ANALYSIS OF SELECTED ASPECTS OF INTERNATIONAL AGRICULTURE INVOLVEMENTS AT LAND GRANT UNIVERSITIES IN 16 SOUTHERN STATES OF THE UNITED STATES

By

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ANALYSIS OF SELECTED ASPECTS OF INTERNATIONAL AGRICULTURE INVOLVEMENTS AT LAND GRANT UNIVERSITIES IN 16 SOUTHERN STATES OF THE UNITED STATES

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This study is dedicated

to the late

Alhaji Adam,

my father,

Baba Gana Adam,

my brother.

Their memories will be encherished forever.

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CHAPTER I

INTRODUCTION

The United States agricultural system is one of the most advanced in the world. Agriculture created much of the capital that allowed development and industrialization.

Mostly because of education over the past hundred years, agriculture in the United States experienced the most dramatic increase in production and technology ever experienced by mankind. Through the land grant colleges, agricultural experiment stations, cooperative extension service, and vocational agriculture programs, agricultural education is a major contributor to agriculture.

Agricultural education has been primarily a domestically oriented field of specialization in the United States, with few individuals venturing on foreign assignments. Due to the challenges presented by the global agriculture today the profession is rapidly developing an international/global perspective.

International agriculture is both ways. The United States agricultural system makes it imperative for the United States to share ideas and methods in agriculture with other countries. The growing interdependence of global economy and agriculture makes it necessary to prepare Americans with global perspective. For example, American wheat farmers can be affected by climate pertubation in the Soviet Union.

The trends responsible for the global perspective include the

concern for reducing poverty through agricultural and rural development, promoting democracy and stability through development assistance projects and, also, to maintain a strong base for agricultural trade.

Statement of the Problem

The International Development and Food Assistance Act of 1975, Title XII, (PL-94-161) has provided incentives especially for the land grant institutions in the United States to expand their involvement abroad. Agricultural colleges and land grant universities are becoming increasingly involved in international activities in development and education.

The net result was that there is greater need than ever before to develop and support educational programs that will prepare today's and tomorrow's agricultural educators to meet the challenges of an increasingly changing and competitive world. The availability of up-to-date information regarding certain aspects of current and projected involvements of educational institutions in international education/development could be of considerable benefit for expanding these efforts.

Central to the problem of this study was assessing the current and future awareness, interest, nature, and extent of involvement by the agricultural education departments in international agriculture.

Purpose

The purpose of this study was to determine the degree of awareness, nature, and extent of involvement in international agriculture programs at a group of 28 land grant institutions' Agricultural Education Departments located in 16 southern states.

To increase general awareness of the importance of global agriculture, it has become apparent to understand agriculture by international perspective and involve agricultural educators.

Objectives

To accomplish the purpose of this study, the following objectives were outlined:

1. To assess the degree of awareness and interest in international agriculture in agricultural education departments at the selected land grant institutions.

2. To determine the nature and extent of past, current, and future academic and nonacademic involvement and activities by agricultural education departments in international agriculture.

3. To determine the extent to which international dimension courses are required for earning a graduate or undergraduate degree in Agricultural Education.

4. To determine the extent of agreement as to the sharing of foreign students', faculty's, or any American students' international experiences in the class at the department.

Assumptions

For the purpose of this study, certain assumptions were made. It was assumed that the importance of international agriculture for all institutions in different states were basically similar in philosophy approach and high degree of commonalities. It was also assumed that the Head of Department's awareness, interests, involvements, experiences, and objectives were the same in all agricultural education departments

surveyed. Also it was assumed that Department heads views would express the outlook of the department and the faculties.

Scope of Study

This study was limited to the agricultural education departments from the 1862 and 1890 land grant institutions in the southern region of the United States. These totaled 28 institutions and were located in the states of Alabama, Arizona, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. The survey was further limited to agricultural education department heads.

Definition of Terms

The following terms are defined to provide meaning of terms used in this study:

1. Agricultural Education Department Heads. Ninety-two Agricultural Education Coordinators and Department Heads are published in the Directory of Teacher Educators in Agriculture, 1988-1989

2. International Agriculture - This is a broad field. It encompasses the following:
   a. International agricultural development programs and agencies. These programs provide resources and technical assistance to developing countries. It includes agencies that are both public and private. These include agencies and programs such as United States Agency for Internation-

al Development; the Peace Corps program; Food for Peace (PL480); the Rockefeller, Ford, Kellogg, and Winrock Foundations; religious organizations; and international and regional banks.

b. International Education, this includes over 356,000 international students from all over the world are studying in the United States, nearly 8,000 are studying agriculture; the United States exchange student programs such as Youth Exchange Programs, faculty sabbatical leaves to teach and research overseas, the Fulbright-Hays Scholar Program of the United States Department of Education, and linkages between foreign country/university programs, unilateral, multilateral, both academic and nonacademic, with United States universities.

c. International Agricultural Trade - involves import/export of food and other agricultural raw materials. In 1983, the total United States exports was over $330 billion and imports of $365 billion worth of goods and services, of which $36 billion are agricultural exports and $16 billion agricultural imports.

d. International Agricultural Research Centers. These centers are engaged in world wide research and training programs with emphasis on food production. The centers are internationally supported by the Consultative Group on International Agricultural Research (CGIAR). The CGIAR is funded by over 40 donor countries, of which the United States contributes 25% of the funds. Others include the Food and

Agricultural Organization (FAO) of the United Nations, the International Bank for Reconstruction and Development (World Bank), and the United Nations Development Programme (UNDP). These centers are International Maize and Wheat Improvement Center (CIMMYT) - Mexico, International Rice Research Institute (IRRI) - Philippines, International Institute of Tropical Agriculture (IITA) - Nigeria, International Potato Center (IPC) - Peru, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) - India, International Laboratory for Research on Animal Diseases (ILRAD) - Kenya, International Livestock Centre of Africa (ILCA) - Ethiopia, International Center for Agriculture Research in Dry Areas (ICARDA) - Egypt, International Board of Plant Genetics Resources (IBPGR) - Italy, West Africa Rice Development Association (WARDA) - Liberia, Center for International Agriculture of the Tropical (CIAT) - Colombia, International Food Policy Research Institute (IFPRI) - USA, and International Service to National Agriculture Researches (ISNAR) - The Netherlands.

3. International Dimensions - World dimension added to existing subjects, its emphasis is upon information and change of attitudes, acquisition of skills and development of international concepts.

4. Land Grant Institutions - These are the Morrill Act universities and colleges. Today there are 71 land grant institutions divided into three general and somewhat arbitrary classifica-

tions. These include 32 state or territorial universities (1862); 24 colleges or universities separate from the state universities, and 15 institutions primarily for African-Americans (1890), known as historically black land grant institutions. Subsequent acts, such as the Hatch Act (1887), added the experiment stations, and the Smith-Lever Act (1914), added the Cooperative Extension Service and vocational education programs. The Smith-Hughes Act (1917) added the home economics and rural development programs to the land grant universities. Generally, the land grant institution (system) involves teaching, research, and extension.

5. Southern states of the United States - American Council on Education (1986) divided the United States into regions. The south consists of 16 states and furthermore divided into the southwest and the southeast. The southwest states are Arizona, New Mexico, Oklahoma, and Texas, while the southeast consists of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

6. Title XII (PL-94-161) - 1975 Legislation was the amendment to the Foreign Assistance Act (1961). This legislation provides incentives for land grant universities ($100,000 per year for 5 years to each university qualifying-matching funds) to become involved in international agriculture. Also, it created mechanisms for the United States Agency for International Development (USAID) to work together with universities and the

Board for International Agricultural Development (BIFAD), BIFAD consists of 7 members appointed by the President of the United States. The BIFAD's primary purpose is to develop linkages for the USAID and land grant universities. This legislation may be as important as the Morrill Act because of its potential of serving more people around the world.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This chapter explores several areas relevant to the study. The chapter reviews literature on the development of the land grant system, trends in internationalization of agriculture, international perspective, international dimensions, resources, and future trends in international agriculture.

The chapter also helps develop the concept for the research under the 1862 and 1890 Land Grant Institutions with implications to agricultural education and international agriculture.

Development of the Land Grant University System and the Role of Agricultural Education

History

The land grant system has rich tradition and history. To course the path for the future, it is necessary to review the past.

In the early part of the 1800s, higher education in the United States was strictly traditional, mostly religious and secular institutions, and classical subjects like latin were being taught. It had no relation to the resources of the country or to occupation and objectives of the great mass of the people, yet it was supported by both

public and private, all classes contributing to its maintenance, even though it was limited to a small group.

During 1820 through 1870, industrial conditions in the United States were reorganized. People engaged in agriculture dropped from 83% to under 48% while those engaged in manufacturing, trade, and transport increased from 17% to more than 31% (Kerr, 1931).

Agriculture, in the settled section, began to show evidence of deterioration. There was a conscious need for better training in both agriculture and industry, yet there was a lack of not only trained workers but of any type of technical or scientific training.

The old colleges did not minister to the wants of all the people; less classical and aesthetic, more scientific and practical subjects were needed.

The Farmers Convention in Illinois, in 1852, issued a resolution endorsing the Illinois Industrial University, having the common man's education Bill of Rights, inspired by the initiative of Jonathan Baldwin Turner. The plan included universities for the industrial classes in each state and the objective of the university were not only directly and efficiently to all practical pursuits and professions of life but to extend the boundaries of present knowledge in all possible practical directions.

Congress enacted the Morrill Act of 1862 to give all Americans the chance for a university education. The act focused upon higher education in agriculture and mechanical arts. These institutions came to be known as land grant institutions or state universities.

> State universities from their earliest years had purposes that were practical, scientific, economic and protective of demo-

> cratic government. They were to serve the general public that support them. (Moos, 1982, p. 30)

The Morrill Act (1862) created the land grant university system. Subsequently, the Hatch Act (1887), the Smith-Lever Act (1914), and the Smith-Hughes Act (1917) were added later on. These make up the three dimensions of the land grant university system: instruction, research, and extension service (Edmond, 1978).

The Morrill Act stated that a "leading object" of the land grant colleges "shall be to teach such branches of learning as are related to agriculture and mechanical arts."

The Hatch Act established the agricultural experiment station and provided federal grants to states for agricultural research. This research output provided the basic knowledge without which there would have been no new improvement in the program for the science of agriculture.

The Smith-Lever Act complemented the experiment stations and instruction by the addition of the agricultural extension service which aided in dissemination and application of research to end users.

The Smith-Hughes Act added vocational education, development of farm bureaus, 4-H clubs, home economics, and rural development to the land grant system.

From its inception, the land grant institution evolved distinctive characteristics: developing frontier - initiative and pioneering; growth - progress; equal opportunity for all - democracy; and helpfulness - service.

Land grant institutions have been involved in teacher education as early as 1902 in North Dakota. Michigan created a department of agri-

cultural education in 1908. The same year, legislature in Oklahoma created in the land grant college the "Chair of Agriculture for Schools" and provided that graduates from the 4-year course of the college shall be granted permanent teacher certificates (Storm, 1935).

Educators have altered instruction and curricula as the needs in agriculture and society changed.

With the increasing interdependence of the world's peoples, it became essential for educators to learn and understand the new developments.

Agricultural education has much to contribute to international agriculture because of its knowledge of the agricultural sciences, technical skills, pedagogical skills, and vocational orientations (Theummel et al., 1983).

The historic Point-four program, the Foreign Assistance Act of 1961, the International Development and Food Assistance Act of 1975 (Title XII) make it possible for universities to extend their reach around the world. Also, thousands of foreign officials and students come to work and study in the United States in land grant universities (Williams, 1979).

These pieces of legislation strengthen the capacity of eligible universities (many of which have agricultural education facilities) to participate in international agriculture and development programs.

Internationalization of Agriculture

International Trade

The United States exports the output of about 40% of total cropland (USDA ERS, 1982). The United States is the world's largest expor-

ter of agricultural products. United States share of the world's export of major farm products demonstrate her dependence on international market: wheat, 40%; feed grain, 72%; soybeans, 80%; tobacco, 20%; and cotton, 30%. Of the total value of world agricultural exports, the United States account for nearly one-fifth. In 1981, agricultural exports totaled $43.0 billion, equaling 19% of total exports, and agricultural imports of just $17.0 billion for an enormous $26.0 billion net surplus from agricultural trade (CIE, 1983).

Schuh summarized the events in the last 20 years that have caused dramatic changes in the economic marketplace. He contended that an evolution has occurred from a

> ...collection of relatively autonomous national economies tied together with a little bit of trade to a fully interdependent economies by means of international trade...(Schuh, 1986, p. 42).

International Perspectives

Many studies have identified the need to incorporate into graduate and undergraduate experience a broader understanding of politics, economics, and cultures of foreign lands, and that the United States students lack the knowledge base and cultural experience to understand and compete in internationally driven economy.

Schuh commented on the United States' domestic policies and concluded "we simply do not understand the kind of world we live in". The world's communication and transport have contracted the time needed to connect us, and compete in a marketplace in which other countries' standards of living, available technologies, labor forces, national resource bases, economic policies, and political structures may be at

wide variance with and yet inextricably linked. The United States cannot hope to compete successfully without knowledge about the competitors.

> ...and what do we do about educating our students for the kind of international economy in which they will work and live? Very little. What about language training? And what about courses that teach something about the major cultures and religions of the world - not say something about the geography of the world? The answer is the same - we do little. (Schuh, 1984, p. 8)

Educators should incorporate an international component into the various courses. Not all students will take those courses whose specific focus is international agriculture. Thus, there is a more general need to integrate a discussion of international agricultural systems into courses whose principal focus is United States agriculture (Schuh, 1986).

Only when the international perspective becomes part of the fabric of the total curriculum and not just available in isolated, individual special courses will most of our students be broadly exposed to an important component of the agricultural knowledge base. By consciously choosing to bring this dimension into the classroom will we foster development of the broad base international perspective in the United States students. Such a perspective is prerequisite to understanding the strength and weakness of American agriculture and its comparative and competitive advantages (Kellogg, 1984).

As noted above, many experts agreed that an understanding of the culture, politics, language, economy, religion and geography of foreign lands is essential to education of American students.

International Dimensions

As early as 1956, educators have seen the need and complexity of incorporating international dimensions.

> ...It is no simple task to introduce students to this vast, complicated, changing world community. It cannot be done by adding another subject to already over burdened curriculum. It must be done by having the world dimension added to all phases of existing subjects. It cannot be done by the social science field alone; it must be done by the work of all fields. It cannot be done by the memorization of isolated facts about the world; it must be done by emphasis upon information and change of attitudes, the acquisition of skills, and the development of some big concepts. (Kenworthy, 1956, p. 20)

Kellogg (1984) discussed the importance of an international dimension in agricultural curricula and has offered suggestions on how it could be accomplished. Colleges of agriculture should not set themselves up as teachers of subject matter that is rightly the domain of other academic departments. Rather, utilize those experts. A course in international trade may be taught in the Department of Agricultural Economics, a course in the geography and politics of southeast Asia should not be taught in the college of agriculture.

Kellogg stated that the problem can be separated into three dimensions. One division is language fluency. A second dimension is the issue of broad understanding of cultural, political, and geographical differences among nations and groups of nations. The third broad subject area is that of the impact on American agriculture of differences in agricultural production systems of differing technological sophistication of those systems and of the different economic structures and policies.

As a nation, we have been described as having a "disinclination to

master foreign languages" (Association of American Universities, 1986, p. 2). Virtually no undergraduate program in our agricultural college has a foreign language requirement. As a consequence of new university-wide admission requirements, admission of undergraduates to a few colleges now include a high school foreign language requirement. Only a small percentage of the faculty members of agricultural colleges read or speak a foreign language fluently.

A study focusing on foreign language competency and international studies noted:

> ...extensive need for a substantial increase in foreign language competence and international awareness throughout U.S. society... Major aspects of our lives in science, technology, business, manufacturing, financial services, and professions as well as security and general economic affairs...are inextricably interwoven with events overseas. The days are past when the U.S. was globally dominant that we could afford to be complacent about knowledge of foreign language and countries. (Association of American Universities, 1986, p. 2)

Foreign language courses are not the domain of agricultural colleges; students will take such courses in appropriate language departments of the university. Some subjects and disciplines in agriculture have an inherent international component and these subjects should be taught in agricultural colleges.

Such courses address international issues in economic development, trade, finance, and public policy, either in a broad context or focused on a particular region, the economics and sociology of developing countries and/or international agricultural trade. Here a substantial body of knowledge falls within the domain of agricultural colleges justifying the existence of such courses. Likewise, a smaller set of courses address international agricultural production systems and constraints

on those systems that are unique to particular geographic areas (Martin, et al., 1989).

Agricultural colleges should provide students with opportunities to undertake an intensive tour of other lands, which will be valuable regardless of the relative emphasis on agriculture or other cultural subjects, or to participate in a study collaborating on such efforts; joint sponsorships help attract enough students to ensure success. Agricultural colleges should encourage students to participate in such programs.

In large part, faculties' knowledge and interest will determine the success in building this extra dimension into a broad range of survey and specially courses taught in agricultural colleges.

Mechanisms must be developed to encourage acquisition of that knowledge by faculties and to encourage an international dimension integrated into the curricula.

Foreign Student Resources

There were 356,187 foreign students in the United States in the fall of 1978; 7930 were studying agriculture (Remigius, 1989).

Foreign graduate students are valuable resources that can be tapped to bring knowledge into the classroom.

To the benefit of United States universities, a significant percentage of graduate students are citizens of foreign lands. This group represents a valuable reservoir of international knowledge and culture.

Schuh (1986) presented these views; foreign students are valuable asset, something to be appreciated, rather than a debit against a research budget. How better to stimulate undergraduates and graduate

students to want to learn of culture, geography, politics, and problems of foreign lands than by firsthand encounters with citizens of those lands? How better to spice an undergraduate or graduate seminar program than by inviting as guest speaker citizens of Kenya, Indonesia, Japan, and Brazil who are students in agricultural colleges? International students are experiencing firsthand American agriculture and production systems and they also know from personal experience the successes, problems, and needs of their own agricultural systems at home. A well-organized and introduced program of presentations by foreign students could motivate United States students to seek the additional knowledge of geography, culture, and economic and political systems that we want them to acquire (Schuh, 1986).

There are some criticisms for educating citizens of foreign lands in technology that will enable them to produce food more cheaply; thereby allowing them to compete successfully. In fact, if the United States fails to help in the economic development of these countries, they will not become a potential marketplace for United States products. Without a stable agricultural economy, the economic development of these countries are doomed.

Many faculty members from agricultural colleges across the United States have participated in international agricultural development projects. Also, many student graduates of agricultural colleges have served as Peace Corps volunteers in countries around the globe.

Linkage should be established between these foreign students and American students and faculty who have been and worked and the office of resident instructors to foster their involvement in broadening the

exposure of our graduate and undergraduate students to the food, fiber, and natural resource systems of other lands.

Future Trends in International Agriculture

An article in USA Today (Raasch, 1985) said that in the 1930's, approximately 20% of United States people were classified as farmers and 2% were in agribusiness careers. In the 1980's, the situation is reversed. Farmers comprise about 2.5% of the population and agribusiness employees account for 40 to 22%. As these changes occur in agriculture, education in the United States will change as the private sector increasingly stresses efficiency in the educational process. Fewer faculty may be involved in university education. Videodisk and expert computer can greatly expand outstanding faculty members' influence to students throughout the world. Early college education could occur in community college settings with advanced undergraduate and graduate education occurring at the larger universities.

More joint university and business educational programs will develop to train people in specific technical areas. More teachers in the classroom will be part-time business experts or executives than is true in the 1980's.

Classes often will be a mixture of adults and youths as thrust for continuing education blurs the distinction between extension and other teaching activities. The duration and timing of courses will become much more flexible. Overall, the educational process increasingly international outlook will result in more rapid changes than occurred in earlier years. University research activity will become worldwide in scope. Nations have different rules regulating research and development

of biotechnology (Gibbs, et al., 1985). Multinational corporations will continue to bring together teams of researchers from many nations to apply biotechnology to agriculture. Many of these programs will have short time-frames of 3 to 5 years for the biotechnology application to be developed and commercialized. Under these arrangements, universities, corporations, and government will maintain smaller research divisions but they will jointly finance and concentrate human resources on research programs of mutual interest (Harris, 1985). Research will be done jointly by other countries and United States scientists, with field experiments likely in countries such as China. Many of the new technologies applied to United States agriculture will be developed in other parts of the world before being adapted to United States situations. This change is consistent with the development of international corporate activity (American Soybean Association, et al., 1984).

The world food system and multinational corporations will influence the development of new knowledge (Federal Intermediate Credit Bank, 1983). Government, industry, and university teams increasingly will conduct joint programs of research targeted at specific private or social issues (Philadelphia Society for Promoting Agriculture, 1985).

The time has come for international agriculture to become part of the agriculture curriculum. This observation is consistent with the statement:

> ...A modern society is many societies more or less loosely connected scattered over the face of the earth. They have aims in common and the activity of each member is directly modified by knowledge of what others are doing... (Dewey, 1916, p. 24)

Summary

In summary, through the review of literature the research has attempted to show how the United States Agriculture is becoming globally integrated and interdependent.

The literature review showed that the land grant system and agricultural education, with professional preparation, can take on the opportunities and the challenges of international agriculture.

The investment of the United States in agricultural research and education paid off in abundant low cost food for consumers at home and commercial agricultural world trade. It is no longer sufficient to know how to produce food and fiber and conduct or manage many tasks in today's agriculture industry. Due to the inter-relationships of various agricultural systems and the government, culture, and societies in which they function, developments and enhancement of one nation's agricultural system is unavoidably interwoven with those of other nations. To be successful, it is critical that students of agriculture learn systems of agriculture in cultures and societies around the world.

Today's land grant universities and colleges are one of the most precious institutions in the society, the life giving spring from which tomorrow's leaders, tomorrow's ideas, and new knowledge are developed.

CHAPTER III

PROCEDURES AND METHODOLOGY

Introduction

The purpose of this chapter was to describe the procedure for conducting and analyzing the study. The design and conduct of the study reflects the purpose of the research. To collect information at the Agricultural Education departments of the selected land grant universities, the author had to accomplish the following tasks: determine population for this study; develop the instrument for collecting data; develop the procedures for collecting data; select the institutions to administer study; and select appropriate method for data analysis.

Population of the Study

The population of this study consisted of the Agricultural Education Department Heads/Coordinators at the 28 land grant institutions in the 16 southern states of the United States. A questionnaire was developed and mailed to these Agricultural Education Department administrators.

Development of the Instrument

In formulating the instrument, the investigator reviewed several instruments, including one developed by Theummel et al. (1983) and another developed by Bin Yahya (1986).

The instrument for this study was designed to answer the objectives of the research. The questionnaire format included several characteristics: easily readable, short and to the point, and limited number of pages for quick, easy, and less time consuming response.

Questions were grouped in five major sections. The first section asked for agricultural education departments' basic demographics such as graduate, undergraduate, international, and American students in the department. The second section was on the awareness. It asked for extent of awareness in international agriculture, the degree of awareness for international development agencies and programs, and also for the extent of awareness of international research centers. In this section, departments were asked for interests in overseas assignment and the type of assignment preferred. The third section dealt with involvement. A question was asked on the extent of preference of involvement by the agricultural education departments nationally in international agriculture. Another question was asked on the current departmental involvement, the percentage of current involvement, and the type of involvement in international agriculture. A blank space for qualitative responses and comments was given, for response on past and present involvement in international activities both on campus and abroad. Also in this section, departments were asked if internships are required for foreign students. The fourth section of the questionnaire dealt with requirements and programs offered. Agricultural education departments were asked if international dimension courses were required and how many credit hours were required for both the graduate and undergraduate programs. A question was asked on allowing students to enroll in internationally related courses in other departments and how

many credit hours were allowed. This section asked for foreign language requirements for both graduate and undergraduate programs. Also, a question was included to determine if agricultural education departments have a formal international agricultural education degree and if a student can minor in such an area of study. The fifth section of the questionnaire asked general questions. Department heads were asked if faculty members should be involved in nonacademic international activities such as religious activities, whether youth organizations such as 4-H and FFA should be involved in international agricultural activities, and if departments encourage the sharing of experience in class by American students who have been abroad, international students, and faculty trips.

A Likert-type scale was used to measure level of response. A draft instrument was submitted to the Statistics Department at Oklahoma State University for review and comment on area of analysis when the instruments are returned. Suggestions of committee faculty and statisticians were incorporated into the final instrument.

The final instrument, shown in Appendix A, was reviewed and evaluated by the researchers' peers and several faculty members of the Oklahoma State University Agricultural Education department for validity and objectivity before it was mailed out.

Collection of Data

The completed instrument was mailed to the selected land grant institutions. The questionnaires were directed to the department chairperson or head of department, using addresses in the Directory of Teacher Educators in Agriculture, 1988-1989 (Whaley, 1989).

The research was conducted within the southern region of the United States, involving 28 land grant institutions (18 - 1862 and 10 - 1890) in 16 states, as shown in Appendix B.

Initial mailing of questionnaires was made in October 1989. Seventy-four percent of the instruments were returned by December 1989. Follow-up was attempted in January 1990, which brought in additional returns of 14% for a total return of 88% by the cut-off date at the end of February 1990.

Data Analysis

Several types of analyses were used to provide treatment of collected data from the study.

Likert-type scales were used to analyze interest and degree of awareness. Yes/No type responses were used to analyze departmental requirements.

Statistical Analysis System (SAS) computer program was used to analyze data.

Statistics such as frequencies, percentages, means, and standard deviations were derived from the analysis.

The data were compiled and tabulated in a manner designed to describe findings related to the purpose and objective of the research.

A numerical scale was used to facilitate comparison of the findings in each area. For each category, the fraction resulting from computation of mean and range of actual values were given. Mean responses were selected as appropriate ways to analyze and describe the findings. For analysis of the mean responses, numerical values, range of actual values, and mean response categories were established for the respec-

tive comparisons. For those sections on which respondents were asked to indicate their extent of awareness or agreement, the following scales were employed:

Numerical Value	Range of Actual Value	Mean Response
3	2.50 - 3.00	Very Aware
2	1.50 - 2.49	Aware
1	1.00 - 1.49	Unaware
3	2.50 - 3.00	Agreement
2	1.50 - 2.49	Neutral
1	1.00 - 1.49	Disagreement

For the analysis of extent of involvement responses, the following pattern was used:

Numerical Value	Range of Actual Value	Mean Response
5	4.50 - 5.00	Very Involved or Much More Involved
4	3.50 - 4.49	Involved or Somewhat More Involved
3	2.50 - 3.49	Somewhat Involved or Stay About the Same
2	1.50 - 2.49	A Little Involved or Somewhat Less Involved
1	1.00 - 1.49	Not at all Involved or Much less Involved

These established patterns were used to facilitate the interpretation of findings. For example, if a computed mean was 2.58 in the Awareness categories, it signified Very Aware, as to the mean response of the research question. Also, in the Extent of Involvement section, for example, a computed mean value of 1.99 signified that the extent of involvement in international agriculture by the agricultural education department was a little involved or somewhat less involved.

CHAPTER IV

PRESENTATION OF DATA AND ANALYSIS OF RESULTS

Introduction

The purpose of this chapter was to present the findings of the study. As previously indicated, the data for the study were collected by means of a questionnaire which was administered to selected Agricultural Education Department Heads. The study assessed Department Heads' awareness, interests, nature, and extent of their departments in international agriculture.

The findings of the study were presented in five sections: demographics, awareness, involvement, requirements/programs offered, and general information. Within these 11 tables and 8 figures were constructed to present the findings.

Analysis of Demographic Data

The survey instrument was sent to Agricultural Education administrators at 28 land grant universities. These universities included both traditional 1862 land grant universities and the 1890 historically black land grant universities. Nineteen of the institutions or 67.86% of those surveyed were the 1862 land grant universities, while 9 institutions or 32.14% of those surveyed were the 1890 land grant universities. This distribution is illustrated in Figure 1. Figure 2 was

FIGURE 1

LAND-GRANT UNIVERSITIES SURVEYED

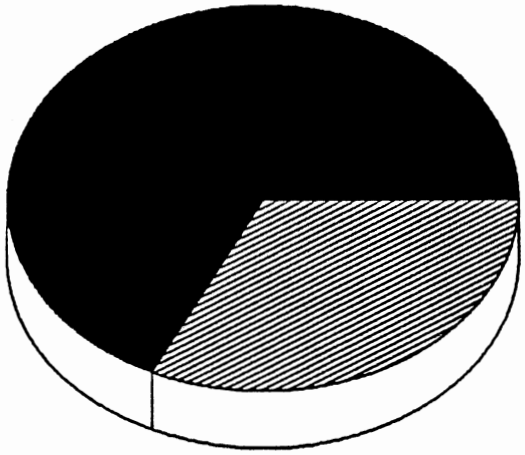
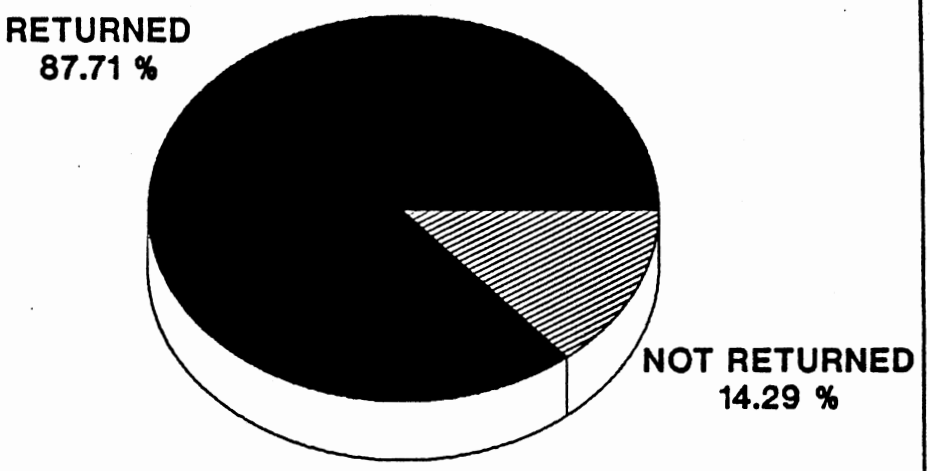


FIGURE 2

TOTAL PERCENTAGE RESPONSE BY THE 1862 AND THE 1890 LAND-GRANT UNIVERSITIES



designed to disclose the total percentage of responses from the programs surveyed, nearly 88% responded.

The percentages of response by types of institutions are featured in Figure 3. Response by the 1862 universities was higher with a return of almost 95%, while the 1890 group's return rate was nearly 67%.

Two institutions did not have graduate programs, while 22 of the 24 institutions that responded had both graduate and undergraduate programs.

Table I shows the breakdown classification of students at the departments surveyed. A total of 1,937 students were enrolled in the agricultural education departments. Of the total number of students, 1,247 (64.4%) were in undergraduate programs while the remaining 688 (35.6%) were in graduate programs. The mean of undergraduate and graduate programs were 51.9 and 31.3 students, respectively.

Overall, 1,798 (92.9%) of students were Americans while 137 (7.1%) were international students. A total of 1,197 (61.9%) Americans and 50 (2.6%) international students were enrolled in undergraduate programs, with the means of 49.9 for Americans and 2.1 for international students in the departments.

For the graduate programs, a total of 601 (31%) Americans and 87 (4.5%) international students were enrolled in the departments, with the means of 27.3 Americans and 3.9 international students in a department.

There was a large variation in the departments due to the difference in size of departments and programs. Some departments had no graduate program while some departments had large programs.

The largest variations in enrollment were in the United States

FIGURE 3

PERCENTAGE RESPONSE BY TYPE OF INSTITUTIONS

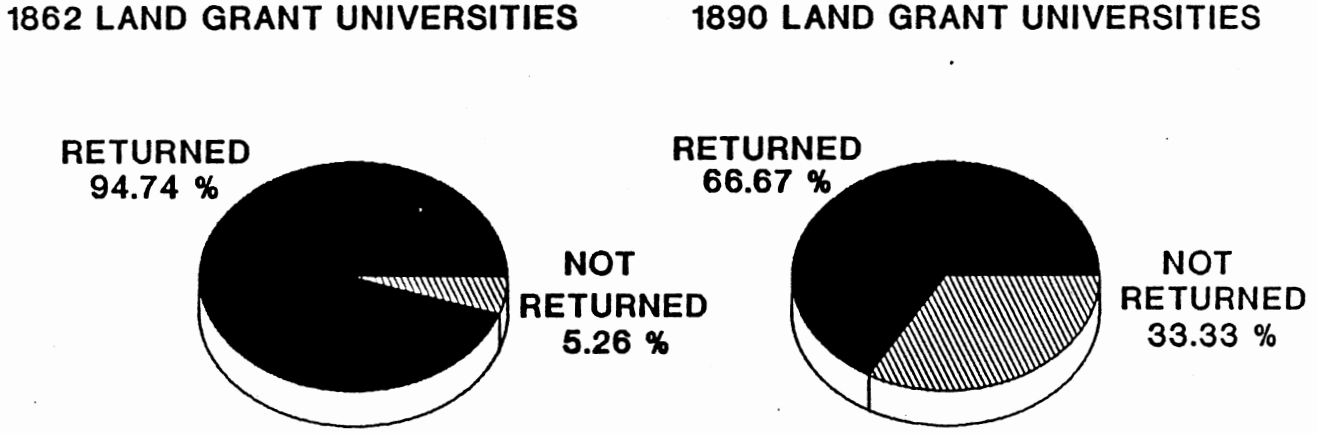


TABLE I

STUDENT CLASSIFICATION IN AGRICULTURAL EDUCATION DEPARTMENTS SURVEYED

	Distribution of Students										
	United States				International				Total		
Classification	Students	%	Mean	SD	Students	%	Mean	SD	Students	%	Mean
Undergraduate	1,197	61.9	49.9	22.95	50	2.6	2.1	5.66	1,247	64.4	51.9
Graduate	607	31.0	27.3	49.90	87	4.5	3.9	4.76	688	35.6	31.3
Total	1,798	92.9	--	--	137	7.1	--	--	1,935	100.0	--

graduate and undergraduate students at different departments. The standard deviations were 49.9 and 22.95 while the variation in enrollment for the international students at the departments were low; 5.66 and 4.76 for undergraduate and graduate students, respectively.

Awareness of Selected Aspects of International Agriculture

International agriculture encompasses a broad range of activities. These include training, research, extension, trade, and economics. A series of questions was asked to determine respondents' level of awareness regarding certain aspects of the international agriculture activities.

Table II was developed to summarize responses to these questions. Fifty-eight and three-tenths percent of the respondents were "very aware" and 47.7% were "aware", with a mean of 2.58. On the average, the respondents were "very aware" of increasing demand for training of United States students in international agriculture. By comparison, they responded at the "aware" level with the mean of 2.45, when asked about the increasing demand for additional international agriculture training for international students. Forty-five and eight-tenths percent of the respondents were "very aware" and 54.2% were "aware".

Respondents were also asked to indicate the level of awareness of increasing demand in other selected areas for international agriculture. For one of these, 36.4% respondents were "very aware", 59.1% were "aware" and 4.5% "unaware" of the increasing demand for research in international agriculture, with an overall mean of 2.32 or "aware". In another view, 50.0% were "very aware", 41.7% "aware", and 8.3%

TABLE II

LEVELS OF AWARENESS REGARDING INCREASING DEMAND
FOR INTERNATIONAL AGRICULTURE
IN SELECTED AREAS

Area	N	Distribution by Level of Awareness: Very Aware n	Very Aware %	Aware n	Aware %	Unaware n	Unaware %	Mean	Mean Response	SD
Training										
US Students	24	14	58.3	10	41.7	0	0.0	2.58	Very Aware	0.50
Intl Students	24	11	45.8	13	54.2	0	0.0	2.45	Aware	0.51
Research	22	8	36.4	13	59.1	1	4.5	2.32	Aware	0.57
Extension	24	12	50.0	10	41.7	2	8.3	2.41	Aware	0.65
Trade and Economy	24	11	45.8	10	41.7	3	12.5	2.33	Aware	0.70

"unaware" of the increased demand for extension in international agriculture. For the trade and economy question, 45.8% of the respondents were "very aware", while 41.7% were "aware", and 12.5% were "unaware" of the increasing demand for international agriculture. Overall, the mean for all the responses was 2.33 or "aware". The section shows respondents were generally "aware" of the increasing demands.

Awareness of International Development, Organizations, Agencies and Programs

In the United States, many entities are engaged in international development and programs. One of the goals of the study was to determine the extent to which respondents were aware of selected ones of these development organizations, agencies, and programs.

By way of review, the United States Agency for International Development (USAID) has been conducting programs since the 1960s. Also, the Peace Corps, a program which involves thousands of United States citizens, is helping developing countries. Many private organizations are involved in development programs. Among the most notable are the Ford and Kellogg Foundations. The International Food Security Act (1975), popularly known as Title XII, was passed by the United States Congress to encourage land grant institutions to become involved in international activities. Table III contains a summary of responses to levels of awareness of these by respondents.

Regarding the United States Agency for International Development, 2.29 or "aware" was the mean response. Of the 24 individuals who answered for the Peace Corps program, a mean response "aware" was expressed by the respondents. As to the Title XII program, 7 respond-

TABLE III

EXTENT OF AWARENESS REGARDING INTERNATIONAL ORGANIZATIONS, AGENCIES, AND PROGRAMS

Organizations, Agencies, and Programs	N	Distribution by Level of Awareness						Mean	Mean Response	SD
		Very Aware		Aware		Unaware				
		n	%	n	%	n	%			
US AID	24	10	41.7	11	45.8	3	12.5	2.29	Aware	0.69
Rockefeller Foundation	24	8	33.3	10	41.7	6	25.0	2.08	Aware	0.77
Kellogg Foundation	24	12	50.0	10	41.7	2	8.3	2.41	Aware	0.65
Peace Corp	24	8	33.3	12	50.0	4	16.7	2.16	Aware	0.70
Title XII	24	17	29.2	10	41.7	7	29.2	2.00	Aware	0.78

ents indicated "very aware", while 10 were "aware", and the remaining 2 were "unaware". Combined, these yielded a mean response of 2.00 or "aware". As to the Rockefeller Foundation, 8 (33%) said they were "very aware", 10 (42%) reported being "aware", and 6 "unaware". The overall mean response was 2.08 and classified as "aware". Measures of extent of awareness of the Kellogg Foundation yielded a mean response of 2.41, which also fell into the "aware" category. Overall, the highest extent of awareness was of the Kellogg Foundation with a mean of 2.41 followed by the United States Agency for International Development with a mean of 2.29, the Peace Corps program (2.16), Rockefeller Foundation (2.08), and Title XII program the mean of 2.08. All of these are classified as "aware".

Extent of Awareness of International Agricultural Research Organizations and Centers

There are 13 international agricultural research centers located around the world. The centers objectives include increasing food production, developing appropriate technology, research on major crops, i.e., wheat, rice, also on plant genetics, and animals diseases.

It was considered important to determine the extent to which respondents were aware of research centers. Table IV illustrates the findings for the extent of awareness by the respondents. Of the 24 respondents, 12 (50%) were "unaware" of the International Center for Wheat and Maize Improvements (CIMMYT), 8 (33%) were "aware", while 4 (17%) are "very aware" of this center. The calculated mean was 1.66 indicating an overall mean response of "unaware".

The respondents were "very aware" of the International Rice

TABLE IV

EXTENT OF AWARENESS OF INTERNATIONAL AGRICULTURAL RESEARCH CENTERS

International Agricultural Research Centers	N	Distribution by Extent of Awareness: Very Aware n	Very Aware %	Aware n	Aware %	Unaware n	Unaware %	Mean	Mean Response	SD
CIMMYT	24	4	16.7	8	33.3	12	50.0	1.66	Unaware	0.76
IRRI	24	3	12.5	13	54.2	8	33.3	1.79	Aware	0.65
IITA	24	2	8.3	6	25.0	16	66.7	1.41	Unaware	0.65
IPC	24	4	17.4	4	17.4	15	65.2	1.52	Unaware	0.79
ICRISAT	24	1	4.2	9	37.5	14	58.3	1.46	Unaware	0.59
ILRAD	24	0	0.0	8	33.3	16	66.7	1.33	Unaware	0.48
ILCA	24	2	8.3	6	25.0	16	66.7	1.41	Unaware	0.65
ICARDA	24	1	4.2	7	29.2	16	66.7	1.37	Unaware	0.57
IBPGR	24	1	4.2	5	20.8	18	75.0	1.29	Unaware	0.55
WARDA	24	1	4.2	6	25.0	17	70.8	1.33	Unaware	0.56
CIAT	23	2	8.7	7	30.4	13	60.9	1.47	Unaware	0.66
IFPRI	24	3	12.5	8	33.3	13	54.2	1.58	Unaware	0.72

Research Institute (IRRI). On the average, as disclosed by a mean of 1.79. Regarding the International Institute for Tropical Agriculture (IITA), the mean response was found to be 1.41 which translated to "unaware".

Fifteen respondents (65%) were "unaware" of the International Potato Center (IPC). Four (17%) respondents were "aware", 4 other respondents indicated they were "very aware". The mean response for the group was found to be 1.52 or "unaware". As determined by the mean response of 1.46, those surveyed were "unaware" of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). For the International Laboratory for Research on Animal Diseases (ILRAD), 67% (16) respondents reported being "unaware" of this research center, while 8 (33%) said they were "aware". None of the group responded "very aware". The 1.33 mean response indicated that, on the average, respondents were "unaware" of the center.

For the International Livestock Center for Africa (ILCA), 2 (8%) respondants indicated "very aware", while 6 (25%) reported "aware", and 16 (67%) of the respondents were "unaware". The mean for the group, 1.41, indicated an overall response of "unaware".

For the International Center of Agricultural Research in the Dry Areas (ICARDA), 7 (29%) of the respondents were "aware" of the center, while one respondent was "very aware", and 16 (67%) of the respondents were "unaware" of the center. The overall mean of 1.37 which signified a general "unaware" level of response.

One respondent was "very aware" of the International Board for Plant Genetic Resources (IBPGR), 5 (21%) respondents were "aware", and 74% of the respondents were "unaware". The totaled mean of all respond-

ents was 1.29 which indicated they were "unaware" of this center on the average.

For the West African Rice Development Association (WARDA), 71% of the respondents were "unaware", and 1 respondent was "very aware" of this international research center. The calculated overall mean was 1.33 which indicated "unaware" as an overall response regarding this center.

Sixty-one percent of the respondents were "unaware" of the Center for Tropical Agriculture (CIAT), 30% of the respondents were "aware", while the remaining 9% were "very aware". The overall mean was 1.47 which signifies "unaware" of this center.

For the International Food Policy Research Institute (IFPRI), 12% indicated that they were "very aware", 8 (33%) of the respondents indicated that they were "aware", while 54% indicated "unaware". The overall mean was 1.88 which signified respondents were"unaware" of this international research center.

Level and Extent of Involvement

Respondents were asked about the extent of department's current involvement in international agriculture. As illustrated in Figure 4, 33% of respondents stated "little involvement", while 25% of the respondents stated that they are "involved", 29.2% of the respondents stated "some involvement", and 12.5% stated they had no involvement in international agriculture.

Types and level of involvement by agricultural education departments in international agriculture are shown in Table V. These are mainly in training, the United States Agency for International Develop-

FIGURE 4

EXTENT OF CURRENT INVOLVEMENTS IN INTERNATIONAL AGRICULTURE

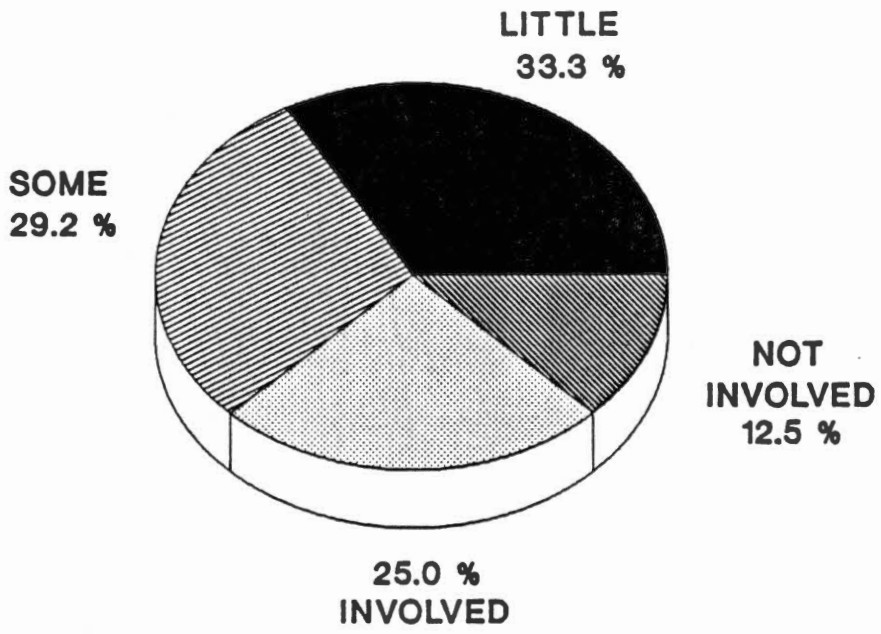


TABLE V

TYPES OF AGRICULTURAL EDUCATION DEPARTMENTS' INVOLVEMENT IN INTERNATIONAL AGRICULTURE

Types of Involvement	N	Distribution by Level of Involvement: Mentioned n	Mentioned %	Not Mentioned n	Not Mentioned %
Training					
US Students	24	12	50.0	12	50.0
Intl Students	24	21	87.5	3	12.5
Joint Projects					
with Government	24	7	29.2	17	70.8
Other Universities	24	9	37.5	15	62.5
USAID Contracts	24	4	16.7	20	83.3

ment (USAID) contracts, and joint programs with other universities.

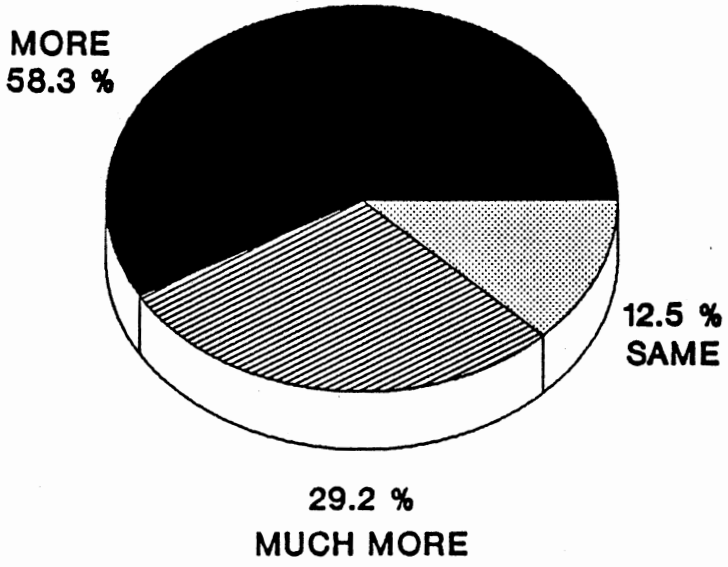
Fifty percent mentioned their departments' involvements in international agriculture were in training United States students, while 87.5% mentioned their involvement was in training international students. Joint projects were mentioned by 29.2% and 37.5% mentioned that their universities work together with other universities, and 16.7% mentioned their involvement in the United States Agency for International Development (USAID) and other government contracts.

As indicated in Figure 5, the preferences as to extent of involvement were as follows: 58.3% of the respondents want "more involvement", while 29.2% want "much more", and 13% about the "same" as it is now.

Respondents were asked to state the percentage of activities which

FIGURE 5

PREFERENCE AS TO EXTENT OF INVOLVEMENT IN INTERNATIONAL AGRICULTURE



were devoted toward international agriculture. As included in Figure 6, 91.3% of the respondents stated that they devote from 0-20% time on international agricultural activities, while 8.7% of response stated 21-40% of their programs involves international agriculture.

As illustrated in Figure 7, 91.7% of the respondents said their faculty are interested in future involvement or assignment in international agriculture.

Eighteen of the respondents (75%), were interested in teaching and research overseas followed by 17 (70.8%) were interested in agricultural development projects, while 16 respondents (66.7%) mentioned interests in consulting and extension programs. These responses were summarized in Table VI.

TABLE VI

INTEREST OF DEPARTMENT HEADS IN FUTURE ASSIGNMENTS

Types of Assignment	N	Distribution by Level of Interest Mentioned n	%	Not Mentioned n	%
Teaching	24	18	75.0	6	25.0
Extension	24	16	66.7	8	33.3
Consulting	24	16	66.7	8	33.3
Agricultural Development	24	17	70.8	7	29.2

FIGURE 6

PERCENTAGE OF ACTIVITIES DEVOTED TO INTERNATIONAL AGRICULTURE

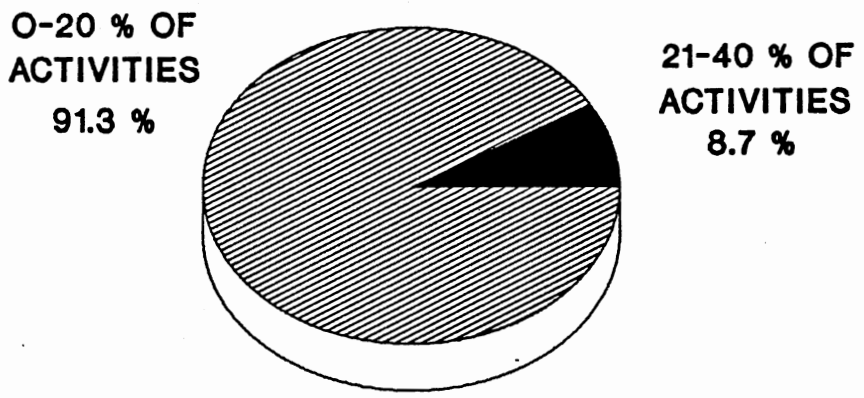


FIGURE 7

INTEREST OF FACULTY INVOLVEMENT IN FUTURE INTERNATIONAL ASSIGNMENTS

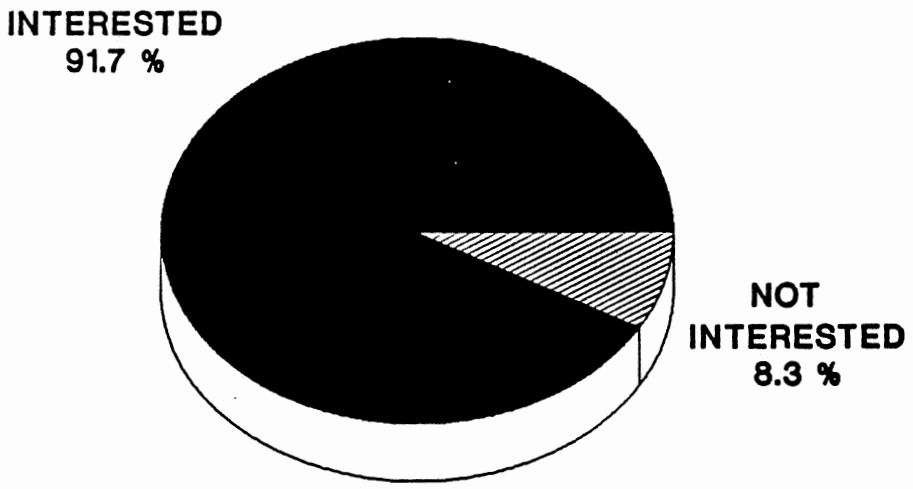


Table VII provides an overview of findings of general questions asked on involvement in non-academic activities.

The section sought for the opinion of respondents as to whether faculties, religious groups and others should be involved in nonacademic international activities.

Of the 24 respondents, 18 (67%) stated "agreement", 7 (29%) were "neutral, while 1 (4%) stated "disagreement" on faculties' non-academic involvement with international agencies, with an overall mean of 2.63 which signified "agreement" by the respondents.

Twenty-three respondents (95%) stated "agreement", while the remaining 4% were "neutral" about faculty involvement in international agriculture through sabbatical leave. The overall group mean of 2.96 signified "agreement" by the respondents.

Eleven respondents (50%) were in "agreement", while 2 (9%) were "neutral", and 9 (41%) stated "disagreement" that departments should encourage religious organizations involvement by faculty in promoting international agriculture in the Agricultural Education Departments. This had the lowest mean, 1.68 or respondents were "neutral".

The following question asked of Youth Organization Involvement and on the sharing of experiences in international agriculture. Twenty-one of the respondents (88%) "agreement" and 3 (12%) "neutral" that youth groups, like the 4H and FFA, should be involved in international agriculture activities, with an overall 2.83 or the respondents were in "agreement".

In the sharing of experiences about international agriculture, 6 respondents (42.9%) indicated "agreement", while 6 respondents (42.9%) "neutral", and 2 (14.3%) respondents showing "disagreement" about other

TABLE VII

EXTENT OF AGREEMENT AS TO THE DESIRABILITY OF SELECTED TYPES OF INVOLVEMENT BY FACULTY AND OTHERS RELATED TO INTERNATIONAL ACTIVITY

Types of Involvement	N	Distribution by Level of Agreement: Agreement n	Agreement %	Neutral n	Neutral %	Disagreement n	Disagreement %	Mean	Mean Response	SD
Faculty NonAcademic Involvement										
International Agencies	24	16	66.7	7	29.2	1	4.2	2.63	Agreement	0.58
Religious Groups	22	2	9.1	11	50.0	9	40.9	1.68	Neutral	0.65
Others										
Sabbatical	24	23	95.8	1	4.2	-	--	2.96	Agreement	0.20
Youth Organizations (4H, FFA)	24	21	87.5	3	12.5	-	--	2.87	Agreement	0.34
Sharing Experiences										
Faculty Project Trips	14	6	42.9	6	42.9	2	14.3	2.28	Neutral	0.73
Foreign Students	23	23	100.0	-	--	-	--	3.00	Agreement	0.00
American Students	23	17	73.9	6	26.1	-	--	2.74	Agreement	0.45

faculty overseas experiences from project trips. The overall mean for this area was 2.87 which stated "agreement" by the respondents.

There was total "agreement" in the encouragement of sharing by foreign students on campus of their experiences. This question had an overall mean of 3.00 which signified total "agreement" by respondents.

Seventeen respondents (74%) indicated an "agreement", while 6 (26%) were "neutral" that American students' experiences, such as Peace Corps, should be shared by the Agricultural Education Departments' in promoting international agriculture. The overall mean was 2.74 which signified "agreement" by the respondents.

Requirements for Degree Program

As illustrated in Figure 8, 78% of the agricultural education departments surveyed do not have foreign language requirements for undergraduate degree program, and 90% do not have foreign language requirements for graduate programs. Nearly 90% of the respondents in the agricultural education departments surveyed do not require international dimension courses, while 83.3% respondents allowed students to enroll in internationally related courses in other departments. Nearly 48% of the agricultural education departments require internships for international students.

The requirement for international dimension courses, other internationally related courses outside the agricultural education department and requirement of internships for international students are included in Table VIII. The number of hours students are allowed to enroll in internationally related courses ranges from 3 credit hours to 21 credit hours. The distribution by hours of credit is shown in

FIGURE 8

FOREIGN LANGUAGE REQUIREMENTS

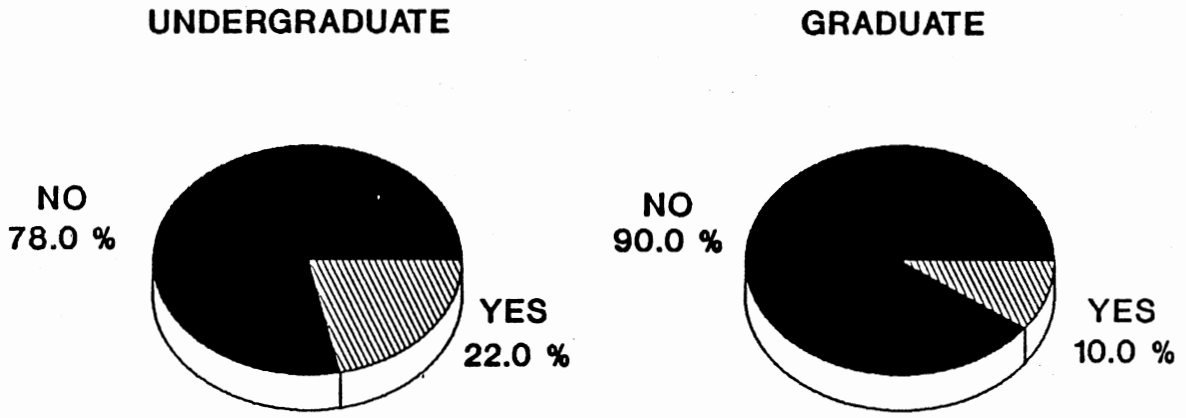


TABLE VIII

ARRANGEMENTS FOR INTERNATIONALLY RELATED COURSES/ EXPERIENCES BY THE AGRICULTURAL EDUCATION DEPARTMENTS

Types of Courses/Experiences	N	Distribution of Response Yes n	Yes %	No n	No %
Required Intl Dimension Courses	24	3	12.5	21	87.5
Intl Courses Allowed from Other Departments	24	20	83.3	4	6.7
Required Intl Student Internship	21	10	47.6	11	52.4

Table IX. Thirty-three percent of the departments allowed students to enroll in between 3 to 6 credit hours, while 40% of the departments surveyed allowed graduate students to take up to 6 hours.

TABLE IX

NUMBER OF CREDIT HOURS STUDENTS ARE REQUIRED IN INTERNATIONALLY RELATED COURSES

Number of Hours	Distribution of Response Undergraduate n	Undergraduate %	Graduate n	Graduate %
3	4	33.3	1	10.0
6	4	33.3	4	40.0
9	1	8.3	1	10.0
10	1	8.3	2	20.0
12	0	0.0	1	10.0
15	1	8.3	0	0.0
21	1	8.3	0	0.0

Previous Involvement with International Agriculture

An effort was made to determine the types of previous involvements of southern region agricultural educators in international agriculture. In a space provided in the questionnaire, the respondents stated involvement with several different agencies. These include national governments, institutions, banks, and developmental organizations. Sponsoring government agencies for international agriculture included the Peace Corp, United States Agency for International Development, the United States Information Service, the United States Department of Agriculture, the United Nations Food and Agriculture Organization, the Fulbright Scholar's Program, Nigerian and Egyptian governments, Oklahoma State University's Office of International Programs, International Funds for Agricultural Development, Winrock Foundation, World Congress of Small Farmers, Mid-America International Agriculture Consortium, and Agricultural Mission International. These are included in Table X.

Table XI includes the countries with which respondents' institutions had been involved with the different projects and assignments for the period 1975-1989. These countries represent all parts of the world. Southern region Agricultural Education departments had been involved with eight African countries, 8 Asian countries, 2 European countries, and 10 Caribbean and Latin American countries in agricultural education projects internationally. Projects included teaching, research, extension, administrative work, and consulting.

TABLE X

SPONSORING GOVERNMENTS, ORGANIZATIONS, AND AGENCIES FOR INVOLVEMENT IN INTERNATIONAL AGRICULTURE BY AGRICULTURAL EDUCATION DEPARTMENT

USAID	(10)	United States Agency for International Development
USIS	(2)	United States Information Services
USDA	(3)	United States Department of Agriculture
Peace Corps	(2)	
Winrock		Winrock Foundation
MIAC		MidAmerica International Agriculture Consortium
FAO		United Nations Food and Agricultural Organization
FFA		FFA
IADB	(2)	International Agricultural Development Bank
IFAD		International Funds for Agricultural Development
Fulbright		Fulbright-Hays Scholars Program
Nigerian Government		
World Congress of Small Farmers		
OSU-OIP		Oklahoma State University Office of International Programs
Agricultural Mission International		
Egyptian Government		

Note: Parentheses contain the number of projects if more than one.

TABLE XI

INTERNATIONAL INVOLVEMENTS BY AGRICULTURAL EDUCATION DEPARTMENTS
1975 - 1989

Distribution by Regions			
Africa	Asia	Europe	Latin America/ the Caribbeans
Nigeria (5)	Sri Lanka	England	Paraguay
Sierra Leone	India	Greece	Dominica Republic
Cameroon	N. Yemen (2)		Jamaica (2)
Uganda	New Zealand		Honduras (2)
Bukina Faso	Pakistan (2)		Guatemala
Egypt	Korea		St. Vincent & Grenadines Islands
Somalia	Australia		Mexico (2)
Tanzania	Thailand		Brazil
			Panama
			Costa Rica

Assignment Includes:	
Short Course Development	(2)
Teaching	(11)
Research	(4)
Extension	
External Evaluation	
Consulting	(2)
Curriculum Design	
Administration	

Note: Parentheses contain the number of projects if more than one.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Purpose of the Study

The purpose of the study was to determine the degree of awareness, interest, nature, and extent of involvement in international agriculture programs offered by the 28 land grant institutions in Agricultural Education in the Southern United States.

Objectives of the Study

To accomplish the purpose of this study, the following specific objectives were established:

1. To assess Agricultural Education Departments degree of awareness and interests in international agriculture.

2. To determine the nature and extent of academic and nonacademic involvement and activities by agricultural education departments in international agriculture.

3. To determine the extent international dimension courses are required for earning a graduate or undergraduate degree in Agricultural Education.

4. To determine the extent of agreement to the sharing of foreign

students', faculty's, or any American students' international experiences in the class at the department.

Plan, Design and Conduct of the Study

After a review of number of previous researches and literature related to the problem, a plan for conducting the study was formulated and implemented with the following steps:

1. Determined population for this study.
2. Developed the instrument for collecting data.
3. Developed the procedures for collecting data.
4. Selected appropriate method for data analysis and presented findings.

A questionnaire was developed and mailed to 28 Agricultural Education Department Heads. The questionnaire was designed in congruence with the objectives of the research. Nearly 88% of the questionnaires were returned.

Statistical Analysis System (SAS) computer program was used to analyze and interpret data. Statistics such as frequencies, percentages, means, and standard deviations were derived from the analysis.

The data were compiled and tabulated in a manner designed to describe findings related to the purpose and objective of the research.

Means and mean responses were selected to describe the findings. The pattern established were to facilitate the interpretation of findings. For example, if a mean computed is 2.58 in the Awareness categories, it signifies "Very Aware" for International Agriculture by Agricultural Education Department.

Summary of Findings

Demographic Data Distribution

Sixty-eight percent of the surveyed institutions were the 1862 land grant institutions while the other 32% were the 1890 land grant institutions. Overall, nearly 88% of both the 1862 and 1890 land grant institutions responded to the study. 94.74% of 1862 and 66.67% of 1890 land grant institutions returned completed questionnaires.

Nearly 2000 students were enrolled in the Agricultural Education Departments surveyed. 64.4% enrolled were in the undergraduate programs of which 61.9% were Americans and 2.5% were international students. The remaining 35.6% of Agricultural Education departments surveyed enrollment were the graduate students, 31.0% of the graduate students were American while 4.6% of the graduate students were internationals.

The distribution of the students show that departments vary in size, however, the number of international students does not vary widely. In the institutions that were surveyed, the mean of United States graduate students is 27.3 with standard deviation of 49.9, while the mean of undergraduate students was 49.9 with a standard deviation of 22.95. There were nearly four international graduate students per department with standard deviation of 4.76 and two undergraduate students with standard deviation of 5.66.

Degree of Awareness and Interest

International Agriculture. An assessment of the level of awareness of the increased demand for training, research, extension, international trade, and economy, showed the agricultural education depart-

ments were "aware" of the increasing demand for these in international agriculture. The overall response for the increasing demand for training United States students was (2.58) "very aware" and international students (2.45) "aware". The responses for training United States students was the only one with a mean response of "very aware". Respondents were overall "aware" of increasing demand for research, extension, trade, and economy.

Awareness of International Development Organizations/Programs. This category was divided into three parts all relating to the United States. These include the United States Government agency/departments such as the United States Agency for International Development, programs such as the Peace Corps. and the Title XII Act which focuses on assistance to developing countries with cooperation of the land grant universities. Also, included a private sector: the Rockefeller and Kellogg Foundations which are very involved in international agriculture and development. The mean response for this section shows that all Agricultural Education Departments are overall "aware" of international agriculture programs, agencies, and organizations.

Awareness for International Agricultural Research Centers. Thirteen centers make up the International Agricultural Research Centers (IARC). These centers are instrumental in increasing food production worldwide.

With the exception of the International Rice Research Institute (IRRI) with a overall mean of 1.79 (aware), the study showed that departments on the average were generally "unaware" of all other international research centers.

Interest in Future Overseas Assignment. Respondents mentioned future interest both for faculty and department in International Agriculture. These were in teaching/research (75%) followed by agricultural development (70.8%) and by consulting and extension work (66.7%) respectively.

Nature and Extent of Involvement in International Agriculture

Fifty percent of respondents mentioned departmental involvement in international agriculture. This involved training of United States students. Also, nearly 88% indicated current involvement in international agriculture included training of international students. Thirty-eight percent mentioned they are currently involved in other projects, such as consulting, evaluation, etc. Twenty-nine percent mentioned they were involved with joint projects with other universities while 17% mentioned they are working with USAID contracts.

Involvement in Non-academic Activities. The overall response was "agreement" (2.63 mean) that faculty should be involved in non-academic international activities, Also, there was "agreement" that faculty should be involved in sabbatical leave. The respondents were also in "agreement" (mean of 2.87) that youth groups should be involved in international agriculture.

Sponsoring Agencies. Mostly, the sponsoring agencies were branches of government agencies or international organizations. Some private foundations, institutions, and banks were also involved in sponsoring international agriculture.

Countries Involved. Countries from every region of the world, developed and developing countries, had been sites for past involvements of respondents in international agriculture. Though a majority of involvement was in the developing countries, Latin America and Caribbean countries had the most involvement followed by countries of Africa, then Asia. Some countries had more than one project or involvement.

Extent of International Dimension Courses

Requirements

Requirements. International dimension courses were required by only 12% of agricultural education departments surveyed. Eighty-three percent of the departments allowed students to enroll in other departments' internationally related courses. Forty-seven percent required international students to complete an internship program.

Number of Internationally Related Enrollment. Three to six hour enrollment for internationally related courses was the most common for both undergraduate and graduate programs. Some departments allowed students to enroll in up to 21 credit hours of internationally related courses.

Utilization of International Experiences

All respondents were in "agreement" with the sharing of international students' experiences (mean 3.00). Also, respondents were in "agreement" that United States students' overseas experience should be involved in enhancing international agriculture. Religious group expe-

rience had the lowest response, the respondents were "neutral" on the sharing of this groups international experiences.

Conclusions

From the analysis and interpretation of the study the following conclusions were established.

1. The administrators of the southern region agricultural education departments had a relatively high level of overall awareness of the increasing demand for international agriculture. The highest level of awareness was expressed for those activities involving development of people through training.

2. For the most part, the agricultural education administrators were unaware of international research centers, the only exception being the International Rice Research Institute (IRRI).

3. Basically, agricultural education administrators were aware of the international organizations, agencies, and programs about which they were queried.

4. In terms of overall involvement, currently, agricultural education departments in the southern region are not heavily into international agriculture. Those which are involved exhibit the most activity in training of students. For the future, the respondents would like to be much more involved in a wide variety of assignments and activities. Sabbatical leaves, international development agencies, and youth organizations are most desirable potential means to achieve this. The sharing of experience by students is viewed as a highly desirable means of involvement in international activities.

5. International dimension courses are not a required component

of agricultural education programs in the southern region. The same was true for foreign language requirements.

Overall conclusion: There was awareness and interest for international agriculture and the administrators of agricultural education departments in the southern United States want to be involved in international agriculture.

Recommendations

The major recommendation the author would like to make is agricultural education should initiate a formal program in international agricultural education. However, the goals should be part of long-term development plans providing for gradual development and introduction of global perspective courses to Agricultural Education Departments. There is the need for training students in foreign languages and departments should require at least one foreign language course.

Also, the researcher wishes to recommend that international dimension courses be made requirements at all agricultural education departments, for both graduate and undergraduate programs.

There are over 356,000 international students in the United States. These students have first hand knowledge and experience of other countries' agricultural systems. More utilization can help agricultural education departments involvement in international agriculture.

Also Agricultural Education departments should develop internship programs for foreign students so they can get some practical experience of the United States Agricultural System before returning to their home countries.

Since the new technologies are often produced by the international

agricultural research centers, agricultural educators need to have working knowledge of these centers.

With the ever changing world, there is need to understand world wide agricultural activities. From the response level of this research, it can be concluded that there was interest by Agricultural Education Departments surveyed in International Agriculture, there is need for additional research, and the researcher recommends more research in all areas of International Agriculture by Agricultural Educators.

Concluding Statement

Mostly agricultural education programs are oriented toward domestic programs. Gradual change is needed to give students a broader background of global perspective. It is a good sign that agricultural educators are willing to be involved more in international agriculture programs. This can be done over a long period of time, to allow flexibility of departments to develop professional programs. There are mechanisms such as the Title XII which allow and promote agricultural education departments to engage in international agriculture.

The education system in the United States, in the past, has met most demands and challenges. The land grant institutions and Agricultural Education, with professional preparation, can take on the opportunities and the challenges of international agriculture.

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APPENDICES

APPENDIX A

QUESTIONAIRE

QUESTIONNAIRE

AGRICULTURAL EDUCATION INVOLVEMENT IN

INTERNATIONAL AGRICULTURE PROGRAMS

P09 2733
Stillwater, OK 74076

September 30, 1989

Dear Department Head:

During the last several decades land-grant universities have been involved in many aspects of international agriculture.

We are conducting a study to determine the level of awareness, interest, and involvement of Agricultural Education departments in international agriculture.

We want to take a few minutes of your time to complete the enclosed questionnaire. Your input is very valuable for the success of the study and future of international programs in agricultural education.

Please return the completed questionnaire as soon as possible. Enclosed is a self-addressed, stamped envelope. Thank you.

Sincerely,

Baba Adam

Baba M. Adam

Research Advisor:

Dr. H. Robert Terry
Professor and Department Head
Department of Agricultural Education
Oklahoma State University
Stillwater, OK 74078

SURVEY OF AGRICULTURAL EDUCATION DEPARTMENTS' INVOLVEMENT/PROGRAMS IN INTERNATIONAL AGRICULTURE

Section I. Demographic Information

1. How many students are enrolled in the Agricultural Education department?

Graduates _____ Undergraduate _____

2. How many foreign students are currently studying in Agricultural Education Department?

Graduate _____ Undergraduate _____

Section II. Awareness

Please indicate the degree of awareness for the following questions (3 indicates Very Aware; 2 indicates Aware; and 1 indicates Unaware).

3. To what extent are you aware of the increasing demand for international agriculture in:

- Training:			
-US (Domestic) students	3	2	1
-Foreign students	3	2	1
- Research	3	2	1
- International Trade and Economy	3	2	1
- Extension	3	2	1

4. Please indicate the degree of awareness you have for the international development organizations/programs.

- USAID	3	2	1
- Title XII	3	2	1
- Rockefeller Foundation	3	2	1
- Kellogg Foundation	3	2	1
- Peace Corps	3	2	1
- Others	3	2	1

5. To what extent are you aware of the following international research organizations and centers?

International Maize and Wheat Improvement Center (CIMMYT) - Mexico	3	2	1
International Rice Research Institute (IRRI) - Philippines	3	2	1
International Institute of Tropical Agriculture (IITA) - Nigeria	3	2	1
International Potato Center (IPC) - Peru	3	2	1
International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) - India	3	2	1
International Laboratory for Research on Animal Diseases (ILRAD) - Kenya	3	2	1
International Livestock Centre of Africa (ILCA) - Ethiopia	3	2	1
International Center for Agriculture Research in Dry Areas (ICARDA) - Egypt	3	2	1
International Board of Plant Genetics Resources (IBPGR) - Italy	3	2	1
West Africa Rice Development Association (WARDA) - Liberia	3	2	1
Center for International Agriculture of the Tropical (CIAT) - Colombia	3	2	1
International Food Policy Research Institute (IFPRI) - USA	3	2	1

6. Do faculty in your department have any interest in future assignments abroad?

   Yes _____ No _____

7. If YES to Question 6, what kind of foreign service would you prefer? (Can be more than one response.)

   a. Research and Development
   b. Teaching
   c. Extension
   d. Consulting
   e. Other (Please specify) _____

Section III. Involvement

Please circle one response indicating extent of involvement.

8. Generally, to what extent would you prefer Agricultural Education programs in the United States be involved in international agriculture?

   a. Much more involved
   b. Somewhat more involved
   c. Stay about the same
   d. Somewhat less involved
   e. Much less involved

9. How involved would you say your Agricultural Education department is in international agriculture?

   a. Very involved
   b. Involved
   c. Somewhat involved
   d. A little involved
   e. Not at all involved

10. Approximately what percent of your department's activities are devoted to international agriculture?

    a. 0 to 20 %
    b. 21 to 40 %
    c. 41 to 60 %
    d. 61 to 80 %
    e. 81 to 100 %

11. Your Agriculture Education department involvement in international agriculture includes (can be more than one response):

    a. Training foreign students
    b. Training American students in international agriculture
    c. Joint projects with other universities
    d. Government projects, e.g., USAID contract
    e. Other (Please specify) _____

12. Describe the extent to which your Agricultural Education program/department has been involved in international activities ON CAMPUS since 1975. Please attach continuation page(s) if necessary.

	Oldest ——— Most Recent
Year/Inclusive Period	
Nature of Activity	
Sponsoring Agency	

13. Describe the extent to which your Agricultural Education program/department has been involved in international activities ABROAD since 1975. Please attach continuation page(s) if necessary.

	Oldest ——— Most Recent
Year/Inclusive Period	
Country	
Overseas Institution	
Title/Name of Project	
Major Activity	
Sponsoring Agency	

14. Are those foreign students who are enrolled in your program required to complete an internship assignment (student teaching or similar field experience)?

Yes _____ No _____

a. If YES, do you have any special procedures or arrangements for facilitating this experience? Yes _____ No _____

b. If YES, please describe. _____

_____

Section IV. Requirements and Programs Offered

15. Are there any requirements for international dimension courses in a degree program)? Yes ___ No ___

If YES, how many hours are required?
Undergraduate _____ Graduate _____

16. Are students allowed to take internationally related courses from other departments? Yes ___ No ___

If YES, how many hours maximum?
Undergraduate _____ Graduate _____

17. Are there foreign language requirements for a degree program? Yes ___ No ___

Undergraduate Graduate

18. Does the department have a formal International Agriculture Education degree? Yes ___ No ___

19. Can students minor in International Agriculture Education? Yes ___ No ___

Section V. General Questions

Please mark one response. (3 indicates Agreement; 2 indicates Neutral; and 1 indicates Disagreement with the statement)

20. Faculty should be involved in nonacademic international activities with

International agencies	3	2	1
Religious organizations	3	2	1
Others	3	2	1

21. Youth organizations such as 4H, FFA should be involved in international agricultural activities. 3 2 1

22. The department should encourage sharing of experience in international agriculture in class by

Faculty's experience from projects trips	3	2	1
Foreign students on campus	3	2	1
Other American students involved in, e.g. Peace Corps, student exchange, etc.	3	2	1

If there is anything else you want to tell us or comments about Agricultural Education in International Agriculture, please use space below or attach additional pages.

Please return questionnaire to:

Baba M. Adam
POB 2733
Stillwater. OK 74076

Thank vou.

POB 2733
Stillwater, OK 74076

January 15, 1990

Dear Department Head:

This is a follow-up letter to the study we are conducting (Survey of Agricultural Education Department's involvment/programs in International Agriculture).

We sent you the survey in October 1989 (attached is another copy of the coverletter and instrument). Please help! we need your prompt response. We are in the process of analyzing and summarizing the data we received from other institutions and are working on a March 1990 deadline to complete the study.

We are aware your schedule is pretty hectic, but please take a few minutes to respond to the survey. Your input is vital to the success of the study.

Enclosed is a self-addressed, stamped envelope for the return of your completed response.

Thank you again for your anticipated cooperation.

Sincerely,

Baba Adam

Baba M. Adam

Research Advisor:

Dr. H. Robert Terry
Professor and Department Head
Department of Agricultural Education
Oklahoma State University
Stillwater, OK 74078

APPENDIX B

LIST OF INSTITUTIONS USED FOR STUDY

Arizona
- University of Arizona

Alabama
- Auburn University
- *Alabama A&M University
- *Tuskegee University

Arkansas
- University of Arkansas - Fayetteville/Pine Bluff
- Arkansas State University

Florida
- University of Florida
- *Florida A&M University

Georgia
- University of Georgia
- *Fort Valley State College

Kentucky
- University of Kentucky

Louisiana
- Louisiana State University
- *Southern University

Mississippi
- *Alcorn State University
- Mississippi State University

New Mexico
- New Mexico State University

North Carolina
- North Carolina A&T State University
- North Carolina State University

Oklahoma
- Oklahoma State University

South Carolina
- Clemson University

Tennessee
- University of Tennessee - Knoxville
- *Tennessee State University

Texas
- Texas A&M University
- *Prairie View University
- Texas Tech University

Virginia

Virginia Polytechnic Institute and State University
•Virginia State University

West Virginia

West Virginia University

•1890 Land grant institution

VITA

Baba Modu Adam

Candidate for the Degree of

Master of Science

Thesis: ANALYSIS OF SELECTED ASPECTS OF INTERNATIONAL AGRICULTURE INVOLVEMENTS AT LAND GRANT UNIVERSITIES IN 16 SOUTHERN STATES OF THE UNITED STATES

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Maiduguri, Borno State, Nigeria, March 3, 1958, the son of Alhaji and Hajja Yagana Ajiram Adam.

Education: Koranic School, 1963-1976; Graduated from Yerwa Government Secondary School, Maiduguri, June 1977; received Associate in Science degree at Miami-Dade Community College, Miami, Florida, May 1979; received Bachelor of Science degree in Agriculture at Oklahoma State University, Stillwater, Oklahoma, December 1987; completed requirements for the Master of Science degree at Oklahoma State University in July, 1990.

Professional Experience: Graduate Research Assistant, 1988-1990 at the Oklahoma State University Center for International Trade Development.

Activities: International Student Organization, Oklahoma State University, President 1984/1985; International Student Organization Government Representative 1989/1990; Student Government Association Tuition Task Force member 1984; Nigerian Student Union, President 1983/1984 and Secretary 1982/1983.

Membership: Association of International Agricultural and Extension Education (AIAEE)