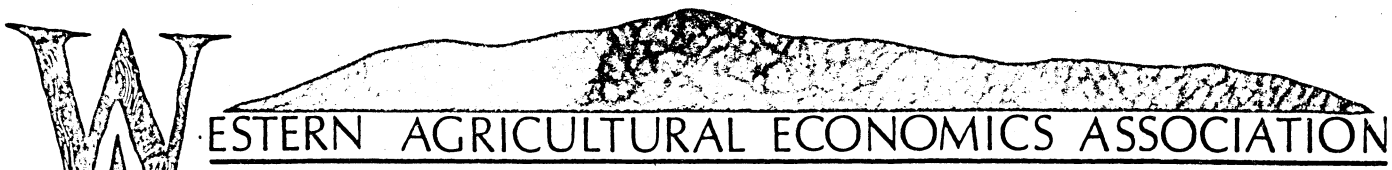

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DEVELOPING GRADUATE PROGRAMS IN AGRICULTURAL ECONOMICS: A BRAZILIAN EXPERIENCE*

Roger Fox and Elmer Menzie**

University of Arizona

A fairly common activity in developing countries during the past 10 to 15 years has been the establishment of national and regional centers for advanced training in the agricultural disciplines. This activity has been supported by the national governments involved with heavy outside support from AID and the foundations. Generally, the programs developed have emphasized training at the master's degree level and are looked upon in part as substitutes for similar training in the U.S. and other more developed countries. Support of these programs fits in well with the AID and foundation goals of institution building and cost effectiveness. The development of indigenous graduate programs is an obvious source of pride for the nations involved.

Within the agricultural economics profession, considerable attention has been given to the training of foreign graduate students in the United States.[1] However, the development of indigenous graduate programs has received much less attention. Darrell Fienup [1], in a recent paper, reviewed the development and performance of eight graduate agricultural economics programs in Latin America, three of these being in Brazil. A fourth Brazilian program, not considered by Fienup and the subject of this paper, was started at the Federal University of Ceara in 1971. This paper will 1) discuss the general setting in which the program developed, 2) review the content and operation of the program, 3) indicate some of the specific problems confronted during the first two and one-half years of the program, and 4) present some important general issues and questions raised by the Ceara experience.

The Setting – The Federal University of Ceara (UFC) is situated in Northeast Brazil. This region has a population of approximately 30 million people living in an area roughly equal in size to the State of Alaska. About 60 percent of the population lives in the rural area and produce 40 percent of the gross product of the region [4, pp. 29, 32]. The agricultural sector is characterized by low productivity and returns, dependence on subsistence and export crops, minifundia and latifundia tenure conditions, and a high degree of uncertainty due to periodic droughts and excessive rainfall.

It is in this setting that the University of Arizona initiated activities under AID support in 1964. The contract was directed towards improving the research, teaching, and extension programs of the Center of Agrarian Sciences at UFC. The University currently has about 8,600 students. The Center of Agrarian Sciences comprises five departments, 98 faculty members (87 on full-time status), and about 600 undergraduate students. Although no undergraduate major in agricultural economics is given, the general agriculture curriculum of the Center includes courses in agricultural economics, extension, and rural sociology.

The Program – Graduate training in agricultural economics has its origins in a 1969 agreement between the University of Ceara, the Bank of Northeast Brazil, and the Ford Foundation. Funds were provided for 1) two special, four-month courses in rural economics, 2) overseas graduate training of professors, and 3) acquisition of equipment and library material. The two specialization courses were offered in 1970; a total of 32 students participated. These courses were designed to provide non-degree training beyond the undergraduate level in the traditional subject matter areas.

In 1970 a plan for the initiation of a master's degree in rural economics was developed by the Department and approved at the University level in early 1971. Selection of the first class of 15 students was made in June and classes were initiated in mid-August of 1971.

The first class represented the various states of the Northeast. All but two were employed at the beginning of the course, a like number had participated in the specialization courses; nine had general agriculture degrees (engenheiro agronomo) and six were economists.[2] Those employed were on leave from a wide variety of government and quasi-government organizations.

The curriculum for the first class contained the standard courses in theory and methods offered by most U.S. agricul-

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**The authors are, respectively, associate professor and professor of agricultural economics at the University of Arizona. Both authors served as Advisors in Agricultural Economics under the University of Arizona-AID Contract LA-145, Fox from August 1970 through December 1973 and Menzie from July 1964 through December 1967.

[1]The excellent article by A.B. Lewis [3] contains a list of references on this subject.

[2]One student dropped out early in the first semester leaving 14 who eventually completed their coursework.

tural economics departments. Flexibility in the curriculum was minimal. Thirty units were required for the degree, of which six were given for a mandatory thesis. Non-credit classes were given in English and mathematics. Expected completion time for the degree was 18 months; in actuality it was almost two years before the first thesis was completed.

Some modification in the curriculum was made before the second class of 14 students started their program in January of 1973. Economies were realized by jointly offering courses with students from the newly initiated master's degree programs in economics and plant science.

Problems – Major difficulties arose relative to: 1) background of students, 2) curriculum, 3) teaching, 4) research, and 4) funding.

The problems of student background related primarily to their competence in economic theory, particularly macroeconomic concepts, and mathematics. The deficiencies in math were adequately handled by the non-credit courses. The problem of inadequate economic theory background became crucial when the theory courses were offered jointly with the Economics Department. The economics M.S. students entered the program with several undergraduate theory courses giving them a distinct advantage. Efforts to maintain working relationships between the two departments were severely strained because of this problem.

Considerable uncertainty, instability, and frenetic reaction characterized the curriculum situation. Problems arose due to lack of professors, inability to offer the electives presented in the course description, and uncertainty concerning the "best" mix of courses to be offered. A number of students felt as is often true in the U.S. that they were not obtaining the knowledge and skills needed for their employment; frequently mentioned was the lack of course material on project planning and evaluation. Because of the limited course offerings, students actually had no electives.

The use of people from outside the Department and/or the University as teachers created special problems. Courses were often cancelled because the visiting professor could not come at the desired time and class schedules were interrupted because the professor had more pressing responsibilities. Students complained of insufficient contact with Departmental faculty. Although the Department was dependent on "outside" professors for some teaching, they were generally unavailable for thesis orientation.

Problems concerning the planning and execution of graduate research projects centered on such things as the professors' lack of experience, delays in preparing project proposals, conducting field work and writing and revising theses. A few of the basic causes of delays were: 1) a failure to force the candidates to prepare research plans within a predetermined period, 2) uncertainty about the availability of funds to support certain projects, 3) restrictions on the release and use of funds, 4) candidates returning to, or accepting employment before completing their projects, 5) a shortage of qualified typists, 6) professors "sitting" on drafts of theses, and 7) computer breakdowns and inefficiencies.

Funding of the program was highly dependent upon the Bank of Northeast Brazil, Ford Foundation grants, and other contracts. Although this fact may not be considered a problem, it created attitudes that hampered the achievements of the program. There was widespread feeling that the University wasn't really supporting graduate study programs. The need for new faculty members to support the program was not recognized; the number of faculty members in agricultural economics actually decreased from 1970 to 1973. The system of evaluation and rewards for teaching and research did not recognize the extra work involved in teaching graduate courses nor the role of the professor as director of graduate research projects. Consequently, there was less than total commitment to the program. Because of the use of outside resources there was tendency for the receiving institution to become dependent on these inputs. This contributed to a feeling of impermanence about the program.

General Issues – What are the general issues and questions of importance raised by the Ceara experience? How can this experience help program advisors and administrators in planning and initiating graduate programs in developing countries?

One issue concerns the existence or nonexistence of an undergraduate program in agricultural economics. In other words, can you build a graduate program without first developing an undergraduate major? The Brazil experience indicates a positive answer. However, the lack of an undergraduate major has obvious implications for the curriculum and length of the program. The necessity of an extra semester of coursework to give the necessary prerequisites must be recognized.

In order to begin and operate a master's program with 15 to 20 students, a minimum of five, full-time professors is desirable. Depending on the other activities of the department, such as undergraduate teaching, faculty on leave for training, administrative and consulting work, etc., this number could be higher. At least one national with a Ph.D. and a strong commitment to the program is necessary. The remaining faculty core should at a minimum have recognized M.S. degrees.

While there is considerable argument over faculty training, the advantages of overseas training seem to outweigh the disadvantages. The important advantages are: 1) attainment of proficiency in English, the currently dominant language of the economics profession and the international business community, 2) exposure to and understanding of the workings of a modern university, 3) availability of specialized study programs and a diverse faculty, 4) exposure to the activities, norms and functions of professional associations such as the AAEA, 5) development of professional contacts that could lead to future exchange of ideas, backstopping and cooperative research, and 6) exposure to the structure and organi-

zation of a developed society. Countries such as the U.S. should continue to train large numbers of foreign students in their graduate programs; countries with new graduate programs should concentrate on developing well-established, high quality master's degree programs. The offering of the Ph.D. degree should evolve only from institutions that have well-established M.S. programs and a stable, experienced faculty.

When resources are limited, the parallel development of economics and agricultural economics graduate programs at the same university should be avoided. It seems more reasonable to strive for one strong, integrated department than to create two departments that result in fragmentation of resources and a base from which jealousy and rivalry can develop.

The importance of publishing the results of research needs to be emphasized. It is through publication that a large measure of the reputation and impact of the program will be established. As indicated by Fienup, the Latin American programs have in general not had a good record of thesis completion and publication [1, pp. 14-16].

In developing a new profession through graduate training, post-degree support of graduates is extremely important. The graduate must be supported with adequate job opportunities and recognition of his new capacity both in terms of rewards and responsibilities. Opportunities and facilities must be made available for continued improvement and learning experiences.

In closing, we want to make a general plea in favor of institution building programs directed towards agricultural teaching, research, and extension. The importance of investing in the human resource and in developing ecologically adaptable and economically viable agricultural technology has been clearly demonstrated [2]. Nevertheless, we sense a certain dissatisfaction with and withdrawal from the institution building concept, especially within AID. Rather than abandoning this approach, thorough study and evaluation of the experiences of the last 10 to 15 years should be made with the objectives of improving our capacity to provide this type of assistance.

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