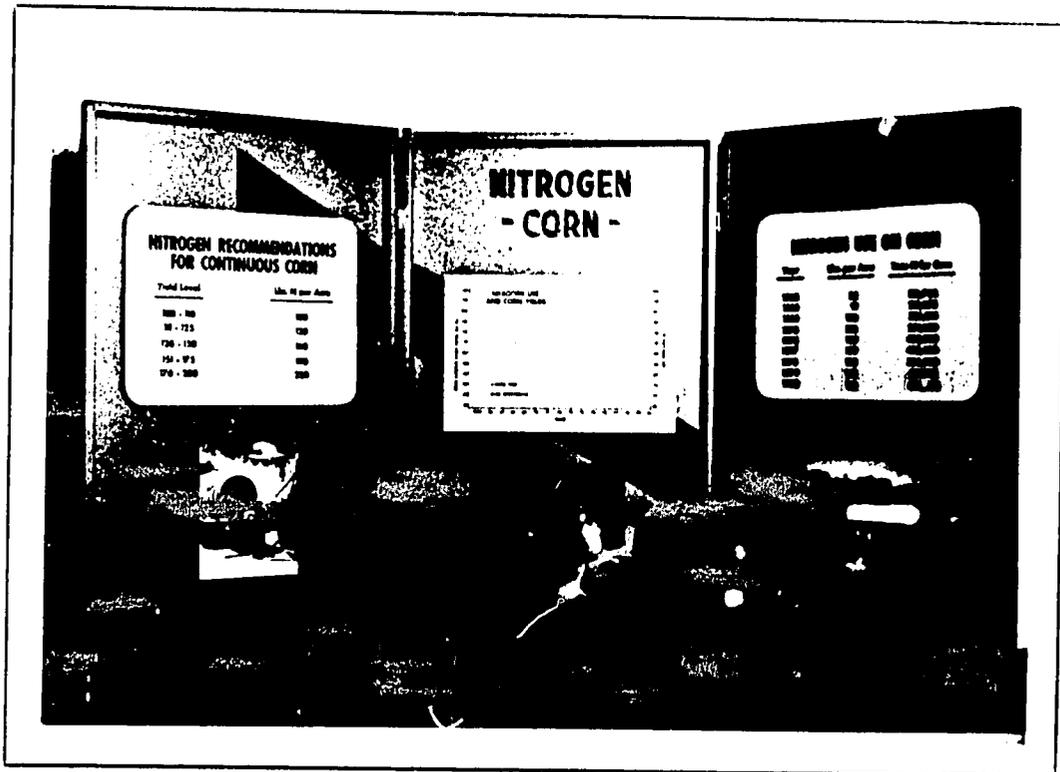
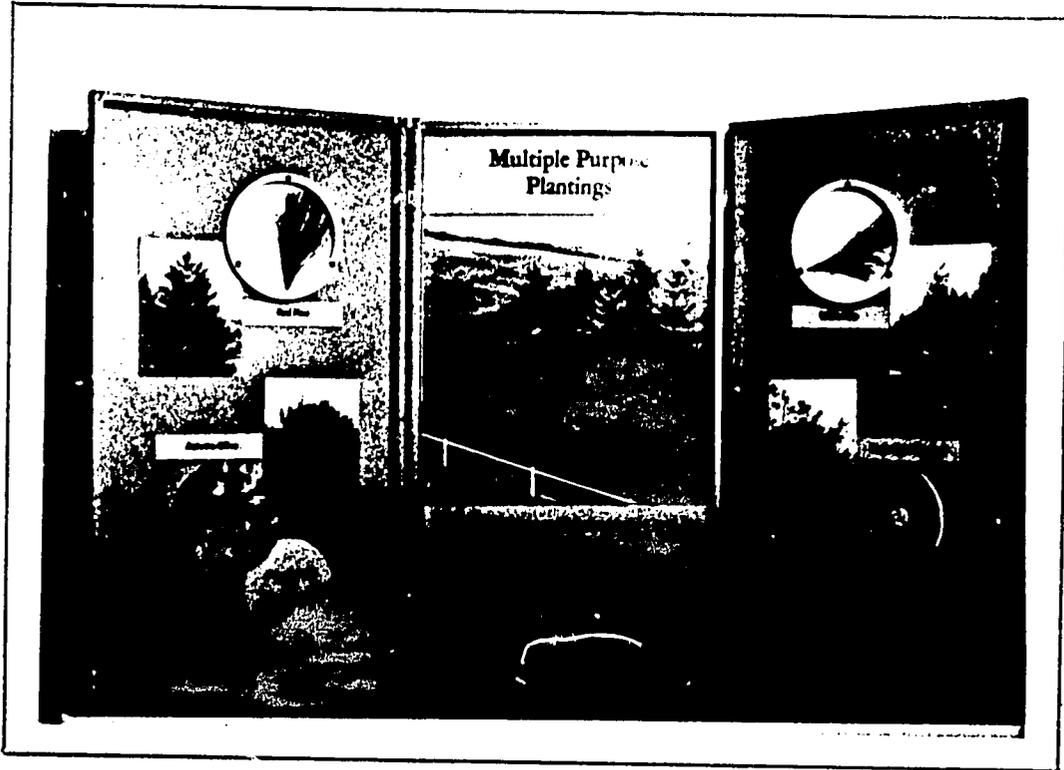


CORN GRAIN YIELDS AS INFLUENCED BY RATE OF FALL-APPLIED ANHYDROUS AMMONIA AND N SERVE (0.5 LBS. A.I./ACRE).

PORTABLE DISPLAY PANELS



PORTABLE DISPLAY PANELS



APPENDIX D

Pilot Cases and Plans for Developing
Linkage Concepts

PILOT CASE 1

A SYSTEMATIC APPROACH FOR DEVELOPING EXTENSION PUBLICATIONS

OBJECTIVE

The major objective of this system is to organize the research resources of IUTAD in a manner that will provide a linkage between the University, the Regional Extension Service and the people of the Tras-os-Montes region. The final result will be a system capable of extending and sharing information and knowledge while at the same time amplifying the communication and continuity of contact between all entities.

The objective will be accomplished by utilizing the concept of obtaining the maximum output from minimum input in developing a system that will provide extension agents with the greatest amount of needed information from the limited human and monetary resources available at IUTAD and in the region.

METHOD

Use interagency planning in selecting, writing, printing and distributing extension publications.

It will be important to set, and abide by, target dates for the completion of each of the following steps. A procedure should be created that will assure that the preparation, printing and distribution of publications will not be interrupted or halted because one or more individuals have not completed part of a step.

When the target date for a step arrives, the existing information on hand should be assembled and processed regardless of whether or not responses are lacking from departments, staff or agents.

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PROCEDURES

Step 1: The Editorial Committee makes a request for the IUTAD staff to prepare a list of topics that they think would be suitable for developing into short (4-6 pages) extension publications.

Each department to select topics based on research results and information that is known to exist.

Step 2: The Editorial Committee assembles a list of the topics suggested by the IUTAD staff and sends it to Tras-os-Montes regional, zone and local extension office. (A copy of the list also distributed to IUTAD staff for informational purposes.)

Request each specialist and extension agent to add to the list topics where they feel information is needed but currently inadequate.

Specialists and agents to return their list to the Editorial Committee at IUTAD.

NOTE: A reminder should be sent to the regional and zone offices two weeks prior to target date.

Step 3: A master list of all topics (IUTAD, specialist and agent suggestions) is assembled by the Editorial Committee and distributed to specialists and agents with a request for each topic to be prioritized into categories, i.e., 1--very useful, 2--medium useful, 3--somewhat useful, 4--of very little use, and 5--will not be used at all. (Again an information copy should be sent to IUTAD staff.)

Some provision should be made to identify each response by region and special interest.

Prioritized lists to be returned to the Editorial Committee--don't forget the reminder two weeks prior to target date.

Step 4: The Editorial Committee assembles a master prioritized list of topics and works with IUTAD staff in preparing a calendar with target dates for completion of each publication (topic).

Publications may be prepared by joint authors either within or outside of IUTAD but be alert to the possibility of extensive delays if too many authors are involved.

Distribute list of topics and calendar to specialists and agents. An added incentive for the author to fulfill the writing obligation.

Step 5: Writing Process

- Author(s) contact Editor in TLRC to discuss and establish objectives of the publication.
- Preliminary draft prepared.
- Review:
 - At least one other staff member (IUTAD)
 - Regional Extension Specialist
 - Local agent and perhaps a farmer also
- Preparation of final draft.

Step 6: Printing

- How many copies will be needed
- Determine who will pay for labor and materials

Step 7: Distribution of printed publications

- IUTAD
- DRTM
 - Regional Office
 - Specialists
 - Local extension agents through zone office
 - (can request additional copies)

NOTE: In the past bulk copies have been sent only to the Regional Director of Extension Services for further distribution. This is a cumbersome and inefficient procedure.

- Other

Regional Offices in Portugal
Universities and Agricultural Schools in Portugal
Libraries in Portugal
Magazines and newspapers

NOTE: Over 300 copies of publication No. 7 "Doença do Chumbo em Pessequeiros" have been distributed in December 1985 according to the above scheme.

COMMENTS:

- Avoids imbalance of extension activity within any specific department or sector of IUTAD
- Opens channels for more and better interagency communication and cooperation
- Develops a team feeling; everyone has an opportunity to participate and contribute
- Develops feedback that can be useful in research planning (DRTM and IUTAD)
- Accomplishes objective of obtaining maximum output with minimum input
- Avoids overlaps and gaps, especially between agencies
- Care must be exercised in this systematic approach for IUTAD to maintain its freedom and ability to provide other documents that may be needed by its public especially in emergency situations, or outside the region.

PILOT CASE 2

USING FIELD RESEARCH SITES FOR EXTENSION TRAINING PURPOSES

Most of the field research conducted by the IUTAD staff and a substantial part of that conducted by DRTM personnel is located away from Vila Real or Mirandela. Some of these locations could serve as excellent field laboratories for training extension agents, specialists and, in some cases, farmers as well.

Following is a description of key mechanisms which would facilitate the use of experimental sites for educational purposes.

1. *Preparation of Lists of Research Projects*

Administrators at IUTAD and DRTM should designate a staff member to prepare a list (annually) of field research projects currently being conducted by staff at their respective institutions. To assure that information is uniform, forms such as that on page D-7 should be provided to each person that has research projects. Completed forms should be returned to IUTAD and DRTM representatives by mid-December.

NOTE: an appropriate representative for IUTAD would be the Director of the Center for Regional Development Studies and for DRTM it would seem that the appropriate representative would be the Regional Sub-Director; both are members of the Agricultural Activities Coordinating Group (GCA) charged with putting into action common programs for agricultural development in the region.

2. *Lists to DRTM Extension Training Coordinator*

The representatives of IUTAD and DRTM should forward a copy of the list of research projects to the Regional Extension Training Coordinator by January.

3. *Selection of Projects Suitable for Extension Training*

The Regional Coordinator, with assistance and advice from sources such as zone administrators, agents and specialists, will select one research site per zone that would be suitable for training sessions for agents and others. In some instances one site might serve for two or more zones.

4. *Contacts with Research Project Leaders*

After the ten locations of research projects have been chosen, the Training Coordinator should contact the research leaders of the projects and arrange a schedule for one or more visits to each project to conduct a training session covering that project. These schedules should be arranged by February to assure that sessions can be conducted at the most appropriate phase of the project when the most teaching can be accomplished. Timing of sessions can be critical for both crops and livestock projects.

5. *Diagnostic Practice*

Each research leader should attempt to schedule training sessions at their projects when there would be the greatest opportunity to identify problem conditions that might exist in the project.

EXAMPLE: Disease, weed or insect problems in fieldcrops. This could be considered in the same manner as grafting and pruning demonstrations and exercises.

6. *Future*

Annual one or two day training sessions alternating between the IUTAD and DRTM centers could be either an extension of this concept or an occasional alternative. These would be more technically oriented than the traditional "Farm Day" program.

RESEARCH PROJECT INFORMATION

PROJECT TITLE: _____

INSTITUTION: DRTM _____ IUTAD _____ : DEPARTMENT: _____

PROJECT STAFF: _____

CONTACT PERSON: _____
Address: _____
Telephone: _____

LOCATION (S) OF PROJECT: _____

OBJECTIVE OF PROJECT:

Note: Similar to objective statements in World Bank Integrated Rural Development Projects.

PILOT CASE 3

USING REGIONAL PROFESSIONAL TRAINING CENTERS TO DEVELOP
LINKAGE CONCEPT BETWEEN IUTAD AND DRTM

The five Regional Professional Training Centers mentioned in Appendix A can serve in two major ways for developing linkages between IUTAD and DRTM. These are: 1) classroom training for extension agents and 2) use of land and livestock for research and/or demonstration.

Classroom Training

As soon as the list of extension agent training topics for the zones in the region has been selected (quarterly or annually) the Regional Extension Training Coordinator should contact either the Director of the Center of Studies for Regional Development or the Head of TLRC at IUTAD. Together they would review the subject matter areas involved and determine what and how much assistance in the training program would be needed and could be provided by the IUTAD staff. The Training Coordinator would then contact the IUTAD staff members individually to solicit their cooperation and work out specific schedules.

It is well to note that all five of the training centers are within two-and-one-half hours travel time from Vila Real. Therefore, 13-14 hours of training could be accomplished in a two day period with staff members and extension agents being away from their offices only one night.

Use of Training Center Facilities for Research
and/or Demonstrations

The IUTAD and DRTM research staff should develop cooperative research projects at the Centers where land and/or livestock is available. Demonstration projects are also a definite possibility.

Advantages of expanding the field research at these centers are as follows:

- Provides additional (needed) locations for field experiments.
- Greater control over experiments than on farmer fields and thus a lower attrition rate due to unforeseen causes.
- Local labor available to perform certain tasks during the season, thus eliminating trips that the researcher would have to make.
- In certain instances the research project could also serve as a field laboratory and thus provide extension agents, specialists and farmers with opportunities to obtain some valuable "hands on" experience in crop and/or livestock production.
- On occasions, one trip could serve a dual purpose, to gather research data and to hold a training session.

PILOT CASE 4

SUMMARIES OF IUTAD'S STUDENT FIFTH YEAR RESEARCH PROJECTS

Students are required to prepare "special problem" reports during their fifth year at IUTAD. Topics are selected within the students' option and require extensive data gathering and summarizing. Most of the reports cover some phase of agriculture in the Tras-os-Montes region. Students often request, and receive, assistance from local extension agents in the data gathering process.

Currently little or no use is made of these reports because they are quite voluminous in nature (50-80 pages) and only 10 copies are printed.

Following are some suggestions which would increase the value and use of information in these reports.

1. TLRC, with departmental assistance, to prepare annually a list of report topics that will include: Title, department, student author, staff advisor and a short abstract. Distribution to teaching, research and extension entities in Portugal.
2. Encouragement from IUTAD administration and TLRC for staff advisors to also have students prepare an "extension style" condensed version of their report (4-6 pages).
3. TLRC to prepare an outline for the student to use as a guide for preparing the condensed version of the report.
4. The student to meet with the TLRC editor to discuss writing techniques to use in preparing the summary.
5. TLRC prints and distributes copies of the summary as follows:
IUTAD - 15
 5 - Student
 5 - Department library of the student
 4 - Documentation Center, Central library
 1 - Coordinator of Center for Studies of Regional Development

DRTM - 15

- 2 - DRTM central office at Mirandela
 - 3 - DRTM Regional Extension Training Coordinator at Vila Real
 - 10 - One to each of the 10 zone extension offices for circulation to local extension agents and then filed at the zone office.
6. An additional step in this sector that would further reinforce the IUTAD/DRTM linkage would be for the Director of the Center for Regional Development Studies (CEDR) to develop through both entities a "pool" of topics from which the students could choose for their fifth year study project. The list of topics should be based upon a consensus of regional needs. Topics on the list could also serve as a source of ideas for staff (IUTAD and DRTM) research projects.

Anticipated Effects

1. Additional information to increase the technical knowledge of the extension agents in the region.
2. Further develop the practice of circulating pertinent information within zone offices.
3. Increase the information dissemination from IUTAD with a minimum input of staff time.
4. Provides students an opportunity to practice non-technical writing.
5. Gives students an additional contact with the "Extension Concept" before their graduation from IUTAD.

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PILOT CASE 5

DEVELOPING VIDEOTAPE PROGRAMS

Several of the IUTAD staff members have expressed interest in developing videotape material to use in their classroom teaching programs. Such material would also be suitable for extension training sessions with little or no modification. They lack experience in preparing videotapes and do not realize the amount of time and effort required on their part to make a tape that would be suitable for teaching purposes. It is not expected that material would need to be of professional quality, but poor quality material would not serve the purpose and students would have a negative reaction to their use in teaching situations.

The IUTAD Student Association has obtained a video camera and cassette recorder from outside sources and has produced (filmed) short segments which instructors have used in classes. This consultant did not have the opportunity to view any of this material but it was reportedly more of a practice exercise. Obviously much practice will be necessary but plans also must include preparation of programs more permanent in nature.

Minimal, but adequate, videotape equipment exists in the A-V section of the TLRC for producing programs for instructional purposes. Included are: 1) Video camera (color); 2) video cassette recorder-player with some editing capacity; and 3) TV monitor. Both A-V staff members attended a television workshop in Lisbon in 1979 that included some instruction on preparing videotapes. Currently the equipment is in "storage" and the staff members have had very little opportunity to develop any competency in preparing material.

Information has been obtained about the availability of agricultural videotapes and training opportunities currently available in Lisbon. One or both of the A-V staff members should attend a videotape workshop to attain a level of knowledge competency

to guide IUTAD staff in preparing videotapes of adequate quality for teaching purposes.

The Portuguese television station RTP worked with IUTAD genetics professor, Henrique de Pinho Guedes Pinto, in preparation of a 55-minute videotape on Triticale. Since this tape was prepared for public television viewing, it is a professional quality tape. Because of its comprehensive nature, it is suitable for classroom teaching, as is, in two segments although most instructional tapes should be much shorter (7-10 minutes maximum time).

The table below provides a list of potential subject matter topics which are specifically suitable for videotape programs which could be prepared either jointly or separately by IUTAD and DRTM. Since not all staff members were contacted by this consultant, there may be other topics equally appropriate.

SUGGESTED SUBJECT MATTER TOPICS FOR VIDEOTAPES

<u>Topic</u>	<u>Primary Institution</u>	<u>Department</u>
Animal Diseases	IUTAD	Animal Science Animal Health and Hygiene
Plant Production	IUTAD	Plant Protection
Forage Production and Management	IUTAD	Plant Sciences and Animal Sciences
Soil Sampling and Testing	IUTAD	Geosciences - Soils
Performance Testing of Beef Cattle	IUTAD	Animal Science
Mechanical Renovation of Vineyards	IUTAD	Plant Sciences (Agricultural Engineering)
Construction and Operation of Milking Parlors	DRTM	
Pruning of Fruit Trees and Grapevines	DRTM	
Grafting of Grapevines and Fruit Trees	DRTM	
Renovation of Traditional Irrigation Systems	DRTM	

Both TLRC and IUTAD personnel need to move gradually and carefully into the process of making videotapes. Following are some suggestions on procedures for the A-V to establish that should assure the establishment of an effective videotaping program at IUTAD and also have the potential of including DRTM personnel in the planning, preparation and utilization of material.

1. Prepare and circulate to IUTAD staff and DRTM Extension Training Coordinator a list of videotapes (agricultural topics) produced in Portugal. Contact all Portuguese A-V firms that produce or sell videotapes. Arrange for staff to preview tapes that they think may be of interest to them. If material is suitable then arrangements could be made to purchase a copy.

NOTE: Due to ease of copying tapes, it may be difficult to make arrangements for previewing, but it is also risky to buy material without knowing the contents. There are advantages and disadvantages for purchasing ready-made tapes so the potential needs careful consideration.
2. Additional videotape training is needed for the two A-V staff members in TLRC. Administration at IUTAD and TLRC should make arrangements for this as soon as possible. There is a possibility that training funds would be available through the PROCALFER program.
3. Organize and conduct a videotape seminar for IUTAD staff, with an invitation also to the DRTM Extension Training Coordinator. The seminar would cover what can and what cannot be done with videotapes.
4. Prepare a guide for staff to use and follow in working with A-V staff in planning and making a videotape in their subject matter area.

APPENDIX E

Report Summary Outline for December 5
IUTAD Staff Seminar

REPORT SUMMARY OF SHORT-TERM ADVISOR FOR IUTAD
Clifford Spies, Associate Professor, Purdue University,
West Lafayette, IN USA

Prepared for IUTAD Staff Meeting, December 5, 1985

A. INTRODUCTION

The advisor has served as liaison between IUTAD/Regional Agricultural Services of the Portuguese Ministry of Agriculture and IUTAD's Teaching Learning Resource Center (TLRC).

The assignment included:

1. Review the extension services provided by and through the Regional Agricultural Services for the Tras-os-Montes e Alto Douro region.
2. Review the extension services provided by IUTAD.
3. Identification of areas in which technical expertise, information, technology development/adaptation is, or is likely to be, present at IUTAD and which needs to be extended.
4. Analysis of the channels and methodologies whereby information and technology can be passed through the TLRC to local extension agents and on to individual farms and farm groups.
5. Identification of specific actions that seem to be necessary by IUTAD and by the Regional Agricultural Services, and jointly, in order to create effective service-oriented linkages between the technical resources of IUTAD and the field extension knowledge requirements.
6. Make specific recommendations to begin implementation of these actions.

7. Identify and describe several specific pilot cases which can be used to test, demonstrate and help develop the initial linkage concepts and develop specific plans for those cases.

B. DISCUSSION

1. Extension Services of DRTM
 - a) Training Courses for Young Farmers
 - b) Training and Visit Scheme
 - c) Special Programs
 - Milking Parlors
 - Renovation of Irrigation Systems
 - d) Extension Agents and Regional Specialists
2. Extension Services of IUTAD
 - a) World Bank (PDRITM) Project Reports (Seminars)
 - b) Rural Extension Course
 - c) Professional Improvement Courses (UNESCO)
 - d) Activities of Individual Staff
 - e) Support Services
 - Animal Disease Laboratory
 - Soil and Plant Analysis Laboratory
 - Wine Quality Testing
 - Plant Disease Diagnosis
 - Animal Production
3. Areas of Expertise at IUTAD
 - a) Animal Production--Sheep, Goats, Performance Testing
 - b) Crop Production--Cereals, Forage Corps including pastures
 - c) Vegetable and Fruit Crops
 - d) Plant Protection
 - e) Soil Fertility
 - f) Management and Marketing
 - g) Irrigation
4. Channels and Methods for Passing Information and Technology Through TLRC
 - a) Publications
 - b) Slides
 - Diazachrome
 - Signs
 - Techniques
 - c) Acetate Overlays
 - Quality
 - Quantity Purchase
 - d) Charts and Signs
 - e) Portable Display Panels

- f) Videotapes
 - g) Audio-Tutorial Services
 - h) Seminars-Workshops
 - i) Budgeting and Financing
5. Identification of and Recommendations for Specific Action
- a) Complete the Staffing of TLRC at IUTAD
 - b) Full Staff of Specialists in Region
 - Permanent Status
 - Avoid Resignations
 - Joint Appointment?
 - c) Class Hours of IUTAD Staff Scheduled Farther in Advance
 - d) Develop Mechanism for Extension Specialists to Pursue Graduate Work at IUTAD (MS Level)
 - e) Increase the Effectiveness of Agent Training Programs
 - Use region training centers to maximum extent
 - Develop mechanism permitting extension agents to take undergraduate courses at IUTAD--audit vs credit
 - Decrease the number of cancellations of scheduled training sessions
 - Use research plots in region more intensively for field training of extension agents
 - (f) All--Honor and Live up to a Commitment
6. Identify and Describe Several Pilot Cases
- a) Systematic Approach for Developing Extension Publications
 - b) Use of Regional Training Centers for Extension Agent Professional Improvement
 - c) Use of DRTM and IUTAD Field Experiments for Extension Agent and Specialist Training
 - d) Topics Suitable for Videotaping

SUMMARY

Effectiveness of TLRC

Develop Closer Communication Between IUTAD/DRTM

IUTAD Has Much Information of Value to Extension and TM

Level of Knowledge of Extension Agents Must be Raised

Greater Evidence of Desire for Cooperation at Local Levels than at National and Regional Levels

APPENDIX F

Weekly Itinerary

WEEKLY ITINERARY
August 16 - December 12, 1985

Week 1 -- August 16-17

Travel from West Lafayette, IN to Indianapolis, New York (Kennedy Airport), Lisbon and Vila Real, arriving August 17 at 7:30 p.m.

Week 2 -- August 19-24

Meetings with Prof. Jose Torres Pereira, Portuguese Project Coordinator at IUTAD. Meetings with Reitor Fernando Real and Vice-Rector Joaquim Lima Pereira, IUTAD. Interview with Virgilio Alves, Zootecnia and visit a local community near Vila Real to observe research work. Begin reading annual reports of IUTAD's Rural Development research projects (World Bank Projects).

Week 3 -- August 26-31

Interviews with Fernando Martins, Fitotecnia, and Jorge Azevedo, Zootecnia, and one day trips with each to visit their research projects in the region. Continue study of Rural Development Projects, comparing project proposals with annual reports of first year's results and becoming familiar with project budgets.

Week 4 -- September 2-7

Meet with Artur Cristovao to review objectives of consulting assignment. Study material he provided to become familiar with Regional Extension Service, course material and extension activities at IUTAD and report of 1981 Portuguese seminar on Rural Extension. Assist IUTAD's Irrigation staff with preparation of annual report material.

Week 5 -- September 9-14

Spend day with local extension agent observing farm visit process and community activities (local livestock fair). Review laws establishing extension (National and Regional) responsibilities. Interviews with IUTAD Soils staff, Joao Coutinho and Ester Portela. Attend report sessions of IUTAD's Agricultural Engineering staff research projects funded through GTZ (German) sources.

Week 6 -- September 16-21

Review and study IUTAD's students fifth year research project reports (special problems) and discuss with Vice-Reitor methods for making extensive use of report conclusions within the University and outside through Regional Extension staff.

Interview with Afonso Martins, Soils, concerning research activities and potential usefulness to extension. Visits to local communities to observe renovation of traditional irrigation systems. Begin developing proposals for potential linkages of IUTAD/TLRC/DRTM.

Week 7 -- September 23-28

Interviews with Carlos Abreu, Plant Protection, and Eduardo Rosa, Fitotecnia, to discuss their research and application to extension. Meet with Cristovao to discuss plans for using extension publications as a means of developing and strengthening linkages between IUTAD and DRTM.

Week 8 -- September 30 - October 5

Interviews with DRTM Director of Extension Services, Fernando Madureira, and Extension Training Coordinator, Graca Madureira, to obtain information about regional extension programs and activities. Visit to one of DRTM's Regional Training Centers for farmers and extension agents. Interview with Orlando Almeida, Zootecnia, concerning veterinary activities in the Tras-os-Montes region. Meet with Reitor Real to review progress on assignment objectives.

Week 9 -- October 7-12

Interviews with Lopes Gomes, Forestry, and Nuno Moreira, Fitotecnia, to discuss research and extension activities. Travel to Mirandela for meeting with Antonio Manso, Director, DRTM. Visit installations of limestone quarry near Vila Real (part of PROCALFER project). Meetings with Cristovao to discuss organization and operation of TLRC.

Week 10 -- October 14-19

Interviews with Antonio Machado, Fitotecnia, to discuss procedures for publication of extension-type leaflets. Interviews with Teles Oliveira, Fitotecnia, and Henrique Guides Pinto, Biology, to discuss their research projects and extension activities. Interview with Alberto Cardosa about interest in extension and TLRC activities. Meet with PROCALFER Research Review group.

Week 11 -- October 21-26

Meetings with Extension Publication Review Committee and audio-visual section of TLRC and Artur Cristovao. Begin preparation of material for Pilot Case #2. Prepare seminar outline and other material for seminar announcement.

Week 12 -- October 28 - November 2

Travel to Alto Douro region to inspect vineyard renovation projects with Bianchi de Aguiar, Fitotecnia. Travel to

15

Montalegre to attend young farmer training session--one of DRTM's extension training programs. Work on report material.

Week 13 -- November 4-9

Meet with DRTM Regional Extension Training staff to learn about how training programs are selected and conducted. Provide suggestions to PROCALFER staff on preparation of extension publications on limestone demonstration project data. Meet with IUTAD (TLRC) Editorial Committee to discuss reorganization.

Week 14 -- November 11-16

Work with audio-visual section of TLRC on preparation of slides and acetate overlays. Meetings with Reitor Real and Project Coordinator Jose Torres Pereira to review assignment progress. Continue preparation of report.

Week 15 -- November 18-23

Continue work on report. Prepare material for seminar. Meeting with Cristovao and Vice Reitor to discuss TLRC operations and functions.

Week 16 -- November 25-30

Discuss future activities of TLRC with Cristovao. Complete report and work on revisions. Work with audio-visual staff on preparation of transparencies using enlargement techniques.

Week 17 -- December 2-7

Preparation of seminar material and present staff seminar. Work with director of soil testing laboratory on preparation of information to accompany computerized soil test reports and fertilizer recommendations. Final meeting with Vice Reitor, Project Coordinator and Head, TLRC.

Week 18 -- December 9-12

Complete report revisions. Debriefing session with USAID in Lisbon on December 10. Returned to U.S. on December 11 and from New York to Lafayette on December 12.