

END-OF-TOUR REPORTMAR 24 1969
INTERNATIONAL
AGRICULTURAL PROGRAMS
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. USAID-Wisconsin Contract AID/1a-147

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This end of tour report covers the period January 25, 1967 to June 20, 1969 during which time I served with the USAID-Wisconsin contract at the Universidade Federal do Rio Grande do Sul as Chief of Party and Agronomy specialist.

I. BASIC ASSIGNMENT

Responsibilities of this staff member have been to

(1) serve as the administrative officer and coordinator of the Wisconsin Contract. The general objective of the Contract is to provide assistance to the Universidade do Rio Grande do Sul in building active and strong programs of teaching (principally post graduate instruction), research and extension. The ultimate goal of the program is to assist the Universidade make a meaningful contribution to the agricultural development of the state and country by training Brazilian specialists through providing research information which may assist agricultural and economic development and by distributing this information through effective extension programs.

(2) assist in the continued development of effective programs of graduate teaching, research and extension in the crop sciences (forrageiras and fitotecnia) at the Faculdade de Agronomia e Veterinária of the Universidade and assist in the interpretation and integration of these programs into the on-going programs of the faculty. The program is designed to produce crop scientists with advanced and also practical training who can lead the agricultural development of the state and country.

(3) assist in the coordination of University with other agencies having the same goals in order to achieve maximum development of the state's agricultural resources.

(4) help in the development of the University experimental farm, Estação Experimental de Agronomia, located about 25 miles west of Pôrto Alegre in the município of Guaíba.

II. GOALS AND TARGETSA. Post Graduate Course Development

Goals and targets were to:

1. Continue development of a permanent structure for the post-graduate courses within the University.
2. Gain official recognition for the post graduate courses within the University and MEC.
3. Place funding for the post graduate courses on a more firm basis within the University structure. University funds will be used with the approximately Ncr\$ 150.000,00 now received annually from outside sources.
4. Continue the development of an effective and well-trained graduate faculty.
5. Concentrate on improvement of the quality of the post graduate courses and to place them on a firm foundation as the project begins phase out activities.
6. Continue the integration of post graduate teaching into the on-going activities of the faculty.

B. Crop Science Sectors:

Goals and targets were to:

1. Continue the development of the program in Forrageiras through placement of emphasis in the production and management area.
2. Develop an effective post graduate training program in Fitotecnia (crop production).
3. Develop an effective course in (a) the Fundamentals of Crop Production and Management and (b) assist in the development of an effective course in Crop Production Practices.
4. Assist in the continued development of needed research in forrageiras and fitotecnia, an environment conducive to research and the acceptance of research as a major role for staff members in crop science. This research will be carried on through graduate student research projects and by encouraging adoption of research projects by staff members in the FAV.
5. Continue assistance to the introduction and evaluation program in order to select annual and perennial forage species adapted for the various climatic regions, soil conditions and uses.
6. Develop an active and effective extension program in crop science that is interdisciplinary in nature, in tune with the problems of the state and encourages inter-agency cooperation.

III. STRATEGY

The basic strategy in post graduate course development was to continue work with Directors of the FAV and FCE, the Reitoria and Brazilian counterparts (1) for inclusion of the post graduate courses as a basic part of the University structure, (2) to include financing for the post graduate courses in the University budget, and (3) to encourage appointment of qualified Brazilian personnel to positions within the faculty of the post-graduate courses and key positions within the new structure. Work was continued with the respective faculties and Brazilian counterparts to continually up-grade standards in the post graduate courses and to continue development of Brazilian leadership within the faculties.

In the crop sciences the strategy was to (1) expand the introduction and evaluation programs in forrageiras and grain crops, (2) substantially expand work in the area of crop production and management, (3) begin post graduate instruction in crop production and management and (4) begin post graduate instruction program in fitotecnia.

In extension the strategy was to develop extension programs in forrageiras and fitotecnia in order to train agronomos and encourage agricultural development of the state based on greatly improved and more efficient crop production.

IV. SPECIFIC RESULTS

A. Post graduate course development:

Activities in post graduate course development has resulted in:

1. Assurance from the Reitoria that a statute has been prepared giving official recognition to the post graduate courses and including them in the University structure. It must still be approved by the University Conselho.
2. The full-time appointment of an additional 5 new faculty members to the post graduate faculties in 1968.
3. Preparation with the assistance of the Brazilian Coordinator and Directors of the FAV and FCE a long-term staff development plan for the post-graduate courses including the appointment of 25.5 full-time equivalent positions within the faculties during the next three years. Approval was gained from the Reitor for appointment of 11 full-time and 3 half time positions in 1969.

4. University acceptance of a portion of the budget for the post-graduate courses in 1969 and assurance from the faculties that the total budget will be included within the respective faculty budgets for 1970.
5. Development of a post-graduate faculty organization and structure for the crop sciences, soils, veterinary medicine - parasitology and agricultural education sectors.
6. Development of an extension conselho within the FAV to develop and coordinate extension activities within the faculty and coordinate with other agencies working in this area. The staff member served as a consultant to this group.
7. Approval and acceptance of plans for a building to house staff members in the post-graduate course of the FAV.
8. Expansion of post-graduate training into veterinary pathology which will be administered through the animal production sector.

B. Crop Sciences

Activities in crop science area have resulted in:

1. Teaching and research

- a. Establishment of post graduate instruction in fitotecnia with 4 students enrolled and completing the course requirements in the first year. The sector is being expanded to include entomology in 1969. Thirteen students have been selected in crop sciences in 1969.
- b. The appointment of four new staff members to the post graduate faculty in forrageiras and fitotecnia during 1968 and 1969.
- c. Development of a post graduate course in Fundamentals of Crop Production and Management. The course was taught to an average of 14 students each year. The course notes were translated into Portuguese and are being printed for future use.
- d. Development of a course in Crop Production Practices by Brazilian staff in fitotecnia and the staff member. The course was taught to 11 students in 1968. Class notes were written in Portuguese and mimeographed.
- e. The staff member serving as the orientador for three students and giving major assistance to two additional students in fitotecnia.
- f. The staff member serving as coordinator for the faculty-student project. The project has been conducted for two years and involved assistance from nine staff members, six graduate students and six undergraduate students of the University of Wisconsin working on improvement of corn and soybean production in Rio Grande do Sul. Research has shown that population densities between 30,000 and 50,000 plants per hectare should be used in a dry year. A survey of corn and soybean fields showed that insect problems are probably more severe than diseases. A survey of insect control information was made and recommendations prepared.
- g. Initiation of research to determine the growth habits and manner of initiation of regrowth by warm season perennial species.
- h. Initiation of research to determine economic rates of nitrogen fertilization on Pangola. Pangola has great potential in the forage production program in Rio Grande do Sul. First year data indicates that the most profitable rate is near 250 kg of nitrogen per hectare. The project is being continued by Professor Saibro.
- i. Continuation of establishment studies for seeding cool-season perennials in native pastures with grass. *Mastiglyra*. A study to

Breliminary data indicates that production can be increased markedly by establishing forage in a well prepared seedbed compared to sod-seeding.

- j. Establishment of research to determine the effect of various cultural practices on the components of wheat production.
- k. Expansion of the forage introduction and evaluation program under leadership of Profs. Saibro, Markus and Barreto to include additional cool-season species and a wider range of climate and soil conditions. Plant species and variety introductions were obtained from the USDA and private industries for evaluation. The program was expanded at the University experimental farm and the state Department of Agriculture Experiment Stations at Vacaria and São Gabriel. New plantings were made at Tupanciretã, Uruguaiana and Guaíba Conde. This work includes a large alfafa variety evaluation trial.
- l. Expansion of the sorghum evaluation program with Prof. Leal and the cooperation of the State Department of Agriculture. After evaluation of the climatic and soil characteristics of various regions, it was determined that sorghums would have great potential for the production of energy in the western and southwestern regions of the state, where droughts are more frequent and severe. Data indicates that sorghums will produce up to 50 percent more than corn in these regions. Research to determine forage production from forage sorghums under various systems of management was expanded under direction of Prof. Saibro.
- m. Continuation of the oat improvement and evaluation program in cooperation with federal, state, university personnel and the Quaker Oats Company. Several selections from advanced lines having rust resistance have been selected for yield testing. The cooperation and interest of Prof. H. L. Shands Agronomy Department, University of Wisconsin who has served as a consultant in 1965 and 1967 has been very important. The enthusiasm and leadership of Ruben Dischinger, agronomist for Produtos Alimentícios Quaker S.A. has been of great value.
- n. Enlargement of cooperative research on rice production and improvement between the FAV and IRGA. Seed of several new lines of rice was obtained and supplied to the institute.
- o. Initiation of work on corn improvement with a commercial concern and the DFV-SA by supplying seed of several new lines from the U.S.
- p. Expansion of the working library by obtaining approximately 25 books and journals for use in post-graduate course and normal course instruction. Preparation of a set of slides on cultural practices in crop production is in process.
- q. Preparation of a paper with Prof. Erven on Economic Evaluation of Pasture Improvement in the Vacaria Area.
- r. Initiation of research to determine fertility needs of alfafa and birdsfoot trefoil with Prof. Ludwick.
This work while not entirely satisfactory has resulted in the initiation of additional work on fertilization. That is providing much needed information to solve alfafa establishment problems.
- s. Preparation in cooperation with Brazilian staff of a long-term research proposal in forages for the state of R.G.S. as a cooperative program with the state Secretary of Agriculture.
- t. Provided equipment for a seed technology laboratory to be used for teaching in seed quality and production.

2. Extension

- a. Evaluation of the 75 pasture improvement demonstrations in the state by Prof. Saibro and selection of those especially suited for result demonstration use.
- b. Initiation of an extension program with Prof. Saibro in cooperation with ASCAR. A field day was held at Camaquã with 40 fazendeiros and técnicos present.
The program should be continued.
- c. Assisted three young Brazilian staff members develop and carry out in-service training for agronomos in eight regions of the State. Training in production and management practices for improved production of forages and grain crops was presented to over 100 agronomos from ASCAR, SA, MA, IRGA, Prefeitura, Banks and Cooperatives. Concentrated training will be carried out in at least 6 areas of the state in 1969 utilizing the assistance of IPEAS-MA.
- d. Preparation of a bulletin on Ten Steps for Increased Corn Production which was the basis for training in corn production. The bulletin was distributed to all ASCAR offices in the state. Three additional bulletins are now being prepared on wheat, soybean and forage production by Brazilian staff members.
- e. Preparation of publicity articles on economics of pasture improvement by introduction of cool-season species.

3. Staff training.

- a. Assisted two Brazilian professors secure advanced study in the United States; developed plans for 4 additional participants to study in the U.S. under this contract.

V. SPECIAL OR UNUSUAL PROBLEMS

The major problems encountered were related to uncertainties of funds for program operation and staff development and University reorganization. They include:

- A. Local funding for 1968 was cut from the University budget due to severe budgetary cuts. This resulted in most of the operational funds coming from past grants from CONTAP and a small grant for 1968. CONTAP and University regulations resulted in the project being in debt for over \$ 10,000.00 for a three month period in 1968.
- B. Local funds for 1969 were cut from the University budget by either the Ministry of Planning or Ministry of Education. As a result the University was asked to cover as much of the budget as possible from funds having stipulated uses. As a result, the contract will receive only about 65 percent of its budgeted request for 1969 from University sources. Project activities will be reduced unless additional funds are obtained from outside sources.
- C. Uncertainty of AID funding and staff policy has made future long range planning difficult. Severe staff reductions on the national level have resulted in contract staff reductions and starting of phase-out operations sooner than originally planned.
- D. University reorganization makes planning within the existing system difficult and uncertain. The University has been slow to officially recognize the post graduate courses. Also it has been difficult for the contract to make definite contacts within the Reitoria and University Administration. The appointment of a Coordinator for Convenios has

- E. There is a lack of cooperation between the FAV and IEPE-FCE, the two entities with which the contract works. Efforts to initiate cooperative projects have not helped the situation and have increased the provincialism. However, it must be realized that the two faculties are separate entities within the University. Under the present structure they can not be managed as one unit. But interdisciplinary research and projects should continue to be encouraged. The separation of sector budgets should help to improve relations between the entities.

VI. RECOMMENDATIONS

Post graduate course development

A. Continued emphasis must be given to the establishment of a firm base for the post graduate courses of UFRGS. This is essential if the contract is to fulfill its goals of well developed and active post-graduate instruction, research and extension programs under Brazilian leadership and direction at contract phase-out. It is quicker and cheaper to train students here than to send them to the U.S. They also obtain the benefit of achieving their training under conditions with which they are familiar and in which they will continue their work. Also the graduate research can be designed to solve local problems and develop research capabilities within the University. Specifically:

1. The University should set up a definite structure for administration of the post graduate courses within the Reitoria where funding requests can be directed and policy determinations made. This should be done in 1969 in order to develop the structure before phase out.
2. Long range planning by the University should be required prior to signing of the project agreement. Contracts should be made directly with the University as well as the contract staff. The contract group can assist in plan development. Considerable lead time must be allotted to achieve this end. Considerable thought by the Brazilian coordinator and directors of the faculties will be needed.
3. USAID should place its support behind the development of the "centers of excellence" using the present university contracts as centers for providing agricultural and economic training. Other Brazilian Universities should be encouraged to utilize these centers for training of Brazilian staff.

B. USAID should work in cooperation with the local University contracts to obtain local funding for project activities. The MEC and the Minister of Planning must be informed of the programs now being conducted at the four Universities, their potential value to the Country of Brazil and appraised of the needs for adequate post graduate instruction and research. It is difficult for the University to obtain sizeable budgetary allotments from MEC for these programs if MEC and the Minister of Planning are not informed. USAID should strongly consider adopting this educational responsibility as the national level as one of its roles. A two pronged effort on the local and the national level will assist in correcting the local funding problem in the federal universities. The recommendations made by Dr. Murdock may be one solution.

C. The possibility of channelling USAID loan funds directly into support of local projects under direction of the contract (U.S. and Brazilian) personnel should be studied.

D. All University contracts are now entering the "Phase out" period. USAID should consider using the contract coordinators in a join planning capacity, more than in the past, in order to develop programs and procedures for achieving project goals and objectives by pahse-out.

E. All parties to the contract must consider the possibility of continuing the cooperation between the UFRGS and the University of Wisconsin after "phase-out" in order to better achieve the goals and objectives set forth. The parties should be encouraged to develop a means for continuation of the cooperation between the Universities in order to insure continued technical development of the sectors now receiving technical assistance under the contract.

F. The directors of both faculties FCE and FAV, should consider steps to integrate the post-graduate faculties and training programs within the departments in order to continue the up-grading of undergraduate instruction. This will not only improve the quality of graduates from the University but will also permit continued improvement in the level of instruction at the post-graduate level. The FAV recently adopted the Departmental system and is making progress toward this end.

G. Resources in each sector should be evaluated as each phases-out. Limited assistance, such as through consultants, should be provided where necessary.

Crop Science

A. Emphasis should be placed on development of an integrated crop science department including forrageiras and fitotecnica and the department of defesa sanitária (entomology and pathology), with post graduate instruction expanded to all areas. This development will include continued staff development and advanced training for staff members in all areas. Post graduate training should be expanded in the areas of crop and plant physiology including weed control. A means of incorporating additional work in plant breeding and climatology may be worthy of consideration at this time.

B. Research workers within the sectors are developing additional research work worthy of publication and useful in making recommendations for agricultural development within the state. Staff members should be strongly encouraged to publish their research results and develop recommendations for use.

C. Staff members should develop a long range, far-reaching, agricultural development program for the state and tailor the research program to accomplish these objectives. This will help to make future research efforts more meaningful.

Extension

A. Assistance should be given to the extension conselho to help it develop its long range program of work and increase its effectiveness.

B. Publication facilities within the University are extremely slow, thus limiting the possibilities for publication of research results and effective extension publications. An effective publication channel is needed.