STRATEGIES TO ENHANCE PRODUCTIVE RELATIONSHIPS BETWEEN EXTENSION PERSONNEL AND UNIVERSITY FACULTY IN DEVELOPING NATIONS

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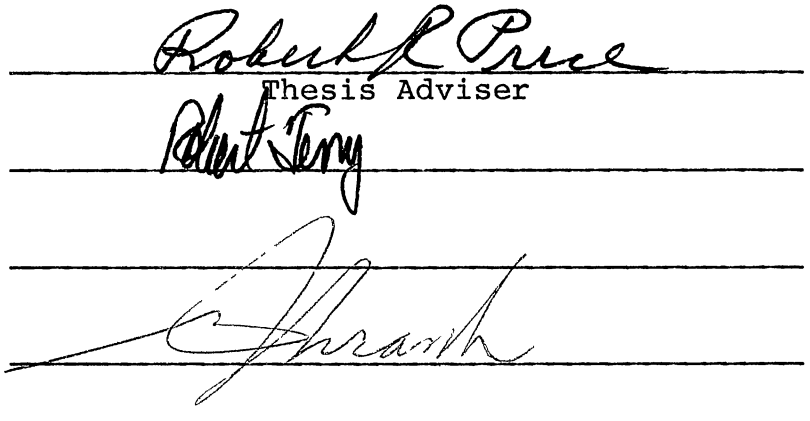

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CHAPTER I

INTRODUCTION

While it is largely true that many, if not most, of the developing countries have been giving a high priority to the development of extension programs in agriculture, it must also be recognized that the preparation of individuals to carry on this work has sometimes been a bit difficult. The tremendous task of adequately preparing people to work in the extension field in agriculture would seem to almost mandate an increasing allocation of resources, both physical and human to the accomplishment of securing an enlightened and enthused agricultural sector. Of high importance is the need for a considerable degree of cooperation between Higher Education and Agricultural Extension. It is within this relationship that a crucial element exists in the bringing of scientific discoveries to the farmer, and in bringing about eventual adoption and application of these new techniques to his farming operations.

Background of the Study

The distribution of developing countries, while concentrated in Asia and Africa, also must include Central and South America as well as the Caribbean and islands of the

Pacific (see Figure 1). Many references are made to the Third World. Generally speaking, the so-called third world contains those countries where per capita income is below $829.00 per year (1, Atlas, p. 8). However, a number of countries where the per capita income is somewhat higher are still considered to be developing countries, particularly when the per capita income of farmers is considered (see Table I). Perhaps the most outstanding example is Saudi Arabia whose vast oil resources place this nation in a category of a per capita income of over $8,270 per year. Nevertheless, the agricultural sector is experiencing a rapid transition through application of development. Nations selected for this study did include selection from a wide spectrum of geographic locations as well as economic levels. The study was restricted to nations where efforts were being made to develop the agricultural sector.

A cursory survey reveals that although each of the selected nations have their own distinctive agricultural extension operation, there are certain commonalities as to function, operation, and problems of delivery. Although there is a wide gap between Haiti and Saudi Arabia in terms of per capita income, problems of maintaining an effective agricultural extension service would appear to apply in a similar manner in each country (see Table I). In a similar manner, it must be recognized that programs of study specifically in agriculture and agricultural education, differ considerable among nations. Requirements for graduation vary as

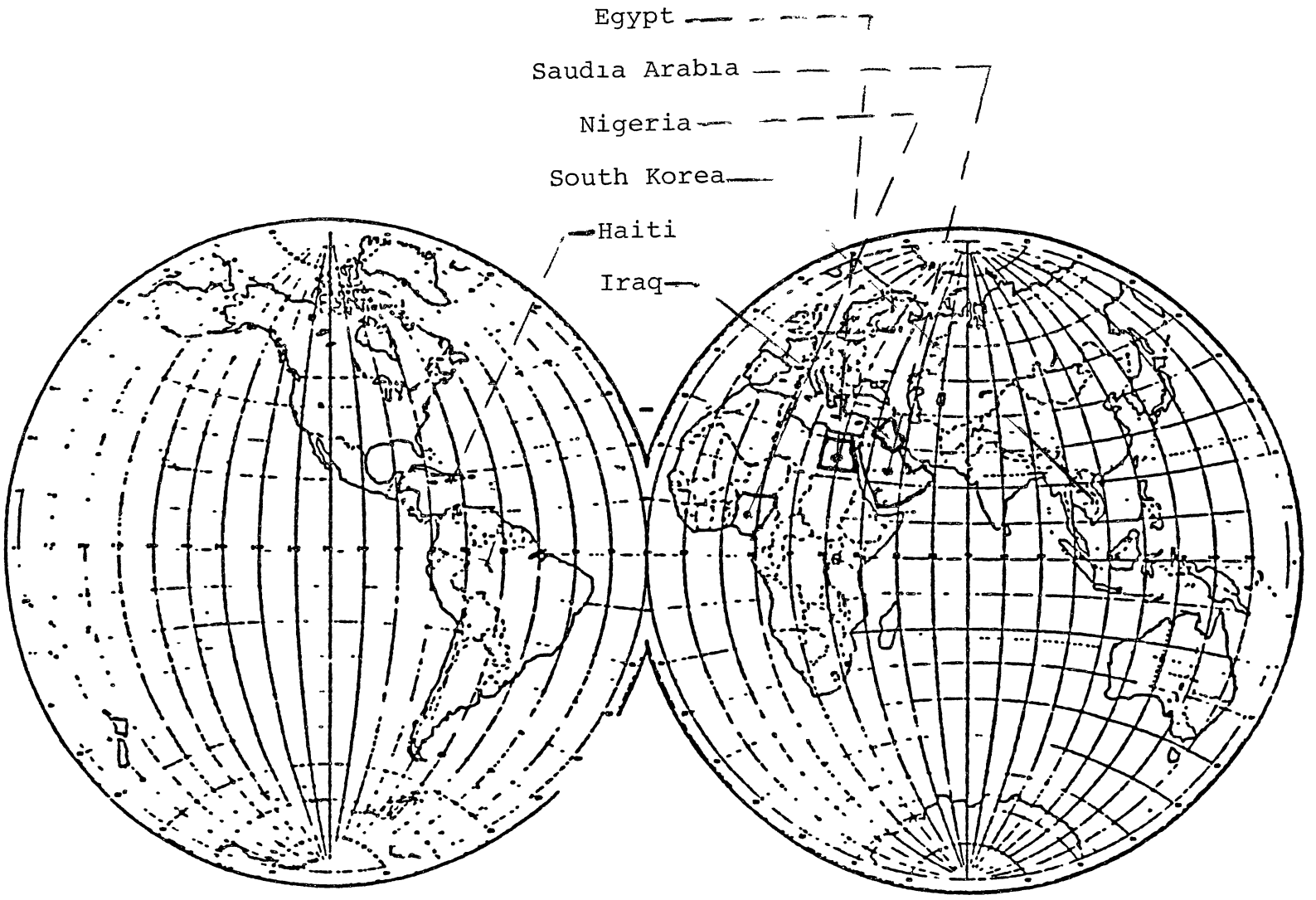

Figure 1. Location of Developing Nations Included in the Study

well as required curricular content. Teaching methods employed by institutions of higher education vary not only among nations but within a given nation.

TABLE I

PER CAPITA INCOME LEVELS IN COUNTRIES INCLUDED IN THE STUDY

Income Group	Country
Less than $360	Haiti
$360 to $829	Egypt
$830 to $3,539	Iraq Nigeria
$3,540 to $8,269	South Korea
$8,270 and over	Saudia Arabia

Source: 1983 World Bank Atlas, Gross National Product, Population, and Growth Rates, International Bank for Reconstruction and Development. Washington, D.C., 1983.

Statement of the Problem

Among developing nations, considerable variation exists in the nature and extent of the working relationship between agricultural extension program personnel and the personnel in higher education in institutions which are responsible for

preparing extension workers. Therefore, it was recognized as essential that an attempt be made to determine perceptions about present relationships as held by key personnel in each of the two groups. What were the concepts which people working in agricultural extension in developing countries had concerning the most effective studies which people in training for extension currently in colleges and universities should experience? Conversely, what were the perceptions of faculty in colleges and universities engaged in preparing extension personnel with regard to the way in which they should solicit and receive assistance from present extension personnel in designing and implementing preparatory programs.

Purpose of the Study

The central purpose of the study was to determine perceptions regarding the relative effectiveness of selected strategies which may enhance the preparation of agricultural extension workers in each of six selected developing nations. These perceptions were limited to two groups: (1) administrative personnel in national agricultural extension programs and (2) administrators and faculty of preparatory training in extension located in an institution of higher education. Perceptions to be determined were centered on the nature and extent of mutual concern and involvement of each strategy or practice and sought responses as to the extent (1) currently existing and (2) was desirable for the future.

Objectives of the Study

The objectives required to achieve the purpose were:

1. To describe the organization, structure, and content of the curriculum in agriculture and extension education common to institutions preparing students to work in assisting farmers to adopt better farm practices in six selected developing nations.

2. To determine both differences and commonalities in perception of selected strategies to enhance preparation of extension workers as held by (1) administrative and supervisory personnel in extension and (2) agricultural administrators and faculty of selected institutions preparing students to serve as extension administrators and/or workers.

3. To prepare a simple model illustrating the nature and extent of joint activities and mutual relationships which are recommended between the agricultural extension department and agricultural administration and faculty in institutions with responsibility for preparing extension personnel.

Assumptions of the Study

1. In this study, it was assumed that the participants were quite aware of the weaknesses and possible undesirable relationships which might exist betwen the national extension program and training institutions in their countries.

2. It was further assumed that participants were sufficiently aware of the relationship existing between the Agri-

cultural Extension program personnel and the personnel in training institutions included in this study. It was further assumed that the questions asked were feasible and practical for consideration of this relationship in each country studied and that respondents would be favorable toward achievement of a more effective extension system in their countries.

3. It was assumed that if participants are given adequate and knowledgeable information with regard to perceptions held by co-workers, they should then be able to play a vital role in bringing such change as may be needed to enhance the services provided by Agricultural Extension workers in their respective countries.

Scope and Limitation of the Study

1. This study was designed in such a manner as to limit respondents to (1) the administrators and supervisory personnel in national agricultural extension programs, and (2) the administrators and faculty most directly involved in Agricultural Extension training in institutions of higher education; both College of Agriculture or Universities. Respondents from each of the two groups were limited to the six selected developing countries. While it was difficult at the outset of the investigation to determine the number of faculty members and their administrators in higher education as well as the personnel in agricultural extension in each of the six countries, no precise limitations could be placed upon the number of individuals to be included in the study.

However, minimum numbers of at least five staff from each major training institution and five staff of each national agricultural extension personnel group were set to serve as respondents.

2. Since the returns from application of the survey instrument came from widely separated areas of the world which required them to be secured through mailing, it was recognized that this constituted a limiting factor, since some returns were likely to be lost in the mail or the solicited respondent may not feel obligated to carry out the task of mailing the schedule. Data secured and analyzed were limited too.

Study Design and Procedure

The study was designed to be largely a survey type of investigation. After a thorough review of pertinent literature, six developing nations were selected to represent various areas. Letters were sent to selected graduates of the Agricultural Education Department at O.S.U. currently residing in each of the selected six nations, requesting names and addresses of those people holding positions of responsibility both in colleges and universities, and in the national agricultural extension services. From this list, a mailing was made to each of the persons selected to serve as respondents. In some instances the addressed envelopes were combined in a single package and sent to the selected alumnus for distribution. Those responses secured were collated and

analyzed. A simple model was developed to be used as a basic design to formulate instruments to obtain responses upon which to be used as basis for making the recommendations for improvement of working relationships between colleges and university training institutions and the national Agricultural Extension Services (see Figure 2).

Definition of Terms

1. Perception. It was recognized that by widely accepted definition, perception is a process of observing, selecting, and organizing those stimuli which are constantly being received by the individual.

2. Development. This term was used with reference to a continuous process of change and growth in human and natural resources directed toward the achievement of welfare status and quality of life to be reached by citizens of a community or nation (2, adopted from Pierre, p. 7).

3. Agricultural Extension Administrative and Supervisory Personnel. The term Agricultural Extension personnel was used with reference to persons who have obligations and responsibility for executing the Agricultural Extension programs in a country or province, often largely in the rural areas.

4. Higher Education Training Institutions. For the purpose of this study, these were defined as those institutions which provide both initial preparatory and continuing programs for individuals studying to become and those current-

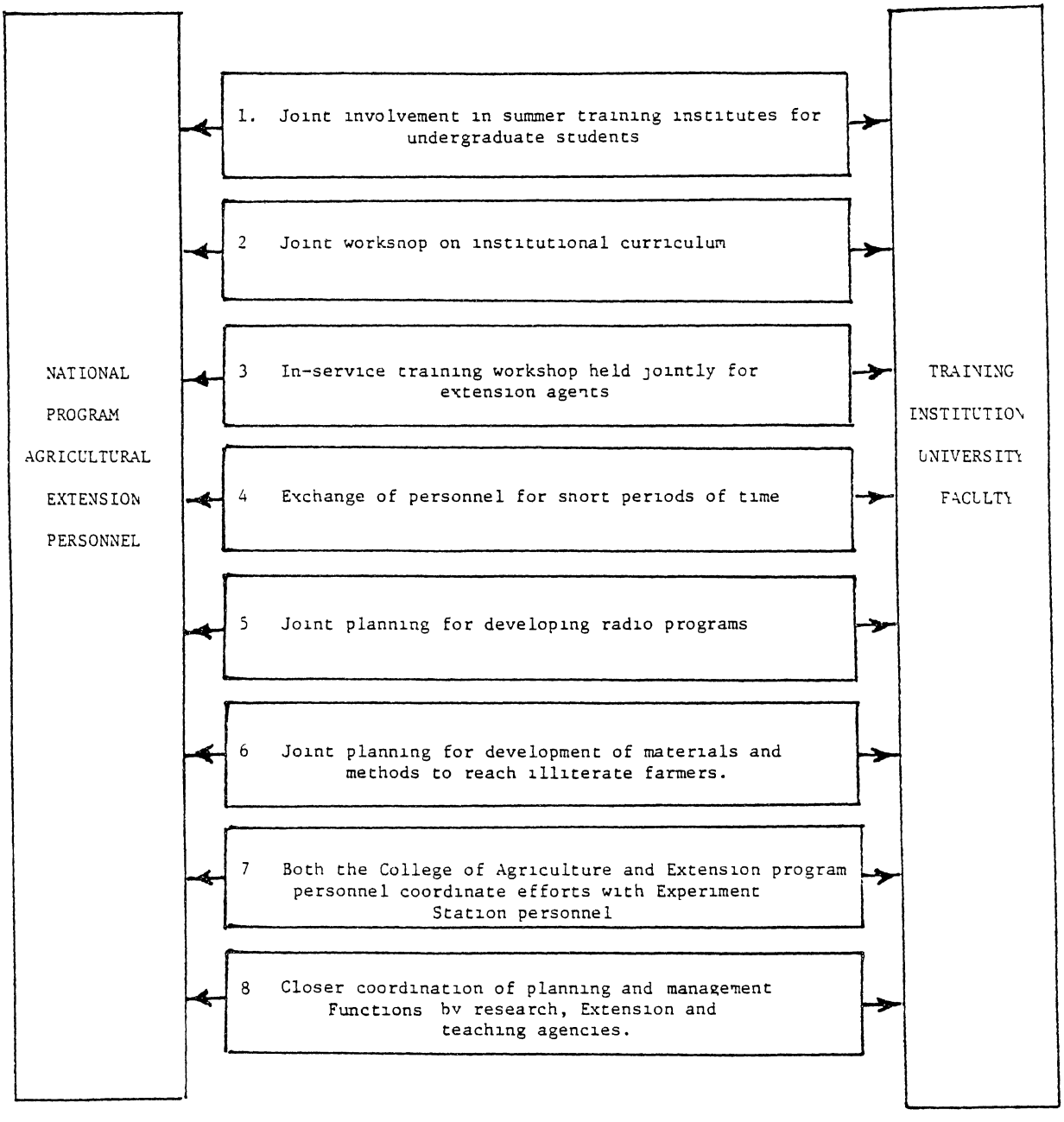

Figure 2. Initiative Strategies Proposed to Work for Achieving Better Relationships Between the Two Agencies

ly serving as extension workers. Only those who were involved in a major way in the training of professional agricultural workers were included.

5. Training for Service in Agricultural Extension. For purposes of this study, this term was used to describe both an initial and a continuous educational process by which abilities and skills demanded of extension personnel in their performance of duties are developed and enhanced. It furnishes opportunity for initial career development and continuing practical educational experiences while on the job. Included are efforts to obtain ever newer professional concepts of program management (3, adopted from Ben-Dhifallah, p. 10).

6. Curriculum. This term was used not only with reference to the courses generally included in each individual student's plan of study, but also included other common experiences of learning which were provided on a selective basis for students in training for careers (4, adopted from Kim, p. 9).

7. Cooperation. For purposes of this study, the term cooperation was used with reference to the nature and extent of mutual support provided by each of the participating groups. When a cooperative atmosphere exists both parties are primarily concerned about the welfare of their shared clientele, the agricultural producer and farmer.

8. Leadership. This term was defined as a process in which an individual takes initiative to assist a group to move toward production goals that are acceptable, to maintain

the groups, and to alleviate those needs of individuals within the group that compelled the individual to join it.

9. Relationship. For purposes of this study, relationship was used to describe the nature and extent of the acceptance or rejection of concepts and practices unique to one or the other of the two groups, agricultural extension program personnel and personnel of training institutions. The determining factor in many situations was considered to lie in joint efforts and recognition of the need for sharing responsibilities.

10. Communication. This term was defined as a process through which an individual receives a sense or impression of another. For this study the impression received by extension workers with regard to the program of studies provided by the training institution was considered of foremost importance and of course, vice versa was equally true.

11. Planning. This term was defined as a selection among alternative future courses of action for the extension organization as a whole and for each unit within it (5, Buford, p. 13.) In the same sense this term was used in a like manner with regard to the selection of study items and for the action of training institutions.

12. Strategies. For purposes of the study, strategies were used to indicate methods or planned actions directed toward the initial goal of achieving better working relationships between the two groups, agricultural extension personnel and personnel of training institutions of higher education.

CHAPTER II

REVIEW OF LITERATURE

A Brief Description of Selected Available Studies Related to the Agricultural Extension Programs in Some Developing Countries

The function and structure of extension programs vary somewhat with locality, social, and agricultural environment in each developing country. According to Oyenuga (6, p. 290):

> The major function of Agricultural Extension Services in Western Nigeria include the teaching of improved farm practices to farmers in the cultivation and processing of crops and livestock husbandry; multiplication and distribution of improved crop planting material and strains of livestocks; the collection and collation of information relating to rural economy; the planning, organization and execution of the cooperative farm settlement scheme, the organization of Farmer's Cooperatives, the young farmer's club, marketing facilities, and topo-logical, pest, disease, and vegetation surveys.

With regard to the efficiency of agricultural extension programs in the economic development in the Arab countries, the following principal lines were recommended (7, p. 15) as follows:

1. To bring to the Arab farmers the scientific knowledge fostered by the Ministries of Agriculture, the agricultural colleges and the agricul-

tural colleges and the agricultural experiment stations.

2. To encourage farmers to use better systems of crop rotation and to adopt modern techniques of farming and to purchase the necessary equipment. Also, to encourage them to use improved varieties of crop, more adequate fertilization, better livestock feeding based on nutritional principles, more effective disease and insect control, and many other developments have made farming more efficient.
3. To explore continuously ways and means for expanding international trade between Arab countries and enable the Arab farmers to improve the marketing efficiency and adequacy in the rendering of the marketing services.

One of the principal educational philosophies of the extension depends on the involvement and participation of rural people in the extension program. In order to teach them how to help themselves, Penders (8, p. 17) stated:

> The participation of the rural population in extension work is therefore essential. Their representatives should be associated to the maximum extent at the local, regional, national and even international level in the formulation of extension policies and requirements, and in planning and sharing the responsibility for carrying out extension programs.

Obibuaku (9, p. 115) explained that the low participation in extension programs could have been due to limitations imposed on extension workers by such factors as insufficient field staff, lack of transport facilities, inability of field staff to make effective use of these methods owing to poor training in the use of extension methods, or perhaps the lack of any training at all. These constraints have been identified by extension workers as serious bottlenecks in extension work in Nigeria.

Agricultural extension programs have been facing many

problems in developing countries. For example, it has been indicated that there were some problems facing the extension services in east Africa (10, pp. 56-57):

1. Lack of clearly defined extension objectives at all levels, lack of job descriptions for extension personnel as well as lack of sufficient personnel and program policies.
2. Lack of annual extension plan (or target), lack of evaluation activities and extension manuals for extension personnel.
3. Lack of information on suitable level of training required by extension staff.
4. Lack of economic and farm management research for dissemination.
5. In most instances, economic planners did not have any idea regarding the role, importance and problems of extension work, and field extension workers were not acquainted with their country's development plan.
6. Lack of two-way communication between research and extension; lack of flow of research information to extension and lack of farmers' problems being transmitted to research institutes.
7. Lack of extension supervisors especially trained for the job.
8. Lack of supporting services and/or lack of coordination between these (especially with credit facilities) and extension services.

Ahmed (11, p. 16) has pointed out that:

> In Pakistan people have not yet been properly involved in the extension program. No appreciable result could yet be achieved in rural development as no effective step was taken for active participation of people in their own improvement. It is largely confined to official effort alone.

In Iraq, due to the field surveys conducted in the three governates of Diyala, Waset, and El-Anbar, it was clearly felt that there is an urgent need for drastic changes in the pattern of extension organization at all levels. Also, it mentioned that most extension workers were engaged in doing routine general agricultural services rather than conducting

agricultural extension educational programs to meet the real needs of farming communities (2).

Overview of Training Institutions Selected From Some Developing Countries

In most developing countries, development and training opportunities should be provided to help extension workers improve their jobs and adapt themselves to meet the rapidly changing needs of the rural needs.

Penders (3, p. 154) states:

> There is no substitute for quality. Successful extension work depends to a considerable extent on the personality of extension workers as well as on his experience and training. This is particularly true of the extension worker who comes most closely into contact with the farming population. He is more than an expert in Agriculture, for his training should also prepare him to be a community organizer, an adult educator and a student of human behavior in general.

With regard to the value of selected items for inclusion in training curriculum in Saudi Arabia, Al-Zaidi (12, p. 67) stated that "the extension workers considered 'general scientific basis,' 'subject matter,' and 'organizing goals and setting objectives' as 'very important' items to stress in a training curriculum for extension workers."

He further recommended that, "Provision should be made immediately to provide an internship program for both students studying to become extension workers and those students to become experiment station workers." He hoped that, "a program of at least six months in length can be provided and

such training be made a prerequisite for employment" (p. 71).

In most of the developing countries, with a predominantly agriculture economy, the production of trained manpower in agricultural extension and rural development remains one of the greatest challenges to the agricultural development effort. Farmers in these countries, who are mostly illiterate, are faced with problems of poverty, disease and ignorance. The difficulty is one of providing adequate facilities to train competent staff in agricultural extension, who in turn will assist farmers to acquire the skills and knowledge essential in improved agricultural production (13).

It is often said that one of the problems of African countries in the race for social and economic development is the lack of trained manpower. Perhaps it should be better said that the greatest obstacle to agriculture and rural development in Africa today is the lack of managerial skills and supervisory competence in its technical staff (14).

In the Middle East, Qasem (15, p. 12) pointed out that:

> 1. There are about 50 colleges of agriculture in the Middle East. A few small countries--Kuwait, Qatar, Bahrain, Oman, U.A. Emirates, and Gibouti--do not have such colleges. Few colleges were established before 1950 but the majority (90 percent) were established in the fifties and the sixties, and some of the seventies. These colleges have been providing the countries of the region with manpower trained in the traditional disciplines of agricultural sciences. All countries have benefitted from the training and educational opportunities provided in countries outside the region either through individual initiative or government scholarships. In addition, technical assistance programs in the majority of the countries have included manpower training, and these have

provided many individuals trained abroad in the various disciplines.

The question as to whether type and quality of graduates of national colleges of agriculture is relevant to the special needs of the region as a whole were discussed in a seminar at the American University in Beirut in 1980. The general conclusion stressed the need to upgrade quality of training, to tailor some programs to fill existing gaps, and to strengthen advanced postgraduate training in more acutely needed disciplines such as extension, water technology, and agricultural economics. The seminar also emphasized the need to examine this subject further in periodic seminars.

2. While some countries of the region 'export' manpower trained in agriculture, others suffer from a scarcity of such people. Among the 'exporting' countries are Egypt, Jordan, and Pakistan, while Algeria, Somalia, Saudi Arabia, Northern Yemen, and Oman are among those which must build a national cadre of qualified manpower.

With regard to the specific training needed to strengthen agricultural research in the region, Qasem mentioned (15, p. 16) the following aspects:

- Each country has certain gaps in qualified manpower in the various commodity-oriented disciplines. This cannot be corrected through a regional effort or program and should be handled by and within each country.

- The majority of countries suffer from a scarcity of trained manpower in certain fields--extension, agricultural communication, water technology and management, and agricultural economics. These subjects may be handled by a regional center or institute or by departments to be established within the national colleges of agriculture.

- Perhaps the most commonly recognized manpower problem in these countries relates to management. Many countries have invested or are about to invest, in agricultural research but are skeptical about the productivity of such activity. The reasons for this fear can be traced to one or more elements of management.

> Training in research management differs from other types of training. There is a worldwide scarcity of qualified trainers. In addition, the majority of research directors or those who work in management positions are promoted for reasons other than managerial experience.

Because there are not enough extension workers wth a high level of qualifications to meet the requirement of extension jobs, most developing countries depend on the agricultural extension workers who graduated from secondary agricultural school, technical agricultural institute, and training centers. In Iraq, for example, the institute of Agricultural Technology was established 1965, together with four other higher institutes under the auspices of the University of Baghdad, all offering a post-secondary training program for two years. This institution in particular had been established in response to the country's great need for this type of middle-level technician in agriculture, who would in the future provide the broad base of the agriculture extension services in the country, in performing the important intermediate role between the college graduate and farmers at the local level (16).

Today, the College of Agriculture in Iraq plays an important role in research and improved production possibilities by graduating and training the research staff needed for a successful research program. For example, the College of Agriculture in Basrah* University has awarded a B.Sc. degree

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* Basrah University is one of the five universities in Iraq. It is located in the southern region of Iraq.

in Agricultural Science with five options, which are:

1. Fisheries and Marine Resource
2. Animal Production
3. Plant Production
4. Horticulture and Date Palms
5. Food and Dairy Technology

It must be mentioned that the requirements for the first year is common for all departments, and specialization starts in the second year. Bachelor of Science courses in agriculture with emphasis in the plant production, soil and land reclamation section involve a total of 99 credit hours required as listed in Table I, and a total of 92 credit hours required in the Department of Fisheries and Marine Resources as listed in Table II (17, p. 278).

Description of Courses Available in the Plant Production Department, Soil and Land Reclamation Section

The description of courses which follow are taken largely from the catalogue of Basrah University (17, pp. 282-284).

General Ecology

This course includes the study of the principle of ecology and its relationship with the other biological sciences, and the effect of the ecological factors on organisms. It also includes the study of energy sources and its transformation and the ecological succession.

TABLE II

COURSE CURRICULUM FOR BACHELOR OF SCIENCE DEGREE IN AGRICULTURE WITH EMPHASIS IN PLANT PRODUCTION DEPARTMENT AND SOIL LAND RECLAMATION SECTION

Subject	Lecture	Laboratory	Units
Microbiology	2	3	3
Organic Chemistry	2	-	2
Agricultural Cooperation	3	-	3
Principles of Soil	2	3	3
Agricultural Machinery	2	3	3
Principles of Horticulture	2	3	3
Agricultural Economics	3	-	3
Principles of Field Crops	2	3	3
Ecology	2	3	3
Land Levelling	1	3	2
Quantitative Chemistry	2	3	3
Organic Chemistry	3	3	4
Sociolist Economy	3	-	3
Soil Chemistry	2	3	3
Irrigation	2	3	3
Soil Physics	2	3	3
Biochemistry	3	3	4
Plant Pathology	2	3	3
Plant Physiology	2	3	3
Experimental Design	2	3	3
Drainage	2	3	3
Physical Chemistry	2	3	3
Principles of Agriculture Extension	3	-	3
Land Reclamation	2	3	3
Seminars	1	-	1
Agricultural Projects	-	3	1
Plant Nutrition	2	3	3
Soil Microbiology	2	3	3
Soil and Water Management	2	-	2
Fertilizers and Soil Fertility	3	3	4
Agricultural Projects	-	3	1
Civil Engineering Works	2	3	3
Land Reclamation and Levelling Machinery	2	3	3
Soil Surveying and Classification	2	4	3
Econ. of Natural Resources	2	-	2
Seminars	1	-	1

Source: The University of Basrah Prospectus, Basrah University Press, Basrah, Iraq, 1982, pp. 282-284.

TABLE III

COURSE CURRICULUM FOR BACHELOR OF SCIENCE DEGREE IN AGRICULTURE WITH EMPHASIS IN DEPARTMENT OF FISHERIES AND MARINE RESOURCES

Subject	Theory	Practical	Units
Principles of Food Technology	2	-	2
Organic Chemistry	2	-	2
Principles of Soil	2	3	3
Agricultural Cooperation	3	-	3
Microbiology	2	3	3
Food and Feeding	2	3	3
Organic Chemistry	3	3	4
Agricultural Extension	3	-	3
Animal Physiology	2	3	3
General Ecology	2	3	3
Principles of Entomology	2	3	3
Genetics	2	3	3
Aquatic Insects	2	3	3
Ichthyology	2	3	3
Biochemistry	3	3	4
Food Microbiology	2	3	3
Aquatic Ecology	2	3	3
Fish and Aquatic Animal Physiology	3	4	4
Invertebrates	2	3	3
Fish Biology	2	3	3
Fish Gears and Methods	2	-	2
Fish Taxonomy	2	3	3
Commercial Fisheries	2	-	2
Fish Technology	2	3	3
Limnology	2	3	3
Fish Culture	2	3	3
Aquatic Plants and Algology	2	3	3
Aquatic Environment Pollution	3	-	3
Fish Handling and Processing	2	3	3
Seminars	1	-	1
Oceanography	2	3	3
Experimental Design	2	3	3
Fish Diseases and Parasites	2	3	3
Marine Biology	2	3	3
Fish Management	2	-	2
Agricultural Projects	-	3	1

Sorce: The University of Basrah Prospectus, Basrah University Press, Basrah, Iraq, 1982, pp. 304-306.

Weeds and Weed Control

This includes the study of weed biology and its control by applying different methods. These methods can be grouped into mechanical, biological and chemical. The side effects of herbicides on the environment has been included. The important weeds in Iraq are also studied carefully.

Genetics

Genetics material, cell mechanism, mendelian genetics, mutations and alleles, genetic interaction, sex determination, and sex linkage, linkage, crossing over and chromosome mapping, quantitative inheritance, population genetics, nonchromosomal inheritance and maternal effects, genetics engineering and chromosome manipulation.

Plant Breeding

Reproduction in crop plants, genetics in relation to plant breeding, methods of breeding field crops, techniques in breeding field crops, new breeding tools, seed production, and distribution.

Plant Taxonomy

This includes the study of plant classification in a systematic order and its applications in other botanical and agricultural sciences. This also deals with the history and evolution of the plant groups. Special attention is being

paid to the description of amilies occurring in Iraq.

Principles of Field Crop Production

It includes the study of classification of field crops according to their economical uses and ecological factors and their effect on the distribution of crops such as environmental factor, biological factor, soil factors. In addition, this includes the study of seed-bed preparation, different methods of plant breeding, weeds and weed control, and the effect of crop rotation for production of crops.

Experimental Design

This course includes the study of different agricultural designs, the advantages and disadvantages of each design, methods of improving the accuracy of an experiment, in addition to statistical analysis of each design.

Apiculture and Silk Worm

The study of the economic importance of honey bees and silk worms, along with their morphology, anatomy, rearing, and their diseases. It also includes the study of hives, swarming specifications of apiaries, and the reeling of the silk cocoons.

General Entomology

Principles of entomology include classification, morphology, anatomy, body parts, and the study of the different

systems such as digestive, respiratory system, etc. The relation of environmental factors to insects. Also includes insect relation to other organisms, and environmental factors are stressed.

Nematodes

Definition, general features, occurrence, dispersal, and the economic importance of nematodes are included in this subject. Plant parasitic nematodes are stressed. Morphology, ecology of these nematodes, along with the study of diseases caused by them and their control are also included.

Horticulture Diseases

The horticulture plants (vegetables, fruit trees, and ornamental plants) are infected by many diseases. Economic importance and geographical distribution of these diseases are included. Dried samples and slides are shown to students along with scientific trips for identification purposes.

Soil Physics

This subject deals with the physical properties of the soil (ex., texture, structure, consistency, etc., of the soil), as well as with the description, measurement, and control as the physical processes take place in the soil. As physics deals with matter and energy (their forms and interrelations), so soil physics deals with the state and movement of matter with the fluxes and transformations of energy in the soil.

Organic Chemistry

This course includes the study of the basic principles and the physical properties of the organic compounds. The preparation and chemical reaction of these chemicals are also studied.

Agricultural Cooperation

An introduction to the development of the cooperative movement and basic principles of cooperative organization. Types of agricultural cooperative societies and a detailed study of the agricultural cooperative movement in Iraq are studied.

Forage Crops and Pastures

The study of this subject includes two main parts: first, the forage crops which cover different aspects of the main forage legumes and grasses in Iraq such as the origin of the crop, its environmental requirements, and cultivation methods. The main cultivated species and varieties, the nutritive value of the crop, and its chemical composition are also studied.

Cereals and Legumes

This subject includes different species of cereals such as wheat, barley, corn, rice, etc., as well as other important edible legumes (e.g., broad beans, lentil, soybean,

etc.). The study of each crop covers the origin of the crop climate and soil requirements. Important species and varieties, weeds, insect, diseases, maturity, harvest, and chemical composition are also studied.

Agricultural Machinery

This course is mainly two-fold. Firstly, the basic principle of internal combusion engines, using the agricultural tractor and its power units as a guide. Secondly, the study of agricultural implements used in mechanized agriculture, which covers plows, seed drills, cultivators, fertilizer spreaders, irrigation pump sets, pest control equipment, and harvesting machinery.

Summer Work Programs

This type of training is designed for the student in the Colleges of Agriculture, Engineering, Medicine, Administration and Economics, and Science. The goals of this (7, p. 29) program are:

a) To provide those students with practical work training in different agriculture majors.
b) To reinforce the student's newly acquired academic knowledge.
c) To give an opportunity to those students to explore a career in different phases and stages of agriculture and water resource development.

This program has been facing some problems, such as less transportation facilities available to the student, difficulties related to providing housing units for the students who live far away from the work sites. Al-Gharawi (18, p. 2),

reporting on a program implemented by Al-Kafagy who was then a director of student training programs in Basrah University, mentioned that "Its cadres are still sufficient to cover all the affairs, so he had to exert intensive effort to achieve all his designed duties."

With regard to the plan of the Directorate, Al-Kafagy was reported by Al-Gharawi (p. 2) as emhasizing that the plan of the directorate has largely brought about accomplishment of the following activities:

-Forming bureaus of summer training in each college.
-Asking the concerned establishments to state their needs and capabilities.
-Coordinating with the Directorate of training at the Ministry of Higher Education and Scientific Research to book the training vacancies.
-Paying field visits to the concerned establishments to clarify the idea and goals of training in a way that will enhance the said directorate at the forthcoming training programs.

In-Service Training

In-service training includes all forms of training for professional extension personnel during their period of employment by the extension service. The in-service training of extension workers is of great importance since their efficiency depends on keeping abreast of modern technical developments and instructional methods (19, p. 40).

To function effectively, agricultural services must have well-trained extension workers with the arrangements for continuous in-service training, so that they can keep pace with new developments and grow on the job. To make training mean-

ingful and of practical utility it must be based on the needs of the trainees and objectives of the employing agency. With regard to the assessment of the training needs of the extension workers working in the department of agricultural services in the northern part of Iraq, Sing and Mohammed (20, pp. 5-6) indicated that:

> All the extension workers felt the need for in-service training. They need training in extension methods, programme planning, technical subjects (especially fertilizers and plant protection), and principles and philosophy of extension. Most commonly used extension methods by the workers are: farm visits and demonstrations.

On the basis of the results obtained they suggested that:

> In-service training for extension workers must be made a regular activity. It should be a balanced programme consisting of lectures, demonstrations, practice, and discussions adequately supported by suitable teaching aids with special emphasis on practicals. Training in programme planning extension methods and communication process with practical exercises in real-life situations must become an important component of the course. Training should be organized preferable at research stations or agricultural colleges, every year of about 15 days to one month duration during the months of March, April, October, or November.

Research Directed Toward Determining Relationships Between Training Institution and Agricultural Extension in Some Developing Countries

In order to increase the capability and efficiency of extension workers to meet the farmer's need and extension services, there is a way to achieve this objective. This can be reached by strong cooperation between the College of Agri-

culture and Extension in each of the developing countries by arranging training programs for extension workers and research conducted in extension fields by professional agriculturalists who are working in the College of Agriculture.

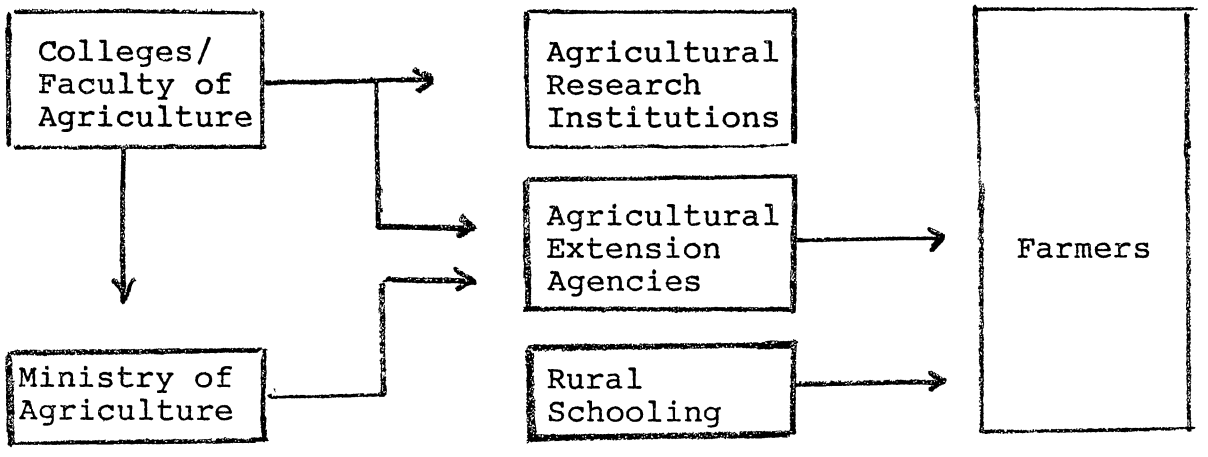
In Saudi Arabia, Al-Zaidi (7, p. 32) suggested that when cooperation between the College of Agriculture and Agricultural Extension developed there were some considerations that should have been taken:

> This cooperation should be based on the needs of rural people. It should be focused to improve the knowledge and skills of extension and experiment station workers, and should be based on flexibility, well-organized, and should be based on scientific information to be sure this program is prepared in consideration of needs and interests of those workkers and the country's conditions. These are such things as human development, teaching techniques and objectives, how to involve people in programming, fundamentals of learning, individual and group contacts, group processes, and teaching methods.

In Sudan, Doran (21) represented the efficient system for the dissemination of information to farmers by Figure 3.

For the requisite information to reach the farmers, the respective links must be functioning efficiently. The agricultural education institutions should be providing a steady flow of personnel to the ministry, the research institutions, and the extension service. The personnel should be both competent in their field of study and prepared to work in an agricultural setting. Their courses should have given them first-hand practical experience as well as theoretical understanding. There must also be a close link between those engaged in agricultural research and those in extension.

Innovations, whether new seed varieties, fertilizer application, or irrigation techniques, have to be location-specific; that is, they have to fit the special social, as well as physical, characteristics of the locality in which they are being applied. A new seed-type developed in the United States has to be developed still further before it fits the growing characeristics of a particular area on the Sudan. This adaptation and modification of agricultural innovations cannot take place without the two-way flow of information between the researcher and the extensionist. The farmer, not being in contact with the real-life growing situation, is totally dependent on the extensionist to know of the success or otherwise of a particular innovative technique.



Source: Doran, A. Agricultural Extension and Development: The Sudanese Experience. British Society for Middle Eastern Studies, Bulletin, 7(1) (1981), p. 39.

Figure 3. The Efficient System for the Dissemination of Information to Farmers

With regard to the university extension role in rural community development in Venezuela, Lacruz (22, p. 19) stated:

> The UNELLEZ extension activity is conceived as a very necessary link between the university and people and their social environment. Extension, therefore, is, in essence, the 'arm' of the university by which it transmits results of investigations and findings and 'reaches out' in productive communication and teaching. At the same time this makes it possible for the university to direct expressions regarding needs and wants from the people that live on and work the land. By doing so, the university contributes to valuable cultural diffusion in the many localities where it serves. Consequently, it has been deemed expedient to exercise two kinds of fundamental activities: (1) provision for non-curricular courses or non-formal educational activities, and (2) cultural activities.

The university can play an important role in improving the service provided by Ministries of Agriculture and agricultural extension service. These institutions should become strongly involved with other agencies to improve extension work (23).

In all the Latin American countries, the efforts were made to improve agricultural research. But a few of these countries have responsibility for the transfer of technology or extension. With regard to the relation of research with extension, Marcano (24, pp. 12-13) indicated that:

> In most research systems, the transfer of technology to farms is considered an activity so different from research that it should be carried out by groups specialized in transmitting messages or informal education. It is assumed that there is an interaction between those who do research and those who transfer technology, but actually, in most cases, there is no such interaction and sometimes there is actually antagonism. This problem is pre-

> sent even when research and extension are the responsibility of one institution.
>
> The fact that technology delivered by research institutions does not often reach farmers is an issue often discussed. Who is responsible?
>
> In our opinion, fluent communication between farmers and researchers will not be obtained if research on farms is not 'popularized.' A close relationship between he who transfers and he who verifies the qualities of technology is necessary, primarily so that new research programs meet priority needs of farmers.
>
> Whether those who conduct operational or verification research are called 'extensionists,' 'agents of change,' 'researchers,' or anything else is not important. What is really important is that the tasks they perform follow a logical sequence beginning at the farm and ending with the transfer of verified technology to farmers.
>
> In our judgement, in most of the Latin American countries, research institutions are in a better condition to start research at the farm level than is the extension service. The main task to be performed is to achieve a fluent communication between organizations in such a way that results will reach the farmers as soon as they are available.

With regard to the inefficient research delivery system and farmer's education in Nigeria, Akinbode (25, p. 54) mentioned that:

> The delivery of research findings to farm families was not much of a major problem when the ministries of agriculture maintained research divisions (the main problem of that organizational arrangement was that of an unconductive civil service environment for meaningful research effort) compared with the present situation when these are two separate agencies without an effective linkage system. Although a considerable amount of problem-oriented and investigative agricultural activities are going on at the Research Institute, the universities and other institutions, there is no proper linkage between research and the end users--the farmers. The reported findings of increased production in almost every aspect of our agriculture bear no relationship to the practices of the farmer.

It was further recommended by Akinbode (26) that a policy of the joint faculty of Agriculture and Institute should be seriously considered. Then an extension and research liaison unit should be established to link the activities of the faculty/institute with those of the Ministry of Agriculture. Furthermore, the teaching material and personnel available to the faculty should provide adequate in-service training facilities for the Ministry staff. Then, an in-service training committee made up of members from the College of Agriculture, Agricultural Institute, and the Ministry of Agriculture should be set up to work out the details of utilizing these facilities.

To set up a well-planned research program adjusted to the needs of the country, a close cooperation must be established between the training institutions and government research organizations. Al-Moursi (27, p. 6) mentioned that:

> Unfortunately this relationship, at present, is generally weak. In Sudan, Syria and Somalia there is little cooperation between research and extension. In Iraq coordination is good but at a personal level. In Kuwait extension staff meets periodically with the research specialists to collect information for transfer to farmers. More coordination is practiced in PDRY where government research staff are involved part-time with extension activities and assist extensionists in establishing field trials and demonstration in the various parts of the country.

He further added that "the extensionists must rely on research workers for knowledge to be offered to the farmer and at the same time, extension must bring back to research the problems of the farmer for study and solution" (p. 7).

On the other side, research and extension service can provide in-service training in field experimentation for staff members of colleges, school, and extension services. Research personnel can help colleges and other agencies by involving them in cooperative programs and by giving seminars to faculty and students. In these ways, cost of training can be justified not only by the improvement of each individual's capabilities but also by the value of concurrent contributions to development (28).

Agricultural extension and research are mutually dependent, as emphasized effectively by Benor and Harrison (29, p. 45):

> Extension requires the finding of research to teach farmers, as well as the continuous support of research in solving farmers' problems without research's backing. Extension may provide farmers with general support, timely reminders, and demonstrations of better practices, but it is unlikely that it can effectively transmit to farmers the significant improved practices (including new varieties, crops, and cropping patterns) that lead to the marked increases in productivity that are required for rapid, sustained agricultural development.

In implication for achieving coordination between teaching, research, and extension in Iraq, Main and Mohammad (30, pp. 16-17) recommend the following guidelines:

1. The complex problem of coordination should be reviewed and examined by the top-level administrators and policy-makers. These suggested models can form workable bases or discussions. A conference or meeting should be planned to work out and evolve some objective administrative mechanism for dove-tailing and integrating the functions and personnel of the Colleges of Agriculture and the Department of Agriculture under the Ministry of Agriculture, at the

national and provincial levels.

2. High-powered Coordination Committees should be set up at the National, and provincial levels, with clear objectives of bringing about coordination of functions. The Coordination Committees should be vested with authority for administrative decisions. The members of these committees may be drawn from the relevant departments and some selected progressive farm leaders. One senior officer should work as the Coordinator of Action and may report to the concerned committee about the implementation of work, problems faced, and suggested actions and programmes.
3. The duties, functions and responsibilities of personnel at various levels of the relevant organizations should be clarified, written, exchanged and discussed. It would be better if the job descriptions are developed through consultation, keeping in view the specific objectives of the organizations. Seminars, conferences, and workshops should be organized on a regular basis for discussing the departmental functions, administrative and coordination questions, and rural development problems.
4. The Agriculture Extension Programmes of the Ministry of Agriculture should be planned by consultations and discussions at the lower levels by involving the field extension staff. The suggested programmes should be flexible and meet the needs of various regions. Periodic meetings should be held at least 3 times a year comprised of staff from the College of Agriculture, Agriculture Research Stations, Subject Matter Specialists, and Administrators from the Agriculture Extension, Ministry of Agriculture.

   The participants should address themselves in the discussions to topics of annual and seasonal plans of work; including teaching, research, and agriculture extension programmes.
5. A system of monthly, quarterly and/or annual progress reports may be evolved. The copies of the progress reports indicating the achievements made and the problems encountered should be exchanged between the personnel of the relevant organizations and departments.

Summary

In this chapter, an attempt was made to explain the func-

tion, structure, and efficiency of the agricultural extension program in some developing countries such as Nigeria, Iraq, and Pakistan. It concludes that the extension programs have been facing many problems in these nations, such as lack of defined extension objectives, supervisors, communication, and the role of rural participation.

Also included are descriptions of training institutions and their function with regard to the manpower extension training in some developing countries such as Saudi Arabia, Iraq, and many West African countries. From reading these studies, it is apparent that the training institutions which are responsible for preparing extension personnel play an important role in most developing countries. Therefore, identifying the curricular needs and objectives and reviewing the functions which they perform is most essential, if improvement is to be accomplished. This is not only important in maintaining a preservice preparatory program but also in providing an approriate program in summer work and in-service training.

Also included are findings which emphasize the significance of and the need for coordination of the work of training institutions with that of the national extension program. As the studies are reviewed the efficacy which may be accomplished through interdependence and reciprocally reinforcing the functions of teaching, research, and agricultural extension can hardly be over-emphasized. Such coordination between the three groups relating to activities on every

level and under established guides make sense both from a financial and an educational point of view. Unfortunately this has not always been achieved to the extent needed in many developing countries.

CHAPTER III

METHODOLOGY

The purpose of this chapter was to present methods used and procedures followed in conducting the study dealing with perceptions held by (1) administrative and/or supervisory personnel of Agricultural Extension programs and (2) faculty of training institutions. Included in the chapter are details concerning the population of the study, development of the data gathering instrument, handling and administering of the questionnaires, and treatment of the data.

Population of the Study

The study population was constituted to include two segments:

1. Administrative officials and/or supervisors in Agricultural Extension in each of the six countries chosen for the study.

2. Administrators and faculty in Colleges of Agriculture and universities who direct and teach programs and courses which prepare students to engage in Agricultural Extension as their major work in each of the six countries.

For the national Agricultural Extension, the population in each country included:

The Directors of Agricultural Extension and at least five assistants or Provencial directors and/or supervisors.

For the training personnel in the university or college, the population for each country came from the major institution or in some cases the two major institutions with responsibility for extension training and included:

The Dean of College of Agriculture or the Head of Agricultural and Extension Education Department and five additional members of the faculty of Agricultural Education and/or Agriculture Departments.

Sampling Procedure

Since there were a great number of personnel who were engaged in working in the national extension programs and Colleges of Agriculture and Universities, it seemed reasonable that a sample of six to twelve personnel from the Agricultural Extension program, and six to fifteen personnel from the College of Agriculture and/or Universities, depending upon the relative size of the respective group in a given country, would be sufficient to meet the requirements of the study. Figure 4 shows the respondents who were selected in each of the six countries included in the study.

For the first segment, the sample consisted of the Director of Extension and at least four additional administrators and/or supervisors selected at random from a list of extension administrators in each country.

Sampling for the second segment was accomplished by

Group 1 Extension		Group 2 University	
Number	Position Held	Number	Position Held
1	Director of Agricultural Extension	1 to 3	Dean of Agriculture and/or Department Head, Agricultural Education
5 to 11	Assistant of Provencial	5 to 12	Faculty, Agricultural Education and/or Agriculture
Total:			
6 to 12		6 to 15	

Figure 4: Sample Size for Respondents Selected for the Study

selecting the chief administrator or department head from up to three institutions operating in each of the countries, and in addition, five faculty members engaged in teaching Agriculture and/or Agricultural Education. So, the number to be sampled ranged from six to fifteen personnel dependent upon the comparative number of training institutions and relative size in each country. For details of response patterns see pages 51 and 52 of Chapter IV.

Development of the Instrument and Data Gathering

A comprehensive questionnaire was developed in order to collect the information relative to the purposes and objectives of the study. The questionnaire was developed by the research in cooperation and consultation with those recognized as key faculty who had demonstrated knowledge and capability in adult and extension education, particularly those with teaching or assessment experience in developing countries.

This jury totaled sixteen faculty and staff including those from departments of Agricultural Education, Agronomy, Sociology, Occupational and Adult Education, as well as personnel from the Division of International Programs.

The questionnaire was pretested through submission to twenty-two graduate students from different developing countries who were currently studying at Oklahoma State University. The questionnaires were first constructed in English

and then translated into Arabic, Korean, and French for submission to certain respondents.

The first portion of the questionnaire schedule was designated to briefly gather basic and pertinent demographic data, particularly the professional position or job of each respondent. The second portion of the questionnaire was designed for securing information from both (1) administrators and supervisors in Agricultural Extension, and (2) administrators and faculty in each of one to three identified training institutions. Specifically, the second portion of the questionnaire was designed for the sole purpose of obtaining data to meet the objectives. Identified strategies as listed in the questionnaire are to be found in Table IV.

Data were secured through submission of the questionnaire to each person included in the sample. To facilitate securing of responses within each specific country, former students from the O.S.U. Agricultural Education Department, who have returned to their home countries, were asked to coordinate responses, assemble them, and return them to the researcher.

TABLE IV

IDENTIFIED SELECTED STRATEGIES OR PRACTICES FOR ENHANCING RELATIONSHIPS BETWEEN EXTENSION PERSONNEL AND UNIVERSITY FACULTY

Strategy or Practice
1. Faculty members who teach extension subjects at college and universities spend some time working in various areas of national extension program work.
2. National Extension administrators help college or university administrators design college curriculum to train future extension workers at the college level.
3. Results of college or university research which would be helpful to extension workers be made available to the workers on a systematic basis.
4. Extension administrators and staff members be used in parts of the college teaching program for future extension workers.
5. Colleges and universities provide in-service training programs for extension workers.
6. A period of practical field experience be a part of the college course for the student prior to graduation, as a part of the requirement for becoming an extension worker. (This may be similar to "summer training" or programs or "student teaching.")
7. Extension, training institutions and agricultural experiment stations cooperate in developing programs with useful and practical information that would help farmers improve their situations.
8. Extension, training institution, and the experiment station work jointly in determining needs of farmers.
9. Extension and training institutions cooperate in evaluating results of overall joint efforts.
10. Periodic conferences for all personnel of extension, training institutions, and experiment stations to become better acquainted with each other and to share learning experience.

TABLE IV (Continued)

Strategy or Practice
11. Extension with the cooperation and assistance of the training institution, develop radio programs to reach farmers with needed agricultural information.
12. Extension and the training institution work jointly to develop materials and methods that extension agents could use to reach illiterate farmers.
13. Closer coordination of planning and management functions by research, extension, and teaching agencies.

Analysis of Data

The following is a description of how the data obtained in this study were analyzed. There were two types of questions included in the survey instrument. Part one contained a simple request for demographic data related to present position or job of the respondent. A likert-type scale was used in Part A of the questionnaire for valuing the extent of present usage and the extent of desirability for each of the thirteen selected strategies or practices. The categories ranged from "not used," which received a value of 0, to "little usage," which received a value of 1, to "occasional usage," which received a value of 2, to "frequent usage," which received a value of 3, and finally, to "great usage" which received a value of 4. For determining the value of

scores given by respondents for desirability the likert scale was used in which the range was from "not desirable," which received a value of 0, to "slightly desirable," which received a value of 1, to "desirable," which received a value of 2, to "very desirable," which received a value of 3, and finally, to "highly desirable," which received a value of 4. These numerical scale values for response categories and the range of numerical limits for the categories were assigned as displayed in Figures 5 and 6.

	Numbers Offered for Responses	Absolute Limits
Great Usage	4	3.5 - 4.00
Frequent Usage	3	2.5 - 3.49
Occasional Usage	2	1.5 - 2.49
Little Usage	1	1.0 - 1.49
Very Little or No Usage	0	.00 - 0.99

Figure 5. Absolute Limits for Use in Establishing Group Mean Scores for Questionnaire Column A

	Numbers Offered for Responses	Absolute Limits
Highly Desirable	4	3.5 to 4.00
Very Desirable	3	2.5 to 3.49
Desirable	2	1.5 to 2.49
Slightly Desirable	1	1.0 to 1.49
Very Little or Not Desirable	0	.00 to 0.99

Figure 6. Absolute Limits for Use in Establishing Group Mean Scores for Questionnaire Column B

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this chapter is to present and describe self-perceptions of respondents as to the relative effectiveness of selected strategies which may enhance the preparation of agricultural extension workers in each of six selected developing nations. Responses were divided into two groupings: (1) administrators or supervisors in the Ministry of Agriculture and/or Agricultural Extension Services and (2) University or college administrators and/or faculty in Agriculture.

Background of Respondents

The population of the study was drawn from six developing nations and included: (1) Iraq, (2) Saudi Arabia, (3) Egypt, (4) Nigeria, (5) Haiti, and (6) Korea.

The total population of this study included: (1) forty-two administrators and/or supervisors currently employed in ministries of agriculture and/or agriculture extension units and (2) fifty university college faculty engaged in programs of preparation of students for servings in agriculture extension work.

Data Responses

The number of questionnaire returns sought from each nation was limited by: (1) the relative size of the administrative supervisory group within the Ministry of Agriculture dealing directly with Agricultural Extension and (2) determination of institutions (college or university) having major training responsibilities for Agricultural Extension and the size of the group within the faculty having such a major responsibility.

Data presented in Table V show the percentage of questionnaire returns by Agricultural Extension administrative/supervisory personnel. It can be readily observed that from personnel in each of the six nations studied, returns of 100% were secured from Iraq, Egypt, Saudi Arabia, and Nigeria. Returns of 83.3 percent were secured from Haiti and Korea. Of the 44 responses sought from the combined group of administrators, 95.5 percent was returned.

Data presented in Table VI show the total responses sought from each faculty from which a return was requested. There were 100% questionnaires tendered by Iraq, Egypt, and Korea, with faculties of Nigeria, Haiti, and Saudi Arabia returning respective percentages of 83.3, 66.7, and 50.0. Of the 59 total responses sought from members of combined faculty, 84.7 percent were returned.

Selected Strategies or Practices for Which Assessment Responses Were Secured

TABLE V

PERCENT AND DISTRIBUTION OF RESPONSES RECEIVED FROM ADMINISTRATORS OR EXTENSION WORKERS IN EACH NATION

Nation	Administrator Location	Total Sought	Number of Responses	Percent Responses
Iraq	General Directorate of Extension and Farmer Education, Baghdad	7	7	100
Saudi Arabia	Extension Directorate & Agricultural Services, Riadh, Eastern Region. Al-hasa	12	12	100
Egypt	Assiut Extension Services.	7	7	100
Nigeria	Ministry of Agriculture, Riverstate County	6	6	100
Haiti	Ministry of Agriculture, Extension Division	6	5	83.3
South Korea	Ministry of Agriculture Extension Division	6	5	83.3
TOTAL		44	42	

TABLE VI

PERCENT AND DISTRIBUTION OF RESPONSES RECEIVED FROM UNIVERSITY FACULTY OF EACH NATION

Nation	Faculty or University	Total Sought	Number of Responses	Percent Responses
Iraq	Basrah University, Salahaldeen and Baghdad University	13	13	100
Saudi Arabia	King Faisal and King Saud Universities	12	6	50
Egypt	Al-Azhar, Alexandria and Assuit University	15	15	100
Nigeria	Riverstate University	6	5	83.3
Haiti	Haiti University	6	4	66.7
South Korea	Seul National University	7	7	100
TOTAL		59	50	

The thirteen strategies or practices which were developed, perfected, and validated by use of "juries" of faculty and of graduate and international students are listed below in the form which they were shown on the questionnaire. For use in tabular form these were each developed in a much shorter form.

1. Faculty members who teach extension subjects at colleges and universities spend some time working at various areas of national extension program work.

2. National Extension administrators help college or university administrators design college curriculum to train future extension workers at the college level.

3. Results of college or university research which would be helpful to extension workers be made available to the workers on a systematic basis.

4. Extension administrators and staff members be used in parts of the college teaching program for future extension workers.

5. Colleges and universities provide in-service training programs for extension workers.

6. A period of practical field experience be a part of the college course for the student prior to graduation, as a part of the requirement for becoming an extension worker. (This may be similar to "summer training" programs or "student teaching.")

7. Extension, training institutions and agricultural experiment stations cooperate in developing programs with

useful and practical information that would help farmers improve their situations.

8. Extension, training institution, and the experiment station work jointly in determining needs of farmers.

9. Extension and training institutions cooperate in evaluating results of overall joint efforts.

10. Periodic conferences held for all personnel of extension, training institutions and experiment stations to become better acquainted with each other and to share learning experiences.

11. Extension, with the cooperation and assistance of the training institution, develop radio programs to reach farmers with needed agricultural information.

12. Extension and the training institution work jointly to develop materials and methods that extension agents could use to reach illiterate farmers.

13. Much closer coordination of planning and management functions by each of the three agencies responsible for research, extension and teaching in order to promote efficiency.

Responses to Questions Pertaining to the Present Use of Practices and Strategies and the Relative Desirability of Each Practice

Data pertaining to responses from each of the six nations are presented separately with certain grouping of nations also compiled and compared. Shown in Tables VII,

VIII, IX, X, XI and XII are the responses from each of the six nations in terms of mean score and corresponding categorization for each of the 13 practices or strategies. As can be seen by examination of data found in these six tables, in general, a similar pattern of response is to be observed among the six countries, in that while many strategies or practices were reported as not used or only slightly used, the same strategy was often assessed as being quite desirable. This pattern of response occurs to some degree in each of the six responding nations.

A Comparison of Responses by Country and by Strategy or Practice

An attempt was made to determine observable differences between and among the six nations as reported by both the extension/supervisory personnel and by faculty of each country and to assess the importance of these differences.

Faculty Members Spend Time Working In National Extension

As can be seen by reference to data shown in Table XIII, dealing with the matter of faculty members spending some time working with the national extension program, there was a remarkable degree of agreement among the nations both on the part of extension personnel and faculty members. This was true as a judgment expressed by respondents both as to the extent of present usage and the extent desirablility. One-

TABLE VII

RESPONSES BY IRAQI FACULTY AND EXTENSION PERSONNEL

Strategies	Extension Personnel						University Faculty					
	Number Responding	Extent of Present Usage Mean Score	Extent of Present Usage Category	Number Responding	Extent Desirable Mean Score	Extent Desirable Category	Number Responding	Extent of Present Usage Mean Score	Extent of Present Usage Category	Number Responding	Extent Desirable Mean Score	Extent Desirable Category
1 Faculty have some work experience in Extension	7	0.14	NU	7	3 00	VD	11	0 63	NU	12	2 66	VD
2. Extension administrators help design curriculum	7	1.28	LU	7	3.57	HD	13	0 38	NU	13	2 76	VD
3 Research findings systematically available to Extension	7	2.28	OU	7	3 71	HD	13	1 15	LU	13	3 61	HD
4 Extension administrators be used as special instructors	7	0 00	NU	5	3 80	HD	13	0 15	LU	13	2 23	D
5 Universities provide in-service training for Extension workers	7	1.28	LU	7	3.71	HD	12	1.25	LU	12	3 08	VD
6 Practical field experience required of Extension trainees	7	2 28	OU	7	3 57	HD	13	2 92	OU	13	3 53	HD
7 "Three-group" cooperation in program planning	7	1.85	OU	7	3.42	VD	13	1 07	LU	13	3 46	VD
8 "Three-group" cooperation in determining needs	7	1.85	OU	7	3.71	HD	12	0 75	NU	12	2 91	VD
9 University and Extension cooperate in evaluation	7	1 28	LU	7	3 57	HD	13	1 00	LU	13	3 26	VD
10 "Three-group" periodic conferences provided for personnel	7	2 28	OU	7	3.71	HD	13	1 23	LU	13	3 00	VD
11 Extension and University jointly plan and deliver radio programs	6	1.16	LU	6	3 16	VD	13	0 69	NU	13	3 69	HD
12 Extension and University develop materials to reach illiterate farmers	6	1.83	OU	6	3.33	VD	13	0 46	NU	13	3 30	VD
13 Closer coordination of "three-group" efforts in planning and management	6	2.00	OU	6	3.33	VD	13	0 84	NU	13	4 00	HD

Note. The term "three-group" refers to. (1) University faculty, (2) Extension personnel, and (3) Experiment Station personnel.

LEGEND

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Very Little Desirable or Not Desirable

TABLE VIII

RESPONSES BY SAUDI ARABIAN FACULTY AND EXTENSION PERSONNEL

Strategies	Extension Personnel						University Faculty					
	Number Responding	Extent of Present Usage		Number Responding	Extent Desirable		Number Responding	Extent of Present Usage		Number Responding	Extent Desirable	
		Mean Score	Category		Mean Score	Category		Mean Score	Category		Mean Score	Category
1. Faculty have some work experience in Extension	12	0.08	NU	12	3 50	HD	6	0 66	NU	6	3 66	HD
2 Extension administrators help design curriculum	12	0 33	NU	12	3 91	HD	6	0 16	NU	6	3 83	HD
3. Research findings systematically available to Extension	12	0.50	NU	12	4 16	HD	6	1.00	LU	6	4 00	HD
4 Extension administrators be used as special instructors	12	0 16	NU	12	3 00	VD	6	0 16	NU	6	3 33	VD
5 Universities provide in-service training for Extension workers	12	0 41	NU	12	3 44	VD	6	0 66	NU	6	3 83	HD
6 Practical field experience required of Extension trainees	11	1 00	LU	12	3 50	HD	6	2.33	OU	6	3 83	HD
7. "Three-group" cooperation in program planning	12	0 91	NU	12	3 91	HD	6	1 00	LU	6	3 83	HD
8 "Three-group" cooperation in determining needs	12	0.91	NU	12	3 50	HD	6	0 66	NU	6	3 83	HD
9 University and Extension cooperate in evaluation	12	0 50	NU	12	3 50	HD	6	0 33	NU	6	4.00	HD
10. "Three-group" periodic conferences provided for personnel	12	0 33	NU	12	3 50	HD	6	0 50	NU	6	3 66	HD
11 Extension and University jointly plan and deliver radio programs	12	0 58	NU	12	3 50	HD	6	0 83	NU	6	3 50	HD
12 Extension and University develop materials to reach illiterate farmers	12	0.41	NU	12	3 58	HD	6	0 50	NU	6	4 00	HD
13. Closer coordination of "three-group" efforts in planning and management	12	0 41	NU	12	3 41	VD	6	0 33	NU	6	3 66	HD

Note The term "three-group" refers to. (1) University faculty, (2) Extension personnel, and (3) Experiment Station personnel.

LEGEND

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Very Little Desirable or Not Desirable

TABLE IX

RESPONSES BY EGYPTIAN FACUTLY AND EXTENSION PERSONNEL

	Strategies	Extension Personnel						University Faculty					
		Number Responding	Extent of Present Usage		Number Responding	Extent Desirable		Number Responding	Extent of Present Usage		Number Responding	Extent Desirable	
			Mean Score	Category		Mean Score	Category		Mean Score	Category		Mean Score	Category
1	Faculty have some work experience in Extension	7	0.14	NU	7	2 71	VD	15	1 20	LU	15	3 53	HD
2	Extension administrators help design curriculum	7	0 85	NU	7	3 28	VD	15	0 33	NU	15	2 86	VD
3	Research findings systematically available to Extension	7	1 28	LU	7	4 00	HD	15	1 26	LU	15	3 93	HD
4	Extension administrators be used as special instructors	7	0 00	NU	7	3 00	VD	14	0 85	NU	14	2 85	VD
5	Universities provide in-service training for Extension workers	7	1 42	LU	7	4 00	HD	15	1 40	LU	15	3 60	HD
6	Practical field experience required of Extension trainees	7	1.00	LU	7	3 57	HD	15	2 40	OU	15	3 93	HD
7.	"Three-group" cooperation in program planning	7	2.28	OU	7	3 85	HD	15	1 13	LU	15	3 86	HD
8	"Three-group" cooperation in determining needs	7	1.42	LU	7	4 00	HD	15	0 80	NU	15	3 66	HD
9	University and Extension cooperate in evaluation	7	1 00	LU	7	3 57	HD	14	0 02	NU	15	3 80	HD
10	"Three-group" periodic conferences provided for personnel	7	2 00	OU	7	3.85	HD	15	1 20	LU	15	3 66	HD
11.	Extension and University jointly plan and deliver radio programs	7	1.42	LU	7	3 85	HD	15	0 46	NU	15	3 40	VD
12	Extension and University develop materials to reach illiterate farmers	7	1 42	LU	7	3 71	HD	15	0 80	NU	15	3 66	HD
13	Closer coordination of "three-group" efforts in planning and management	7	1 00	LU	7	4 00	HD	15	0.73	NU	15	3 93	HD

Note The term "three-group" refers to (1) University faculty, (2) Extension personnel, and (3) Experiment Station personnel

LEGEND

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Very Little Desirable or Not Desirable

TABLE X

RESPONSES BY NIGERIAN FACULTY AND EXTENSION PERSONNEL

Strategies	Extension Personnel						University Faculty					
	Number Responding	Extent of Present Usage		Number Responding	Extent Desirable		Number Responding	Extent of Present Usage		Number Responding	Extent Desirable	
		Mean Score	Category		Mean Score	Category		Mean Score	Category		Mean Score	Category
1 Faculty have some work experience in Extension	6	1.50	OU	6	3.50	HD	5	1.40	LU	5	3 40	VD
2 Extension administrators help design curriculum	6	1.83	OU	6	3 33	VD	5	1.00	LU	5	3 60	HD
3 Research findings systematically available to Extension	6	1 00	LU	6	4 00	HD	5	1 00	LU	5	3.80	HD
4 Extension administrators be used as special instructors	6	0 83	NU	6	3 50	HD	5	0 40	NU	5	3 80	HD
5 Universities provide in-service training for Extension workers	6	2.33	OU	6	3.33	VD	5	1 60	LU	5	3 60	HD
6 Practical field experience required of Extension trainees	6	2.66	FU	6	3.83	HD	5	2 40	OU	5	3.80	HD
7. "Three-group" cooperation in program planning	6	1 66	OU	6	4 00	HD	5	1.60	OU	5	3 60	HD
8 "Three-group" cooperation in determining needs	6	1.50	OU	6	3 33	HD	5	1 20	LU	5	3 80	HD
9 University and Extension cooperate in evaluation	6	1 16	LU	6	3 50	HD	5	0 60	NU	5	3 60	HD
10 "Three-group" periodic conferences provided for personnel	6	1 00	LU	6	3 66	HD	5	1 00	LU	5	3 80	HD
11. Extension and University jointly plan and deliver radio programs	6	1.33	LU	6	3 83	HD	5	0 20	NU	5	3.60	HD
12 Extension and University develop materials to reach illiterate farmers	6	1.00	LU	6	3 66	HD	5	0 60	NU	5	3 80	HD
13 Closer coordination of "three-group" efforts in planning and management	6	0.83	NU	6	3 83	HD	5	0 40	NU	5	3 60	HD

Note The term "three-group" refers to. (1) University faculty, (2) Extension personnel, and (3) Experiment Station personnel

LEGEND

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Very Little Desirable or Not Desirable

TABLE XI
RESPONSES BY HAITIAN FACULTY AND EXTENSION PERSONNEL

Strategies	Extension Personnel						University Faculty					
	Number Responding	Extent of Present Usage		Number Responding	Extent Desirable		Number Responding	Extent of Present Usage		Number Responding	Extent Desirable	
		Mean Score	Category		Mean Score	Category		Mean Score	Category		Mean Score	Category
1 Faculty have some work experience in Extension	5	1 80	OU	5	2.30	VD	4	2.00	OU	4	2 50	VD
2 Extension administrators help design curriculum	5	0.60	NU	5	2 60	VD	4	1.25	LU	4	2 75	VD
3 Research findings systematically available to Extension	5	1.20	LU	5	3 60	HD	4	1.75	OU	4	3 00	VD
4. Extension administrators be used as special instructors	5	1 60	OU	5	3 00	VD	4	2 50	FU	4	3 75	HD
5 Universities provide in-service training for Extension workers	5	1 80	OU	5	3 40	VD	3	1.00	LU	3	2 66	VD
6 Practical field experience required of Extension trainees	5	2 80	FU	5	4 00	HD	4	2 75	FU	4	3 50	HD
7 "Three-group" cooperation in program planning	5	1 20	LU	5	3 20	VD	4	1 50	OU	4	3 50	HD
8 "Three-group" cooperation in determining needs	5	1 40	LU	5	3.20	VD	4	1.25	LU	4	3 50	HD
9 University and Extension cooperate in evaluation	5	1 00	LU	5	3 00	VD	4	1.00	LU	4	3 50	HD
10 "Three-group" periodic conferences provided for personnel	5	0 60	NU	5	3.00	VD	4	0 50	NU	4	2 60	VD
11 Extension and University jointly plan and deliver radio programs	5	0 80	NU	5	2 40	D	4	1.25	LU	4	3 00	VD
12 Extension and University develop materials to reach illiterate farmers	5	1 00	LU	5	2 40	D	4	1 25	LU	4	3 00	VD
13 Closer coordination of "three-group" efforts in planning and management	6	1 00	LU	5	3.80	HD	4	1 00	LU	4	4 00	HD

Note The term "three-group" refers to (1) University faculty, (2) Extension personnel, and (3) Experiment Station personnel.

LEGEND

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Very Little Desirable or Not Desirable

TABLE XII

RESPONSES BY SOUTH KOREAN FACULTY AND EXTENSION PERSONNEL

Strategies	Extension Personnel						University Faculty					
	Number Responding	Extent of Present Usage		Number Responding	Extent Desirable		Number Responding	Extent of Present Usage		Number Responding	Extent Desirable	
		Mean Score	Category		Mean Score	Category		Mean Score	Category		Mean Score	Category
1 Faculty have some work experience in Extension	5	2.00	OU	7	1.57	VD	7	1.57	OU	7	3 57	HD
2. Extension administrators help design curriculum	5	0 80	NU	5	3 20	VD	7	0 71	NU	7	3 28	VD
3 Research findings systematically available to Extension	5	2 20	OU	5	3 20	VD	7	2 41	OU	7	3 28	VD
4 Extension administrators be used as special instructors	5	2 40	OU	5	3.00	VD	7	1 00	LU	7	3 42	VD
5 Universities provide in-service training for Extension workers	5	1.40	LU	5	2 40	D	7	1 00	LU	7	3 42	VD
6 Practical field experience required of Extension trainees	5	2 60	FU	5	3 00	VD	7	3 00	FU	7	3 71	HD
7 "Three-group" cooperation in program planning	5	2 80	FU	5	3.00	VD	7	2 57	FU	7	3 85	HD
8 "Three-group" cooperation in determining needs	5	2.80	FU	5	3 00	VD	7	2 41	OU	7	3 85	HD
9 University and Extension cooperate in evaluation	5	2 20	OU	5	3 20	VD	7	2 28	FU	7	3 85	HD
10 "Three-group" periodic conferences provided for personnel	5	1 40	LU	5	3.00	VD	7	1 71	OU	7	3 85	HD
11 Extension and University jointly plan and deliver radio programs	5	1.40	LU	5	3.00	VD	7	1 00	LU	7	3 28	VD
12 Extension and University develop materials to reach illiterate farmers	5	0 80	NU	5	1.80	D	7	1 28	LU	7	3 42	VD
13 Closer coordination of "three-group" efforts in planning and management	5	2 40	OU	5	2.80	VD	7	1.71	OU	7	3 24	VD

Note The term "three-group" refers to. (1) University faculty, (2) Extension personnel, and (3) Experiment Station personnel.

LEGEND

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Very Little Desirable or Not Desirable

TABLE XIII

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 1: FACULTY MEMBERS WHO TEACH EXTENSION SUBJECTS AT COLLEGE AND UNIVERSITIES SPEND SOME TIME WORKING AT VARIOUS AREAS OF NATIONAL EXTENSION PROGRAM WORK

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	0 14	NU	7	J 00	VD	11	0.63	NU	12	2 66	VD
Saudi Arabia	12	0 08	NU	12	3 50	HD	6	0 66	NU	6	3 66	HD
Egypt	7	0 14	NU	7	2.71	VD	15	1 20	LU	15	3 53	HD
Nigeria	6	1 50	OU	6	3 50	HD	5	1 40	LU	5	3 40	VD
Haiti	5	1 80	OU	5	2 80	VD	4	2 00	OU	4	2 50	VD
Korea	5	2 00	OU	5	3 20	VD	7	1.57	OU	7	3 57	HD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

half of three nations reported "occasional usage" in terms of responses by extension personnel, while those personnel from the remaining one-half reported "not used." In terms of desirability of this practice as reported by extension personnel, two nations Saudi Arabia and Nigeria reported the practice was "highly desirable," with the remaining four nations reporting the practice as being "very desirable."

When university faculty were likewise asked about the extent of present usage, only respondents from two nations, Haiti and Korea, reported "occasional usage," while a responding faculty from Egypt and Nigeria reported only "little usage." Respondents from Iraq and Saudi Arabia were in agreement that in their countries the practice was "not used." When responses from college faculty were collated with regard to the item assessing the desirability of practice number one, it was found that three nations, Saudi Arabia, Egypt, and Korea, were in agreement in assessing the practice as being "highly desirable." The remaining three nations, Iraq, Nigeria, and Haiti reporting the practice as being "very desirable."

Extension Personnel Assist College Faculty With Curriculum Development

In terms of responses reported through data shown in Table XIV, this item dealt with the strategy of extension administrators helping the university faculty design college curriculum to train future extension workers. This was

TABLE XIV

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 2: NATIONAL EXTENSION ADMINISTRATION HELP COLLEGE OR UNIVERSITY ADMINISTRATORS DESIGN COLLEGE CURRICULUM TO TRAIN FUTURE EXTENSION WORKERS AT THE COLLEGE LEVEL

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	1.28	LU	7	3 57	HD	13	0.38	NU	13	2.76	VD
Saudi Arabia	12	0 33	NU	12	3 91	HD	6	0 16	NU	5	3.83	HD
Egypt	7	0.85	NU	7	3 28	VD	15	0 33	NU	15	2 86	VD
Nigeria	6	1 83	OU	6	3 33	VD	5	1 00	LU	5	3 60	HD
Haiti	5	0 60	NU	5	2 60	VD	4	1.25	LU	4	2 75	VD
Korea	5	0 80	NU	5	3 20	VD	7	1 57	OU	7	3.57	HD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

affirmed by both extension personnel and college faculty both as to extent of present usage and extent desirability with only one nation reporting "occasional usage" in terms of responses by extension personnel. Likewise, only one nation reporting "little usage" while extension personnel from all other nations reported the strategy as "not used." In terms of the nature of responses with regard to desirability of the practice as reported by extension personnel, respondents from two nations, Iraq and Saudi Arabia, reported the practice was "highly desirable," with the remaining respondents from four nations reporting the practice to be "very desirable."

When college faculty were asked about the extent of present usage only respondents from a single nation reported "occasional usage," while faculty of another two nations reported "little usage." The remaining three nations reported the practice as "not used." When responses with regard to faculty assessment of desirability of practice number two were compared, it was found that three nations, Saudi Arabia, Nigeria, and Korea reported the practice as "very desirable."

Research Findings Be Made Available to Extension Workers on a Systematic Basis

As can be seen by reference to data shown in Table XV, and dealing with the matter of availability of results of university research to extension workers, there was a remarkable degree of agreeement among the nations both on the part of extension personnel and faculty members. This was

TABLE XV

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 3: RESULTS OF COLLEGE OR UNIVERSITY RESEARCH WHICH WOULD BE HELPFUL TO EXTENSION WORKERS BE MADE AVAILABLE TO THE WORKERS ON A SYSTEMATIC BASIS

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	2.28	OU	7	3.71	HD	13	1.15	LU	13	3 61	HD
Saudi Arabia	12	0.50	NU	12	4 16	HD	6	1 00	LU	6	4 00	HD
Egypt	7	1 28	LU	7	4.00	HD	15	1.26	LU	15	3 93	HD
Nigeria	6	1.00	LU	6	4 00	HD	5	1 00	LU	5	3 80	HD
Haiti	5	1.20	LU	5	3.60	HD	4	1 75	OU	4	3 00	VD
Korea	5	2 20	OU	5	3 20	VD	7	2.41	OU	7	3 28	VD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

true both for extent of present usage and extent desirable. Only two nations reported the practice was of "occasional usage" in terms of responses by extension personnel, while extension personnel of three other nations reported it to be of "little usage." The personnel from Saudi Arabia reported the practice as "not used." In terms of desirability of this practice as reported by extension personnel, five nations, Iraq, Saudi Arabia, Egypt, Nigeria, and Haiti reported the practice was "highly desirable," while only one nation, Korea, reported the practice was "very desirable."

When university faculty were asked about the exent of present usage, only respondents from two nations Haiti, and Korea reported "occasional usage," while responding faculty from Iraq, Saudi Arabia, Egypt, and Nigeria reported "little usage." While responses with regard to the faculty desirability of practice number three were compared, it was found that four nations, Iraq, Saudi Arabia, Egypt, and Nigeria reported the practice as being "highly desirable," and the remaining two nations, Haiti and Korea, reported the practice was "very desirable."

Extension Personnel Serve as Resource Persons In College Teaching Programs

Findings as collated and presented in Table XVI, dealing with the strategy that extension administrators and staff members be used in parts of the college teaching program for future extension workers, there was a remarkable degree of agree-

TABLE XVI

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMEBERS BY COUNTRY FOR PRACTICE 4: EXTENSION ADMINISTRATORS AND STAFF MEMBERS BE USED IN PARTS OF THE COLLEGE TEACHING PROGRAM FOR FUTURE EXTENSION WORKERS

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	0 00	NU	5	3.80	HD	13	1.15	LU	13	2 23	D
Saudi Arabia	12	0 16	NU	12	3 00	VD	6	0 16	NU	6	3 33	VD
Egypt	7	0 00	NU	7	3.00	VD	14	0 85	NU	14	2 85	VD
Nigeria	6	0.83	NU	6	3.50	HD	5	0 40	NU	5	3 80	HD
Haiti	5	1 60	OU	5	3.00	VD	4	2.50	FU	4	3 75	HD
Korea	5	2 40	OU	5	3 00	VD	7	1 00	LU	7	3 42	VD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
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ment among the nations both on the part of extension personnel and faculty members. This was true both for extent of present usage and extent desirable. Only two nations reported "occasional usage" in terms of responses by extension personnel, while those personnel from all other nations reported "not used."

In terms of desirability of this practice as reported by extension personnel respondents from two nations, Iraq and Nigeria, the practice was seen as being "highly desirable," with respondents from the remaining four nations reporting the practice to be "very desirable."

When university faculty were asked about the extent of present usage of practice number four, only a respondent from one nation, Haiti, reported "frequent usage," while responding faculty from Iraq and South Korea reported "little usage." Personnel from the remaining three nations reported "not used."

When responses were collated and compared with regard to the faculty assessment of the desirability of practice number four, it was found that two nations, Nigeria and Haiti, reported the practice as being "highly desirable," while the other three nations, Saudi Arabia, Egypt, and South Korea, reported the practice as being "very desirable." The remaining one nation, Iraq, reported it as a "desirable" practice.

College and University Provision for In-Service Training

An examination of data shown in Table XVII dealing with the college and universities providing in-service training programs for extension workers, there was a remarkable degree of agreement among the nations both on the part of extension personnel as well as faculty members. This was true both for extent of present usage and extent of desirability.

Respondents from extension personnel in only two nations reported "occasional usage," while respondents from three other nations reported "little usage." Respondents from the remaining nations reported the practice (number five) as "not used."

In terms of desirability of this practice, extension personnel respondents from two nations, Iraq and Egypt, reported that the practice was "highly desirable." In a like manner, personnel from the other three nations reported the practice to be "very desirable." Respondents from the remaining nation reported the practice as being merely "desirable."

When university faculty were asked for their perceptions about the extent of present usage, respondents from five nations, Iraq, Egypt, Saudi Arabia, Haiti, and South Korea, reported "little usage," while the remaining one nation reported the practice as "not used."

When responses from faculty regarding the desirability of practice number five were collated, it was found that

TABLE XVII

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 5: COLLEGES AND UNIVERSITIES PROVIDE IN-SERVICE TRAINING PROGRAMS FOR EXTENSION WORKERS

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	1 28	LU	7	3 71	HD	12	1.25	LU	12	3.08	VD
Saudi Arabia	12	0.41	NU	12	3 41	VD	6	0 66	NU	6	3.83	HD
Egypt	7	1.42	LU	7	4 00	HD	15	1 40	LU	15	3 60	HD
Nigeria	6	2.33	OU	6	3 33	VD	5	1 60	LU	5	3 60	HD
Haiti	5	1 80	OU	5	3.40	VD	3	1 00	LU	3	2 66	VD
Korea	5	1 40	LU	5	2 40	D	7	1.00	LU	7	3.42	VD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

respondents from three nations, Saudi Arabia, Egypt and Nigeria were in agreement that the practice was "highly desirable," with faculty of the remaining three nations, Iraq, Haiti and South Korea, reporting the practice as "very desirable."

Practical Field Experience Prior to Graduation

Data presented in Table XVIII relate to the matter of a period of practical field experience to be a part of the college course for the student to complete prior to graduation.

There was a remarkable degree of agreement about this practice among the nations both on the part of extension personnel and faculty members. This was true both for the extent of present usage and also regarding the extent desirable. For this practice, respondents from three nations reported "frequent usage," with responses from one nation being "occasional usage." Extension personnel from the remaining two nations reported the practice having "little usage" in their country.

In terms of desirability of this practice as reported by extension personnel, the nations Iraq, Saudi Arabia, Egypt, Nigeria, and Haiti reported the practice was "highly desirable," while the remaining one, South Korea, reported the practice "very desirable."

When university faculty were asked about the extent of present usage, only a respondent from two nations, Haiti and

TABLE XVIII

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 6: A PERIOD OF PRACTICAL FIELD EXTERIENCE BE A PART OF THE COLLEGE COURSE FOR THE STUDENT PRIOR TO GRADUATION, AS A PART OF THE REQUIREMENT FOR BECOMING AN EXTENSION WORKER

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	2 28	OU	7	3 57	HD	13	2 92	OU	13	3 53	HD
Saudi Arabia	11	1 00	LU	12	3.50	HD	6	2 33	OU	6	3 83	HD
Egypt	7	1 00	LU	7	3.57	HD	15	2.40	OU	15	3 93	HD
Nigeria	6	2 66	FU	6	3 83	HD	5	2.40	OU	5	3 80	HD
Haiti	5	2 80	FU	5	4.00	HD	4	2.75	FU	4	3 50	HD
Korea	5	2.60	FU	5	3 00	VD	7	3 00	FU	7	3.71	HD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
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South Korea, reported "frequent usage," while responding faculty from Iraq, Saudi Arabia, Egypt, and Nigeria all reported "occasional usage." When responses with regard to faculty assessment of desirability of practice number six were compared, it was found that all nations reported the practice as being "highly desirable."

Cooperate Effort Among Extension Personnel, College Faculty, and Experiment Station Workers

Findings shown in Table XIX deal with the matter of extension personnel, faculty of training institutions, and agricultural experiment station personnel cooperating to develop programs useful and practical to help farmers improve their situation. There was a remarkable degree of agreement among respondents of the nations both on the part of extension personnel and faculty members. This was true both for extent of present usage and extent desirable. Only one nation reported "frequent usage" in terms of responses from extension personnel, with respondents from three nations reporting "occasional usage." Extension personnel from one other nation reported "little usage," while respondents from the remaining nation reported this practice as "not used."

In terms of desirability of this practice, extension personnel from three nations, Saudi Arabia, Egypt, and Nigeria, perceived it as being "highly desirable," with the remaining three nations reporting the practice as "very desirable."

TABLE XIX

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 7: EXTENSION, TRAINING INSTITUTIONS, AND AGRICULTURAL EXPERIMENT STATIONS COOPERATE IN DEVELOPING PROGRAMS WITH USEFUL AND PRACTICAL INFORMATION THAT WOULD HELP FARMERS IMPROVE THEIR SITUATIONS

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	1 85	OU	7	3 42	VD	13	1 07	LU	13	3 46	VD
Saudi Arabia	12	0 91	NU	12	3 91	HD	6	1 00	LU	6	3.83	HD
Egypt	7	2 28	OU	7	3.85	HD	15	1 13	LU	15	3 86	HD
Nigeria	6	1.66	OU	6	4 00	HD	5	1 60	OU	5	3 60	HD
Haiti	5	1.20	LU	5	3 20	VD	4	1.50	OU	4	3.50	HD
Korea	5	2 80	FU	5	3 00	VD	7	2.57	FU	7	3.85	HD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

When university faculty were asked about the extent of present usage only a respondent from one nation, South Korea, reported "frequent usage," while faculty from two other nations reported "occasional usage." Responding faculty from the remaining three nations reported the practice as "not used." When responses from faculty with regard to the desirability of practice number seven were compared, it was found that five nations, Saudi Arabia, Egypt, Nigeria, Haiti, and South Korea, described the practice as "highly desirable." The respondents from the remaining nation, Iraq, reported the practice as "very desirable."

Joint Efforts of Three Groups to Determine Farmer Needs

Data presented in Table XX relates to the matter of extension, training institution, and experiment station work jointly in determining needs of farmers. Again, there was a remarkable degree of agreement among respondents from different nations, both on the part of extension personnel and college faculty. This was true for both items covering extent of present usage and extent of desirability. Respondents from only one nation reported the practice as being of "frequent usage," while extension personnel from two other nations reported "occasional usage." The response from two other nations was "little usage," while the response from the remaining nation was "not used."

In terms of the desirability of this practice as report-

TABLE XX

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 8: EXTENSION, TRAINING INSTITUTION, AND EXPERIMENT STATION WORK JOINTLY IN DETERMINING NEEDS OF FARMERS

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	1.85	OU	7	3.71	HD	12	0 75	NU	12	2 91	VD
Saudi Arabia	12	0 91	NU	12	3 91	HD	6	1 00	LU	6	3.83	HD
Egypt	8	1 49	LU	7	4.00	HD	15	0.80	NU	15	3 66	HD
Nigeria	6	1 50	OU	6	3 83	HD	5	1.20	LU	5	3 80	HD
Haiti	5	1 40	LU	5	3.20	VD	4	1.25	LU	4	3 50	HD
Korea	5	2 80	FU	5	3 00	VD	7	2.41	OU	7	3.85	HD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

ed by extension personnel from four nations, Iraq, Saudi Arabia, Egypt, and Nigeria, it was considered a "highly desirable" practice. Extension personnel of the remaining two nations reported the practice as being "very desirable."

When university faculty were asked about the extent of present usage, only a respondent from one nation, South Korea, reported "occasional usage" of practice number eight, while faculty from three other nations reported "little usage." Respondents from the remaining two nations reported the practice as "not used."

When responses of faculty with regard to the desirability of practice number eight were compared, it was found that respondents from five nations, Saudi Arabia, Egypt, Nigeria, Haiti, and South Korea, reported the practice as being "highly desirable." The respondents from the remaining nation, Iraq, reported the practice as "very desirable."

Cooperative Effort Between Extension Personnel and Faculty in Evaluating Joint Practices

As can be seen by reference to data presented in Table XXI dealing with the matter of extension and training institution cooperating in evaluating results of overall joint efforts, there was a remarkable degree of agreement among the nations both on the part of extension personnel and faculty members. This was true both for extent of present usage and extent desirable. Extension respondents from one nation re-

TABLE XXI

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 9: EXTENSION AND TRAINING INSTITUTIONS COOPERATE IN EVALUATING RESULTS OF OVERALL JOINT EFFORTS

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	1.28	LU	7	3.57	HD	13	1.00	LU	13	3.23	VD
Saudi Arabia	12	0 50	NU	12	3 50	HD	6	0 33	NU	6	4.00	HD
Egypt	7	1 00	LU	7	3 37	HD	14	0 02	NU	15	3 80	HD
Nigeria	6	1.16	LU	6	3 50	HD	5	0 60	NU	5	3 60	HD
Haiti	5	1 00	LU	5	3 00	VD	4	1 00	LU	4	3.50	HD
Korea	5	2 20	OU	5	3.20	VD	7	2 28	FU	7	3 85	HD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

ported "occasional usage," while respondents from four nations reported "little usage." For the remaining one nation, extension respondents reported "not used."

In terms of desirability of the practice dealing with cooperative evaluation of joint activities, extension personnel from Iraq, Saudi Arabia, Egypt and Nigeria reported the practice as "highly desirable." Respondents from the remaining two nations judging the practice as being "very desirable."

When university faculty were asked about the extent of present usage, a respondent from one nation, South Korea, reported "frequent usage," while faculty from Iraq and Haiti reported "little usage." Faculty responses from the remaining three nations indicated that the practice was "not used."

Faculty responses with regard to the desirability of practice number nine were collated, and it was found that those from five nations, Saudi Arabia, Egypt, Nigeria, Haiti, and South Korea judged the practice as being "highly desirable." Those faculty from Iraq perceived the practice as "very desirable."

Conference Between Faculty, Extension, and Experiment Station Personnel

Findings as collated in Table XXII deal with the strategy of holding periodic conferences between faculty of extension, training institutions, and experiment station personnel in order to become better acquainted with each other and to share learning experiences. There was a remarkable degree of

TABLE XXII

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 10: PERIODIC CONFERENCES HELD FOR ALL PERSONNEL OF EXTENSION, TRAINING INSTITUTION, AND EXPERIMENT STATIONS TO BECOME BETTER ACQUAINTED WITH EACH OTHER AND TO SHARE LEARNING EXPERIENCES

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	7	2 28	OU	7	3.71	HD	13	1 23	LU	13	3.00	VD
Saudi Arabia	12	0 33	NU	12	3.50	HD	6	0 50	NU	6	3 66	HD
Egypt	7	2.00	OU	7	3.85	HD	15	1 20	LU	15	3 66	HD
Nigeria	6	1 00	LU	6	3.66	HD	5	1 00	LU	5	3.80	HD
Haiti	5	0 60	NU	5	3.00	VD	4	0.50	NU	4	2 80	VD
Korea	5	1 40	LU	5	3.00	VD	7	1.71	OU	7	3 85	HD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

agreement among the nations both on the part of extension personnel and faculty members, and this was true both for the extent of present usage and extent of desirability. Extension personnel from only two nations reported "occasional usage," with those from two other nations reporting "little usage." Extension respondents from Haiti and Saudi Arabia reported that they perceived the strategy as "not used."

Extension personnel judging as to the desirability of the strategy found those from four nations, Iraq, Saudi Arabia, Egypt, and Nigeria, perceiving the practice as "highly desirable," with personnel from the remaining two nations judging the strategy to be "very desirable."

When university faculty were asked for their observation as to the extent of present usage, only a respondent from one nation reported "occasional usage," with faculty of three nations observing "little usage." Two nations stated the practice as "not used."

Faculty responses as to perceptions of desirability of the strategy revealed that respondents of four nations, Saudi Arabia, Egypt, Nigeria, and South Korea, felt the practice to be "highly desirable," with respondents from the remaining two nations, Iraq and Haiti, judging the strategy as "very desirable."

Extension, with Assistance of Faculty Developing Radio Programs

Collated data presented in Table XXIII deals with the

TABLE XXIII

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 11: EXTENSION, WITH THE COOPERATION AND ASSISTANCE OF THE TRAINING INSTITUTION, DEVELOP RADIO PROGRAMS TO REACH FARMERS WITH NEEDED AGRICULTURAL INFORMATION

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	6	1 16	LU	6	3.16	VD	13	0.69	NU	13	3.69	HD
Saudi Arabia	12	0.58	NU	12	3 50	HD	6	0.83	NU	6	3.50	HD
Egypt	7	1.42	LU	7	3 85	HD	15	0 46	NU	15	3 40	VD
Nigeria	6	1 33	LU	6	3 83	HD	5	0 20	NU	5	3 60	HD
Haiti	5	0.80	NU	5	2 40	D	4	1.25	LU	4	3 00	VD
Korea	5	1 40	LU	5	3 00	VD	7	1 00	LU	7	3.28	VD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

proposed strategy of extension, with assistance from faculty of training institutions, developing radio programs to reach farmers with needed agricultural information. Again, evaluation of this practice by respondents resulted in a notable extent of agreement among respondents of the six nations, both on the part of extension personnel and faculty members. This was largely true both regarding extent of present usage and extent desirability. Four nations reported the practice as having "little usage." Extension personnel in two nations reported the practice as "not used."

When extension personnel reported as to desirability of the practice those from three nations, Saudi Arabia, Egypt, and Nigeria, reported the practice was "highly desirable," while respondents from Iraq and South Korea judged the practice as "very desirable." Respondents from Haiti reported the practice as "desirable."

University faculty were likewise asked about the extent of present usage of the practice, and respondents from both Haiti and South Korea reported "little usage," while respondents from the four remaining nations responded that the practice was "not used."

When faculty of the training institutions asessed the desirability of the practice, those from three nations, Iraq, Saudi Arabia, and Nigeria, felt the practice was "highly desirable," with faculty of institutions in the remaining nations of Egypt, Haiti, and South Korea reporting the practice as "very desirable."

Joint Efforts of Extension and Faculty to Develop Teaching Materials

Data presented in Table XXIV relates to the matter of the extension and faculty of training institutions working jointly to develop materials and methods that extension agents could use to reach illiterate farmers. There was slightly less degree of agreement among respondents from the nations between extension personnel and faculty members with regard to this practice. While extention respondents from only one nation reported "occasional usage," those from three nations reported "little usage," and personnel from two nations reportedd "not used."

In terms of desirability of this practice, extension personnel from three nations, Saudi Arabia, Egypt, and Nigeria reported the practice as "highly desirable" and only one nation, Iraq, reported the practice as "very desirable." The remaining two nations, Haiti and South Korea, reported the practice as being "desirable."

When university faculty were asked about the extent of present usage, only respondents from two nations, Haiti and South Korea, reported "little usage," while responding faculty from Iraq, Saudi Arabia, Egypt, and Nigeria all reported the practice as "not used."

When responses of faculty with regard to the desirability of the practice were compared, it was found that respondents of three nations, Saudi Arabia, Egypt, and Nigeria,

TABLE XXIV

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 12: EXTENSION AND THE TRAINING INSTITUTION WORK JOINTLY TO DEVELOP MATERIALS AND METHODS THAT EXTENSION AGENTS COULD USE TO REACH ILLITERATE FARMERS

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	6	1 83	OU	6	3.33	VD	13	0 46	NU	13	3.30	VD
Saudi Arabia	12	0 41	NU	12	3.58	HD	6	0.50	NU	6	4.00	HD
Egypt	7	1 42	LU	7	3 71	HD	15	0.80	NU	15	3 66	HD
Nigeria	6	1 00	LU	6	3 66	HD	5	0 60	NU	5	3 80	HD
Haiti	5	1 00	LU	5	2 40	D	4	1 25	LU	4	3 00	VD
Korea	5	0 80	NU	5	1 80	D	7	1 28	LU	7	3 42	VD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

reported the practice as being "highly desirable," with the remaining three nations, Iraq, Haiti, and South Korea, reporting the practice as being "very desirable."

Close Coordination of Planning and Management Functions Among the Three Groups

Findings shown in Table XXV related to the matter of much closer coordination of planning and management functions among the three agencies being responsible for research, extension, and teaching in order to promote efficiency. Extension personnel from only two nations reported "occasional usage" of this practice. Personnel from two other nations reported "little usage," while extension personnel from the other three nations reported coordination of activities as "not used."

In terms of desirability of the practice of closer coordination of planning and management activities, extension personnel from three nations, Egypt, Nigeria, and Haiti, reported the practice as "highly desirable." The remaining three nations reported the practice to be "very desirable."

When university faculty were asked about the extent of present usage of the practice, only respondents from the nation South Korea reported "occasional usage," while responding faculty from Haiti reported the practice as having "little usage." Faculty respondents from the remaining four nations, Iraq, Saudi Arabia, Egypt, and Nigeria, reported the practice as "not used."

TABLE XXV

RESPONSE BY EXTENSION WORKERS AND FACULTY MEMBERS BY COUNTRY FOR PRACTICE 13: MUCH CLOSER COORDINATION OF PLANNING AND MANAGEMENT FUNCTIONS AMONG THE THREE AGENCIES RESPONSIBLE FOR RESEARCH, EXTENSION, AND TEACHING IN ORDER TO PROMOTE EFFICIENCY

Country	EXTENSION PERSONNEL						UNIVERSITY FACULTY					
	Extent Present Usage			Extent Desirable			Extent Present Usage			Extent Desirable		
	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category	No Responding	Mean Score	Category
Iraq	6	2 00	OU	6	3.33	VD	13	0 80	NU	13	4 00	HD
Saudi Arabia	12	0 41	NU	12	3 41	VD	6	0 33	NU	6	3 66	HD
Egypt	7	1.00	LU	7	4 00	HD	15	0.73	NU	15	3 93	HD
Nigeria	6	0 83	NU	6	3 83	HD	5	0 40	NU	5	3 60	HD
Haiti	5	1 00	LU	5	3 80	HD	4	1 00	LU	4	4 00	HD
Korea	5	2.40	OU	5	2 80	VD	7	1 71	OU	7	3 24	VD

LEGEND:

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Not Desirable

Responses by faculty as to the desirability of this practice, when collated, revealed that it was deemed "highly desirable" by respondents of five nations, Iraq, Saudi Arabia, Egypt, Nigeria, and Haiti. Respondents from South Korea reported the practice as being "very desirable."

Responses From All Nations Combined

When data secured from all nations was collated and analyzed for each of the thirteen selected strategies or practices, as shown in Table XXVI, it became evident that, in general, extension personnel recognized that present usage was meager, with four categories reported as "not used," an additional six of "little usage, and the remaining three categories showing only "occasional usage."

In a like manner, when responses obtained from university faculty with regard to the present usage of these practices was collated, it was found that five of the practices were reported as "not used," six assessed as having only "little usage," and one strategy or practice recognized as having "occasional usage." The remaining strategy was assessed as having "frequent usage." Those three practices which were reported by extension personnel as having "little usage," but categorized by university faculty as "not used" were: (1) extension training institution and experiment station work jointly in determining farmers' needs; (2) extension personnel work with faculty training institution to develop materials for use with illiterate farmers; and (3)

TABLE XXVI

COMBINED RESPONSES BY FACULTY AND EXTENSION PERSONNEL FROM SIX NATIONS

Strategies	Extension Personnel						University Faculty					
	Number Responding	Extent of Present Usage		Number Responding	Extent Desirable		Number Responding	Extent of Present Usage		Number Responding	Extent Desirable	
		Mean Score	Category		Mean Score	Category		Mean Score	Category		Mean Score	Category
1 Faculty have some work experience in Extension	42	0.61	NU	42	3.30	VD	50	1 08	LU	50	3.18	VD
2 Extension administrators help design curriculum	42	0 88	NU	42	3 45	VD	50	0.56	NU	49	3 06	VD
3 Research findings systematically available to Extension	42	1 30	LU	42	3 76	HD	50	1.28	LU	50	3 68	HD
4 Extension administrators be used as special instructors	42	0 83	NU	42	2 92	HD	50	0 64	NU	49	3 00	VD
5 Universities provide in-service training for Extension workers	42	1 16	LU	42	3 47	VD	49	1 10	LU	48	3 35	VD
6 Practical field experience required of Extension trainees	42	1 85	OU	42	3 54	HD	50	2.64	FU	50	3 74	HD
7 "Three-group" cooperation in program planning	42	1 65	OU	42	3 73	HD	49	1 38	LU	50	3 70	HD
8 "Three-group" cooperation in determining needs	42	1 57	OU	42	3.55	HD	49	1.00	LU	49	3 32	VD
9 University and Extension cooperate in evaluation	42	0.95	NU	42	3 30	VD	50	1 04	LU	50	3 40	VD
10 "Three-group" periodic conferences provided for personnel	42	1 26	LU	42	3 45	VD	50	1 54	OU	49	3 51	HD
11 Extension and University jointly plan and deliver radio programs	42	1 07	LU	42	3 40	VD	50	0 68	NU	50	3 44	VD
12 Extension and University develop materials to reach illiterate farmers	42	1 07	LU	42	3 14	VD	50	0 76	NU	49	3 53	HD
13 Closer coordination of "three-group" efforts in planning and management	42	1 04	LU	42	3.47	VD	50	0 48	NU	50	3 74	HD

Note The term "three-group" refers to (1) University faculty, (2) Extension personnel, and (3) Experiment Station personnel

LEGEND

GU = Great Usage FU = Frequent Usage OU = Occasional Usage LU = Little Usage NU = Not Used
HD = Highly Desirable VD = Very Desirable D = Desirable SD = Slightly Desirable ND = Very Little Desirable or Not Desirable

coordination of efforts among the three agencies, extension, research, and teaching in management. Those practices which were reported as of "occasional usage" by extension workers, but as of only "little usage" by university faculty were: (1) cooperation between extension, training institutions, and agricultural experiment stations to help improve their situation and (2) extension, training institution, and experiment station work jointly to determine farmers' needs. It was found that extension personnel felt that the practice stating that a period of practical experience be a part of the college course for the student prior to graduation was of "occasional usage," while the judgement expressed by university faculty as to extent usage was slightly higher being in the "frequent usage" category.

When desirability was determined by responses of two groups, extension personnel and university faculty, it was found that extension personnel felt that the practice stating that extension, training institution, and experiment station work jointly to determine farmers' needs was "highly desirable," while the judgement expressed by university faculty as to desirability were slightly lower being in the "very desirable" category. The strategies or practices expressed as (1) periodic conferences held for all personnel of extension, training institutions, and experiment station to share learning experiences; (2) extension, with the assistance of the training institution, to develop radio programs to reach farmers; and (3) extension and the training institution work

jointly to develop materials to reach illiterate farmers, showed a reverse appraisal with extension personnel considering each "very desirable," but university faculty recognizing the practices of somewhat higher value, rating them as "highly desirable." Those practices or strategies which both extension personnel and university faculty gave the highest rating of "highly desirable" were: (1) availability of research findings to help extension workers; (2) a period of practical field experience be a part of requirements for becoming an extension worker; (3) extension personnel, training institution, and experiment stations cooperate in developing practical information for improving the farmers' situation. All other categories were assessed by both groups as being "very desirable." These included: (1) faculty members spend some time working in national extension work; (2) extension personnel assist university faculty to design college curriculum for training extension workers; (3) extension personnel be used occasionally to take part in the college teaching program; (4) in-service training for extension workers provided by university; (5) extension and training institutions cooperate in evaluating results of overall joint efforts; and (6) extension, with the assistance of the training institution, to develop radio programs to reach farmers.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This chapter attempts to present summaries of the following topics: (1) rationale for and purpose of the study; (2) design of the study; and (3) major findings of the study. Finally, conclusions and recommendations are presented along with a simple model for implementation and maintenance of strategies enhancing a more productive relationship between the two agencies studied to the end that farmers and agricultural workers may receive maximum instruction counsel and benefits.

Rationale for the Study

While it is largely true that many, if not most of the developing countries have been giving a high priority to the development of extension programs in agriculture, it must also be recognized that the preparation of individuals to carry on this work has sometimes been a bit difficult. The tremendous task of adequately preparing people to work in the field of Agricultural Extension would seem to almost mandate

an increasing allocation of resources, both physical and human to the accomplishment of securing an enlightened and enthused agricultural sector. Concurrently, this highlights the need for a considerable degree of cooperation between training institutions preparing workers for jobs in Agricultural Extension and Extension administration and personnel. It is within this relationship that a crucial element exists in the bringing of scientific discoveries to the farmer, and in bringing about eventual adoption and application of these new techniques to his farming operations. Generally speaking, the so-called third world contains those countries where per capita income is below $829.00 per year. However, a number of countries where per capita income is somewhat higher are still considered to be developing countries, particularly when the relative per capita income of the farmer is considered. Nations selected for the study did include selection from a wide spectrum of geographic locations as well as economic levels. The study was restricted to nations where recognized efforts were being made to develop the agricultural sector. While the distribution of the six developing countries of the study was primarily in Asia and Africa, the Western Hemisphere was represented by the country of Haiti.

Although each of the nations selected for the study have their own distinctive agricultural extension operation, there are certain commonalities among them as to function, operation, and problems of delivery. For example, although there is a wide gap between Haiti and Saudi Arabia in terms of per

capita income, problems of maintaining effective agricultural extension services would appear to apply in a similar manner in each country. Likewise, it must be recognized that programs of study, specifically in agriculture and agricultural education, differ considerably among nations. Requirements for graduation vary as well as required curricular content. Nevertheless, in planning for this study, it was recognized that enough commonality exists in both functioning agricultural extension programs and extension training programs to provide a basis for identification and study of strategies and practices which hold promise for achievement of better final accomplishments in agricultural practices among developing nations.

Purpose of the Study

The central purpose of the study was to determine perceptions regarding the relative effectiveness of certain selected strategies which might enhance effectiveness of agricultural extension, specifically with regard to the preparation of agricultural extension workers in each of six selected developing nations. These perceptions were limited to two groups: (1) personnel in national agricultural extension programs and (2) administrators and faculty responsible for preparatory training in extension located in institutions of higher education. Perceptions to be determined centered on the nature and extent of mutual concern and involvement for each strategy and sought responses as to the extent it (1)

currently existed and (2) was desirable for the future.

A major objective was to determine both differences and commonalities presently existing in perceptions of selected strategies to enhance preparation of Extension workers as as held by (1) administrative and supervision personnel in extension and (2) agricultural administrators and faculty of selected institutions preparing students to serve as Extension administrators and/or workers. A concomitant purpose was to prepare a simple model illustrating the nature and extent of joint activities and mutual relationships which are recommended between the agricultural extension department and agricultural administration and faculty in institutions with responsibility for preparing extension personnel.

Study Design and Procedure

The study was designed to be largely a survey type of investigation. After a thorough review of pertinent literature, six developing nations were selected to represent various areas. Letters were sent to selected graduates of Agricultural Education Department at Oklahoma State University currently serving and residing in each of the selected six nations. The letter requested names and addresses of those people holding positions of responsibility both in colleges and universities, and in national Agricultural Extension Services. From this list, a mailing was made to each of the persons selected to serve as respondents. In some instances the addressed envelopes were combined in a single package and sent to the

selected alumnus for distribution. Responses so secured were collated and analyzed. A simple model was developed to be used as a basic design to formulate instruments to obtain responses upon which to be used as basis for making recommendations for improvement of working relationships between colleges and universities training institutions and the national Agricultural Extension services (see Figure 2, Chapter I).

As shown in Table XXVIII strategies or practices finally selected after validation by a "jury" technique totaled thirteen. These thirteen were listed in the questionnaire, with the request of each respondent to check (1) extent present usage and (2) extent of desirability. When collating and analyzing returns categories were established with corresponding numerical limits. These limits are shown in Table XXVII.

Major Findings of the Study

Demographics of the Respondent Groups

Respondents represented only six developing countries but for each country they were divided into two categories (1) administrative and supervisory personnel of the national agricultural extension service and (2) immediate administators and department faculty of universities or colleges where the majority of extension workers were being trained. It was determined that a total of 44 extension personnel were in major responsible positions of administration in the six nations surveyed. In a like manner, it was determined that

TABLE XXVII

CATEGORIES DETERMINED BY MEAN SCORE VALUES

Usage Response Categories	Scale Numerical Value	Range of Numerical Limits for Categories
Great usage	4	3.5 - 4.00
Frequent usage	3	2.5 - 3.49
Occasional usage	2	1.5 - 2.49
Little usage	1	1.0 - 1.49
Very little or Not used	0	0.0 - 0.99

Desirability Response Category	Scale Numerical Value	Range of Numerical Limits for Categories
Highly desirable	4	3.5 - 4.00
Very desirable	3	2.5 - 3.49
Desirable	2	1.5 - 2.49
Slightly desirable	1	1.0 - 1.49
Very little or Not desirable	0	0.0 - 0.99

TABLE XXVIII

IDENTIFIED SELECTED STRATEGIES OR PRACTICES FOR ENHANCING RELATIONSHIPS BETWEEN EXTENSION PERSONNEL AND UNIVERSITY FACULTY

Strategy or Practice
1. Faculty members who teach extension subjects at college and universities spend some time working in various areas of national extension program work.
2. National Extension administrators help college or university administrators design college curriculum to train future extension workers at the college level.
3. Results of college or university research which would be helpful to extension workers be made available to the workers on a systematic basis.
4. Extension administrators and staff members be used in parts of the college teaching program for future extension workers.
5. Colleges and universities provide in-service training programs for extension workers.
6. A period of practical field experience be a part of the college course for the student prior to graduation, as a part of the requirement for becoming an extension worker. (This may be similar to "summer training" or programs or "student teaching.")
7. Extension, training institutions and agricultural experiment stations cooperate in developing programs with useful and practical information that would help farmers improve their situations.
8. Extension, training institution, and the experiment station work jointly in determining needs of farmers.
9. Extension and training institutions cooperate in evaluating results of overall joint efforts.
10. Periodic conferences for all personnel of extension, training institutions, and experiment stations to become better acquainted with each other and to share learning experience.

TABLE XXVIII (Continued)

Strategy or Practice
11. Extension with the cooperation and assistance of the training institution, develop radio programs to reach farmers with needed agricultural information.
12. Extension and the training institution work jointly to develop materials and methods that extension agents could use to reach illiterate farmers.
13. Closer coordination of planning and management functions by research, extension, and teaching agencies.

59 individuals were serving either as an immediate administrator (dean or department head) or as a faculty member teaching courses and advising students engaged in study preparing them to become extension workers.

Of the nations from which responses were received, the percentages of responses from extension personnel were Iraq 100%, Saudi Arabia 100%, Egypt 100%, Nigeria 100%, Haiti 83.33%, Korea 83.33%, and all nations combined 95.45%. For faculty members responding, the percentage for each nation was Iraq 100%, Saudi Arabia 50%, Egypt 100%, Nigeria 83.33%, Haiti 66.66%, and Korea 100%, and from all nations combined the faculty member return was 84.74%.

Extent of Percent Usage and Desirability of Selected Strategies or Practices

A major objective of this study was to secure and analyze perceptions and judgements as to the extent to which selected strategies or practices were found to be presently used and in a like manner to obtain perceptions and judgments as to the extent of desirability of these same strategies. These perceptions were obtained for each of the 13 selected strategies or practices, as listed in the questionnaire.

Judgements As to the Extent of Present Usage of Selected Practices or Strategies:

Data presented in Tables XXIX, XXX, and XXXI provide contrasting perceptions held by total respondents comprising each of the two groups as to the extent of present usage of each selected strategy or practice. Both extension and faculty groups identified each of the strategies according to the category in which they perceived it as currently belonging. Responding extension personnel agreed with university faculty that practices numbered 1, 2, and 4 were not used and both groups also agreed that practices 3, 5, and 10 were "little used." While university faculty indicated that practices 11, 12, and 13 were "not used," extension personnel felt that these practices had "little usage." Again, it was determined that while extension personnel recognized that practice number 6, was "occasionally used," university faculty reported that this practice was "frequently used." Extension personnel recognized practice number 9 as being "not

TABLE XXIX

COMBINED RESPONSES AS TO EXTENT OF PRESENT USAGE

Strategy or Practice Number*	Extension Personnel Response by Category				University Faculty Response by Category			
	NU	LU	OU	FU	NU	LU	OU	FU
1	X				X			
2	X				X			
3		X				X		
4	X				X			
5		X				X		
6			X					X
7			X			X		
8			X			X		
9	X					X		
10		X				X		
11		X			X			
12		X			X			
13		X			X			
Number In Category	4	6	3	0	6	6	0	1

*Wording of strategy or practice can be found in Table XXVIII.

TABLE XXX

COMBINED RESPONSES AS TO ASSESSMENT OF EXTENT OF DESIRABILITY

Strategy or Practice Number*	Extension Personnel Response by Category			University Faculty Response by Category		
	D	VD	HD	D	VD	HD
1		X			X	
2		X			X	
3			X			X
4		X			X	
5		X			X	
6			X			X
7			X			X
8			X		X	
9		X			X	
10		X				X
11		X			X	
12		X				X
13		X				X
Number in Category	0	9	4	0	7	6

*Wording of strategy or practice can be found in Table XXVIII.

used," while university faculty felt that the same practice had "little usage." Likewise, it was interesting to discover that while extension personnel considered practices number 7 and number 8 as "occasionally used," university faculty recognized them as only having "little usage."

University faculty identified five of the practices as "not used," while extension personnel identified only two as not being used. It is notable that several of the items identified by faculty as "not used' were those which might call for more initiative effort on the part of extension personnel. An example would be practice number 11, which calls for assistance from training institutions for the extension effort to develop radio programs to reach needy farmers. University faculty were almost unanimous in agreement that they did not contribute to the development of such programs, and consequently identified the practice as "not used." Apparently extension personnel thought there was usage, even though it might be remote. The same evaluation might be made with regard to the categorization of a number of other practices. For example, faculty recognized practice number 6--a period of practical field experience be a part of the college course for the student prior to graduation--as "frequently used," extension personnel identified it as having only "occasional usage." Obviously, university faculty, being more directly involved with the planning and implementation of training programs, were more prone to see this as being of more often occurence. In a like manner, it can be noted that while uni-

versity faculty did say practice number 9--extension and training institutions cooperate in evaluating results of overall joint efforts--had "little usage," extension personnel admitted that as a practice it was "not used."

Judgments as to Extent of Desirability of Practices or Strategies

When identification and categorization with regard to the extent of desirability of the practices were concerned, it was found the extent of agreement between the two groups was much more pronounced. While extension personnel identified four practices as "highly desirable," their counterparts at the university recognized six practices as being "highly desirable." Conversely, extension personnel categorized nine practices as being "very desirable" as compared to faculty categorization of seven. It should certainly be of note that neither respondent group categorized any practice as being only "desirable," "slightly desirable," or "very little or not desirable."

It was most interesting to note that while neither of the groups found any of the thirteen strategies to be "not desirable" or even merely "desirable," they were in agreement that six of the practices were "very desirable." Both groups were also in agreement that three of the practices were "highly desirable," these included practices number three, six, and seven. It should further be noted that while university faculty rated practice number eight as being "very desirable,"

extension personnel felt even more strongly in that they viewed the practice as being "highly desirable." In a reverse manner, university faculty felt that practices numbered 10, 12, and 13 were deemed "highly desirable," while the same practices were valued slightly less by extension personnel, who rated them "very desirable." In summary, it should be noted that considering the entire thirteen practices, respondents in each of the two groups accepted the fact that, in terms of desirability, each identified practice or strategy was felt to be a very effective means for achieving a much more profitable relationship between the two agencies and thereby enhancing extension achievements.

Identification and Categorical Grouping of Strategies or Practices by Both Groups as to Present Usage and Desirability

In order to more fully and completely present findings in terms of identification and categorization of the thirteen practices, Table XXXI was designed. Data show that university faculty identified five of the practices as "not used," while extension personnel identified only two practices as "not used." It is notable that several of the items identified by faculty as "not used" were those which might call for more initiative effort on the part of extension personnel. An example would be practice number 11--which calls for assistance from training institution for the extension effort

TABLE XXXI

IDENTIFICATION OF STRATEGIES OR PRACTICES AS CATEGORIZED IN TERMS OF PRESENT USAGE AND IN TERMS OF DESIRABILITY

A. EXTENSION CATEGORIZATION AS "NOT USED"

1. Faculty members spend some time working in National Extension Programs.

2. Extension personnel help university faculty design curriculum.

B. UNIVERSITY FACULTY CATEGORIZATION AS "NOT USED"

1. Extension personnel help university faculty design curriculum.

2. Extension personnel serve as resource persons in college teaching program.

3. Extension personnel with assistance of university faculty develop radio programs to give needed agricultural information.

4. Extension personnel and university faculty jointly develop materials and methods to reach illiterate farmers.

5. Much closer coordination of planning and management functions by three agencies responsible for research, extension and teaching.

A1. STRATEGIES OR PRACTICES CATEGORIZED BY EXTENSION PERSONNEL AS LITTLE USED.

1. Extension personnel help university faculty design curriculum.

2. Research findings of faculty be made available to Extension personnel on systematic basis.

3. University faculty provide in-service training programs for extension personnel.

4. Periodic conferences held jointly for personnel of training faculty, experimental station workers, and and extension workers to share experiences.

TABLE XXXI (Continued)

5. Extension personnel, with assistance of university faculty, develop radio programs to give needed agricultural information.

6. Much closer coordination of planning and management functions by the three responsible agencies functioning in research, extension and teaching.

B1. STRATEGIES OR PRACTICES CATEGORIZED BY UNIVERSITY FACULTY AS LITTLE USED.

1. Faculty members spend some time working in the national extension program.

2. Research findings of faculty be made available to extension personnel on a systematic basis.

3. University faculty provide in-service training programs for extension personnel.

4. Cooperation be maintained among extension personnel, experiment station personnel and university faculty in developing useful information for farmers.

5. Cooperation and joint efforts be maintained among extension personnel, experiment station personnel and university faculty in determining needs of farmers.

6. Extension personnel and faculty of training institutions cooperate in evaluating results of joint efforts.

A2. STRATEGIES OR PRACTICES CATEGORIZED BY EXTENSION PERSONNEL AS OCCASIONALLY USED.

1. A period of practical field experience be part of the college course for students prior to graduation.

2. Cooperation be maintained among extension personnel, experiment station personnel and university faculty in developing useful information for farmers.

3. Cooperation and joint efforts be maintained among extension personnel, experiment station personnel and university faculty in determining needs of farmers.

TABLE XXXI (Continued)

B2. STRATEGIES OR PRACTICES CATEGORIZED BY UNIVERSITY FACULTY AS OCCASIONALLY USED.

1. Periodic conferences held for personnel of training faculty, experiment stations, and extension to share experiences.

A3. STRATEGIES OR PRACTICES CATEGORIZED BY EXTENSION PERSONNEL AS FREQUENTLY USED, AND AS EXTENSIVELY USED.

None

B3. STRATEGIES OR PRACTICES CATEGORIZED BY UNIVERSITY FACULTY AS FREQUENTLY USED.

1. A period of practical field experience be part of the college course for students prior to graduation.

A4. STRATEGIES OR PRACTICES CATEGORIZED BY UNIVERSITY FACULTY AS EXTENSIVELY USED.

None

A5. STRATEGIES OR PRACTICES CATEGORIZED BY EXTENSION PERSONNEL AS HIGHLY DESIRABLE.

1. Research findings of faculty be made available to Extension personnel on systematic basis.

2. A period of practical field experience be part of the college course for students prior to graduation.

3. Cooperation be maintained among extension personnel, Experiment Station personnel and university faculty in developing useful information for farmers.

4. Cooperation and joint efforts maintained among extension personnel, experiment station personnel, and university faculty in determining needs of farmers.

B5. STRATEGIES OR PRACTICES CATEGORIZED BY UNIVERSITY FACULTY AS HIGHLY DESIRABLE

1. Research findings of faculty be made available to extension personnel on a systematic basis.

2. A period of practical field experience be part of the college course for students prior to graduation.

TABLE XXXI (Continued)

3. Cooperation be maintained among extension personnel, experiment station personnel, and university faculty in developing useful information for farmers.

4. Periodic conferences be held for personnel of training faculty, experiment station workers, and extension workers to share experiences.

5. Extension personnel and university faculty jointly develop materials and methods to reach illiterate farmers.

6. Much closer coordination of planning and management functions be maintained by the three agencies responsible for research, extension, and teaching.

A6. STRATEGIES OR PRACTICES CATEGORIZED BY EXTENSION PERSONNEL AS VERY DESIRABLE.

1. Faculty members spend some time working in national extension programs.

2. Extension personnel help university faculty design curriculum.

3. Extension personnel serve as resource persons in college teaching program.

4. University faculty provide in-service training programs for extension personnel.

5. Extension personnel and faculty of training institutions cooperate in evaluating results of joint efforts.

6. Periodic conferences held for personnel of training faculty, experiment stations, and extension to share experiences.

7. Extension personnel with assistance of university faculty develop radio programs to give needed agricultural information.

8. Extension personnel and university faculty jointly develop materials and methods to reach illiterate farmers.

9. Much closer coordination of planning and management functions be maintained by the three agencies respon-

TABLE XXXI (Continued)

sible for research, extension, and teaching.

B6. STRATEGIES OR PRACTICES CATEGORIZED BY UNIVERSITY FACULTY AS VERY DESIRABLE.

1. Faculty member spend some time working in national extension programs.
2. Extension personnel help university faculty design curriculum.
3. Extension personnel serve as resource persons in college teaching program.
4. University faculty provide in-service training programs for extension personnel.
5. Cooperation and joint efforts maintained among extension personnel, experiment station personnel, and university faculty in determining needs of farmers.
6. Extension personnel and faculty of training institutions cooperate in evaluating results of joint efforts.
7. Extension personnel with assistance of university faculty develop radio programs to give needed agricultural information.

A7. STRATEGIES OR PRACTICES CATEGORIZED BY EXTENSION PERSONNEL AS DESIRABLE, SLIGHTLY DESIRABLE OR NOT DESIRABLE.

None

B7. STRATEGIES OR PRACTICES CATEGORIZED BY UNIVERSITY FACULTY AS DESIRABLE, SLIGHTLY DESIRABLE OR NOT DESIRABLE.

None

to develop radio programs to reach needy farmers. University faculty were in almost unanimous agreement that they did not contribute to the development of such programs, and consequently identified the practice as one "not used." Apparently, extension personnel felt that faculty did provide help even though it might be remote. The same explanation might be applied with regard to the categorization of a number of other practices, for example, faculty recognized practice number six--a period of practical field experience be a part of the college course for the student prior to graduation; as "frequently used." Extension personnel identified it as only "occasional used." Obviously, university faculty being involved more directly with the planning and implementation of the training programs were more prone to see this as being a more important function. In a like manner, it can be noted that while university faculty did say practice number nine--extension and training institutions cooperate in evaluating results of overall joint efforts-- had "little usage," extension personnel admitted that as a practice it was "not used."

When identification and categorization with regard to the extent of desirability of the practices was concerned, it was found that the extent of the agreement between the two groups was much more pronounced than had been the case when assessing extent of usage. While extension personnel identified four practices as "highly desirable," their counterparts at the university recognized six practices as being "highly desirable." Conversely, extension personnel categorized nine

practices as being "very desirable" as compared to a faculty categorization of seven of the thirteen practices as being "very desirable." It should certainly be noted that neither of the responding groups categorized any practice as only being either "desirable," "slightly desirable," or "not desirable."

Conclusions

1. It was concluded that each of the thirteen selected strategies or practies which were identified by "jury" technique should be recognized as valid since most all respondents classsified them as either "very desirable," or "highly desirable." Only four items were listed by respondents from one or two countries as being merely, "desirable." No responses were made which anticipted any practice as being "slightly desirable" or "not desirable."

2. It must be further concluded that at the present time usage of most of the thirteen strategies can be only viewed as meager. Respondents from only two countries recognized any of the practices as being "frequently used," these relating to only five separate practices. "Occasional usage" was listed by four nations for three items or less. Respondents from only two nations listed "occasional usage" for as many as four practices, while four nations listed "occasional usage" for only three practices.

3. It was further concluded that perceptions of faculty were prone to be the more limited in terms of usage, but

considerably more positive in terms of desirability.

4. It was also concluded that among the nations, both for extension personnel and university faculty, that perceptions of more extensive usage were more pronounced for respondents from South Korea. However, from the standpoint of extension personnel, respondents from Iraq were by far the more positive in that they indicted that a majority of practices were "occasionally used." However, faculty members from this country were not in agreement with extension workers as to the extent of present usage.

5. Among the thirteen strategies or practices, the two perceived by respondents as most "frequently used' were (1) a period of practical field experience be a part of the college course for the student prior to graduation and (2) extension, training institutions, and agricultural experiment stations cooperate in developing programs to help farmers improve their situation.

6. Among the thirteen practices, three appeared to be those practices deemed most desirable by both extension personnel and university faculty. These were practice number three--results of university research which would be helpful to extension workers be made available to the workers on a systematic basis; practice number six--a period of practical field experience be a part of the college course for the student prior to graduation; and practice number 13--much closer coordination of planning and management functions by each of the three agencies in order to promote efficiency.

Recommendations

1. It is recommended that this study be repeated and that it be expanded to include more developing countries. Further, that returns from the countries be stratified into a possible three or four categories, these based according to the extent to which development has been achieved.

2. It is further recommended that a summary of the findings of this study be made available to each responding group in the countries participating in the study. It is hoped that, where possible, joint conferences might be held with the two groups, extension personnel and university faculty, and whenever feasible with experiment station personnel. It is further anticipated that a small manual based on this study's findings should be structured for use by each of these two groups in developing nations.

3. It is further recommended that administrative and other functioning personnel in experiment stations be definitely included in conferences and workshops as a third entity participating in evaluation and planning.

4. It is also recommended that continued effort be made to implement and maintain the training and visit system (T&V system) in extension operation in developing countries. Findings of this study seem congruently applicable to those practices involved in the extension T&V system.

5. It is recommended that, since there is strong indication from the findings of the study that each of the two

groups were not always well aware of the nature and extent of the other's involvement, as well as the extent of services rendered, that Ministries of Agriculture and administrators and faculty of universities give immediate attention to exploring ways in which each group plays or should play in promoting the welfare of the agricultural sector of their nations.

6. Underguarding all previous recommendations is one that a coordinated effort be made to engage the joint activities as depicted in Figure 7.

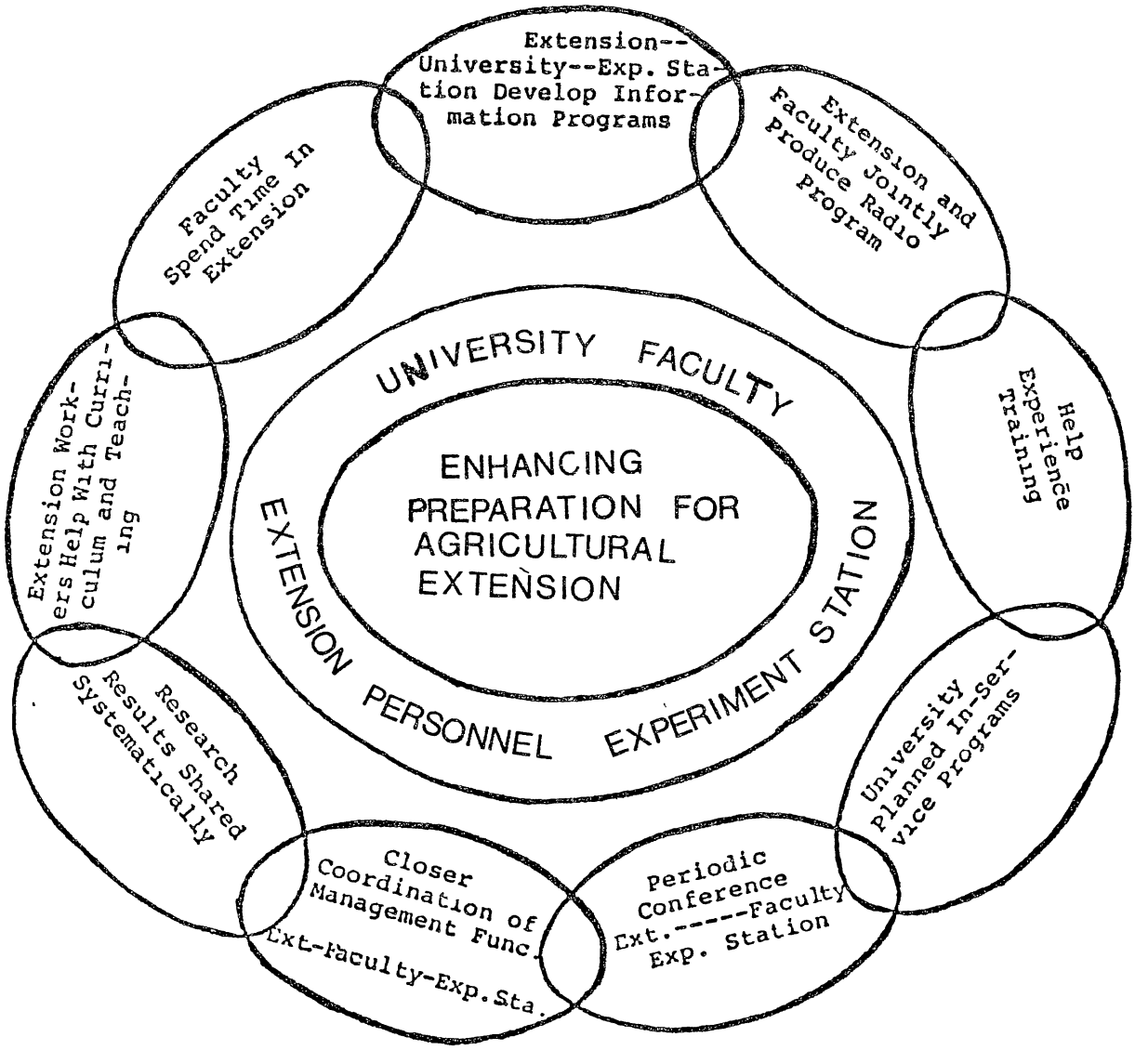

Figure 7. Model for Achieving Relationships

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APPENDIXES

APPENDIX A

QUESTIONNAIRE ENGLISH

LANGUAGE VERSION

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Agricultural Education
448 Agricultural Hall
624 5129

74078

November 5, 1984

To Selected Personnel in Ministries of Agriculture and Institutions Training Extension Workers in Ten Developing Nations

From: The Department of Agriculture Education
Oklahoma State University

The Department of Agricultural Education at Oklahoma State University is attempting to study relationships now existing between Ministry of Agriculture Extension Program workers and those Colleges and Universities where Extension personnel are trained. The study includes a number of developing nations, in which planned programs for closer coordination are in various stages of implementation. We feel that responses from your nation will be particularly helpful. One of our doctoral candidates, Abbas Al Kafagy of Iraq is working on this project at present We will greatly appreciate your assistance in completing and returning the data gathering instrument.

Sincerely,

Robert R. Price
Professor Emeritus

abbas alkafagy
Abbas Al Kafagy
Graduate Student

RESPONSE SCHEDULE

Name _____ Country _____

Please check your position:

- ☐ Dean or head of Department
- ☐ Associate Dean or member Dept. faculty
- ☐ Director of Agriculture Extension
- ☐ Director of Ministry of Agriculture
- ☐ Associate or Provincial Director MOA
- ☐ Other (please write in)

A. Please check indicating the extent that you feel the strategy is now used.

4 = extensive usage
3 = frequent usage
2 = occasional usage
1 = only little usage
0 = no usage

B. Please check indicating the extent you feel the strategy is desirable in terms of its potential effectiveness

4 = highly desirable
3 = desirable
2 = somewhat desirable
1 = slightly desirable
0 = not desirable

EXAMPLE

Faculty members who teach subject at college and universities spend some time working in various areas of national extension program work.

Extent now Existing					Level Desirable				
4	3	2	1	0	4	3	2	1	0
			X		X				

This means that the respondent feels that presently this item has only little usage, but it is highly desirable in the future.

PLEASE CHECK THE APPROPRIATE ANSWER

A. Extent Now Existing					Item	B. Level Desirable				
4	3	2	1	0		4	3	2	1	0
					1. Faculty members who teach extension subjects at colleges and universities spend some time working at various areas of national extension program work					
					2. National Extension administrators help college or university administrators design college curriculum to train future extension workers at the college level					

A. Extent Now Existing					Item	B. Level Desirable				
4	3	2	1	0		4	3	2	1	0
					3. Results of college or university research which would be helpful to extension workers be made available to the workers on a systematic basis.					
					4. Extension administrators and staff members be used in parts of the college teaching program for future extension workers.					
					5. Colleges and universities provide in-service training programs for extension workers.					
					6. A period of practical field experience be a part of the college course for the student prior to graduation, as a part of the requirement for becoming an extension worker. (This may be similar to "summer training" programs or "student teaching.")					
					7. Extension, training institutions and agricultural experiment stations cooperate in developing programs with useful and practical information that would help farmers improve their situations.					
					8. Extension, training institution and the experiment station work jointly in determining needs of farmers.					
					9. Extension and training institutions cooperate in evaluating results of overall joint efforts.					
					10. Periodic conferences held for all personnel of extension, training institutions and experiment stations to become better acquainted with each other and to share learning experiences.					
					11. Extension, with the cooperation and assistance of the training institution, develop radio programs to reach farmers with needed agricultural information.					
					12. Extension and the training institution work jointly to develop materials and methods that extension agents could use to reach illiterate farmers.					
					13. Much closer coordination of planning and management functions by each of the three agencies responsible for research, extension and teaching in order to promote efficiency					

APPENDIX B

QUESTIONNAIRE FRENCH

LANGUAGE VERSION

Questionaire

Nom Pays_ _ _ _ _ _ _ _ _ _ _ _

S'il vous plait marquez votre position.

- ☐ Doyen ou chef de département
- ☐ Assistant du Doyen ou membre a La faculté.
- ☐ directeur de vulgarisation.
- ☐ Directeur au Ministere de L'Agriculture
- ☐ Directeur provincial ou son Assistant
- ☐ Autres (specifier)

A. S'il vous plait indiquez L'ampleur a Laquelle la strategie est actuellement pratiquée selon votre opinion.

4 - extensive
3 - souvent
2 - occasionelle
1 - peu pratiquée
0 - n'est pas pratiquée

B. Indiquez L'ampleur á Laquelle La strategie est desirée pour qu'elle soit effective selon votre opinion

4 - Largement desirée
3 - desirée
2 - quelquefois desirée
1 - peu désirée
0 - n'est pas desirée

Example

Les membres de La faculty qui donnent des Cours á L'university, travaillent dans certains projects de vulgarisation nationale

Actuel				
4	3	2	1	0
			X	

Voulue				
4	3	2	1	0
X				

Cela veut dire que Le interogé voit que ce cas est actuellement peu pratiqué mais il est largement desiré dans le future.

S'il vous plait indique vos réponses

A. situation actuelle					Cas	B. situation voulue				
4	3	2	1	0		4	3	2	1	0
					1. members de La faculté qui donnent des Cours á L'university, travaillent dans certains projects de vulgarisation nationale.					

A Situation actuelle	Cas	B Situation voulue
4 3 2 1 0	2 Les administrators de vulgarisation national participent ou aident ceux de l'université à établir un curriculum d'etude pour la formation des futurs cadres de vulgarisation au niveau de vulgarisation national	4 3 2 1 0
	3 Les resultats de recherche au niveau de l'university qui peuvent aider les gens de vulgarisation, sont systamatiquement mis à leur disposition	
	4. Les administrateurs de vulgarisation agricole et leur personnel participent à donner des cours de formation des futurs cadres de vulgarisation.	
	5 Les instituts et les universités preparent des programmes de stage pour les gens de vulgarisation agricole	
	6. Des stages sur le terraian font parti des cours donnés à la faculté et ils doivent obligatoires pour les futurs vulgarisateurs	
	7 La vulgarisation, les institutions d'etud et les stations experimenta les, travaillent en coopiration pour developper des programmes pratiques et utiles qui peuvent aider les agriculteurs à ameliorer leur situations	
	8 La vulgarisation, les institutions d'étude, ét les stations experimentales travaillent ensemble pour determiner les besoins de l'agriculteur	
	9. La vulgarisation, et les institutions d'étude Coperent à évaluer les resultats obtenus.	
	10. Le personnel de vulgarisation, des institutions d'étude, et des stations experimentales se réunissent periodiquement pour discuter les resultats, et la situation actuelle dans chaque institution.	
	11. La vulgarisation, avec l'assistance des institutions d'étude prépare des, programmes diffuses par la radio et Contenant de l'information agricole pour arriver au niveau de l'agriculteur	
	12. La vulgarisation et les institutions d etude travaillent ensemble pour preparer des moyens et des methodes que les vulgarisateurs peuvent utiliser afin de fair Comprendre l'agriculteur illtere	
	13 une tres forte Coordination des trois institutions; Recherche, Extension, et Etude, est exigée pour que la planification et la gestion soient officaces	

APPENDIX C

QUESTIONNAIRE KOREAN

LANGUAGE VERSION

OKLAHOMA STATE UNIVERSITY • STILLWATER
Department of Agricultural Education 74078
(405, 624 5129

August 15, 1984

The Department of Agricultural Education at Oklahoma State University is attempting to study relationships now existing between Agricultural Extension Programs and those Colleges and Universities where Extension personnel are trained The study includes a number of developing nations, in which planned programs for closer coordination are in various stages of implementation We feel that responses from your nation will be particularly helpful One of our doctoral candidates, Abbas Al Kafagy of Iraq is working on this project at present We will greatly appreciate your assistance in completing and returning the data gathering instrument

Sincerely,

Robert R Price
Professor Emeritus

abbas alkafagy
Abbas Al Kafagy
Graduate Student

미국 오크라호마 (Oklahoma) 주립대학의 농업교육학과는 농업지도자를 양성하는 농업지도소와 농업대학간에 현재 일어나고 있는 상호관계에 대한 연구입니다 이 연구는 더 밀접한 상호관계를 위한 계획들이 여러차례 이용되고 있는 많은 개발도상국들이 포함 됩니다 우리는 귀하 국가의 답변이 이 연구에 커다란 도움이 되리라 생각합니다 우리의 박사과정을 밟는 학생들중의 한 이락 (Iraq) 학생이 이 사업을 연구하고 있읍니다 우리는 이 설문지의 자료 수집을 완료하고 또 발송하는데 있어서 귀하께서 힘써주신다면 대단히 감사하겠읍니다 감사 합니다

설 문 지

성명 _____ 극명 _____

맞는 곳에 O표를 하시오.

- □ 학장 또는 과장
- □ 교수 단
- □ 농업 지도소 소장
- □ 농수산부 이사
- □ 농수산부 농촌진흥청 간부
- □ 기타 (기입하시오)

A. 현재 적용되고 있다고 느끼는 정도에 O표 하시오.

4 = 크게 적용
3 = 수시로 적용
2 = 가끔 적용
1 = 아주 적게 적용
0 = 적용하지 않음

B 잠재적 시험 효과에 대하여 느끼는 정도에 O표 하시오.

4 = 아주 효과적이다
3 = 효과적이다
2 = 약간 효과적이다
1 = 별로 효과적이 아니다
0 = 효과가 없다

예:

대학에서 가르치고 있는 교수가 전부 농촌 지도사업에 참여한다

A 현재 적용 정도					B 잠재적 타당한 효과 정도				
4	3	2	1	0	4	3	2	1	0
				O					

위의 예에 대한 설문결과는 현재 이 예에서 그들은 적용되고 있지 않지만 적용된다면 크게 타당적한 효과를 가져올 수 있음을 뜻한다

평정하다고 생각되는 해당란에 표를 하시오

A 현재 적용 정도					내 용	B 잠재 타당한 효과 정도				
4	3	2	1	0		4	3	2	1	0
					1 대학에서 농촌지도 사업에 대하여 가르치고 있는 교수가 전부 농촌지도 사업에 참여한다.					
					2 농촌지도 사업에 근무하는 공무원이 장래 대학 농촌지도 사업요원이 되기위해 대학 교과 과정 편성위원회에 참여한다					

A. 현재적용 정도	내용	B. 장래 바람직한 효과 정도
	3. 대학의 연구 결과가 농촌지도사업 종사자들에게 도움을 준다	
	4 농촌 지도사업 공무원이 대학생 지도에 참여한다.	
	5 대학이 농촌 지도사업 종사 공무원 교육을 담당한다. (대학에서)	
	6 현장 실습교육 (여름학교나 교생실습)이 대학의 농촌 지도 사업분야의 필수과목으로 채택된다.	
	- 농촌 지도소, 농업학교 또는 농사 시험장이 협조하여 농민의 지위를 향상 시킬수 있는 유용하고 실용적인 프로그램을 개발한다	
	8. 농촌 지도소, 농업학교 그리고 농사 시험장이 협조하여 농민이 가장 필요로 하는것이 무엇인지를 결정한다	
	9 농촌지도소와 농업학교가 제반 농촌 사업 결과를 평가하는데 참여한다.	
	10 또는 농촌 지도 요원, 농업학교 교사, 그리고 농사시험장 요원이 정기적 모임이 서로의 생각 경험과 지식을 교환하는데 도움이 된다	
	11. 농촌지도소가 농업학교의 협조를 얻어 농민에게 필요한 농사 기술을 가르치기 위해 방송통신학교를 개설한다	
	12 농촌지도소와 농업학교가 공동으로 지도요원이 문맹 농민을 가르칠수 있는 교재와 교육 방법을 개발한다	
	13 농촌지도소, 농업학교 그리고 농사시험장 세 기관이 연구와 지도교육의 효과 증진을 위하여 계획하고 운영하는데 보다 긴밀한 협조를 기한다	

APPENDIX D

QUESTIONNAIRE ARABIC

LANGUAGE VERSION

بسم الله الرحمن الرحيم

عزيزي :

السلام عليكم ورحمه الله وبركاته .. وبعد :

إني الطالب عباس عبدالمحسن الحماجي من القطر العراقي الدارس في جامعه ولايه أوكلوهاما بالولايات المتحده الأميركيه وفي الوقت الحاضر أعد أطروحه الدكتوراه عن " دور أهميه الأستيرايتحيات اللازمه لتقويه وتخفير العلاقه بين الإرشاد وكليات الزراعه في الدول النامية "

لذا سأكون مقدراً تعاونك معي في ملأ الإستبيان المرفق ، حيث أن رأيك ضروري جداً لإنجاز متطلبات الدراسة .

وتقبل تحياتي ...

عباس عبدالمحسن الحماجي
جامعه اوكلوهاما - الولايات المتحده
الأميركيه

إستبيان بريدي.

الإسم _____ القطر _____

ضع علامه (✓) على درجه وظيفتك الحاليه :

- ☐ عميد أو رئيس قسم.
- ☐ مساعد العميد أو أحد مدرسي كليه الزراعة.
- ☐ مدير الارشاد الزراعي.
- ☐ مدير في وزاره الزراعة.
- ☐ مساعد أو رئيس منطقه زراعيه.
- ☐ أخرى تذكر (جاءً)

أ- ضع علامه (✓) على الدرجه التي تشعر بأن الإستبيان يتجيه بين الإرشاد الزراعي والجامعه (كليه الزراعه) قائمه الآن.

صفر = غير مستخدمه.
١ = قليله الاستخدام.
٢ = بعض الاحيان مستخدمه.
٣ = مستخدمه.
٤ = مستخدمه بصوره مكثفه.

ب- ضع علامه (✓) على الدرجه التي تشعر بأن الإستبيان يتجيه مرغوب برا في المستقبل.

صفر = غير مرغوب برا.
١ = قليل مرغوب برا.
٢ = مرغوب برا.
٣ = مرغوب برا لحدما.
٤ = على درجه عاليه من الرغبه.

مثال للاسترشاديه عند الإجابه على الأسئله.

ضروره قيام مدرسي كليات الزراعه بقضاء بعض الاوقات بالعمل في أقسام مديريات الأرشاد الزراعي

المستوى الحالي						المستوى المرغوب به					
صفر	١	٢	٣	٤		صفر	١	٢	٣	٤	
	✓									✓	

هذا يعني أن هذه الأستبيان يتجيه قليله الاستخدام، لكنها تعتبر على درجه عاليه من الرغبه في المستقبل.

ضع علامه (×) على الدرجه الملائمه (الرجاء ملاحظه المثال السابق للاستر شاد على الجواب)

صفر	١	٢	٣	٤	الإستبيانة	صفر	١	٢	٣	٤
					١- قيام مدرسي كليات الزراعه بقضاء بعض الاوقات بالعمل في أقسام مديريات الارشاد الزراعي.					
					٢- قيام مديري الارشاد الزراعي بمساعدة كليات الزراعه في بناء وتصميم الكورسات المطلوبه في تدريب المرشدين الزراعيين.					
					٣- تهيئه نتائج البحوث من الجامعات وكليات الزراعه الى المرشدين الزراعيين بصورة نظاميه.					
					٤- قيام المرشدين الزراعيين بإلقاء محاضرات عمليه في كليات الزراعة.					
					٥- قيام كليات الزراعه في توفير وتهيئه برامج التدريب أثناء الخدمه للمرشدين الزراعيين.					
					٦- إعتبار "التدريب الصيفي" لكليات الزراعه أحد متطلبات الكورسات لعمل المرشدين الزراعيين.					
					٧- قيام الإرشاد وكليات الزراعه ومحطات البحوث في تنميه برنامج عملي لتوفير المعلومات وذلك لمساعده وتحسين مستوى المزارعين.					
					٨- قيام الإرشاد بالتعاون مع كليات الزراعه ومحطات البحوث بالعمل على تحديد إحتياجات المزارعين.					
					٩- قيام الإرشاد بالتعاون مع كليات الزراعه في تقييم نتائج المجهودات الإرشاديه القائمه.					
					١٠- قيام مؤتمرات دوريه بين الأرشاد وكليات الزراعه ومحطات البحوث لتبادل الخبرات.					

غير مستخدمة صفر	قليلة الاستخدام ١	بعض الأحيان ٢	مستخدمة ٣	بصورة مكثفة ٤	الإستراتيجية	غير مرغوب بها صفر	قليلة مرغوب بها ١	مرغوب بها ٢	مرغوب كثيرا ٣	عالية الرغبة ٤
					١١. قيام الإرشاد بالتعاون ومساعدة كليات الزراعة ببناء وتنمية برامج إذاعية من أجل الوصول إلى فكر المزارعين واحتياجاتهم.					
					١٢. قيام الارشاد وكليات الزراعة بالعمل تعاونياً على تنمية طرق ومواد مكتوبة من أجل إستخدامها للوصول للمزارعين الأميين.					
					١٣. تعاون الارشاد والبحوث والتعليم في مجال التخطيط والأدارة من أجل رفع كفاءة الإرشاد الزراعي.					

2

VITA

Abbas Abdul Mohson Al-Kafagy

Candidate for the Degree of

Doctor of Education

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Personal Data: Born in Al-theikar, Iraq, February 14, 1946, the son of Abdul Hohson Ali and Kuhlah Mohammed Ali.

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Professional Experience: Manager of Agricultural Cooperative in Saniah Disrict, Qadisiah, Iraq (1972-1973); served four years (1978-1982) in College of Agriculture in Basrah University, Basrah, Iraq; Director of Student Training, Basrah University, 1979-1982.

Publications: Translation of book Agriculture Extension, author of four articles and the book Community Development.

Organizations: Member, Association of International Agricultural Education (AIAE), and Association of Arab Students.