

AN ASSESSMENT OF PERSONAL, EDUCATIONAL AND PROFESSIONAL  
DEVELOPMENT NEEDS AS PERCEIVED BY INTERNATIONAL  
GRADUATE STUDENTS ENROLLED IN THE COLLEGE OF  
AGRICULTURAL SCIENCES AND NATURAL RESOURCES  
AT OKLAHOMA STATE UNIVERSITY

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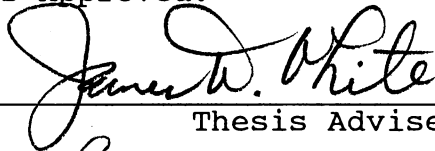
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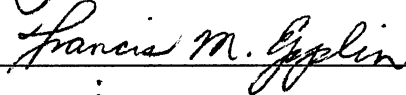
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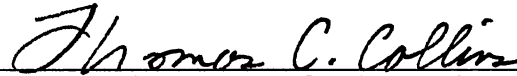
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" It is He (Allah) who brought you forth from the womb of your mothers when you knew nothing and He gave you hearing and sight and intelligence: that you may give thanks (to Him for His bounties)."

Al-Quraan (16:78)

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## CHAPTER I

### INTRODUCTION

A large number of international graduate students have continuously been coming to the Oklahoma State University from a number of developing nations for advanced degree programs in agriculture and other major fields of study. Normally international students, especially those from developing nations have little or no information at the time of their arrival in USA to address perceived needs or assess their future educational endeavour in which they anticipated during their stay at the university. These students take quite sometime adjust to the new environment, new academic atmosphere and to identify personal, family, educational and professional needs. In the process of adjustment to the climatic and academic conditions they face a number of problems in fulfilling their needs. The assessment of needs and providing facilities to meet those needs helps the international graduate students in acquiring the knowledge required for personal as well as their country's benefit.

Perceptions of need by international graduate students is of major importance in view of the fact that almost all of these students come from developing nations. Many of which are agriculturally based and the students from these countries come to OSU for the purpose of gaining knowledge

and developing skills according to national needs.

Agriculture, a primary source of national wealth, constitutes the base of the economies in most developing countries. It is a way of life and key to the country's development. Under the present diversity of industrial progress, shortages in agricultural products is an inhibiting factor working against sustained growth. Norwine and Gonzales (1988) indicated that a large number of the people in developing countries depended on the land for their livelihood, while at the same time, the bulk of foreign exchange is derived from sale of raw agricultural products and/or value-added products.

Agriculture enjoys a primary position in the scheme of national economic life. Keeping in mind its contribution toward production, consumption, employment, and export earnings, agriculture deserves special attention in actual application rather than mere lip service. Developing countries with agricultural surpluses may emerge as major trading partners for industrial nations in order to earn much needed foreign exchange for the development of infrastructure expansion, and economic development. David Colman (1985). The livelihood and welfare of the majority of populations in developing nations is derived from agriculture.

Almost all of the developing countries have the common characteristics of a low standard of living, depressed productivity, high population growth, high unemployment, dependence on agricultural production and exports limited

to raw agricultural products. In addition, many developing nations feel the dominance, dependence and vulnerability in international relations from the major powers.

A vast majority of the people in developing nations live and work in rural areas. A large portion of them are rural based as compared to 35 percent in the developed nations. In terms of proportion, the labor force engaged in agriculture in less developed regions is 60 percent, while it is 21 percent for the developed nations.

Agricultural production among under developed nations is low not only because of increasing population in relation to the availability of land, but the agriculture in less developed nations is often characterized by primitive technologies, poor organization, and limited fiscal and human capital. In many less developed countries, agriculture is predominantly non-commercial peasant farming. It is characterized further by land tenure arrangements in which peasant proprietors usually rent, rather than own the land-they farm.

Most of the less developed nations are directed toward production of primary products instead of secondary manufacturing and "tertiary" services or activities. Export of primary products typically accounts for 60 percent to 75 percent of the annual flow of total foreign currency earnings into the developing world. Yet the exports of these countries cannot keep pace with that of developed countries.

Less developed nations (LDCs) seem to be limited in their introduction of new scientific innovations in

agricultural development due to the lack of knowledge required by farmers and the farm business sector. The "LDCs" remained behind in agricultural education and thus have become more dependent on developed countries for an outlet of their agricultural products, while their own overall trade share in the world market has decreased.

#### Rationale

Considering the present situation concerning educational programs, it is implied that progress is imminent if positive changes were made in food production and distribution. There seems to be a perceived need to teach agricultural sciences, economics of agriculture & new approaches, and methods of agriculture production to farmers as well as people directly or indirectly related to agricultural development. This would enable the young scientists to make a major contribution toward increasing food production.

A rigid social structure coupled with unutilized human potential and natural resources is a common characteristic of developing economies. However, there is a need for new resources and the latest technology, essential for modernization of agriculture to play its important role in national development. Therefore, it is important that potential scientists, business and political leaders develop skills and foundations which bring about beneficial change and progress in the country. The transition and process which takes place among international students in the host

country has a dramatic impact on their perceptions of need whether it be personal, educational, or skill development. Many factors influence need, of which most have a personal effect, which in turn affects how people respond in a variety of situations.

An individual, group, or a country plays its own role in the process of the agricultural development. The behavior patterns of these groups determine the agricultural growth. There is a need for them to acquire knowledge and adopt policies best suited for production, pricing, and marketing of agricultural commodities. At the same time, they need to acquire knowledge of financial and economic feasibility of investment plans for agriculture. It is evident that growth which has occurred in developed countries as a result of changes, came largely through education, leads to building future behavioral patterns of farmers and society.

Robert A. Martin and Ronald Peterson, (1991) defined Agricultural Education as follows:

Agricultural Education encompasses applied study of different sciences concerning agricultural development which included: Agricultural Economics, Biology, Chemistry, Forestry, Agronomy, Agricultural Engineering, Entomology, Animal Science and Plant Pathology. One of the major purpose of imparting knowledge concerning different fields of agriculture is to apply knowledge and skill for better quality and quantity of agricultural products. Education in Agriculture is driven by needs of individuals, groups and the market place and focuses on developing satisfactory and socially responsible knowledge, skills and values. Such a focus recognizes the value and relies heavily on experience and the context in which the knowledge, skills and values are learned. The study of Agricultural Sciences is unique in a sense that it bridges the gap between and among the basic sciences, communication and computational skills and human relation studies. They further maintained that in general, Education of Agricultural Sciences has three critical

components i.e. technical agriculture, experiential learning and personnel/human development. (pp. 21)

The ultimate purpose of study in Agriculture is to prepare people especially internationals, to use newly acquired knowledge and skills for agricultural development in their own environmental limitations and according to the available resources in their home countries. Students should be provided the opportunity to apply the knowledge and skills through the relevancy of concepts and principles.

No study dealing with the perceptions of international graduate students concerning educational and professional needs in the various disciplines of agriculture has been conducted at Oklahoma State University. The College of Agricultural Sciences and Natural Resources has been training professionals in agriculture for many years. However, it is not known whether the program is perceived as having fulfilled the personal, educational and professional needs of international students.

Changes in education, including agriculture is a process in many cases which brings about benefits and improvements in the usefulness of programs which make them even more useful to international students and the agriculture sector as a whole. Keeping in mind the need for such a study, the author decided to assess the personal, educational and professional development needs of international graduate students studying Agriculture at Oklahoma State University.

## Statement of the problem

A large number of international students have completed their graduate studies in different fields of agriculture at Oklahoma State University in Stillwater, OK. These students normally go back to their countries of origin with the most current knowledge available in their specific disciplines as well as skills and techniques for economic development and betterment of the citizens.

The problem being, there was little or no information available to address international student needs or to assess the perceptions of success among graduate students and programs in agriculture. Is there a need for change or improvement in courses being offered, the enrollment process, housing or the way academic advisement is conducted. Do graduate students understand the purpose of the study plan and why they are enrolled in certain courses as well as the expectations of their major professor, department and college?

It would appear to be worthwhile to look at the needs of international students in agriculture. The central problem of the study was to assess personal, social, educational and professional development needs among international graduate students in agriculture, at Oklahoma State University. The ultimate outcome should assist advisers in agriculture to better prepare students for expectations, a different culture, academic requirements, etc.



## Purpose of study

The purpose of this study was to assess the personal, educational and professional development needs of international graduate students in the College of Agricultural Sciences and Natural Resources at Oklahoma State University.

## Objectives

The following specific objectives were established to fulfill the purpose of the study:

1. To determine the general characteristics of international graduate students enrolled in agriculture, at Oklahoma State University during the 1991, summer semester.
2. To determine levels of influence selected factors have, relative to students' decisions to choose a graduate program at Oklahoma State University as perceived by international graduate students in the College of Agricultural Sciences and Natural Resources.
3. To determine the levels of agreement, selected factors have, associated with previous job responsibilities in ones' home country as perceived by international graduate students in agriculture at Oklahoma State University.
4. To determine the levels of need selected factors have, pertaining to work skills which would enhance ones effectiveness in his/her area of employment in the home country as perceived by international graduate students in agriculture at Oklahoma State University.

5. To determine the levels of agreement, selected factors have, which apply to the perceived need for training, skill development and/or education in the specific topic areas of agriculture, rural development, adult and extension education, and professional development by international graduate students in agriculture at Oklahoma State University.

6. To determine the level of need, selected factors have relative to personal and family necessities and education/university requirements as perceived by international graduate students in agriculture at Oklahoma State University.

#### Assumptions

1. It was assumed that the international graduate students willingly provided responses to the questionnaire which were both accurate and honest.
2. It was assumed that students coming from various developing nations had similar needs for developing knowledge and skills in agriculture.

#### Scope

The scope of this study included all international students enrolled in graduate programs in the College of Agricultural Sciences and Natural Resources during the 1991, summer semester on the main campus of Oklahoma State University at Stillwater, Oklahoma.

## Definitions

International Student      The term used for OSU students who were not citizens of the United States of America.

American student      This term was used for students who were legal citizens of the United States of America.

Less Developed Nations      This term referred to under developed countries where agriculture was in a depressed stage and primitive methods as well as production practices were the status quo.

Developed Nations      A term used to refer to those countries which are well advanced in the adoption of technology, production practices and who have an abundance of natural resources which can be utilized for increasing both agricultural and industrial output.

Faculty      This term refers to the staff with teaching, research and extension appointments in the College of Agricultural Sciences and Natural Resources at Oklahoma State University.

Adviser      Faculty members in the College of Agricultural Sciences and Natural Resources who provide counselling with regard to the advisee's study plan, thesis problems and performance expectations and personal matters during the student's period of stay at Oklahoma State university.

Educational qualifications      Formal admission credentials which the respondents earned in their home country universities, academic degrees, recognitions, leadership, scholarly research papers printed in professional journals,

paper presented at professional meetings, job performance etc.

Need assessment The formal process of identifying needs, requirements, problems or a discrepancy.

College of Agriculture Recently renamed pertains to the academic programs administered by the Division of Agricultural Sciences and Natural Resources, Oklahoma State University, Stillwater, Oklahoma.

## CHAPTER II

### REVIEW OF LITERATURE

The purpose of this chapter was to present a summary of literature relative to the needs of personal, educational and professional development of international graduate students studying at Oklahoma State. The primary emphasis of this review included family, personal, social, educational, and recreational needs during the students' stay at OSU. Attention was also focused on background information of agricultural development since a large percentage of the international students come to the U.S. from developing nations.

#### Involvement of OSU in Imparting Education to International Community

Oklahoma State University in the year 1951 started its involvement in the educational development of developing nations. It started its efforts of contributing its talent and resources in establishing an Agricultural and Mechanical College in an African country of Ethiopia. Then president, of the university Dr. Henery G. Bennett, was a pioneer in this respect. He introduced the international aspect to the university programs.

Gill, (1978) mentioning the efforts of Oklahoma State

University in providing on-campus teaching services, involvement in establishing educational institutions and assisting in running various educational programs for students belonging to various developing nations, stated:

OSU has been involved in technical assistance projects and other international programs since 1951. During the intervening period OSU faculty and staff served not only on-campus teaching but also served in African, Southeast Asia, Middle East, Central America, and South America from the Amazon to the Nile, in barren deserts and lush tropical forests, in teeming cities and small villages, in modern classrooms and private wilderness, (pp.2).

#### Needs of international students

An understanding of human beings reveals that they have various needs and tend to behave in order to satisfy those needs. The needs can be divided into two categories i.e. physiological needs and psychological needs. Lee (1981) indicated physiological needs are basic to the human beings and psychological needs are those which an individual has by virtue of the fact that he resides in a particular social environment and live in relation to other human beings.

Kaplan stated:

The primary goal of international students who attend US colleges and universities for graduate studies, was to receive the best education available, (pp.71).

More than eighty-five percent of the international students who come for study go back to their home countries after completion of their degrees in the United States.

According to Cieslak (1955):

When a student from abroad especially from non-

English speaking lands, comes to study in the United States he has immediate need for types of orientation before undertaking an academic program and orientation to life in America and Orientation to the collegiate institution, (pp. 104).

According to a survey published in "Open Doors", 2,817 institutions of higher education regarding international educational exchange indicated that the number of foreign students enrolled in graduate programs in the U.S. was increasing. At the beginning of 1954-55 the number of such students was 34,232 while during the years the number went up to 3,66,354 in the United States. The total number of students at Oklahoma State University, during 1988-89 was 20,488 out of which 1,615 were foreign students. During 1991, the number of graduate students in the College of Agricultural Sciences and Natural resources was 317, out of which 96 were international and remaining were white, black, hispanic, oriental and Indian American students.

Sanders, (1988) discussing the comparative advantage in education for the United states with respect to the developing countries stated:

Despite much recent public debate about declining quality and comparative advantage in US goods and services the US continues to have the edge in post secondary education, as verified by the high demand for such by the top students in other countries. Such demand has helped strengthen and reinforce educational system support for all students. This cultural diversity gained with international students also provides an intrinsic benefit to the university, its students, faculty and staff, and the community at large, (pp. 21).

International students, while coming to the US bring with them a desire for education, are also cognizant of the

need for providing them with the professional, social, and personal skills required for a meaningful role in society. However, foreign students in the U.S. indicate that some students return home without having attained their educational goals. Some nationalities because of various reasons seem to experience greater difficulties in adaptation than others. Kaplan (1983) stated many students from developing countries arrive in U.S. with little idea of the organization of American educational institutions and the cultural difference which prevailed among the two nations belonging to the respective countries and the United States.

However, several previous studies indicated that the goals of foreign students do not differ by nationality, marital status or academic level.

Lee, (1981) in alluding to the goals which international students set for themselves while in the U.S. found in his review of literature that several authors looked at the "good setting" process of students regarding educational benefits. Lee, (1981) quoted:

Han (1975) found that the principal goals of the foreign students in the U.S. were educational. Singh (1976) also found that the primary goals of foreign students were educational. Spaulding and Flack (1978) also concluded in their study, the major reason foreign students come to U.S. were to get an advanced education or training not available at home, to acquire prestige, to take advantage of available scholarship funds, to escape from the unsettled political or depressed economic conditions in the home country and to learn more about U.S., (pp.6).

Cieslak (1955) tracing the history of needs assessment



among international students maintained:

The history of identification of needs of foreign or international students goes back to 1919 when the Institute of International Education was established in New York. One of the important achievement in which the Institute pioneered included the identification of the problems of the international or foreign students and the development of the office of Foreign Student Adviser on college campuses in the United States, (pp.12).

Later the National Association of Foreign Student Advisers held its annual meeting during 1942-1952 on related issues. Article-II of the Association's By-Laws mentioning the purpose of the organization regarding matters pertaining to foreign students stated:

The purpose of this association shall be to promote the professional preparation, appointment, and service of foreign student advisers in colleges and universities and in other agencies concerned with student interchange; to serve more effectively the interest and needs of exchange students; to coordinate plan for student interchange through comprehensive voluntary cooperation of all agencies and individuals concerned; and in fulfillment of that purpose to initiate, promote, and execute such systematic studies, cooperative experiments, conferences and such other similar enterprises as may be required to that end. (pp.51).

A number of studies have been conducted to identify the problems and needs of international students studying in various universities in the United States. Moore (1965) as quoted by Leed (1981) further emphasized that many of the problems around foreign students were:

- (1) problems related to proficiency in English;
- (2) problems caused by differences in educational systems;
- (3) problems of adjustment to the American cultures
- (4) problems related to the complexity of the situation with regard to social, cultural and religious adjustments;
- (5) legal implications of study abroad;
- (6) problems of

academic performance; (7) problems of inadequate resources; and (8) problems of social and cultural adjustment, (pp.11).

Dunnett, (1975) pointed out the problems and difficulties faced by international students and their needs during study in U.S. universities and colleges. Rising and Copp (1968) elaborated on the difficulties faced by foreign students in their study:

1) accommodation, 2) transportation, 3) American food, 4) privacy, 5) etiquette, 6) shopping and 7) use of various facilities during their stay in the United States, (pp.7).

He further quoted Ursua (1969), who stated:

Where the study had identified that the problems of foreign students including good academic advice, financial difficulty, insufficient orientation and lack of social and personal guidance, (pp.7).

Moore (1970) as quoted by Leed (1981) proposed the following measures to deal with the problems and needs of foreign students:

1) flexible work regulation for foreign students; 2) study programs which would integrate and apply class learning to situations in foreign students' home countries; 3) courses relevant to development and barriers to change; 4) internships that would approximate human and environmental conditions in foreign students' home countries. He suggested on the basis of the past literature the diversified needs of varying importance existing among foreign students. He had categorized those as: 1) academic needs; 2) linguistic needs; 3) other cultural-related needs; 4) interpersonal needs; 5) financial needs; 6) daily-living materialistic needs, and 7) post return needs, (pp.11).

### Educational and Professional development

Educational development of all the students including the internationals is an important aspects of higher

education which is directly related to talent development.

Astin (1985) suggested the following measures for the educational and professional development of the American and international students:

Allocation of greatest portion of instructional resources by universities in educating graduate and professional students giving number one priority, active needs of teaching, learning communities, individualization, curricular innovation, student-faculty contact, faculty development, and underprepared students, (pp.163).

He continued to point out that:

Student life activities can also help increase involvement of the student. Student life outside the classroom offers a number of levers for promoting greater involvement, which included academic advising, residential facilities, orientation, financial aid, counseling and campus life in general. He further added the factors of implementing appropriate procedures, successful completion of program of study, cognitive development, student involvement and satisfaction, assuring cognitive performance. assessing faculty performance, (pp.167).

Educational and professional development are the main objectives of the international students when they come to the U.S. universities for higher education. The universities work accordingly to meet the aspirations and needs of American and International students alike. This in other words is the necessity of talent development which is the base for the educational and professional development of the students. Astin (1985) recommended:

The educational institutions in U.S. should be obliged to accommodate the need for more relevant programs and more practical training so that students could see how to apply their U.S. education to the situations in their home countries. Universities and colleges may be in the best position to provide opportunities and facilities for continuous growth to the international graduate

students who can contribute to the international community of knowledge with respect to their own home country. (pp.132-133).

### Importance of Agricultural Education

A basic knowledge of Agriculture is important especially where it is the major industry in a state and lack of agricultural knowledge and experience impedes economic development. Agricultural literacy, William and White (1991) alluded to as ones knowledge and innate ability in and about agriculture. William and White (1991) defined agriculturally literate person as one who has a basic understanding of the food and fiber system, its history and current economic, social and environmental significance to all of society, (pp.9).

Zurbrick (1989) while explaining the importance of Agricultural Education stated:

Change is rampant in agriculture and unless agricultural education is willing to match this incessant transformation with revolutionary changes the field, agricultural education is destined to become a remnant of the past. The primary vision of the future is an image as a cohesive, dynamic, forward looking profession offering educational programs in agriculture unified by an overarching mission. The country needs a stronger work force in agriculture and an agriculturally literate populace. Agricultural education must and can contribute to both needs, (pp. 3).

Commenting on the importance of Agricultural Education in Development, he continued ...

Programs designed to aid the agricultural development of developing countries typically have not been focused on agriculture. He continued to say that the years of experience we have gained through vocational agriculture may be of benefit to developing countries,

(pp. 3).

Stressing the need to educate students from foreign countries, Miller, (1985) stated that:

The years of experience we have gained through vocational agriculture may be of benefit to developing countries. Experience and training in working with youth organizations, adult programs and providing practical instruction in agriculture could be valuable asset for the benefit of developing nations, (pp. 3).

With the urgent need of securing food supplies for increasing populations in developing countries, traditional agriculture and farming practices in these countries needs to be replaced by modern practices. Efforts to identify alternatives in order to reduce the risks associated with such ventures as well as the socio- economic and political impacts on society, and especially in rural areas, should be taken into consideration.

Since agriculture makes a major contribution to the economies of many developing nations, the value of it being considered as academically important is not unrealistic.

Abolaji, (1983) stressing the importance of agricultural education for developing nations stated:

There had been a rapid increase in evolving many scientific and modern techniques and methods for use in the agriculture to boost food production. To make best use of available resources, inventions, latest knowledge and experience of the developed nations the people of developing nations need to be educated and trained in various disciplines of agriculture in the US and other developed countries. There was a lack of knowledge in the field of agricultural sciences and the facilities to impart and gain latest knowledge in these fields was also not available, (pp. 43).

It was apparent that many of these countries had

problems with educational programs in agriculture including the availability of classrooms and research facilities as well as attracting students with experience or academic background in agriculture. However, the most glaring deficiencies were the lack of experienced teachers and libraries. As a result, students from developing countries coming to the U.S. may not have the writing skills, biological sciences or language skills to compete in some highly technical graduate programs.

#### Agricultural Education in Developing Countries

Discussing the broad subject of Agricultural Education in Developing Countries. Lindley, (1975) stated:

In any country, people are the most important resource. The importance of education for social and economic development everywhere in the world cannot be over emphasized. He further add that It is generally recognized that there is a direct relationship between the level of education and the degree of development found within any country. Assistance programs directed toward the agricultural sector must be concerned either directly or indirectly with education, (pp. 77).

Mentioning the role of Agricultural colleges in developing countries Lindley (1975) stated:

Agricultural colleges in developing countries were mainly concerned with the theoretical rather than practical instructions, as is the case with most universities. Some agricultural colleges do not even have a separate budget from the university to which they are affiliated except for a small contingent fund for college farm operations. For this reason agricultural education in developing countries had declined to be too theoretical for present needs as there has been too little practical emphasis in the work, (pp.21)

Agriculture in higher education requires professional

agricultural scientists, economists, researchers who have understanding of the psychology, principles and techniques of teaching as well as the application of various techniques and practices.

Patton et al., (1975) describing the needs of the foreign students in U.S. educational institutions asked the question...

What do foreign agricultural students want to know about agriculture in the United States? Well for one thing they would like to learn more about the process of information dissemination through colleges, universities, the extension service, high schools area vocational schools and the media? (pp. 85).

A number of problems exist in developing countries concerning efforts to strengthen agriculture through higher education. Policy issues, administrative, technical and financial conditions seem to be the most common problem facing many institutions of higher education.

In some of the Asian countries there were just too many agricultural colleges to be supported adequately. Because these colleges were understaffed, underfinanced and under-equipped, the training / teaching quality was very low. In many instances no budget was provided to carry out research activities, or they are only able to acquire funds from the university with which they are affiliated. Acute shortages of suitable textbooks for use at all levels of agricultural education seems to be a prevalent problem. Most of the books used in schools or universities were usually of European and North American origin, which in most cases were not suitable for use in specific areas / regions,

particularly the tropical regions.

Lee and Burks (1986) described problems relevant to international students. Water and Hels (1978) stated:

There had been a number of studies conducted, which deal with problem solving or critical evaluation of the U.S. educational institution what they offer. Altscher (1976) argued that American counselors have not been trained to provided effective support for them. Understanding the cultural differences between the counselor and the students is a pre-requisite for effective counseling; therefore, counselors should be trained to identify these differences, (pp.10).

A world conference on Agricultural Education and training was held in Copenhagen, Denmark, in July/August, 1970 during which the findings of a survey by region of the world for all type of Agricultural education and training were presented. The results emphasized the new ideas and trends which existed in the regions and the problems which existed. Describing the role of agricultural education in developing countries, it was stated in the report...

To play a vital role in the social and economic development of the country agricultural education must be given due attention. The staff of the agricultural colleges should be well staffed, well equipped and well financed and that it should be an integral part of the university. The agriculture colleges should also undertake certain amount of extension and research work and that in many parts of the developing countries the training of extension agents should be the responsibility of the colleges. The seminar called for strengthening the existing institutions by providing higher education in foreign universities to the staff of the colleges and also to provided sufficient funds enabling them to carry out extension and research activities, (pp. 3).



### Importance of Agriculture in Developing Countries

The importance of agriculture cannot be denied for developing countries in particular and for developed countries in general. In developing countries, the livelihood of a major percentage of the population depends on agriculture. The significance of agriculture may be considered from a number of viewpoints each contributing to the complexity of the situation faced by the countries facing severe food shortages and those passing through a serious crises, Jalil, (1991).

Jalil, (1990) quoted Meller, (1985) who stated the objective of agricultural development was increased welfare generally and increased rural welfare specifically. The objectives also included:

- 1) to provide food and fiber for an expanding population with rising purchasing power;
- 2) to provide capital, including foreign exchange for the economic transformation, and
- 3) to provide a direct increase in rural welfare

Enumerating the benefits of the agricultural development Meller, (1985) as quoted by Jalil maintained:

- a) Agricultural development is for the benefit of the total consuming population, rural and urban inclusive.
- b) Economic transformation. Most under-developed countries start with a major part of their population and capital in agriculture. Mellors' argument is that agriculture in essence finances development of the nonagricultural sectors, it must give up part of its work force and must "go into debt" to finance non-agricultural development. Since agriculture is generally the primary earner of foreign exchange through its export crops, it provides the basis of foreign exchange to purchase non-agricultural

investment and input goods. c) Agricultural production directly contributes to farm income and hence rural welfare d) The rate of economic transformation depends on the proportion of labor force initially in the agriculture sector, the rate of growth of the total labor force, of non farm job opportunities and of productivity in agriculture, (pp. 29-31).

Before World War II, most of the developing countries were exporters of agricultural commodities including wheat and feed grain while many of the "so-called" developed nations were the importers. However, under the present situation, this position has been reversed and almost all the developing countries throughout the world are facing serious food shortages and are the net importers of food commodities, whereas the developed countries are the large exporter of many agricultural commodities, Hathaway (1987).

Jalil ,1990 quoted Paul, who stated that the current Middle East crises was an example of how the situation has changed for developing nations from being exporters of food products to being net importers:

In 1960, the middle east was exporting food commodities. Its exports totaled to more than one billion dollars until 1974. Today this same region imports more than half of its food requirements. The position regarding other developing countries in Asia, Africa and Latin America is more serious than that of the middle eastern countries, (pp. 8).

One of the major sources of foreign exchange in the past for the developing countries was the export of agricultural commodities to the developing nation. Lawless (1985) reported, that one of the main reasons for the depletion of the foreign exchange reserves of the developing countries was the large imports of food commodities from

developed countries. Lawless (1985) maintained:

The burden on foreign currency reserves is enormous and is growing, Iran spent over \$2 billion on food imports in 1978, compared with \$330 million in 1973-74 which went up to \$ 5 billion in the year 1981. Saudi Arabia's import bill for 1980 in this respect was \$4.5 billion which registered an increase of over 50 % in one single year, (pp. 7).

Jalil, (1990) reported that the rate of population growth in all the developing countries was very high as compared to the developed nations. For the ever increasing population securing adequate food supplies has become an urgent responsibility on the part of the governments in the developing nations especially after the food shortage crises in early 1970s. Khutson et al. (1983) suggested that 450 million people in the world were malnourished. Khutson et al. (1983) further maintained:

The world population passed the 4 billion mark in 1976, twice the size of the 1940 population, in 1988. Predictions suggest that the limit of population growth would be reached in the year 2075 where world population would reach 8 to 9 billion people (pp.23). He further said that: food production in the developing countries is increasing at an annual rate of 2.9 % while the effective demand for food is increasing at a rate of 3.8 %. The result is an increasing need to import food, primarily wheat and feed grain, (pp. 10).

Grace Abolagi (7) quoted Johnson and Daily (1987) stating that the world population increased from 2.5 billion in 1950 to 3.678 billion in 1970. The World Food Program of the United Nations reported 5.4 billion people in 1990. Many nations of the world suffer from famine as food distribution and production fail to meet the demand of increasing populations.

## Summary

Education plays an important role in the improvement of the quality of life of the people and the economic development of a country. Many developing nations lack education and dissemination among citizens as well as within disciplines. These countries primarily depend on agriculture, but due to primitive agriculture practices, they progress slowly even though they possess vast tracts of fertile land and suitable climatic conditions.

Realizing that the trends in modern agriculture and education are against them, developing nations send students to European countries and the United States to acquire and develop up-to-date knowledge and skills as well as an experience base in order to accelerate agricultural development in their home countries.

A sizeable number of foreign students have been coming to Oklahoma State University, for higher education in different fields including agriculture. Many international students have made outstanding contribution through research to Oklahoma agriculture as well as in their native countries. Acquiring the required kind of education by the international students could only be possible in an appropriate manner if their personal, family, educational / university, and professional development needs are known to the university faculty and the staff of the institution.

Generally the international students on completion of their degree programs go back to their home countries, work

in "expected" positions and use the knowledge and skills gained in the United States for welfare of agricultural development. Many however, have difficulties in achieving their goals of completing a degree program, as a result they go home or to other places feeling like they are failures because they didn't meet the expectations of family, sponsor, their government etc.

Physical and psychological needs exist for foreign student like every other person. These included eating, friendship, attending social functions, religious activities, and inter-action with American students. In addition, they need to know university environment, its rules, regulations and procedures concerning admission, enrollment, advisement, the grading system and the expectations of many other aspects of university life.

International students, like other students, function in a positive way in a peaceful and congenial atmosphere. This is possible when they are secure and their needs are met. In view of this important aspect, many universities in the United States require Academic Advisers for all graduate students to provide guidance and assistance in helping them solve problems and meet their needs.

## CHAPTER III

### METHODOLOGY FOR CONDUCT OF THE STUDY

#### Introduction

The purpose of this chapter was to describe the procedure used to collect and analyze data and to draw conclusions with a view to achieve the purpose of this study. The procedure used was determined in light of the purpose and objectives which were discussed in chapter one.

The following tasks were determined in order to achieve a dependable system for collection and analyzing the data:

1. To explain the general description of the study population;
2. To develop an instrument for data collection;
3. To develop the most effective procedure for data collection;
4. To provide a clear explanation and description of the data analysis.

#### Population of the Study

The population of the study consisted of all the international graduate students enrolled in the College of Agricultural Sciences and Natural Resources, at Oklahoma State University, during the 1991 summer session.

International students are usually from developing nations, where facilities for teaching, research and extension are not equal to those generally found in advanced societies. A list of international graduate students who were enrolled during the 1991 summer semester was obtained from the College of Agricultural Sciences and Natural Resources, while another list of international students was obtained from the Graduate College, which documented the students enrolled in the 1991, spring semester as well. It was observed that a total of 96 international students were enrolled in 10 different agricultural disciplines, which was the population study size. However, the population size of 75 for this study was based on the response rate of 78.13 percent of the respondents who returned completed questionnaires.

#### Development of the Instrument

For the purposes of developing a survey instrument relevant literature was studied. The questionnaire was deemed most appropriate in view of the objectives of the study, nature of the questions asked and the environment in which the study was to be conducted.

Key (1991) defined the questionnaire as ...

A means of eliciting the feelings, beliefs, experiences of some sample of individuals. As a data collecting instrument it could be structured and unstructured. Use of questionnaire has many advantages as compared to other instruments, (pp.155-156).

Enumerating the benefits and advantages of the

questionnaire Key (1991) further stated:

It is economical, has uniformity of questions for all the respondents, if the questions are structured then the questionnaire could be standardized. The questionnaire has one disadvantage, it is difficult to assess the motivation of the respondents and the responses which they provided may tend to bias the sample, (pp. 157).

A detailed review of the related literature was carried out to develop a proper instrument for this study. The instrument was developed in light of the characteristics mentioned by various experts and with many of the ideas included in this instrument reflecting the work accomplished by Burks and Lee, (1981) as well as Jalil, (1990).

The following points made by Key, (1991) were also considered in preparing the questionnaire.

- 1) It deals with a topic recognized by the respondents as significant and warrants spending time for its completion.
- 2) It seeks only that information which cannot be obtained from other sources such as census data.
- 3) It should be as short as possible, long questionnaires frequently find their way into waste baskets.
- 4) It is attractive in appearance, neatly arranged and clearly duplicated.
- 5) Directions are clear and complete, important terms are defined, all questions are worded clearly and categories provide an opportunity for easy, accurate and, unambiguous responses.
- 6) Questions are presented in good psychological order, proceeding from general to more specific responses. If possible annoying and embarrassing questions are avoided.
- 7) It is easy to tabulate and interpret. It is advisable to preconstruct a tabulation sheet, anticipating how the data will be tabulated and interpreted, before the final form of the question is decided upon.



The 1991-92 University Catalog (OSU) was also utilized to complete the portion of the instrument dealing with admission and enrollment requirements as well as Graduate college requirements.

The questionnaire designed was deemed as being relevant for the respondents in view of its structure and comprehensiveness. It was distributed to members of the Advisory committee, an official from the International Programs Office, Assistant Dean of the International Programs office in agriculture and one international graduate student for review and suggestions. The reviewers made suggestions for improvement after which the questionnaire was revised and finalized on the basis of suggestions made and in consultation with the thesis adviser. Furthermore, a pilot test was conducted with four participants of a 17 member group of Pakistani Agricultural Scientists, who came to Oklahoma State University on a short-term training program during July, 1991. Some changes were made on the basis of the recommendations received from the sample group which completed the pilot test.

The questionnaire was developed to identify the training needs of the international graduate students studying in the College of Agricultural Sciences and Natural Resources, at Oklahoma State University. The questionnaire was divided into four major parts: Part-I ascertained the personal information regarding the respondents, while Part-II addressed perceptions of influence regarding their

decision for graduate study at OSU, and Part-III was directed toward their priorities in the major fields of Agriculture. Part-IV assessed the needs of respondents for various skills in broad categories of family, personal, university, educational and professional needs.

Five different "Likert-type" scales ranging in value from 0 to 4 and 1 to 5 were used to collect the data. The "Likert-type" scale was suitable for the type of questions which were asked in the study. Key (1991) defined "Likert-type scale as:

one of the most popular methods currently in use. Items in this type of questionnaire are generally multiple-choice in nature. The option representing the most favorable opinion is the five-point scale (if there are five options), and the least favorable option is the one-point option. The sum of scores obtained on each item is the total score for the scale. This type of scale is the easiest to construct, (pp. 137).

#### Institutional Review Board (IRB)

Federal regulations and Oklahoma State University policy require review and approval of all research studies that involve human subjects before investigators can begin their research. The Oklahoma State University Office of University Research Services and the IRB conduct this review to protect the rights and welfare of human subjects involved in bio-medical and behavioral research.

In compliance with the aforementioned policy this study received the proper surveillance and was granted permission to continue. IRB # AG -91 -021.

### Collection of Data

A number of data gathering instruments have been used by various researchers to collect data including personal interviews, telephone interviews, direct observations and mailed questionnaires. The researcher selected a unique "mailing system".

The instrument was finalized in the 3rd week of June, 1991 and delivered to all available international graduate students through personal contacts, friends, departmental secretaries, and campus mail. This was done in the first week of July, 1991 and the questionnaires were returned back in the same manner in which they were distributed over an eight-week period ending in early September.

### Analysis of Data

Frequencies, percentages, arithmetic means and rank order were the descriptive statistics used to treat the data. The respondents' perceptions were measured with the assistance of both five-point and four-point "Likert-type" scales for parts II, III & IV of the survey instrument. Absolute values were established for each of the scales illustrated in Table I below.

TABLE I  
A DISTRIBUTION OF VALUES CONCERNING EACH OF THE  
SCALES UTILIZED IN THE QUESTIONNAIRE  
BY RESPONSE CATEGORY

RESPONSE CATEGORY	SCALE	REAL LIMITS
<u>FIVE-POINT SCALE:</u>		
Very great influence	5	4.5 - 5.00
Great influence	4	3.5 - 4.49
Moderate influence	3	2.5 - 3.49
Somewhat influence	2	1.5 - 2.49
No influence	1	1.0 - 1.49
<u>FOUR POINT SCALE:</u>		
Very great importance	4	3.5 - 4.00
Great Importance	3	2.5 - 3.49
Moderate importance	2	1.5 - 2.49
Somewhat importance	1	0.5 - 1.49
No importance	0	0 - 0.49

Overall rankings were computed for each of the selected factors and needs as indicated by the respondents on the basis of number of responses. An illustration of the procedure for computing the overall ranking was shown in Table II.

TABLE II  
COMPUTATION OF RANKINGS ON THE BASIS OF  
FIVE-POINT "LIKERT-TYPE" SCALE

FACTOR	RESPONSE CATEGORY					TOTAL
	5	4	3	2	1	
Academic reputation	13	14	15	5	18	65
Geographic location	7	12	12	10	23	64

$$\text{Cumulative score} = 13 \times 5 + 14 \times 4 + 15 \times 3 + 5 \times 2 + 18 \times 1 = 204$$

$$= 7 \times 5 + 12 \times 4 + 12 \times 3 + 10 \times 2 + 23 \times 1 = 162$$

$$= 204/65 = 3.$$

$$= 162/64 = 2.$$

---

i.e. "Academic reputation" with a mean score of 3 and 65 resposes, ranked number 1, while "Geographic location" which had a mean score of 2 and 64 responses ranked second.

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

#### Introduction

The purpose of this chapter was to provide information regarding data collected through the survey instrument and to present the same with explanation, how it was analysed, to arrive at the findings and conclusions.

Evan et al., (1991) stated that 1477 international students representing 91 countries were enrolled at Oklahoma State University during the 1991 summer session. However, this study only included graduate students enrolled in agricultural disciplines. All students have needs, however all are different and at various level of need.

Perceptions of need are affected by previous experience, culture, family, and academic background and self esteem. This study was conducted to determine if there were personal, academic and professional development needs which influenced student decision to select graduate program in agriculture at Oklahoma State University. Specifically it was not known how facilities, courses, and / or research projects were perceived with regard to personal benefits and skill development. Skill development relative to previous employment was an important concern, especially when it

affects the courses on a student's study plan and student advisement toward a particular area or experience.

Information regarding needs of students would assist in making decisions concerning, living conditions, cultural environment and student advisement more beneficial. Study findings should assist academic advisers to do a better job in meeting the needs of international graduate students and thereby prevent problems from becoming barriers to the students' educational objectives.

In order to achieve the purpose of the study the following objectives were formulated:

1. To determine the general characteristics of international graduate students enrolled in agriculture, at Oklahoma State University during the 1991, summer session.

2. To determine levels of influence, selected factors have, relative to students' decision to choose a graduate program in agriculture at Oklahoma State University as perceived by international graduate students.

3. To determine the levels of agreement selected factors have, associated with previous job responsibilities in ones home country as perceived by international graduate students in agriculture at Oklahoma State University.

4. To determine the levels of need selected factors have, pertaining to the development of work skills which would enhance ones effectiveness in his/her areas of employment in the home country as perceived by international graduate students in agriculture at Oklahoma State University.

5. To determine the levels of agreement selected factors have which apply to the perceived need for gtraining skill development, and/or education in the specific topic areas of agriculture , rural development, adult and extension education and professional development of international graduate students in agriculture at Oklahoma State University.

6. To determine the levels of need selected factors have, relative to personal and family necessities and education/university requirements as perceived by international graduate students in agriculture at Oklahoma State University.

## Findings

### Population

According to information secured from the Graduate College and the College of Agricultural Sciences and Natural Resources at Oklahoma State University, 96 international graduate students enrolled during the 1991 summer semester. Questionnaires were distributed to all of the international graduate students through personal contacts, friends and departmental secretaries in the desciplines of agriculture.

Seventy-five questionnaires were returned by the respondents within an eight week period with 78.13 percent response rate. The analysis of data was therefore based on a population size of 75 respondents.



### Demographic Information

Part-I of the survey instrument addressed demographic information pertaining to the student. The questions considered were those for which comparison could be made with reference to age, country of origin, academic background, English proficiency, and other factors.

The responses shown in Table III revealed that 62 male and 13 female students enrolled in the College of Agricultural Sciences and Natural Resources at Oklahoma State University responded to the survey. These students represented 22 different countries. Seventy-three students represented developing nations, while one student originated from France and another from Spain.

A distribution of international graduate students by country of origin was enumerated in Table IV. The largest number of students were from Pakistan-twenty (26.67 %). However, eight (10.67 %) each were from China and Ethiopia, four (6.0 %) each from Nigeria and Indonesia, three (4.0 %) each from Saudi Arabia, India, Korea, Yemen, and Malaysia, two (2.67 %) each from Peru and Morocco and one (1.33 %) from Palestine, Brazil, Nepal, Zaire, Sudan, Somalia, and one (1.33 %) student each from France and Spain.

It may be mentioned here, not all respondents answered all of the questions included in the questionnaire, therefore, a discrepancy exist among the tables in the total number of responses reported.

TABLE III  
A DISTRIBUTION OF INTERNATIONAL GRADUATE  
STUDENTS IN AGRICULTURE BY GENDER

GENDER	F R E Q U E N C Y	
	NUMBER OF STUDENTS	PERCENTAGE
Male	62	82.67
Female	13	17.33
Total	75	100.00

TABLE IV  
A DISTRIBUTION OF INTERNATIONAL GRADUATE  
STUDENTS IN AGRICULTURE BY COUNTRY OF ORIGIN

COUNTRY OF ORIGIN	NUMBER OF STUDENTS	PERCE- NTAGE	COUNTRY OF ORIGIN	NUMBER OF STUDENTS	PERCE- NTAGE
Pakistan	20	26.67	Ethiopia	8	10.67
China	8	10.67	Nigeria	4	5.34
Indonesia	4	5.34	Korea	3	4.00
Saudi Arabia	3	4.00	India	3	4.00
Yemen	3	4.00	Malaysia	3	4.00
Mexico	3	4.00	Morocco	2	2.67
Peru	2	2.67	Brazil	1	1.33
Nepal	1	1.33	Botswana	1	1.33
Zaire	1	1.33	Sudan	1	1.33
Somalia	1	1.33	Palestine	1	1.33
France	1	1.33	Spain	1	1.33
Total				75	100.00

### Personal Background Information

The data in Table V provided an insight into the various age groups to which the respondents belonged. Twenty-six students were in 26-30 year age group, while the second largest group was the age group from 31 to 35 years with twenty five students, thirteen students were 36-40 years of age and seven students were in the age group of 21 to 25 years. However, four students were in the age group of 41 years and above.

Question No.4 addressed the students' highest level of formal education prior to their enrollment at OSU. A summary of the responses in Table VI revealed that forty-five (60 %) students had M.S. degrees, One (1.33 %) had an M.A. degree, twenty-five (18.75 %) had B.S. degrees while two students held certificates in Higher Education. Two students coming for post doctoral study held Ph. D. degrees prior to joining OSU.

Table VII illustrated the data ascertained by question No. 5 which was directed toward the degrees being pursued by the international graduate students enrolled during the 1991 summer semester while question no.6 alluded to the respondents by major area of study. There were 10 different major graduate fields within the College of Agriculture at OSU. Total enrollments by departments indicated thirty-one (41.33 %) students in Agricultural Economics, which was the largest number of international graduate students enrolled in any of Department in the College of Agricultural Sciences

TABLE V  
A DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS  
IN AGRICULTURE BY AGE CATEGORY

AGE CATEGORIES	FREQUENCY	
	N = 75	PERCENTAGE
21 - 25 Years of age	7	9.33
26 - 30	26	34.67
31 - 35	25	33.33
36 - 40	13	17.33
41 Years and above	4	5.34
Total	75	100.00

TABLE VI  
A DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS IN  
AGRICULTURE BY MAJOR AND HIGHEST LEVEL OF EDUCATION

MAJOR AND DEGREE HELD	N = 75	FREQUENCY PERCENTAGE
Agricultural Economics	31	41.33
High School	1	3.23
B.S.	9	29.02
M.S.	19	61.29
M.A.	1	3.23
Other	1	3.23
Agricultural Education	3	4.00
High School	1	33.33
B.S.	1	33.33
M.S.	1	33.34
Agricultural Engineering	6	8.00
B.S.	4	66.67
M.S.	2	33.33
Agronomy	10	13.33
B.S.	2	20.00
M.S.	8	80.00
Animal Science	8	10.66
B.S.	3	37.50
M.S.	4	50.00
Other (Ph.D)	1	12.50
Forestry	8	10.66
B.S.	3	37.50
M.S.	5	62.50
Entomology	1	1.33
M.S.	1	100.00

TABLE VI CONTINUED

MAJOR AND DEGREE HELD	N = 75	FREQUENCY PERCENTAGE
Plant Pathology	4	5.33
B.S.	1	25.00
M.S.	3	75.00
Horticulture	3	4.00
B.S.	2	66.67
M.S.	1	33.33
Biochemistry	1	1.33
M.S.	1	100.00
Total	75	100.00

and Natural Resources. The Agronomy Department was second having ten (13.33 %) international graduate students, while Animal Science and Forestry Departments tied for third with eight (10.73 %). Agricultural Engineering had six (8.0 %) students. Plant Pathology had four (2.67 %) students, and Agricultural Education and Horticulture departments had three (4.0 %) each. Bio-chemistry and Entomology departments each had one international graduate student.

In addition, the data in Table VII revealed the distribution regarding the nature of degree programs being pursued by the international graduate students in the College of Agricultural Sciences and Natural Resources. According to the responses, there were thirty-four (45.32 %) students enrolled in M.S. programs, thirty-seven (49.34 %) in Ph.D. programs, two (2.67 %) in Ed.D., and two (2.67 %) in other programs which included short-term training.

Question No. 7 consisted of two parts. In first part students were asked to indicate whether they were employed or not, prior to enrollment at OSU. The second part of the question depended on depended on the positive answer, which asked about the type of agency / department / organization where the student had been working.

The data shown in Table VIII contained the summary of responses from the international graduate students regarding their employment status prior to starting their studies in the College of Agriculture indicating the type of agency / department / organization where they were working. Fifty-five (73.33 %) respondents responded to this question.



TABLE VII  
A DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS  
PURSUING ADVANCED DEGREES BY MAJOR

MAJOR	M.S.		Ph.D.		Ed.D.		Other		Total	
	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT
Ag: Economics	10	13.33	21	28.0	-	-	-	-	31	41.33
Ag: Education	1	1.33	-	-	2	2.67	-	-	3	4.00
Ag: Engineering	3	4.0	3	4.0	-	-	-	-	6	8.00
Agronomy	3	4.0	6	8.0	-	-	-	-	9	12.00
Animal Science	4	5.33	2	2.67	-	-	2	2.67	8	10.67
Forestry	7	9.33	2	2.67	-	-	-	-	9	12.00
Entomology	-	-	1	1.33	-	-	-	-	1	1.33
Plant Pathology	2	2.67	2	2.67	-	-	-	-	4	5.34
Horticulture	3	4.0	-	-	-	-	-	-	3	4.00
Biochemistry	1	1.33	-	-	-	-	-	-	1	1.33
Total	34	45.32	37	49.34	2	2.67	2	2.67	75	100

TABLE VIII

A DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS IN  
 AGRICULTURE BY TYPE OF EMPLOYMENT  
 PRIOR TO ENROLLMENT AT OSU

TYPE OF EMPLOYMENT	F R E Q U E N C Y	
	N = 75	PERCENTAGE
Teaching (University level)	14	25.46
Administrative/Planning agencies	20	36.36
Business/Banking	2	3.64
Engineering	1	1.81
Research Organizations	18	32.73
Total	55	100.00

Fourteen (25.46 %) students indicated they had been teaching in Universities, twenty (36.36 %) were in Administrative and Planning agencies, two (2.67 %) in the Banking profession, one (1.33 %) was employed by an engineering firm, while eighteen (24.0 %) students had been working in agricultural research institutes.

The data ascertained by question No. 8 were directed toward the semester and year in which the international students initially enrolled at OSU. The data in Table IX showed the distribution of responses concerning enrollment by semester and by year. The largest number, forty-one (54.67 %) students were enrolled during 1990. Thirteen (31.70 %) were enrolled during the Spring semester, Nine (21.96 %) in summer and nineteen (46.34 %) in the Fall semester. Sixteen (21.32 %) international graduate students enrolled during the year 1989 with three (18.75 %) in the spring, one (6.25 %) in the summer and twelve (75.0 %) in the fall semester. Nine (12 %) enrolled for the 1988 academic year, with four (44.44 %) in the spring, one (11.11 %) in summer, and, four (44.45 %) also in the fall semester. Seven, (9.34%) students enrolled during 1987, with two (28.57 %) during yhe spring semester one (14.29 %) in summer and four (57.14 %) in the fall semester). Two (2.67 %) enrolled during the 1991 spring semester. An overall observation showed that 39 international graduate students enrolled for the first time during the fall semesters, 24 in the spring semesters and 12 during summer sessions.

The data obtained through question No.9 concerned the

TABLE IX

A DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS  
ENROLLED IN AGRICULTURE GRADUATE PROGRAMS BY  
SEMESTER/YEAR

SEMESTER	1987		1988		1989		1990		1991		TOTAL	
	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT	N	PERCENT
Spring	2	2.67	4	5.33	3	4.00	13	17.33	2	2.67	24	32.00
Summer	1	1.33	1	1.33	1	1.33	9	12.00	-	-	12	15.99
Fall	4	5.34	4	5.34	12	15.99	19	25.34	-	-	39	52.01
Total	7	9.34	9	12.00	16	21.32	41	54.67	2	2.67	75	100

length of stay of students at Oklahoma State University. The data in Table X illustrated that thirty-one students (41.33 %) indicated that their stay was for one year, while twenty-six (34.67 %) stated that they would be at OSU for two years. Seven (9.33 %) students revealed they would be enrolled for three years, eight (10.67 %) for, four years and 3 (4.0 %) for five years or more.

The data ascertained by question No.10 dealt with information regarding living arrangements of these students in Stillwater. The data shown in Table XI indicate that sixty-nine (92.00 %) students were living in Married Student Housing, while five (6.67 %) were in private off campus residences and one (1.33 %) was living on-campus with an American friend.

The data derived from question No.11 was directed toward students' participation in an orientation program upon arrival at OSU for acquaintance with American, and Oklahoma culture, traditions and expectations. As revealed in Table XII forty (53.33 %) students attended orientation while the remaining thirty-five (46.67 %) students did not attend any orientation upon their arrival in the United States.

The data ascertained through question No. 12 provided insight concerning the English language proficiency through which the students indicated their level of proficiency in terms of Test of English Language Proficiency (TELP) and English courses, which they had taken upon their arrival at Oklahoma State University. The data in Table XIII revealed

TABLE X  
DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS  
IN AGRICULTURE BY LENGTH OF STAY AT OSU

LENGTH OF STAY (YEARS)	NUMBER OF STUDENTS	PERCENTAGE
One	31	41.33
Two	26	34.67
Three	7	9.33
Four	8	10.67
Five and above	3	4.00
Total	75	100.00

TABLE XI

DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS IN  
AGRICULTURE BY TYPE OF HOUSING

TYPE OF HOUSING	NUMBER OF STUDENTS	PERCENTAGE
Married Student Housing	69	92.00
Private Off-Campus	5	6.67
On-Campus with American friend	1	1.33
Total	75	100.00

TABLE XII  
DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS  
WHO ATTENDED ORIENTATION SESSIONS

CATEGORY	F R E Q U E N C Y	
	NUMBER OF STUDENTS	PERCENTAGE
Attended	40	53.33
Did not attend	35	46.67
Total	75	100.00



TABLE XIII

DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS IN  
AGRICULTURE BY ENGLISH LANGUAGE PROFICIENCY

CATEGORY	FREQUENCY	
	N = 75	PERCENTAGE
Passed TELP Exam	52	69.33
Attended 0003 English Course	22	29.33
Attended 1313 English Course	1	1.33
Total	75	100.00 %

that fifty-two (69.33 %) students passed the TELP while twenty-two (29.33 %) attended English course 0003 and one (1.33 %) student took English course 1313 administered by the English Language Institute for the International Students.

The data in Table XIV illustrated the distribution of responses regarding source of funding and the sponsoring agency of the students as ascertained by question No. 13. The data showed that thirty-three ( 44.0 %) students were on sponsored by USAID assisted programs and twenty-five (33.34 %) by their home country governments. Nine (12.00 %) were on assistantship in various departments in OSU's College of Agricultural Sciences and Natural Resources, while three (4.00 %) students were funded by their own families. Two (2.67 %) students were on Fullbright scholarships, one (1.33 %) was funded by Rotary Foundation, one (1.33 %) by the International Monetary Fund and one (1.33 %) by an "unidentified" agency.

The data obtained through question No.14 concerned previous work/study experience prior to enrollment at OSU. The data in Table XV illustrated that twenty two (29.33 %) students did not have any previous work experience, while sixteen (21.33 %) Pakistanies, seven (9.33 %) Chinese, four (5.34 %) Saudi Arabian, seven (9.33 %) African, four (5.34 %) Indonesian, three (4.00 %) Malaysian, one (1.33 %) student from Yemen, four (5.34 %) Korean, one (1.33 %) Thai and one (1.33 %) Canadian student, all had previous work experience in university positions.

TABLE XIV

DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS IN  
AGRICULTURE BY SPONSORING/FUNDING AGENCY

SPONSORING/FUNDING AGENCY		F R E Q U E N C Y
		N = 75                  PERCENTAGE
Home Government	25	33.34
USAID Assistance Programs	33	44.00
Assistantships	9	12.00
Private/family or self	3	4.00
Fullbright Scholarships	2	2.67
Rotary Foundation Fund	1	1.33
International Monetary Fund	1	1.33
Other	1	1.33
Total	75	100.00

TABLE XV  
DISTRIBUTION OF INTERNATIONAL GRADUATE STUDENTS  
IN AGRICULTURE BY WORK/STUDY EXPERIENCE

COUNTRY/UNIVERSITY WORK EXPERIENCE	F R E Q U E N C Y	
	N = 75	PERCENTAGE
Chinese	7	9.33
Pakistan	16	21.33
Malaysia	3	4.00
Indonesia	4	5.33
Yemen	1	1.33
Korea	4	5.33
African	7	9.33
Saudi Arabian	4	5.33
Thai	1	1.33
Canada	1	1.33
International conferences	1	1.33
No experience	22	29.33
Total	73	100.00

### Factors of Influence

Part-II of the questionnaire addressed ten selected factors which influenced student decisions regarding their choice to study at Oklahoma State University. The data in Table XVI showed that the "Academic reputation of Oklahoma State University" was perceived to be very high and ranked first with 65 responses and a mean score of 2.98. Second was "Geographic location" with 64 responses and mean score of 2.53. Third in the rankings was "Foreign (USAID) Aided programs" which received 66 responses and a mean score 2.45. "Students' home government programs" with 64 responses and 2.13 mean score and "friends who studied at OSU" with 63 responses having same mean score of 2.13 were tied fourth in the rankings. "The relative cost of the graduate programs at OSU" was 5th with mean a score of 2.06 and 62 responses while "university size" was 6th with a mean score of 1.95 and 59 responses. One student indicated that "Ease of Admission at OSU" was the main factor for his selecting OSU, while another considered "desire to get good scientific knowledge and exposure in relevant areas as the main source of attraction at OSU.

### Need Assessment

Part-III, of the questionnaire related to selected responses which best reflected the perceptions of agreement concerning international graduate student needs. Part-III, section-I concerned the relevance of needs to in-country

TABLE XVI

A SUMMARY OF PARTICIPANT RESPONSES CONCERNING LEVELS OF INFLUENCE  
REGARDING THE DECISIONS OF INTERNATIONAL GRADUATE STUDENTS IN  
AGRICULTURE TO ATTEND OSU BY SELECTED FACTORS OF INFLUENCE

FACTOR	VERY GREAT INFL		GREAT INFL		MODERATE INFL		SOMEWHAT INF		NO INFL		NO OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Parents or Guardians	3	4.92	1	1.64	2	23.28	2	3.28	53	86.88	61	0.85	10
Friends from OSU	8	12.70	8	12.70	4	6.35	7	11.11	36	57.14	63	2.13	4.5
Own Government Program	11	17.74	8	12.90	6	9.68	2	3.23	35	56.45	62	2.13	4.5
Foreign aid (USAID/other)	18	27.27	6	9.09	2	3.03	2	3.03	38	57.58	66	2.45	3
Academic reputation	13	20.00	14	21.54	15	23.08	5	7.69	18	27.69	65	2.98	1
Geographic location	7	10.94	12	18.75	12	18.75	10	15.62	23	35.94	64	2.53	2
Relative cost	3	4.84	7	11.29	15	24.19	3	4.84	34	54.84	62	2.06	6
University size	3	4.76	9	14.29	8	12.70	4	6.35	39	61.90	63	1.95	7
Research reputation	1	1.69	8	13.56	9	15.26	8	13.56	33	55.93	59	1.91	8
Other	3	4.76	2	3.17	2	3.17	5	7.95	51	80.95	63	1.43	9

jobs and educational qualification of the students.

The data in Table XVII revealed that "academic requirements are relevant to your job at home" with 66 responses and a mean score of 4.38 ranked first. Second was "need for further development of skills to perform more efficiently" with 66 responses and a mean score of 4.28. Third was "shortage in particular field of specialization in home country" with a mean score of 3.74 and 66 responses. Fourth in rankings was the "development of grant and proposal writing skills to secure loans from international financial institutions" with 66 responses and a mean score of 3.28. Fifth was the need for "development of computer skills to work more efficiently and effectively" with 68 responses and a mean score of 3.25. "Development of research skill to utilize research facilities in home country" ranked sixth. The seventh position was for "development of skill to utilize the laboratory and other scientific equipment in home country" with 66 responses and a mean score of 3.08. Last and the eighth position was for "development of writing skill and knowledge of published material for effectively utilizing the library facilities in home country" with 64 responses and mean score of 3.03.

Part-Three section-II related to the level of need concerning skill development needed to improve the efficiency of international graduate students which would enable them to be more effective professionals in their positions at home. Twenty-seven selected needs were identified and the respondents were asked to respond

TABLE XVII

A SUMMARY OF PARTICIPANT PERCEPTIONS CONCERNING LEVELS OF  
AGREEMENT REGARDING RELEVANCE TO IN-COUNTRY JOBS AND  
EDUCATIONAL QUALIFICATION BY SELECTED NEED(S)

SELECTED NEEDS/FACTORS	VERY GREAT NEED		GREAT NEED		MODERATE NEED		SOMEWHAT NEED		NO NEED		NO OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Academic Requirement relevant to job at home	33	50.00	27	40.91	5	7.58	-	-	1	1.51	66	4.38	1
Need for further dev: to perform more efficiently	33	50.00	25	37.88	2	3.03	4	6.06	2	3.03	66	4.26	2
Shortage in particular field of specialization in home country	19	28.79	24	36.36	13	19.70	7	10.61	3	4.54	66	3.74	3
Dev. of Research skill to utilize research facility in home country	8	12.12	19	28.78	21	31.82	13	19.70	5	7.58	66	3.18	6
Dev. of skill to utilize lab. & other equipment in home country	4	6.06	21	31.82	21	31.82	16	24.24	4	6.06	66	3.08	7
Dev. of writing skill and knowledge of published research work	6	9.37	20	31.25	18	28.14	14	21.87	6	9.37	64	3.03	8
Dev. of computer skill to work more efficiently	14	20.59	18	26.47	14	20.59	16	23.53	6	8.82	68	3.26	5
Dev. of grant & proposal writing skill to secure loans from Int. Financial institutions	9	13.64	26	39.39	9	13.64	15	22.73	7	10.60	66	3.28	4



according to the five-point "Likert-type" scale. The category of needs ranked from "very good a need" to "no need".

The data illustrated in Table-XVIII show "maintenance and operation of laboratory equipment" Number one in the rankings with 70 responses and a mean score of 4.58. "Procedure and skills for conducting research" was second in the rankings with 72 responses and a mean score of 4.3. The third position in rankings was "writing proposals and technical papers" with 66 responses and a mean score of 4.24 and fourth was "evaluation of education programs and agricultural projects" with 70 responses and mean score of 4.23. The fifth ranked position was for "project planning and appraisal of agricultural projects" with 69 responses and a mean score of 4.22. "Energy conservation" was in sixth position with 63 responses and 4.14 mean score. The seventh place ranking went to "preparation and presentation of reports and seminars" with 69 responses and a mean score of 4.12. "Soil and water conservation" ranked eighth with 65 responses and 4.05 mean score, Ninth position was "statistical application in designing agricultural projects" with a mean score of 4.0 and 68 responses, while tenth was the "Formulation of Agricultural policies for developing countries" with 64 responses and mean score of 3.94.

The last position, twenty-fifth in ranking was "Operation and maintenance of agricultural equipment" with 65 responses and a mean score of 2.78. Twenty-fourth position was for "new methods of irrigation" with 64

TABLE XVIII

A SUMMARY OF PARTICIPANT RESPONSES CONCERNING THEIR PERCEIVED  
NEEDS FOR DEVELOPMENT OF SKILLS THAT WOULD ASSIST THEM TO  
WORK MORE EFFICIENTLY IN THEIR HOME COUNTRIES BY  
SELECTED FACTORS

SELECTED FACTORS	VERY GREAT NEED		GREAT NEED		MODERATE NEED		SOMEWHAT NEED		NO NEED		NO. OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Writing proposals and technical papers	33	50.00	21	31.82	8	12.12	3	4.54	1	1.52	66	3.24	3
Procedures and skills for conducting research	41	56.94	19	26.39	6	8.33	5	5.95	1	1.39	72	3.30	2
Evaluation of educational programs/Agr. projects	30	42.86	27	38.57	10	14.28	2	2.86	1	1.43	70	3.23	4
Planning, designing, dev; & conducting short courses for in service training	22	32.35	27	39.71	13	19.12	3	4.41	3	4.41	68	2.85	13
Prep. and presentation of reports and seminars	27	39.13	28	40.58	10	14.49	3	4.35	1	1.45	69	3.12	7
Project planning and appraisal of Ag: projects	31	44.93	25	36.23	10	14.49	3	4.35	1	-	69	3.22	5
Use of audio and visual aids for training	18	24.66	25	34.25	19	26.02	5	6.85	6	8.22	73	2.60	20
Marketing local products in world market	16	24.24	22	33.33	17	25.75	9	13.64	2	3.03	66	2.62	19
Procedures and rules to secure loans from Int: financial Institutions	20	28.17	27	38.03	9	12.68	14	15.49	4	5.63	71	2.68	16
Formulation of Agri. policies for developing countries	25	39.06	21	32.81	10	15.63	5	7.81	3	4.69	64	2.94	11
New methods of irrigation	14	21.87	23	35.94	18	28.12	5	7.81	4	6.26	64	2.23	24.5

TABLE XVIII CONTINUED

SELECTED FACTORS	VERY GREAT NEED		GREAT NEED		MODERATE NEED		SOMEWHAT NEED		NO NEED		NO. OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Energy Conservation	28	44.45	20	31.75	10	15.87	3	4.76	2	3.17	63	3.14	6
Soil & water conservation	30	44.16	15	23.07	16	24.61	2	3.08	2	3.08	65	3.06	8
Development and Planning of rural roads	23	37.70	20	16.39	16	26.23	7	11.48	5	8.20	61	2.64	18
Statistical application in designing Ag. projects	18	26.47	37	54.42	9	13.23	3	4.41	1	1.47	68	3.00	9.5
Maintenance & operation of lab. equipment	25	35.71	24	34.29	14	20.00	5	7.14	2	2.86	70	3.58	1
Watershed Management Agricultural policies	17	25.37	24	35.82	17	25.37	5	7.46	4	5.98	67	2.67	17
Study of crops suitable for developing countries	19	29.23	22	33.85	12	18.46	9	13.85	3	4.61	65	2.69	15
Domestic & international agricultural policies	26	40.00	23	35.38	9	13.85	5	7.69	2	3.08	65	2.54	22
Land tenure system	16	23.53	22	32.36	20	29.41	4	5.88	6	8.82	68	2.56	21
Agricultural pricing	30	44.12	21	30.88	9	13.23	3	4.41	5	7.36	68	3.00	9.5
Taxation	26	36.62	18	25.35	15	21.13	5	7.04	7	9.86	71	2.72	14
Food storage methods and regulations	27	41.54	19	29.23	10	15.38	4	6.16	5	7.69	65	2.86	12
Landscaping & ornamental Horticulture	13	20.31	20	31.25	19	29.69	4	6.25	8	12.50	64	3.41	23
Experimental design	11	15.94	19	27.54	21	30.43	11	15.94	7	10.15	69	3.23	24.5
Operation & maintenance of Agricultural equipment	4	6.16	13	20.00	23	35.38	15	23.08	10	15.38	63	2.78	26
Other	2	2.82	14	19.72	25	35.21	16	22.53	14	19.72	71	2.63	27

responses and mean score of 3.23. "Land tenure system" was ranked twenty-third with 68 responses and a mean score of 3.56. "Calculus and advanced mathematics for use in agricultural research" ranked twenty-second with 72 responses and average score of 3.55.

As a whole only one skill that of "maintenance and operation of laboratory equipment" on the basis of the mean score was under the category of "a very great need". Nine skills were considered "a great need", fifteen were perceived as being "moderate need" and only two were in the "somewhat need category". No skill was identified as "No need" for the students.

#### Need For training Skills

Under section Three in Part-III, the questionnaire contained four sub-sections each having 14 questions regarding specific needs falling under major categories of Agriculture (General), Rural Development, Adult & Extension Education and Professional Development. Separate tables were prepared for each of the major categories.

#### Agriculture (General)

Table-XIX contained a summary of respondents' perceptions regarding the category "Agriculture (General)". Training and skill development in the area of "Food processing" received 66 responses and mean score of it, 4.04 was "agreed" to be the greatest need and ranked first. The second position in the ranking was "Irrigation" which

TABLE XIX

**A SUMMARY OF PARTICIPANT RESPONSES REGARDING PERCEIVED  
LEVELS OF AGREEMENT CONCERNING THE NEED FOR SKILL  
DEVELOPMENT IN GENERAL AGRICULTURE BY TOPIC AREA**

TOPIC AREA(S)	V/STRONGLY AGREE		STRONGLY AGREE		MODY. AGREE		S/WHAT AGREE		NOT AGREE		NO OF RESP.		MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%				
General Agricultural	22	31.88	24	34.78	18	26.09	2	2.90	3	4.35	69	3.87	4	
Marketing Ag. commodities	25	36.23	22	31.88	17	24.64	1	1.45	4	5.80	69	3.91	3	
Animal Health	19	25.68	18	24.32	15	20.27	18	24.32	4	5.41	74	3.41	11	
Insects & Pests control	22	32.35	27	39.71	13	19.12	3	4.41	3	4.41	68	3.85	10	
Agricultural Chemicals	18	26.47	31	45.59	13	19.12	2	2.94	4	5.88	68	3.81	7	
Artificial insemination	18	25.70	29	41.43	17	24.29	3	4.29	3	4.29	70	3.80	8	
Plant diseases	14	20.29	17	14.64	23	33.33	8	11.59	7	10.15	69	3.40	12	
Soil fertility	21	31.35	23	34.34	16	23.88	2	2.98	5	7.46	67	3.84	6	
Irrigation	24	35.29	27	39.71	11	16.18	5	7.36	1	1.47	68	4.00	2	
Agricultural Engineering	23	33.82	26	38.23	11	16.18	5	7.36	3	4.41	68	3.87	5	
Food processing	4	6.06	30	45.46	20	30.30	9	13.64	3	4.54	66	4.04	1	
Horticulture	21	33.33	17	26.98	12	19.05	10	15.88	3	4.76	63	3.66	9	
Animal Science	20	30.76	21	32.31	16	24.61	7	10.78	1	1.54	65	3.80	8	

received 68 responses and a mean score of 4.0. Third position was for "Marketing of Agricultural commodities" with 69 responses and a mean score of 3.91. "General Agriculture" was fourth with a mean score of 3.87 and 69 responses. "Agricultural Engineering" with 68 responses and a mean score of 3.87 tied for fourth. "Soil fertility" was fifth with 67 responses and a mean score of 3.80. "Agricultural chemicals" was seventh with 68 responses and a mean score of 3.81, while "Animal Nutrition" with 65 responses and a 3.80 mean score was eighth. "Horticulture" was ninth with 63 responses and a mean score of 3.66. "Animal Health" was tenth with 74 responses and a mean score of 3.41, while "Insects and Pest control" were eleventh with 68 responses and a mean score of 3.85, followed by "Plant diseases" as twelvth with 69 responses and mean score of 3.85. "Other needs" identified by the graduate students under Agriculture were as follows: a) agricultural economics, b) agricultural system analysis, c) soil genesis classification, d) environmental science, and d) forestry development.

#### Rural Development

The second sub-section of section-Three in Part-III of the questionnaire concerned "Rural Development". The data illustrated in Table XX indicated that "Economic Development" was at the top of all needs under this category with 64 responses and a mean score of 4.30. Ranked second was "market development" with a mean score of 4.19 and 62

TABLE XX

A SUMMARY OF PARTICIPANT RESPONSES REGARDING PERCEIVED LEVELS  
OF A AGREEMENT CONCERNING TRAINING/EDUCATION NEEDS BY  
SPECIFIC SKILL AREA NEEDS IN RURAL DEVELOPMENT

AREAS OF SPECIALIZED NEED	STRONGLY AGREE		AGREE		DISAGREE		STRONGLY DISAG.		UNDECIDED		NO OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Water quality for human consumption	32	50.00	20	31.25	6	9.38	2	3.12	4	6.25	64	4.16	4
Infrastructure	25	39.69	21	33.33	11	17.46	3	4.76	3	4.76	63	3.98	10
Human Nutrition	33	51.56	14	21.88	10	15.62	4	6.25	3	4.69	64	4.10	5
Economic development	40	60.60	15	22.73	6	9.09	1	1.52	4	6.06	66	4.30	1
Rural roads/transportation	26	41.27	26	41.27	6	9.38	2	3.13	4	6.25	64	4.06	6
Conservn. of Environment	31	48.44	21	32.80	8	12.50	2	3.13	2	3.13	64	4.20	2
Flood control	26	40.61	22	34.38	11	17.19	1	1.56	4	6.26	64	4.02	9
Market development	31	50.00	20	32.36	7	11.29	-	-	4	6.45	62	4.19	3
Food processing	24	38.71	22	35.48	10	16.13	1	1.61	5	8.07	62	3.54	13
Storage of food and food products	28	45.15	19	30.64	9	14.52	2	3.23	4	6.45	62	4.05	7
Rural housing	20	32.26	19	30.64	12	19.35	6	9.69	5	8.06	62	3.69	11
Conducting impact and feasibility analysis	30	48.39	14	22.58	9	14.52	4	6.45	5	8.06	62	4.03	8
Other	17	27.42	20	32.26	13	20.97	8	12.90	4	6.45	62	3.61	12

responses, while "water quality for human consumption" ranked third with 64 responses and a 4.16 mean score.

The smallest mean score was 3.69 for "Rural housing" with 62 responses and was eleventh, however, ranking tenth was "Infrastructure" with a mean score of 3.98 and 63 responses. "Conservation of environment" was in fourth position with 64 responses and a mean score of 4.2. "Human nutrition" ranked fifth with 64 responses and a mean score of 4.1, while "Rural roads / transportation" was sixth with 64 responses and a mean score of 4.06. "Storage of food and food products" was seventh with 62 responses and a 4.05 mean score. "Conducting impact and feasibility analysis" was eighth with 62 responses and mean score of 4.03, while "Flood control" with 64 responses and a mean score of 4.02 ranked ninth. "Other" perceived needs indicated by the respondents were: a) soil conservation, and b) quality control-food.

#### Adult and Extension Education

The Third sub-section in Part-III of question-III concerned needs under the category of "Adult and Extension Education". The data contained in Table-XXI revealed that "Program Planning" was perceived as being the most needed among the selected skills listed, with 64 responses and a mean score of 5.02. "Planning and appraisal of Agricultural projects" was second with 64 responses and mean score of 4.37, while third was training in "Needs assessment" with 56 responses and a 4.3 mean score.



TABLE XXI

A SUMMARY OF PARTICIPANT RESPONSES REGARDING PERCEIVED  
LEVELS OF AGREEMENT CONCERNING TRAINING/EDUCATION  
NEEDS BY SPECIFIC SKILL AREA NEEDED IN ADULT AND  
EXTENSION EDUCATION

SPECIFIC SKILL AREAS/ FACTORS	N	%	STRONGLY AGREE N	%	AGREE N	%	DISAGREE N	%	STRONGLY DISAG. N	%	UNDECIDED RESP.	NO OF SCORE	MEAN	RANK	
Needs Assessment			18	32.15	23	41.07	17	30.36	2	3.57	4	7.15	56	4.30	3
Program Planning			29	45.31	23	35.94	9	14.06	-	-	3	4.69	64	5.02	1
Teaching Methods			30	46.14	26	40.00	6	6.24	2	3.08	1	1.54	65	4.26	4
Conducting in-service short term training programs			21	32.81	28	43.75	8	12.52	4	6.26	3	4.69	64	3.82	7
Farming System Research			27	42.19	25	39.05	10	15.62	-	-	2	3.13	64	4.18	5
Planning & Appraisal of Agricultural projects			32	50.00	22	34.38	10	15.62	-	-	-	-	64	4.37	2
Principles of Adult Edu.	14	22.58	27	53.56	13	20.97	3	4.84	5	8.07	62	3.68	10		
Principles of Learning	17	27.42	23	37.10	13	20.97	2	3.23	7	11.28	62	3.34	12		
The Adoption Process	17	27.42	25	40.32	12	19.35	5	8.07	3	4.84	62	3.77	9		
Organizing Adult Groups	12	18.18	27	40.91	13	19.70	2	3.03	12	18.18	66	3.45	11		
Prep. of Teaching Aids	20	37.74	16	30.19	11	20.75	3	5.66	3	5.66	53	3.89	6		
Conducting Field Days	20	30.30	26	39.39	10	15.16	6	9.09	4	6.06	66	3.78	8		
Conducting On-Farm Demonstration	18	29.03	19	30.65	15	24.19	8	12.90	2	3.23	62	3.77	12		
Other-"Women Education"	1	1.54	-	-	-	-	-	-	-	-	-	1	0.067	-	

"Teaching methods" ranked fourth with 65 responses and a mean score of 4.25, while ranking fifth was "Farming system research" followed by "Preparation of teaching aids" and ranking sixth with 53 responses and a 3.89 mean score. Seventh was "Conducting in-service short-term training programs" with 64 responses and a 3.82 mean score. "Conducting field days" was eighth with 66 responses and a mean score of 3.78, while the "Adoption process" was ninth with 62 responses and a 3.77 mean score, followed by "Principals of Adult Education" in tenth place with 62 responses and a 3.68 mean. "Women Education" was suggested as a need by one respondent.

"Principals of learning" with 62 responses and mean score of 3.34 was on the bottom of the ranking. The 11th position was for "Organizing Adult groups" with 66 responses and mean score of 3.45.

#### Professional Development

The fourth sub-section of section-II, Part-III pertained to perceived needs in the category of Professional Development. The data illustrated in Table XXII revealed that "Computer operation and application" ranked first as a perceived need in ranking with the highest mean score of 4.58. Ranking second as a perceived need was "Grant and proposal writing" with a 4.22 mean score from 64 responses, while "Technical writing" with 63 responses also had a mean score of 4.22. "Publication of Research" was perceived as ranking third with 63 responses and a 4.19 mean score.

TABLE XXII

A SUMMARY OF PARTICIPANT RESPONSES REGARDING PERCEIVED LEVELS  
OF AGREEMENT CONCERNING TRAINING/EDUCATION NEEDS BY  
SPECIFIC SKILL AREAS NEEDED IN PROFESSIONAL DEVELOPMENT

SPECIALIZED NEEDS IN PROFESSIONAL DEVELOPMENT	STRONGLY AGREE		AGREE		DISAGREE		STRONGLY DISAG.		UNDECIDED		NO OF	MEAN	RANK
	N	%	N	%	N	%	N	%	N	%	RESP.	SCORE	
Experimental Design	25	40.32	24	38.71	-	-	11	17.74	2	3.23	62	4.13	5
Photography	7	11.47	21	42.62	15	24.59	9	14.76	4	6.56	61	3.38	12
Operation of audio/video equipment	12	19.67	22	36.07	16	26.23	6	9.83	5	8.20	61	3.49	11
Human Relations	25	39.68	24	38.10	8	12.70	2	3.17	4	6.35	63	4.02	8
Personal Development	27	43.55	22	35.48	8	12.90	2	3.23	3	4.84	62	4.10	6
Publication of Research	26	41.27	26	41.27	8	12.70	3	4.76	-	-	63	4.19	4
Computer operation and application	35	54.69	21	32.81	8	12.50	-	-	-	-	64	4.58	1
Technical Writing	27	42.85	24	38.08	9	14.30	2	3.18	1	1.59	63	4.22	2.5
Grant and Proposal Writing	23	35.94	27	42.19	9	14.06	2	3.12	3	4.69	64	4.22	2.5
Dev. of Leadership skills	25	39.69	26	41.27	9	14.28	1	1.59	2	3.17	63	4.06	7
Development of Budgets	28	43.75	23	35.94	5	7.81	5	7.81	3	4.68	64	3.28	13
Presentation of Research papers	28	45.90	23	37.70	8	13.12	2	3.28	-	-	61	3.93	10
Operation of Laboratory equipment (eg. Gas Chromo- spectrometer, etc)	23	37.10	20	36.26	15	24.19	1	1.61	3	4.84	62	3.95	9

"Experimental Design" ranked fifth with 62 responses and a 4.13 mean score, while "Personal development" was 6th with 62 responses and a 4.1 mean score. Ranking seventh was "Development of leadership skills" with 63 responses and a mean score of 4.06, followed by "Human relations" which ranked eighth with 63 responses and a mean score of 4.02. The ninth position in the rankings was for "Operation and maintenance of laboratory equipment" e.g. "gas chromospectrometer etc." with 62 responses and a 3.95 mean score. Perceived as being tenth as a need among the respondents was "Presentation of research papers" having 61 responses and a 3.93 mean score. "Other" perceived needs identified by the respondents were: a) Human resource development, b) food technology, c) animal nutrition, c) soil mapping, and developing marketing skills. However, only "Human Resource Development" pertained to the designated need area of "Professional Development". The last and the twelvth position in the rankings was "Photography" with 61 responses and a mean score of 3.39, while "Operation and maintenance of audio/video equipment" ranked eleventh with a 3.49 mean score.

#### Personal and Family Needs

Section-IV in Part-III of the questionnaire concerned "Personal and family needs", "Educational and University Requirements".

The data illustrated in Table XXIII show "Language skill" as the number one need in rank order with 75

TABLE XXIII

A SUMMARY OF PARTICIPANT PERCEPTIONS CONCERNING LEVELS OF  
PERSONAL AND FAMILY NEEDS BY SPECIFIC AREA NEED

AREA(S) OF SPECIALIZED NEED	V.OFTEN NEED		FREQUENT NEED		OCCL: NEED		LIMITED NEED		NO NEED		NO OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Public Transportation	40	55.56	11	15.28	7	9.72	7	9.72	7	9.72	72	2.97	6.5
Banking Services	25	33.78	20	27.03	13	17.57	6	8.11	10	13.51	74	2.59	13
Housing	33	48.53	21	30.88	8	11.77	4	5.88	2	2.94	68	3.11	5
Health Care	40	56.34	17	23.94	9	12.68	4	5.63	1	1.41	71	3.28	4
Sports Participation	6	9.09	25	47.88	21	31.81	10	15.16	4	6.06	66	2.38	17
Communication with home country families	29	40.84	22	30.99	9	12.68	8	11.26	3	4.23	71	2.93	8
Necessity of having American friends	15	22.06	19	27.94	19	27.94	9	13.23	6	8.83	68	2.77	12
Religious and Spiritual	25	36.23	11	15.94	17	23.64	9	13.04	7	10.14	69	2.55	14
Recreation	22	31.88	23	33.33	16	23.19	4	5.80	4	5.80	69	2.80	11
International Food Items	22	33.33	20	30.31	19	28.79	2	3.03	3	4.54	66	2.85	8
Positive Faculty-Student Relationship	35	50.72	24	34.78	9	13.05	1	1.45	-	-	69	3.34	2
Positive Relationship With American Students	33	48.53	23	33.82	11	16.18	1	1.47	-	-	68	3.29	3

TABLE XXIII CONTINUED

AREA(S) OF SPECIALIZED NEED	V.OFTEN NEED		FREQUENT NEED		OCCL: NEED		LIMITED NEED		NO NEED		NO OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Friends from Home Country	17	26.98	25	39.69	16	25.39	4	6.35	1	1.59	63	2.84	10
Language Skill	45	59.99	18	24.01	9	12.00	2	2.67	1	1.3	75	3.30	1
Orientation regarding American Expectations	16	23.53	22	32.35	20	29.41	8	11.77	2	2.94	68	2.97	6.5
Shopping Centers	24	25.83	19	28.36	16	23.88	6	8.95	2	2.98	67	2.85	9
Orientation regarding American Culture	11	15.94	23	33.33	22	31.88	11	15.94	2	2.90	69	2.43	16
Orientation regarding Environment, Culture of Oklahoma State and OSU	9	13.23	26	38.23	21	30.88	11	16.18	1	1.47	68	2.45	15

responses and the highest mean score-3.39. The second ranked position was for "Positive faculty-student relationship" with 69 responses and a 3.34 mean score, while third was "Positive Relationships with American students" with 68 responses and a 3.29 mean score. Fourth was "Health Care" with 71 responses and a 3.28 mean score, while "Housing" ranked fifth with 68 responses and a 3.11 mean score, followed by "Orientation regarding American expectations" ranking sixth with 68 responses and a mean score of 2.85, also tying for sixth was "Public Transportation". Ranking eighth "International Food items" followed by "Friends from home country" with 63 responses and a 2.84 mean score, while ranking tenth was "Recreation" with 69 responses and a 2.80 mean score. "Necessity of having American friends" ranked eleventh with a mean score of 2.77 and 68 responses. "Banking services" ranked twelfth with 74 responses and a 2.50 mean score, followed by "Religious and spiritual" with 69 responses and a mean score of 2.55. "Creating job opportunities for international graduate students" and "Tuition waiver for family members" were perceived as additional "Family Needs" by international graduate students.

The mean score of 2.38 for "Sports Participation" with 69 responses was at the bottom of the rankings. Perceived next to last was "Orientation regarding American Culture" with 69 responses and a 2.43 mean score, followed "Orientation regarding the environment, culture, and traditions of Oklahoma and OSU" which had 68 responses and a

mean score of 2.45.

### Education and University Requirements

The data contained in Table-XXIV address nine selected areas of need under sub- category of "Educational/University Requirements", which revealed that "Advisement from Faculty" with 68 responses and a mean score of 3.22 was ranked as "very often a need". Second was "Library Service" with 67 responses and a 3.18 mean score. Ranking third as perceived need was "Academic Standings". Grading System and Expectations" with 63 responses and a 3.1 mean score. "Tuition regulations" ranked fourth with 64 responses and mean score of 2.97. "Graduate college requirements" was on 5th place with 65 responses and mean score of 2.76. Sixth ranking position was for "Enrollment procedure" having 63 responses and 2.7 mean score. "International Student Organizations" was seventh with mean score of 2.66 and 65 responses. "Admission requirements" with 66 responses and a mean score of 2.48 ranked last as perceived need, while the perceived need to be involved in "Social Gathering" ranked eighth.



TABLE XXIV

SUMMARY OF PARTICIPANT PERCEPTIONS CONCERNING LEVELS OF  
NEED RELATING TO EDUCATIONAL AND UNIVERSITY  
REQUIREMENTS BY SPECIFIC AREA OF NEED

AREA(S) OF SPECIALIZED NEED	V.OFTEN NEED		FREQUENT NEED		OCCL: NEED		LIMITED NEED		NO NEED		NO OF RESP.	MEAN SCORE	RANK
	N	%	N	%	N	%	N	%	N	%			
Admission Requirements	23	34.85	22	33.33	10	15.15	6	9.09	5	7.58	66	2.48	9
Advisement from Faculty	31	45.59	24	35.29	11	16.18	1	1.47	1	1.47	68	3.22	1
Academic Standings Grade system and expectations	21	33.33	29	46.03	10	15.87	2	3.18	1	1.59	63	3.10	3
Enrollment Procedure	19	28.57	29	46.03	10	15.88	2	3.17	4	6.35	63	2.70	6
Grad. College Requirements	18	27.69	26	40.00	14	21.54	2	3.08	5	7.69	65	2.76	5
International Students Organizations	14	21.54	29	44.61	13	20.00	4	6.16	5	7.69	65	2.66	7
Social Gatherings	15	23.45	21	32.81	19	29.69	4	6.24	5	7.81	64	2.58	8
Library Service	30	44.78	22	32.84	12	17.91	3	4.77	-	-	67	3.18	2
Tuition Regulations	19	29.69	30	46.87	11	17.19	2	3.12	2	3.12	64	2.97	4

## CHAPTER V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

The purpose of this chapter was to provide a brief summary of the study and to present the conclusions and recommendations based on the findings.

#### Summary of the Study

#### Problem Statement

International graduate students have come to Oklahoma State University from a number of countries throughout the world. These include students from many developing countries with only a small percentage from Europe and the "developed" nations. OSU has granted degrees to a large number of highly qualified graduates in various fields from the developing nations. The problem considered in this study dealt with selected needs of international graduate students in agriculture. The question was, were these selected needs relevant to international graduate students at OSU, and if so what was the perceived level of influence, agreement and need concerning the selected factors in terms of their personal, family, professional, and educational goals?

If specific needs are identified, can there not be a practical approach to the problem and what are probabilities in making positive changes that bring about mutual benefits for the students, the College and the University. If academic advisers know problems do exist, will the level of awareness be to such an extent that positive changes can be made at the student/teacher level without creating difficulties in other areas?

### Purpose

The purpose of this study was to determine the perceptions of the international graduate students concerning personal, family, professional and educational development needs during the course of study in the College of Agricultural Sciences and Natural Resources at Oklahoma State University.

### Objectives

The following objectives were established to achieve the purpose of the study:-

1. To determine the general characteristics of international graduate students enrolled in agriculture at Oklahoma State University during the 1991, summer session.
2. To determine levels of influence selected factors have, relative to international students' decisions to choose a graduate program at Oklahoma State University.
2. To determine the levels of agreement selected factors have, associated with previous job responsibilities

in ones' home country as perceived by international graduate students in agriculture at Oklahoma State University.

4. To determine the levels of need selected factors have, pertaining to the development of work skills which would enhance ones effectiveness in his/her area of employment in the home country as perceived by international graduate students in agriculture at Oklahoma State University.

5. To determine the levels of agreement selected factors have, which apply to the perceived need for training, skill development, and/or education in the specific topic areas of agriculture, rural development, adult and extension education, and professional development by international graduate students in agriculture at Oklahoma State University.

6. To determine the levels of need selected factors have, relative to personal and family necessities and education / university requirements as perceived by international graduate students in agriculture at Oklahoma state University.

### Design of the Study

#### Population Of the Study

A population of 96 international graduate students in agriculture was identified from a list furnished by the Assistant Deans' office for International Programs in Agriculture. Seventy-five (78.13 %) returned completed

survey instruments. Sixty-two (82.67 %) of the respondents were male and thirteen (17.33 %) were female. Seventy-three (97.33 %) of the respondents represented developing nations, while one each was from France, and Spain Only students enrolled during the 1991, summer semester were asked to respond to the survey.

#### Development of the Instrument

A questionnaire was developed in consultation with the adviser and members of the author's study committee, as well as considerable input from student colleagues. The survey instrument included three major parts: a) demographics, b) factors influencing students to select graduate programs at Oklahoma State University, and c) needs assessment of perceived personal, family, educational and professional development needs.

Fourteen items were included in the demographic portion of the study, while 10 selected factors were addressed in Part-II, which dealt with factors influencing students to select a graduate programs at Oklahoma State University and Part-III, pertained to needs assessment, which included specific areas dealing with 10 eight selected items relative to the participants' jobs in their home countries and educational qualification, 20 thirty-two items concerning perceived need for skill development relative to enhancing the respondents' job effectiveness in their home countries, and 3) four topic areas relative to the respondents' need for training, skill development and education in a) general

agriculture, b) rural development, c) adult and extension education and d) professional development. Each of the four topic areas included 14 selected factors to which the respondents were asked to respond. Section-four of Part-III addressed needs with regard to Personal and family needs and education/University needs contained 19 selected factors, while 10 selected factors were included in the Educational / University sub-section.

Specific instructions to provide only one response to each of the 14 demographic inquiries in Part-I were emphasized. These statements included forced answer items with exhaustive and mutually exclusive responses for the purposes of collecting nominal data. The statements relative to Part-II and Part-III of the instrument were composed of selected factors with five categories relative to level of influence, levels of agreement and levels of need. The quantitative data were secured utilizing a five-point "Likert-type" scale.

#### Collection of the Data

Ninety six survey instruments were distributed to the potential respondents in late July, 1991 through a net-working of personal contacts, friends, faculty and departmental secretaries. Seventy-five (78.13 %) questionnaires were returned by mid-September, 1991. However, all respondents did not respond to every question, therefore a discrepancy exists in the "N" value of some tables.

A follow-up of non-respondents was not conducted.

### Data Analysis

Frequency distributions, percentages, mean scores and rank orders by mean scores were the descriptive statistics utilized to treat the data under the study.

### Major Findings of the Study

#### Demographics

1. Twenty-six participants were in the age group of 26-30 years, while 25 were of 21-25 years age group and four were in the age group of 41 years and more.
2. Forty-eight students had M.S. and 25 had B.S. degrees prior to enrollment at OSU, while two had Ph.D degrees and were working on post-doctorate research. Thirty-four students were pursuing M.S., 37, Ph.D, 2, Ed.D degrees and two were involved in post-doctorate research programs.
3. Of the 55 respondents who replied the question regarding employment status, 18 had been working in Research Organizations in their home countries, 14 were in the teaching profession at University level, twenty were in the Planning and other Administrative government agencies, while two were in the banking profession and one with an engineering firm.
4. During the period from 1987 to 1991, largest number of international graduate students enrolled in the College of Agricultural Sciences and Natural Resources, in one calendar

year was the year 1990 with enrollment of 41 students.

Thirty-nine students were enrolled during the Fall semesters, while twenty-four were enrolled in the Spring semesters and twelve in summer sessions during 1987-1991.

5. The Maximum length of stay for three international graduate students in Agriculture was five years, while thirty-one students were here for a year, twenty-six for two years and seven had three year stay at OSU.

6. Ninety-two percent of the international graduate students lived in Married students housing. Only eight percent were lived off-campus.

7. Forty-three students attended orientation programs upon arrival at OSU while 35 did not attend such programs.

Regarding English Language Proficiency, it was indicated that 42 students passed the TELP exam, 22 attended English Language course 0003 and one attended EL course No.1313 which were offered by the English Language Institute (ELI) on campus.

8. Concerning sponsoring/funding agencies of international students, it was revealed that 33 students were funded by their home country programs, 25 by USAID assisted programs, 9 were on Assistantship, 3 by families or their own arrangements, one by International Monetary Fund, one by Rotary Foundation and two were Fullbright Scholar.

9. Prior to enrollment at OSU, 22 international students had no teaching or other work experience. Sixteen students had teaching or other work experience in Pakistan, seven in China, four in Saudi Arabia, seven in Africa, four in



Indonesia, four in Korea, three in Malaysia, one in Yemen, one in Thailand and one in a Canadian University.

### Selected Factors of Influence

Results indicated that the "Academic reputation of Oklahoma State University" was the most influencing factor which affected their decision to study here. The second most important factor was "Geographic Location of the Institution" and the third factor was "Foreign (USAID) assisted programs" for students to pursue graduate programs at OSU.

### Needs Assessment

#### Job in Home Country/Education qualification

"Academic requirements relevant to their job at home" was the most important factor for continuing further studies while the second most important factor was "Need for further development of skills to perform jobs more efficiently" and third was a "Shortage in particular field of specialization in home country".

### Skill Development Needs

#### Enhance Work/Job Effectiveness

"Maintenance and Operation of Laboratory equipment" ranked first among areas of greatest need for skill development, whereas "Procedure and skills for conducting

research" was second. Although the data indicated that more students rated the later factor as being of a "Very Great Need" and the remaining students were divided choices among other four levels of agreement. In the case of the former factor some respondents rated it as a "Great need" and a "Moderate need" rather than a "Very Great Need". The least interest among skill development needs seemed to be in the area of "New irrigation methods", "Land tenure system", and "Calculus and advanced mathematics for use in agricultural research".

### Training / Skills /Education

#### Needs Among Selected Variables

1. Under the major category of Agriculture, "Food processing" was a "very great need", while "Irrigation practices" were also perceived to be a legitimate need in the "Agree" category.
2. In the area of Rural Development the respondents were in "agreement" concerning the importance of "Economic Development" as a need while "Conservation of environment" was perceived as the second highest in level of agreement. There was little agreement for "Rural housing" as a perceived need among the respondents, while little agreement for "infrastructure" as a need.
3. Under the category of Adult and Extension Education the respondents were in complete agreement regarding "Program Planning" as a perceived need, while "Planning and

appraisal of agricultural projects" was the second and "Need assessment" was ranked third. "Principals of Learning" was at the bottom of the list with little agreement in the affirmative. "Organizing adult groups" also considered of lesser importance with regard to levels of agreement.

4. Under the topic of Professional Development, "Computer operation and application" ranked first and had "Strong agreement", among the respondents. "Grant and proposal writing" and "Technical writing" skills tied for second in perceived level of agreement. Even though "Photography" and "Operation and maintenance of audio / video equipment" were rated rather low, they were still perceived to be in the "agree" category as a need.

### Personal and University Needs

#### Personal and Family Needs

1. In the "Personal and Family needs" area, "Language skills" ranked first, while "Positive Student-Faculty relationship" ranked second. "Sports participation" and "orientation to American culture" ranked at the bottom of "personal and family needs".

#### University / Educational Requirements

2. In the area of University/educational requirements "Advisement from Faculty" was the highest ranking factor while "Library services" were second. The least important need as perceived by the respondents among

education/university requirements was "International students organizations".

### Conclusions

The following conclusions were drawn on the basis of the findings of the study which were carried out to assess the needs of the international graduate students concerning their personal, family, professional and educational development, while enrolled in the College of Agricultural Sciences and Natural Resources at Oklahoma State University.

1. On the basis of the findings of the study it was concluded that a large number of students from developing nations have been attending the College of Agricultural Sciences and Natural Resources, primarily because of the reputation of academic programs in agriculture at OSU.
2. Based on the findings of the study it was also concluded that the internationals enrolled in the College of Agriculture during the 1991 summer session were male students 26 to 41 years old.
3. Equal numbers of international graduate students were pursuing Master of Science and Ph.D programs in agriculture at OSU.
4. "Academic reputation" was a major concern among graduate students when selecting an institution for the purpose of earning an advanced degree. Therefore, it was concluded that international graduate students in agriculture held positive views with regard to their educational experience at Oklahoma State University.

5. However, it was also concluded that a definite need exists among graduates for research, education and computer skills in order to advance professionally in their respective home countries.
6. As a result of the study findings it was concluded that skills in "Market Development" was a need among international graduate students in agriculture.
7. "Program Planning" and "Planning and appraisal of agricultural projects" were perceived as skills which were essential to make best use of the available agricultural resources by the developing nations.
8. Based on the findings of the study it was concluded that in the major areas of Professional Development, "Computer Operation and Application" were important needs of the international students with regard to professional advancement.
9. It was further concluded, "Technical writing" and "Grant and proposal writing" were important skills to be acquired among international graduate students in carrying out their research responsibilities in the home country.
10. With regard to Personal and Family needs, "Language skills" were definite needs for international graduate students in their own environment as well as American culture.
11. It was rather obvious that positive faculty-student relationships were considered as an essential condition for program matriculation among international graduate students in agriculture.

12. "Academic advisement" and positive adviser-student relationships play a major role in the academic life of international graduate students in agriculture as well as timely matriculation through their degree programs.

### Recommendations

On the basis of the findings and conclusions of the study, the following recommendations were made:

1. Faculty/Advisers should keep in mind the expressed needs of international graduate students at the time of plans of study are prepared. Does the major area of study fit the student and his or her career goals?
2. Students should be given the latitude to select courses for their major area of study after conferring with their major advisers.
3. The results of the study should be utilized as a guide by the academic advisers of international graduate students in agriculture.

### Further Studies

1. A similar study including the American students in agriculture should be carried out with a view to carry out a comparison of the needs as perceived by international and native students.
2. An appraisal of the courses currently offered in agriculture graduate programs should be conducted to determine their usefulness for students in the areas of skill development and enhancing professional capabilities,

both by international graduate and American students.

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## **APPENDIXES**

**APPENDIX A**

**COVER LETTER**

22nd July, 1991

Dear Friend and Colleague:

I am a graduate student in the Agricultural Education Department and conducting a study entitled "An Assessment of Educational and Professional Development Needs As Perceived By International Graduate Students Enrolled In The College Of Agriculture, Oklahoma State University." The study should improve programs offered by the University on the basis of the results of this study. It will help make graduate programs more beneficial to you (international students) as well as the respective positions which you fill in your country. In addition, advisers will better be able to assist you in preparing a plan of study to meet your needs and make the training more useful.

In conducting the study, I need your help and cooperation. I am sending a questionnaire with this letter which contains questions regarding perceived needs pertaining to family, the university and professional needs during your stay at Oklahoma State. I am requesting you to fill out the attached questionnaire at your earliest convenience and return not later than 15th August, 1991.

This would enable me to complete my MS Degree program in Agricultural Education at the earliest possible time.

Your cooperation and help is appreciated.

Regards!

Sincerely,

James D. White  
Thesis Adviser  
Department of  
Agricultural Education

(ALTAF HUSSAIN BHATTI)  
Graduate Student  
Agricultural Education  
Department

**APPENDIX B**

**QUESTIONNAIRE**

**SURVEY OF INTERNATIONAL GRADUATE STUDENTS  
COLLEGE OF AGRICULTURAL SCIENCES AND  
NATURAL RESOURCES, OKLAHOMA STATE UNIVERSITY**

**I. DEMOGRAPHIC INFORMATION;**

Please indicate ONLY ONE response for the next 14 questions.

1. Country of origin: \_\_\_\_\_
2. Gender:
  - 1) \_\_\_ Male
  - 2) \_\_\_ Female
3. Age: \_\_\_\_\_
4. Highest level of formal education prior to enrolling at Oklahoma State University:
  - 1) \_\_\_ High School Graduate
  - 2) \_\_\_ B.S.
  - 3) \_\_\_ M.S.
  - 4) \_\_\_ M.A.
  - 5) \_\_\_ Other (Specify): \_\_\_\_\_
5. The Degree which you are pursuing:
  - 1) \_\_\_ Master of Science
  - 2) \_\_\_ Master of Agriculture
  - 3) \_\_\_ Ph. D.
  - 4) \_\_\_ Ed. D.
  - 5) \_\_\_ Other (Specify): \_\_\_\_\_
6. Primary emphasis (Major field) of graduate study.

(eg. AGECE, AGRON, AGEN, HORT, ANSI, AGED ):

\_\_\_\_\_

7. Were you employed in your country prior to enrolling at OSU?

a. \_\_\_\_\_ Yes \_\_\_\_\_ No

If so, please write the name of the department/  
company/institution where you were working.

b. \_\_\_\_\_

8. First Semester enrolled at Oklahoma State University:

SEMESTER

YEAR

1) Fall

\_\_\_\_\_

2) Spring

\_\_\_\_\_

3) Summer

\_\_\_\_\_

9. Length of Educational stay at OSU?

\_\_\_\_\_ One year \_\_\_\_\_ Two year

\_\_\_\_\_ Three year \_\_\_\_\_ Four year

\_\_\_\_\_ Other (Specify) \_\_\_\_\_

10. Please indicate current living arrangements at OSU.

housing \_\_\_\_\_ Dormitories \_\_\_\_\_ Married student

\_\_\_\_\_ Private housing \_\_\_\_\_ On-campus with an  
off-campus American room mate

\_\_\_\_\_ Other (Specify) \_\_\_\_\_

11. Did you participate in an orientation program upon your arrival at OSU to acquaint yourself with American culture, traditions and expectations?

\_\_\_\_\_ Yes \_\_\_\_\_ No

12. Please indicate your level of English proficiency.



- \_\_\_\_\_ Passed TOFEL Exam
- \_\_\_\_\_ Passed ENGL 1013 and/ or 1033
- \_\_\_\_\_ Passed ENGL 2333 or 3323 (Technical writing)
- \_\_\_\_\_ Enrolled in English Language Institute at OSU
- \_\_\_\_\_ Other (Specify) \_\_\_\_\_

13. What is your major source of funding which sponsors/ supports your academic program at OSU.

- \_\_\_ Private (family and personal savings)
- Government in my home country
- Employment off campus
- \_\_\_ Employment on campus
- \_\_\_ Assistantship in Academic Department
- \_\_\_ Fulbright scholarship/fellowship
- \_\_\_ USAID
- \_\_\_ Ford Foundation
- \_\_\_ Winrock International
- \_\_\_ National Science Foundation
- \_\_\_ Others (Specify) \_\_\_\_\_

14. Please indicate previous international experiences prior to enrolling at OSU.

- \_\_\_ Chinese Universities
- \_\_\_ English (U.K.) Universities
- \_\_\_ Australian and New Zealand Universities
- \_\_\_ Japanese Universities
- \_\_\_ Pakistani Universities

- \_\_\_ International work experience
- \_\_\_ European Universities (excluding the U.K.)
- \_\_\_ Work experience in U.S.A.
- \_\_\_ Other (Specify) \_\_\_\_\_

## **II. SELECTED FACTORS OF INFLUENCE:**

1. Please respond to the selected items by circling the number that best reflects the degree of influence each of the following factors had on your decision to choose a Graduate Program at OSU. (4= Very Great influence, 3= Great influence, 2= Moderate influence, 1= Some influence and 0= No influence).

I. Parents or Guardians	4	3	2	1	0
2. Friends who had previously studied at OSU	4	3	2	1	0
3. Your Government's educational support program	4	3	2	1	0
4. Foreign aid (USAID) or other Training Program	4	3	2	1	0
5. Academic reputation of the institution	4	3	2	1	0
6. Geographic location and climate	4	3	2	1	0
7. Relative cost of the program	4	3	2	1	0
8. Size of the University	4	3	2	1	0
9. Reputation of the institution's Research program	4	3	2	1	0
10. Other (Be specific) _____	4	3	2	1	0

## **III. NEEDS ASSESSMENT:**

1. Please respond by circling the number that best reflects your perception of the questions relative to your job (in your country) and educational qualifications.

(5= Strongly agree, 4= Agree, 3=Disagree, 2=Strongly Disagree and 1=Undecided).

1. Academic requirements in my discipline at OSU are relevant to my job at home.	5	4	3	2	1
2. I need to further develop skills in my area of specialization to perform more effectively.	5	4	3	2	1
3. There is a shortage of highly	5	4	3	2	1

- qualified personnel in my field of study in my home country.
- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 4. Development of my research skills is imperative so that I may utilize the research facilities available in my country.   | 5 | 4 | 3 | 2 | 1 |
| 5. Development of research skills and techniques are necessary for me to utilize the laboratories and scientific equipment available in my country.                   | 5 | 4 | 3 | 2 | 1 |
| 6. Development of writing skills and knowledge of published research is necessary for me to effectively utilize research libraries.                                   | 5 | 4 | 3 | 2 | 1 |
| 7. Further development of computer skills is necessary for me to be an effective researcher in my country.  | 5 | 4 | 3 | 2 | 1 |
| 8. Development of Grant and Proposal writing skills is necessary for me to acquire the needed financial support for carrying out research efforts in my home country. | 5 | 4 | 3 | 2 | 1 |

**2. Please circle the response which best reflects your perceptions concerning your needs for development of skills, that would enable you to work more effectively in your country. Use the following scale: 4=Very Great Need, 3=Great Need, 2=Moderate Need, 1=Somewhat of a Need and 0= No Need)**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. Writing proposals and technical papers   | 4 | 3 | 2 | 1 | 0 |
| 2. Procedure and skills for research.   | 4 | 3 | 2 | 1 | 0 |
| 3. Evaluation of educational programs and/or agricultural projects.                                       | 4 | 3 | 2 | 1 | 0 |
| 4. Planning, designing, developing and conducting short courses for in-service education/ training needs. | 4 | 3 | 2 | 1 | 0 |
| 5. Preparation and presentation of reports and seminars.  | 4 | 3 | 2 | 1 | 0 |
| 6. Project planning and appraisal.  | 4 | 3 | 2 | 1 | 0 |
| 7. Use of audio/visual aids for training.   | 4 | 3 | 2 | 1 | 0 |
| 8. Marketing local agriculture products in the world market.  | 4 | 3 | 2 | 1 | 0 |

9. Procedures, Rules, and Regulations for securing development assistance from international financial institutions. (eg. World Bank, Asian Bank, Latin American Development Bank, etc.).	4	3	2	1	0
10. Formulation of Agricultural policies for developing countries.	4	3	2	1	0
11. New methods of irrigation.	4	3	2	1	0
12. Energy Conservation.	4	3	2	1	0
13. Soil and water conservation.	4	3	2	1	0
14. Development and planning of rural roads.	4	3	2	1	0
15. Control of crop diseases.	4	3	2	1	0
16. Needs Assessment for rural development	4	3	2	1	0
17. Calculus and advanced mathematics for use in Agricultural research.	4	3	2	1	0
18. Statistical applications in designing Agricultural projects.	4	3	2	1	0
19. Maintenance and operation of scientific equipment in laboratories to carry out research.	4	3	2	1	0
20. Watershed Management.	4	3	2	1	0
21. Study of crops which could be suitable for the climatic conditions of your country but not grown at present.	4	3	2	1	0
22. Domestic and International Agricultural policy.	4	3	2	1	0
23. Land tenure system.	4	3	2	1	0
24. Agricultural Pricing.	4	3	2	1	0
25. Taxation.	4	3	2	1	0
26. Food storage methods and regulations.	4	3	2	1	0
27. Landscaping and Ornamental Horticulture	4	3	2	1	0
28. Experimental Design	4	3	2	1	0
29. Operation of Agricultural equipment	4	3	2	1	0

(Tractors, Combines, Augers, Hay Balers etc)					
30. Operation of Video Equipment	4	3	2	1	0
31. Others (Specify) _____	4	3	2	1	0
32. _____	4	3	2	1	0

3. Please indicate YOUR NEED FOR TRAINING/SKILLS/EDUCATION, etc.\_as a graduate student in agriculture at OSU. Circle the number which best reflects YOUR PERCEIVED AGREEMENT OF NEED among the selected areas listed regarding Agriculture, Rural Development, Adult and Extension Education, and Professional Development.

Utilize the following scale for your responses 5=Strongly agree, 4=Agree, 3=Disagree, 2= Strongly Disagree and 1=Undecided.

-----  
 SELECTED COURSES/TOPIC AREA  
 -----

AGRICULTURE

1. General Agriculture	5	4	3	2	1
2. Marketing of Agricultural Commodities.	5	4	3	2	1
3. Animal Health	5	4	3	2	1
4. Insect and Pest control	5	4	3	2	1
5. Agricultural Chemicals	5	4	3	2	1
6. Artificial Insemination	5	4	3	2	1
7. Plant Diseases	5	4	2	2	1
8. Soil Fertility	5	4	3	2	1
9. Irrigation	5	4	3	2	1
10. Agricultural Engineering	5	4	3	2	1
11. Food Processing	5	4	3	2	1
12. Horticulture	5	4	3	2	1

13. Animal Nutrition	5	4	3	2	1
14. Other (Specify): _____	5	4	3	2	1

### **RURAL DEVELOPMENT**

1. Water Quality (Human consumption)	5	4	3	2	1
2. Infrastructure	5	4	3	2	1
3. Human Nutrition	5	4	3	2	1
4. Economic Development	5	4	3	2	1
5. Rural Roads / Transportation	5	4	3	2	1
6. Conservation of Environment	5	4	3	2	1
7. Flood Control	5	4	3	2	1
8. Market Development	5	4	3	2	1
9. Food Processing	5	4	3	2	1
10. Food & Food Product Storage	5	4	3	2	1
11. Rural Housing	5	4	3	2	1
12. Rural Medical Services	5	4	3	2	1
13. Conducting Impact and Feasibility analysis	5	4	3	2	1
14. Other (Specify): _____	5	4	3	2	1

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### **ADULT & EXTENSION EDUCATION**

1. Needs Assessment	5	4	3	2	1
2. Program Planning	5	4	3	2	1
3. Teaching Methods	5	4	3	2	1
4. Conducting In-Service education and shortterm training programs	5	4	3	2	1
5. Farming Systems Research	5	4	3	2	1
6. Planning & Appraisal of	5	4	3	2	1

### Agricultural Projects

7. Principles of Adult Education	5	4	3	2	1
8. Principles of Learning	5	4	3	2	1
9. The Adoption Process	5	4	3	2	1
10. Organizing Adult Groups	5	4	3	2	1
11. Preparation of teaching aids	5	4	3	2	1
12. Conducting Field Days	5	4	3	2	1
13. Conducting On-Farm Demonstrations	5	4	3	2	1
14. Other (Specify): _____	5	4	3	2	1

### PROFESSIONAL DEVELOPMENT

1. Experimental Design	5	4	3	2	1
2. Photography	5	4	3	2	1
3. Operation of Audio and Video equipment	5	4	3	2	1
4. Human Relations	5	4	3	2	1
5. Personal Development	5	4	3	2	1
6. Publication of Research	5	4	3	2	1
7. Computer operation and applications	5	4	3	2	1
8. Technical Writing	5	4	3	2	1
9. Grant & Proposal Writing	5	4	3	2	1
10. Development of Leadership skills	5	4	3	2	1
11. Development of Budgets	5	4	3	2	1
12. Presentation of Research papers	5	4	3	2	1
13. Operation of Laboratory Equipment (eg. Gas Chromo-spectrometer, etc.)	5	4	3	2	1
14. Other (Specify): _____	5	4	3	2	1

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4. Please indicate YOUR LEVEL OF NEED as a graduate student in agriculture at OSU. Circle the number which best reflects your perceived agreement regarding the selected areas of Personal and Family Need(s) concerning educational & university requirements. Utilize the following scale for your responses: 4=Very Often a Need, 3=Frequently a Need, 2=Occasionally a Need, 1=Limited Need and 0= No Need)

**PERSONAL & FAMILY NEEDS**

1. Public Transportation	4	3	2	1	0
2. Financial (Banking) Services	4	3	2	1	0
3. Housing	4	3	2	1	0
4. Health Care	4	3	2	1	0
5. Participation in sporting events/activities	4	3	2	1	0
6. Communication with families from my home country	4	3	2	1	0
7. Necessity of American friends	4	3	2	1	0
8. Religious/Spiritual needs	4	3	2	1	0
9. Recreation	4	3	2	1	0
10. International Food Products	4	3	2	1	0
11. Positive Faculty/Student relationships	4	3	2	1	0
12. Positive relationships with American students	4	3	2	1	0
13. Friends among your fellow "Countrymen"	4	3	2	1	0
14. Language skills	4	3	2	1	0
15. Orientation concerning American expectations	4	3	2	1	0
16. Shopping centers	4	3	2	1	0
17. Orientation regarding American culture	4	3	2	1	0
18. Orientation regarding the State of Oklahoma and OSU environment/culture/traditions etc.	4	3	2	1	0
19. Other (Specify): _____	4	3	2	1	0

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**EDUCATIONAL/UNIVERSITY REQUIREMENTS**

1. Admission Requirements	4	3	2	1	0
2. Advisement from faculty	4	3	2	1	0
3. Academic Standing: Grading system and Expectations	4	3	2	1	0
4. Enrollment Procedure	4	3	2	1	0
5. Graduate College Deadlines	4	3	2	1	0
6. International Student Organizations	4	3	2	1	0
7. Social Gatherings	4	3	2	1	0
8. Library Services	4	3	2	1	0
9. Tuition Regulations	4	3	2	1	0
10. Other (Specify): _____	4	3	2	1	0

VITA<sub>α</sub>

ALTAF HUSSAIN BHATTI

Candidate for the Degree of  
Master of Science

**Thesis:** AN ASSESSMENT OF PERSONAL, EDUCATIONAL AND PROFESSIONAL DEVELOPMENT NEEDS AS PERCEIVED BY INTERNATIONAL GRADUATE STUDENTS ENROLLED IN THE COLLEGE OF AGRICULTURAL SCIENCES AND NATURAL RESOURCES AT OKLAHOMA STATE UNIVERSITY

**Major Field:** Agricultural Education

**Biographical:** Personal Date: Born in Batala (East Punjab, India) on December, 27th, 1946. The son of Mr. Munawwar Hussain and Hanifa Munawwar. Married to Asghari Khanam in Lahore on 1st October, 1972. Having five daughters Naila, Shumaila, Iram, Mariyam, Farrukh and son Mohammad Kamran. Presently living in Quetta, Balochistan south western province of Pakistan.

**Educational:** Received High school education from Government Special high school, Quetta in 1962. Received Bachelor of Arts degree from the Punjab University, Lahore Pakistan in 1968. Master of Arts, Economics during 1973 and Master of Arts, Urdu (Language/Literature) during 1974 from Balochistan University, Quetta Pakistan. Received Postgraduate Diploma in Development problems and policies from Glasgow University, Scotland, UK, during 1984-85. Completed requirements for the Master of Science degree program in Agricultural Education at Oklahoma State University, Stillwater in December, 1991.

**Professional:** Worked as Accounts Assistant in Railway Accounts Office, Pakistan Railways, Quetta from 1966 to 1975. Joined the Planning and Development Department, Government of Balochistan Pakistan as Economic Investigator during 1975. Worked as Planning Officer, in the same department from 1975 to 1976, as Research Officer from 1976 to 1984 and as Assistant Chief of Section from 1984 until the date of departure from Pakistan for OSU.