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Iran's agriculture is a developing one, and although it has made some progress in the last few years, agricultural commodities still form a fairly important portion of Iran's imports.

There are a number of factors that contribute to the slow progress of Iran's agriculture. While lack of production requisites and credit in sufficient amount is part of the problem, the lack of technical knowledge and "know how" on the part of the people involved in food production is considered the most important factor contributing to the inefficiency of Iran's agriculture.

This graduate research project was undertaken to (1) study Iran's Agricultural Extension Service in depth, (2) to study the agricultural extension service in various parts of the world, and (3) to develop guidelines for improvement of present Extension Service in Iran.

Relevant literature both within and outside of the United States was reviewed in this study.

On the basis of the findings of this study it was concluded that improvements are needed in Iran's Agricultural Extension Service in order to make it a useful institution for the rural people.

The necessary guidelines and recommendations thought to be useful in improving Iran's Extension Service were suggested.

**Guidelines for Improving Agricultural  
Extension Service in Iran**

by

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APPROVED:

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## TABLE OF CONTENTS

I.	INTRODUCTION	1
	Statement of the Problem	2
	Purposes of the Study	6
	Limitations of the Study	6
	Iran--Background	7
	Methods of Study	12
II.	REVIEW OF RELATED LITERATURE	14
	Aims and Scope of Extension Service	14
	Organizational Pattern of Extension Service	16
	Program and Program Planning	26
	Relationship of Extension Service to Research and Teaching	28
III.	DEVELOPING GUIDELINES FOR IMPROVING AGRICULTURAL EXTENSION SERVICE IN IRAN	34
	Defining Objectives and Goals for the Extension Service and its Activities	34
	Extension Service and its Personnel	37
	Recruitment and Selection of the Personnel	42
	Supervision of the Personnel	45
	Coordination	47
	Coordination between Research and Extension	47
	Relationship between Headquarters and Provinces	50
	Integration not Segregation	51
	Decentralization	53
	The Extension Program	54
	Legislation for Extension Service	57
	Supporting Services	58
IV.	SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	63
	Summary	63
	Conclusions	65
	Recommendations	66
	BIBLIOGRAPHY	68

## LIST OF CHARTS

<u>Chart</u>		<u>Page</u>
1	County Organization Chart	23
2	Organization of Federal Extension Service	24
3	Organizational Chart of Cooperative Extension Service in Oregon	25
4	Inter-Relationships - School of Agriculture, Oregon State University Resident Instruction, Research and Extension Service	31

# GUIDELINES FOR IMPROVING AGRICULTURAL EXTENSION SERVICE IN IRAN

## I. INTRODUCTION

In today's world one ideal is commonly shared by all nations. That ideal is the continuous effort to raise people's standard of living. While this effort means more luxuries and conveniences for people in developed and industrial nations, in less developed countries, it simply means more struggle to either improve people's diet or prevent their starvation. No elaborate statistical or learned discourse is necessary to demonstrate the existence of world-wide malnutrition and low standards of living for a majority of the world's population.

While the less developed nations allocate most of their resources and energies in producing food, this problem is of much less concern in developed countries. For example, today an American farmer produces for 27 other people besides himself, and only 20% of the income in an American family is spent on food, whereas this figure ranges between 70-80% in economically under-developed countries. The present prosperity of agriculture in the developed countries is partially attributed to research and technology. However, if we examine the situation more closely we will find that the present level of agriculture production would have been difficult to



reach, without the transfer of scientists' findings to the farmers, and the adoption of these findings by the farmers. Scientists' findings have little value unless understood and applied. Getting this understanding and application has been a major responsibility of agricultural extension service in most countries. The record of its stewardship in this regard is best measured by the progress made in agriculture and rural living. Agricultural extension service, through orderly organization, has brought numerous progressive changes in rural communities with the help of people themselves. Extension in short, teaches people to determine accurately their own problems, and helps them to acquire knowledge useful for solving these problems, and inspires them to action.

### Statement of the Problem

The agricultural extension service plays a vital role in the betterment of life, especially that of rural people. The role of agricultural extension in helping to solve the food crisis of the world and helping to raise the standard of living of rural people is well recognized, and today extension, in one form or another, exists throughout the world. However, its usefulness and degree of effectiveness has not been the same throughout the world. A comparison of agricultural production and pattern of rural living between a developed country and a developing one would easily indicate this point.

It would be illogical to say the inability of the extension service is the main cause of varying rate of development, because a multitude of factors contribute to the situation. However, in most cases the inability of the extension service to reach people and fulfill its objectives seems to be part of the reason why developing countries have trouble with increasing their agricultural production and raising their standard of living. This problem of course, is known and the extreme need for extension is well recognized.

In an FAO conference on agricultural extension, held in Rome, Italy, in 1951, the 66 member nations resolved

Being fully convinced that the surest way to promote the increased production so necessary to raising the total agriculture and food production and improve the standard of living is to start at the farm level with demonstrations and education, in order to improve techniques, production methods, farm and home management within the limits of the farmer's resources and understanding (6, p. 12).

At a CENTO conference on agricultural development policy, recommendations regarding agricultural improvement were made by three of the member nations, Iran, Turkey and Pakistan. The recommendation put forward by the conference covers the various aspects of major problems facing the region countries in their effort to increase agricultural production. These recommendations were as follows: extension education and training, research, production requisites and techniques, providing more credit, establishment of

more and effective cooperatives and promotion of incentives for farmers (3). Extension could directly or indirectly play a vital role in all of the above areas.

Extension education recognizes cultural variations and is adaptable and workable under various conditions and cultures. If this were true, considering the fact that extension has existed in most parts of the world in one form or another and also the fact that two-thirds of the world is undernourished, then we may conclude that extension for various reasons has not been quite effective in most parts of the world. We probably would not be very far from the truth, if we drew the same conclusion about Iran.

Although Iran is basically an agricultural country and has had an extension service since 1949, a look at Iran's imports would indicate that various forms of agricultural products have always formed part of Iran's imports. The recent government policies to promote industry would worsen the situation even more. Agriculture production is not quite enough to take care of internal needs at the present time and it is thought that the rapid rate of industrial development would increase the people's purchasing power and considering the present nutritional level, this will bring a sharp demand for food (9). Judging from the type of government projects and its economic policies, it seems probable that the momentum of industrial expansion will be maintained, which in turn means more

economic prosperity (9).

... given present nutritional level, a rise in income will lead to a sharp increase in demand for food... an annual rise in income of eight percent and a population of three percent implies a rise in demand for food of six percent, which is likely to prove well beyond the power of Iranian agriculture, given the present state of techniques, transport, storage and marketing system (9, p. 458).

As can be noted, Iran's agriculture is in need of help and the needed assistance is mostly in areas in which agricultural extension could play a vital role, such as production techniques, storage, marketing, etc. It may be thought that financial matters hinder development of extension work; however, this is not quite true. "Of the three general shortages impending rapid economic growth--capital, foreign exchange and skills--only the last one may prove to be very serious in Iran" (9, p. 456).

Thus, from what is said, it is clear that Iran's agriculture is under-developed and the main limiting factor is the lack of technical knowledge and "know-how" on the part of the farmers. The problem is how the present agricultural extension service may be improved, so it could play an effective role in eliminating the limiting factors which hinder agricultural development in Iran.

### Purposes of the Study

The purposes of this study are as follows:

1. To study agricultural extension service in various parts of the world excluding Iran.
2. To study Iran's Agricultural Extension Service in depth.
3. To develop guidelines for improvement of extension service in Iran.

### Limitations of the Study

This study is limited to:

1. The information received from the Office of Foreign Agricultural Relations of the U. S. D. A., the Near Eastern Division of Agency for International Development, Utah State University and Food and Agricultural Organization of the United Nations.
2. The information obtained from the extension service in Neyshabour, Iran, and the province of Khorasan's Extension Service in Iran.
3. Correspondence with the officials of the national Extension Service in Iran.
4. The relevant information available in the Oregon State University Library.

5. The author's knowledge of extension service through taking Extension Methods courses.
6. The author's knowledge and familiarity with Iran as a whole, its social structure, the government policies and its agricultural problems.

### Iran--Background

Iran covers an area of 628,000 miles. Iran is bound on the west by Iraq and Turkey, on the north by Russia, on the east by Afghanistan and Pakistan and on the south by the Persian Gulf (11). It is about one-fifth of the land mass of the United States, about equal in size to Texas, New Mexico, Arizona and California combined.(24). These are states whose topography and climate are somewhat similar to Iran's. Its southern limits are on the same latitude as the southern boundary of Texas, and its northern frontier is on the latitude of San Francisco with Tehran, the capital, on the latitude of Santa Fe (26).

Iran lies within the temperate zone and enjoys a modified continental climate with cold winters, hot summers, and a fairly well defined change of seasons. The desert region receives less than five inches of rain a year, while the average fall is about 12 inches. Along the Caspian Sea, the largest lake in the world, an annual rainfall of 40-60 inches creates a tropical climate, reflected by dense

forest (26).

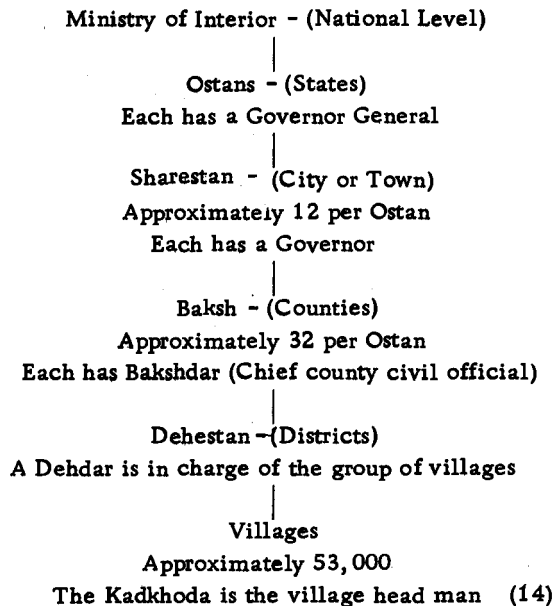
Current estimates suggest some 65 percent of the population are farmers living in about 53,000 villages. Thirty-one percent of the population are urban dwellers in towns of more than 5,000 people and the remaining four percent are semi-settled nomads. Iran's population is about 26 million people. Ninety-eight percent of the people are Muslims, with 93 percent of this adherent of the Shi'a sect and the others are Sunnis and Ismae'is. Other religious communities are represented by some 75,000 Armenians, at least 50,000 Baha'is, 30,000 Nestorian Christian in northwestern Iran and small colonies of Jews and Zoroastrians (26).

In 1967 the active population over ten years old numbered about 7,557,900. Agriculture employs 45.7 percent and industry 29 percent of the population (8).

According to the 1968 census, more than 3.5 million people are involved in various levels of educational activity in Iran, and the government expects this number to increase to over five million by the end of its fourth five-year program which ends in 1972 (8). Since the early 1960's the government apparently has focused greater attention on rural welfare. Part of the government's activity in rural areas has involved the establishment of Education Corps. The idea for the Education Corps sprang from the need to enable Iranians with secondary education to share their knowledge with the millions of rural

people to whom education had been denied (20).

The Iranian Government is characterized as being strongly centralized. The National Government consists of an Executive Branch, Judiciary Branch and the Legislative Branch. The Shah or King is the constitutional monarch. The Executive Branch is composed of several executive departments. A Prime Minister is the head of government. The Minister of Interior is charged with the central core of responsibility and authority that runs to the village level (25). The geographical political units and their senior government officers are:



While the senior officer of the Ministry of Interior is in charge of each of the above political units, other important executive departments have representatives in the Ostans and Sharestans and



sometimes in the lower political entities.

The Legislative Branch consists of two houses, Parliament and Senate. The members of these houses meet periodically to perform the legislative functions. The Judicial Branch is composed of a Supreme Court of the people, State Courts, Sharestan Courts and Bakhsh Courts. The higher the court the more serious the offense or matters it considers. In addition there are special army courts (25).

Thirteen percent of the total land area is under cultivation. There are about six million hectares (one hectare equals 2.4 acres) of forest and 55 million hectares of range land (8). The amount of desert and waste land is estimated at 20-35 percent, depending on the reference. Nearly 20 percent of the land not presently cultivated is considered to be potentially cultivatable (24).

Iran is generally self-sufficient in food at its relatively low level of living except for sugar and tea, which are imported in large quantities. Iran's import and export of agricultural commodities is not constant and seems to be dependent upon environmental conditions. In years of drought, wheat, which is the main crop, is imported, and when weather conditions are favorable wheat is exported (9).

Agriculture is the basic industry in Iran and accounts for 30 percent of gross national product. The chief crops include: wheat, barley, rice, fruit and nuts, cotton, vegetables and melons, pulses,

sugar beets, tobacco and other grains (19).

**Agricultural Extension Service** - In 1949 the Iranian Ministry of Agriculture established an Agricultural Extension Service. It is not entirely clear where this idea came from. Some observers claim it came about from the Seven-Year Plan Report, while others maintained it was picked up by an Iranian visitor to the United States. This point is probably not of much importance. What is important is the fact that while the term extension had been adopted, the function of extension education had not been understood and accepted.

The Extension Department became a service organization distributing farm machinery and seeds of various crops. It also provided other services, such as spraying fruit trees for farmers.

In 1951 the Technical Cooperation for Iran (TCI) and the Food and Agricultural Organization of the United Nations (FAO) began agricultural work in Iran at the request of the Iranian Government. FAO's activities in the agricultural field were confined to a considerable extent to an agricultural extension project, whereas, the Agricultural Division of TCI worked mainly on research and service matter in the beginning.

During 1952 the Ministry of Agriculture, FAO and TCI began to explore more intensively the possibilities of establishing an Agricultural Extension Service in Iran, a service that was educational in nature. On the initiative of the Ministry of Agriculture, a

seminar on extension principles was held. Also FAO had an extension training course of 30 sessions for five agricultural engineers from the Ministry of Agriculture. This was devoted to extension organization and working methods in relation to Iranian conditions.

Later in 1952 the decision was made by the Ministry of Agriculture and TCI to launch a major effort in establishing Agricultural Extension Service in Iran. FAO would assist. Broad tentative plans were made at the time of the decision. A short time later, in early 1953, these plans tended to crystallize in the Near East Regional Extension Development Center which was held in Beirut, Lebanon, under the sponsorship of FAO.

As a result of these plans, a special Agricultural Extension training team was recruited from the United States to initiate the extension work in Iran. The team arrived in February, 1953 and agricultural extension movement got underway (14).

#### Methods of Study

This study was conducted by gathering relevant materials from a number of reliable sources. The information received from USDA, AID and FAO was studied and reviewed and used for introducing Iran's Extension Service along with that of other nations. This information also was used for setting guidelines for improvement of the present Extension Service in Iran. The materials obtained from

local, province and national levels in Iran were studied and analyzed and utilized for suggesting possible ways and means of making extension service a more effective organization in meeting challenges of agriculture. The relevant literature in the Oregon State University Library was studied, and selected portions of it which could give a general idea of how extension service is organized and operates in various parts of the world, were incorporated in the review of related literature. The information from this source was also used in other parts of this study as needed.

The author has drawn upon his knowledge of extension through the courses he has taken in this area and also his knowledge of Iran and familiarity with its agriculture and extension, the existing problems in these areas, the country's social structure and its impact on extension operations, and the government policies and their influence on agriculture, extension and its supporting services.

## II. REVIEW OF RELATED LITERATURE

Today extension in one form or another exists in almost all parts of the world. In Europe it dates as far back as 1840, when teachers of agriculture went around the country and taught the farmers. Extension and its philosophies, however, are fairly new to most parts of the world.

What follows is a brief look at agricultural extension in several countries with distinct and different types of organizations, aims and operation.

### Aims and Scope of Extension Service

Although there is a superficial difference between the objectives of the extension service from one country to another, in the end, it all boils down to the one general goal of raising the living standard of rural people. The differences in ways and means of reaching this objective is mostly due to stage of agricultural development, type of agriculture and social structure of the country.

In France the ways and means of reaching higher standard of living for rural people as identified by France's Advisory Service are: (1) the production of enough food supplies for the country; (2) reduction in imports of feed grains and animal feed through raising the production of these commodities and better utilization

of grass and fodder crops; (3) the export of large quantities of basic food products (17).

The Advisory Service in Denmark directs its efforts in assisting farmers to improve their living conditions and reach prosperity by providing them and their families with educational opportunities, giving advice to farmers and homemakers, doing local experiments in agriculture and much administrative work in connection with keeping of the records of Farmer Associations which run the advisory service (17).

In Iran the long term objectives of the extension service as identified by the Ministry of Agriculture are: (1) to further develop the Agricultural Extension Service as the educational arm of the Ministry of Agriculture, to transmit the research of the various technical divisions of the Ministry to the farmers for practical application of improved methods in order to increase agricultural production, improve standards of living, and develop democratic village institutions; (2) to recruit and train personnel capable of reorganizing and developing village leadership and capable of assisting village people to recognize their problems and carry out programs of self help in order to increase the effectiveness of the extension service and contribute to national well being (18).

The principal aim of extension work in the earlier days in the United States was mainly to assist farmers in technical problems

connected with agriculture and provide advice to farm women in various aspects of homemaking. However, with the passage of time and many changes that have taken place socially, politically and scientifically, the emphasis of extension teachings has also changed somewhat. Today, while extension still emphasizes the importance of raising the efficiency of farming, increasing farm incomes, improving farm homes and raising living standards, the program has broadened to include total resource conservation and development. Education, leadership training and citizenship are also of prime importance to extension in the United States (16).

#### Organizational Pattern of Extension Service

There is no uniform pattern of organizing and operating the extension service in the world. In Denmark the extension service is organized and run entirely by the people, in Iran and France the national government plays the major role, and in the United States it is a cooperative enterprise at three levels, federal, state and local level.

In France the Agricultural Advisory Service is responsible to the Ministry of Agriculture. For administrative purposes, metropolitan France is divided into 90 departments. The Agricultural Advisory Services are organized at the departmental level and thus, there are 90 Advisory Service Directorates. There are four separate

directorates for non-metropolitan France. A Chief Engineer, a Deputy Chief Engineer, a number of engineers and administrative staff forms the staff of each Advisory Directorate. In many departments there are more than 10,000 farmers to each advisor and at the same time the engineer has to carry out the many administrative and regulatory duties attached to his post. The Agricultural Service Directorates are responsible for their advisory work to the Directorate for Agricultural Production in the Ministry of Agriculture. For their work regarding the cooperative and social questions, they are responsible to the Director for Professional and Social Affairs, and for their work in connection with agricultural statistics and investigations, they are responsible to the Study and Documentation Branch section of the central Ministry. The Directorate of Advisory Service is a sub-division of the Agricultural Production Directorate. The former is divided into three sections, namely university education, district schools and home economics and practice centers.

There are General Inspectors who coordinate and control the work of the different Agricultural Directorates in their area and contribute to improvement of technical knowledge of advisory officers through their specialist knowledge (17).

The foundation of present Advisory Service in Denmark was laid in 1860. The existing services are now operated by two parallel but independent groups of societies. The first society is the



Agricultural Societies and the second one is the Small-Holder's societies. These societies are self governed and receive federal grants for their advisory work. Each of these groups have provincial federations, the provincial federations provide delegates to form the two national federations. The extent of Advisory Services depends on the strength and wealth of the societies. The wealthier societies usually have three advisors - one in crop, one in animal husbandry and one in accountancy. The Advisory Service of the two societies are separate and independent of the other. As a general rule the societies select committees from their members on various subject matters and these committees direct the work of advisors dealing with their particular subject. Since advisors are employed by the societies their services are not available to non-member farmers (17).

In the Netherlands, for organizing and coordinating extension service, the country is divided into districts, the boundaries of which are determined by the type of agriculture. Such an arrangement makes coordination easier as research and extension within a district work on similar agricultural problems. It is possible for the director of the district extension to also be head of research. A group of subject matter specialists assist the extension team in the district with their work. There are monthly meetings of representatives of all concerned (21).

The present Iranian Agricultural Extension Service started operating formally as a part of the Ministry of Agriculture on November 1, 1953. In extension organization at the national level there are: (1) co-director, who is the Deputy Minister of Agriculture; (2) national supervisor, who is the Director of Extension Department of the Ministry of Agriculture and directly responsible to the co-director. There are four divisions within the latter department, these are: business and finance, extension information, program planning, and supervision and training (14).

At the province level there are: (1) co-manager, who is the chief of agricultural department of the respective province; (2) co-supervisor, who is assigned by the ministry; (3) specialist and supervisor (14).

The Director of the Sharestan (town or city) Agricultural Department is administratively responsible for the coordination and integration of the work of extension agents with all phases of agricultural program development in sharestan. Extension specialists as well as extension agents work through the sharestan director and are to coordinate and integrate their work with the sharestan director's work (14).

Since the establishment of Home Extension Service in 1957 and Rural Youth Club in 1956, there are people who represent these organizations at province, sharestan and bakhsh (county) level.

Homemaking had been carried out as a pilot project only in two provinces (12).

Recent government policies have brought drastic changes in the organization of Iran's Extension Service. Under these policies a large number of village extension workers are being transferred to the newly established Ministry of Land Reform and Rural Cooperatives, and home extension service is becoming part of another newly established ministry, Ministry of Housing and Development (7).

There is a law already existing which requires all high school and college graduates of draft age to serve for two years in rural areas, and the efforts of this group is organized in Extension and Development Corps which operates under the extension service's supervision (1). Presently there is a bill before the parliament which is expected soon to become a law which requires all single females before the age of 25 years, with a high school diploma, and single females before the age of 30, having a college diploma, to serve for two years in rural areas as home extension agents. This group will probably work under the Ministry of Housing and Development (5).

In the case of Peru, the country is divided into 12 zones; each zone has a director who is in charge of all agricultural and extension activities within each zone. The extension supervisor within each zone reports to the zone director as well as to the director of

extension at the national level. The recruitment of personnel is done by the zones (21).

Cameroon is made up of two states, one is French speaking and the other is English speaking. Each of these states has its own department of agriculture. There is no coordination at any level except at the very highest. The director of extension prepares all the programs with the assistance of a team of specialists. The involvement of local people in extension, due to low standard of technology and education, is very limited. The programs developed by the extension director are then sent to the respective Minister of Agriculture, who has a service committee to help him consider the proposed programs (21).

Extension is a cooperative enterprise in the United States and cooperation comes from three levels, federal, state and local. The Federal Extension Service does not function as a regulatory body, but it exists to serve the needs of the field. It exerts leadership through democratic means, through persuasion and suggestion. For carrying out its functions the Federal Extension Service is divided into six divisions, each one dealing with a particular area of extension education (2) (Chart 2).

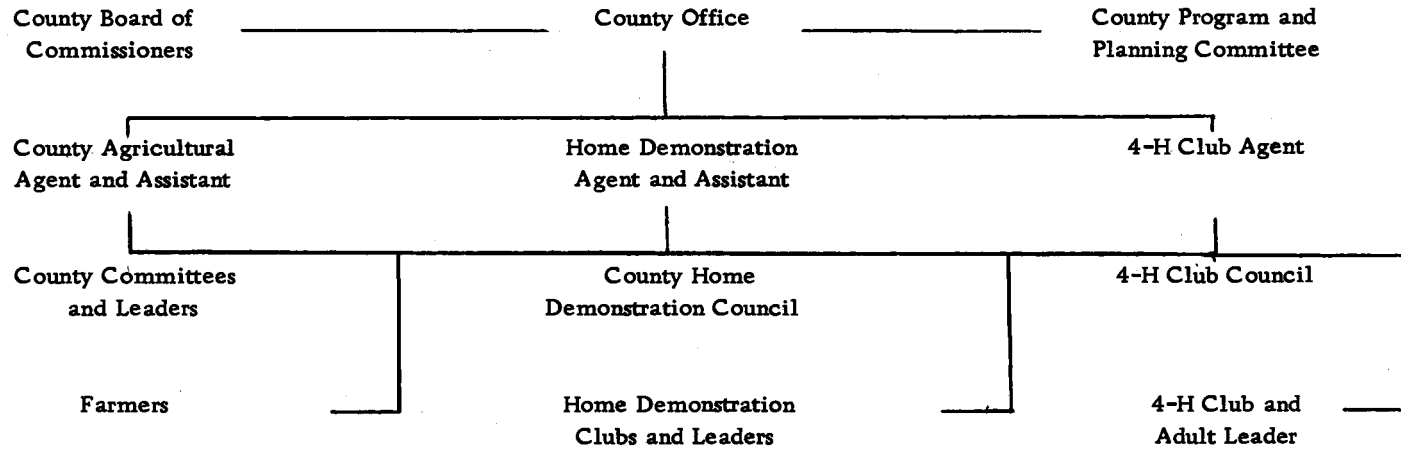
While the Extension organization varies somewhat in the different states, the heart of the extension program is in the Land Grant Colleges and Universities. In Oregon the Extension Service, on the

state level, operates as a division of the School of Agriculture of Oregon State University. The Extension director is the administrative head, whose rank is equal to that of dean of resident instruction and director of experiment stations. Working under the extension director are one or more assistant directors, a supervisory staff, subject matter specialists, with supporting clerical helpers, and a group of field agents and the county extension workers (2). Chart 3 shows the organization of the Oregon Extension Service (15).

The pattern of county organization for extension varies somewhat in Oregon and is affected largely by the area of the individual county and by the available funds. Every county has one or more agricultural agents. In most places there are also home demonstration agents and 4-H club agents. The agents work with a county advisory council, often made up of representatives from each of the organized farm groups in the county. There are also advisory committees for different program areas, that is, home economics and 4-H club work. The following chart shows a typical organization of extension service on the county level (16).

CHART 1

COUNTY ORGANIZATION CHART (16)



**CHART 2**  
**ORGANIZATION OF FEDERAL EXTENSION SERVICE (16)**

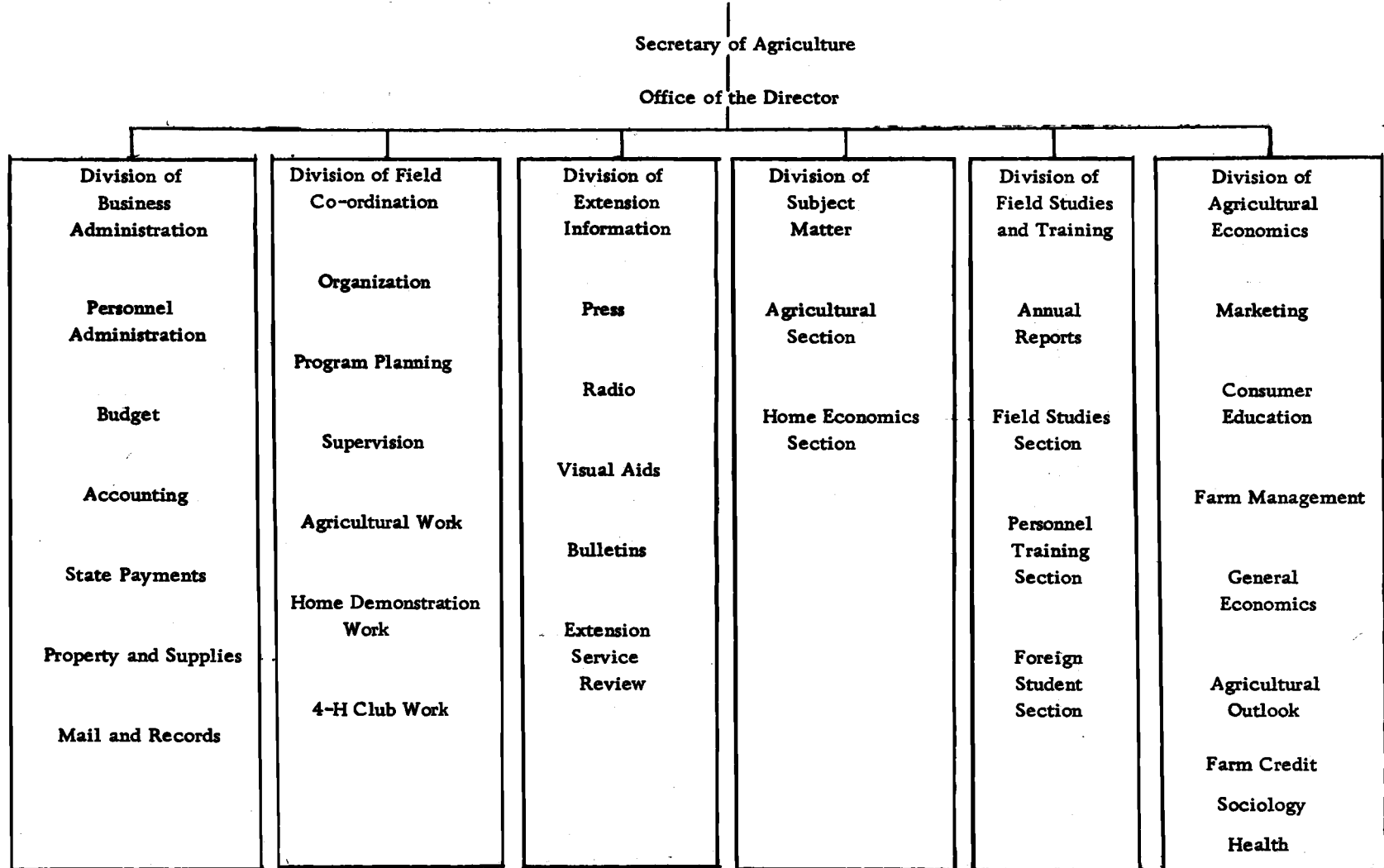
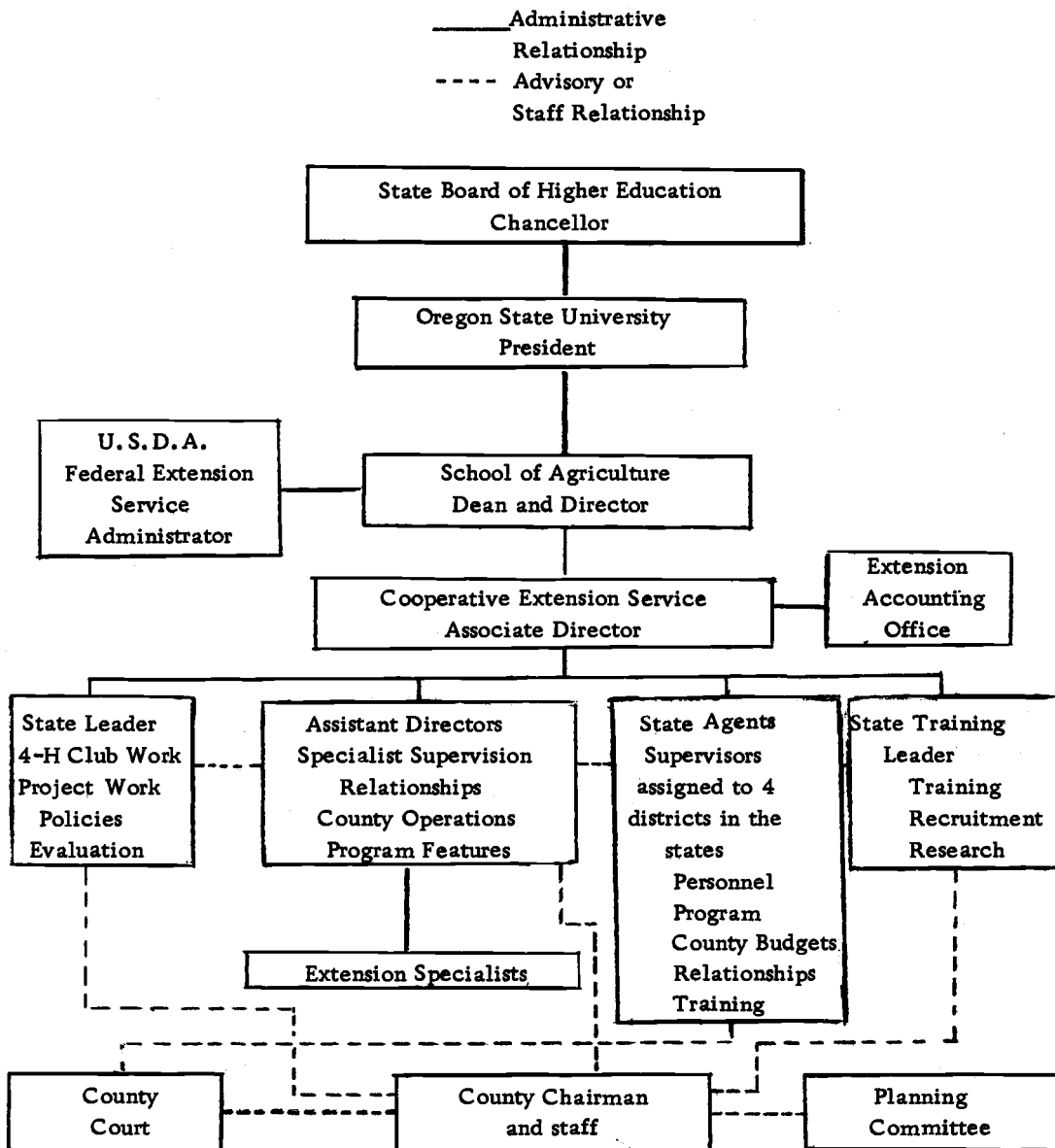


CHART 3  
 ORGANIZATION CHART OF COOPERATIVE EXTENSION SERVICE IN OREGON





### Program and Program Planning

The organizational pattern of the extension service determines to a great extent the nature of program planning. In places where extension is operated at a national level, the program planning is also done at the national level without the consulting of or participation of local people; however, where extension is operated entirely by the people or a combination of local people and leadership of national and state government, program planning is done by local people with the help of extension workers.

In France, the program of agricultural advisory service is planned by the Ministry of Agriculture. The Director of Agricultural Service, which the advisory service is a sub-division of his directorate, spends 50 percent of his time on regulatory and administrative work. The Ministry keeps the directors informed of the general agricultural policies and orientation to be given to their services at the two annual meetings in Paris. Circular letters from the ministry completes their instructions. There is no definite plan or program for advisory action at the departmental level (17).

In Denmark, the only planning is done in the local fields by the Agricultural and Small-Holders Societies, which are organized through farmers' membership. There are also two annual meetings convened for the planning of field experiments (17).

In Sweden the programs followed by the advisory service are largely based on the requirements of the national policy. Provincial Agricultural Societies are given much freedom in planning of their programs. The constitution of the Societies is enough to ensure that the interests of practical farming will be taken into account in organizing the programs (17).

In Iran, the activities and programs for the village level are organized and determined by village extension workers and the director of the agricultural department in sharestan (town) based on the needs of the village people. The degree of people's participation in program planning at all levels is negligible. There is not much emphasis on program planning except at the national level and most of the activities are carried out through administrative orders (4).

For meeting the needs of rural people in the United States, planning is largely done at the local level, where most is known about the needs. For program planning on the county level there is a county planning committee or council, which may vary greatly in size and generally includes a series of sub-committees which meet fairly regularly and submit their recommendations to the annual meeting of the main committee. There is usually a sub-committee for each group of crops grown in the county. At the annual meeting of the county committee the recommendations of the sub-committee are considered and a balanced county program is drawn up after full

discussion with the county agent. Care is taken to see that it is an integrated program and not merely a collection of isolated proposals (16).

In the Netherlands the farmers' organizations participate in planning the advisory program, which is carried out by advisory workers. A local advisor is allowed considerable freedom in planning his own work (17).

In Italy, the Minister of Agriculture decides on the program of agricultural policies, which then is communicated to the Regional Inspectors at their monthly meetings in Rome. The Regional inspectors, in their periodical meetings with Provincial Inspectors, communicate to them the general program with the modifications arising from the particular conditions of the region. The Provincial Inspectors, while keeping in mind the instructions from the regional level, hold consultive meetings with the Councils of Agriculture of their respective provinces. Consultations between these two groups allows for the formulation of a practical policy at the province level in line with the national policy (17).

#### Relationship of Extension Service to Research and Teaching

For extension service to be able to carry out its educational functions, it is imperative that there be a close coordination and

cooperation between extension, research and instruction.

In France, the contact between the advisory staff and agricultural research is provided at the national level, by the General Directorate for Agricultural Production and the General Inspectors. The number of specialists and research centers are very limited and there is almost no contact between the research staff and advisory officers on a professional basis. Contact between the Advisory Service and agricultural education institutes is also unsatisfactory. On the other hand, there is a close cooperation between the Advisory Service and teaching at the local agricultural schools. These schools are used a great deal by the Advisory Service for demonstration and propaganda purposes (17).

The Royal Veterinary and Agricultural College, and also other institutions under the direction of the Ministry of Agriculture, carry out all the research in Denmark. It is the job of Special Advisory Committees to the Ministry of Agriculture to ensure that the work of research institutions is of practical value to farmers. The committees approve of proposals made by the director of different research departments. In addition, the local advisors in Plant Culture carry out numerous field experiments. Special measures are taken to coordinate the work of advisors and government research. In December of each year there is a general meeting to which are invited the representatives of all the parties involved in agricultural

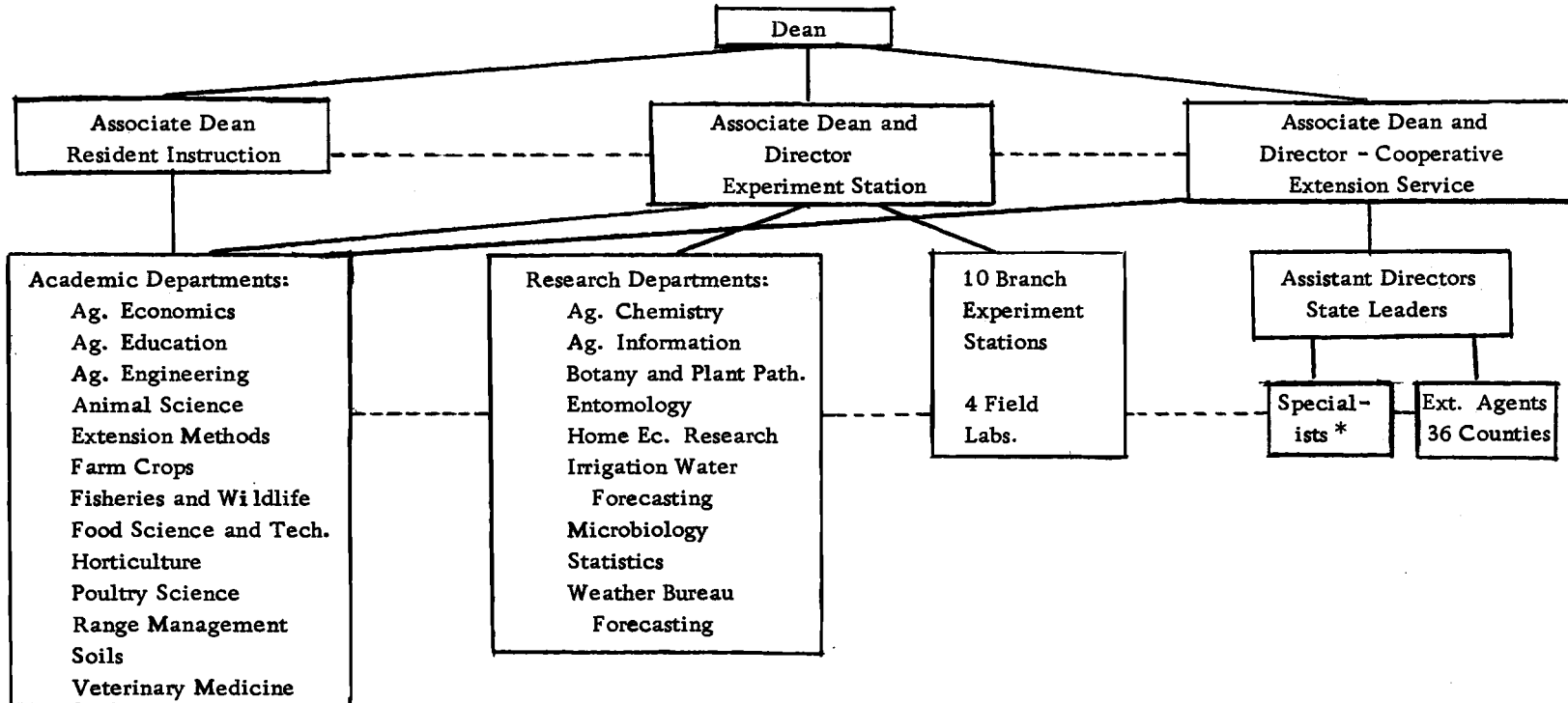
research in Denmark. Recommendations are made as to the experiments to be carried out at the government stations and to those to be carried out by local advisors (17).

All the research that is being done in Iran is at the central level, with no coordination with extension or teaching. The research is conducted by various semi-independent Bongahs (department) within the Ministry of Agriculture. Some of these bongahs are Irrigation Bongah, Sugar beet Bongah etc. and all bongahs are independent of each other and do their own research. Some research is also conducted at Karaj Agricultural College (18).

A very close association between research, extension and education at the Land-Grant College is an important feature of the American system of agricultural education. It is through this type of organization that results of research are channelled to the farmer rapidly and the farmer's problems are continuously under study by research staff, and the teaching of agriculture in college is oriented with a view to emphasize current developments. The Federal Department of Agriculture also carries out research work; the findings at this level and the activities of experiment stations and experimental farms at the Land-Grant Colleges are released at very frequent intervals and information is provided to Extension on all experiments in progress (16). Chart 4 shows the relationship of extension, research and instruction in the state of Oregon (15).

CHART 4

INTER-RELATIONSHIPS--SCHOOL OF AGRICULTURE, OREGON STATE UNIVERSITY  
RESIDENT INSTRUCTION, RESEARCH AND EXTENSION SERVICE (15)



— Administrative Responsibility  
 - - - - Subject Matter and Advisory Relationships  
 \* Housed with Departments

The Canadian Department of Agriculture is responsible for and carries out the major portion of agricultural research in this country. There are one or two research centers in each province which do fundamental and applied research. All but two of the ten Canadian provinces have a university. The major responsibility of these universities is teaching and some research. They sometimes have a Department of Extension but, they do not play a major role in agricultural extension in the provinces. While extension, research and teaching are under separate administration, there is some overlap and some administrations carry out two or more functions. Coordination between research, extension and teaching is on a voluntary basis on the part of key personnel in each of the three administrations. A great need for coordination between these three areas is felt (21).

The relation between extension, research and teaching is the most serious limitation of the extension organization in Nigeria. There is no coordination between these three areas. This has resulted in setting up of research divisions by each regional government for meeting its commitments to its farmers. There is some coordination with the inter-territorial research organizations which are concerned with basic research in the export crops, the results of which are passed to regional Ministries of Agriculture (21).

In Switzerland, advisory work is carried out in conjunction

with the agricultural schools, the teachers of which, at the same time, engage in experimental and control work. Short courses for the purposes of discussing research results by agricultural teachers are organized each year. The teachers carry out much experimental work in the school and neighboring farms in cooperation with Research Stations. Various government and private organizations publish material on different fields of agriculture (17).

The relation of extension, research and teaching varies from country to country. In Canada, Yugoslavia, Japan, Ireland, China, Chile, Costa Rica, Nicaragua and some other countries, extension, research and teaching are completely separate from each other. In some countries like the United States, France and Guinea the three areas are integrated and in Sweden only, education and research are linked. There are also countries such as Cameroon, Laos, Portugal, Greece, Poland, Afghanistan, Netherlands, Peru and Sudan which have only extension and research linked (21).



### III. DEVELOPING GUIDELINES FOR IMPROVING AGRICULTURAL EXTENSION SERVICE IN IRAN

The Extension Service was first established in Iran in 1949 mostly as a service organization. For this reason, the present Extension Service, launched in 1953, was charged with the purpose of organizing the extension division as an educational institution which would help the rural people to help themselves, as well as providing general services for them. A study of extension in Iran today will reveal that while the educational aspect of extension is emphasized somewhat more than prior to 1953, the performing of services still constitutes the most important functions of extension workers and probably their most valuable contribution. There is no doubt that the Extension Service has made some contributions, but the amount of contributions made and whether they have brought any profound changes to lives of rural people is a question for study. This becomes evident when the degree of increase in agricultural production between 1953 and the present time, and improvement in living standards of rural people during the same period, is studied.

Extension has benefited many, and it can do much more, if more attention is devoted to the following problems: objectives and goals of extension service, extension personnel, coordination, extension legislation and supporting services.

Defining Objectives and Goals for the  
Extension Service and its Activities

Objectives are expressions of the ends toward which our efforts are directed. Without objectives an organization like the Extension Service or any other organization, would be lost and the efforts which should be channelled toward a useful cause would be wasted. Defining Extension's goals, unfortunately, has not received enough attention in Iran. Extension goals are determined at the national level and these goals usually change along with changes of the officials who define them. The usefulness of the goals and their relevance to extension is often open to question.

In 1952, when decisions regarding the establishment of the Extension Service in Iran were made, the following were included as reasons for having the Extension Service: "to find more constructive employment for the Ministry of Agriculture personnel and to avoid a reduction in the Ministry personnel because of financial difficulties" (14, p. 16). The development of goals for the projects carried out at the province and local level is not a common practice. To get extension service moving as a useful organization, its objectives and goals which determine the nature and scope of its work, must be defined clearly. To accomplish this, the following suggestions may be helpful:

1. Redefine the over-all objectives and goals of the Extension Service and set guidelines for ways and means of reaching these objectives and goals clearly at the national level.
2. Develop Extension objectives and goals on a permanent basis and change only as needed, rather than being changed with changes in staff.
3. Allow the Extension Service in the provinces, that are better informed of potential and resources of their level, to develop their own goals within the framework of national objectives and guidelines.
4. Encourage the Extension Service in the provinces to develop well organized programs for all the activities that are being carried out at this level. The goals of these programs, and the principles and procedures of reaching and evaluating them should be clearly defined. The Extension program of the provinces should be approved at the national level before being implemented.
5. Develop the objectives and goals of Extension programs on the basis of sound and accurate data and information.
6. The Extension Service, in stating its objectives, should clarify the fact that extension is an educational, as well as a service organization.

7. Informing key government officials and rural people regarding Extension, its functions and its objectives, should be a continuous job of the Extension Service.

#### Extension Service and its Personnel

A large number of village extension workers are previous employees of the Ministry of Agriculture, all having an urban background and unfamiliar with farm life and problems. They have between six to eight years of schooling. Some of them volunteered for the service with thoughts of increased pay in mind and some were drafted by the government. Finding difficulty in getting enough participants, the Ministry of Agriculture had ordered some of the departments to furnish men. In some of these instances, the departments took this opportunity to move some of their less competent employees to Extension. After three months of training some were sent to rural areas as extension workers. Some refused to go to work because they did not want to move their families to villages (14). By forces of circumstances the first extension recruits were Ministry personnel who had developed, by virtue of years of service, a negative attitude toward rural people and rural life based largely on their experience at a desk. No amount of training or persuasion was able to change the attitude of these officials (13).

Regardless of how promising Extension and its programs may

be, there is very little chance of its success unless qualified personnel are hired to carry out the programs. Considering that the core of extension work is in the villages, the qualifications of the people working at this level, and their willingness to live in villages to help the villagers, must be of prime importance. However, the lack of adequate professional qualifications on the part of the village extension workers and their reluctance to live under conditions of the villages, have made extension efforts ineffective.

The recruitment of qualified subject matter specialists, supervisors and administrators to work in provinces and at the national level is also a major problem. Graduates of agricultural colleges usually occupy these positions. Under the present system a high school graduate, with neither knowledge of agriculture nor a farm background, participates in the entrance examination of several colleges, and without any regard for his interests, enters the school in which he passes the examination, which could be a college of agriculture. After attending a college of agriculture for four years, the graduate receives a master of science degree in agriculture. Applied agriculture is not emphasized enough and the quality of curricula and instruction is highly questionable. Upon graduation, almost all of the graduates enter various governmental agencies such as the Extension Service. Again, it is questionable if the degree of effectiveness of a supervisor or subject matter specialist with such

a background can be expected to be sufficient. The qualifications and background of supervisors and specialists are considered one of the factors inhibiting extension progress in Iran. "Extension agricultural specialists and supervisors do not have sufficient training and supervision" (18, p. 19). The following suggestions should be considered in providing the village Extension workers, supervisors and specialists a better and more useful professional training.

1. A farm background or extensive farming experience is a must for village Extension workers, and such a background is generally common amongst rural people. In the past, educational opportunities were available to only a very small portion of rural people, the situation however, has changed somewhat in the last few years and education has become available to a larger number of rural people. The preparation of future village Extension workers should include courses in agriculture, sanitation, home making, health, etc., as well as reading, writing and arithmetic which are being taught presently.
2. The rural youngsters should be provided with the opportunity to attend an agricultural high school which presently exists in some towns. More are needed to be built in rural areas.
3. After the completion of agricultural high schools, the

students could attend the schools that are called Normal Agricultural Schools for a period of two years. There are several of these schools in Iran, and at least one in each province is needed.

4. The curricula of agricultural high schools and Normal Agricultural schools should be re-evaluated and oriented to the needs of the students and their communities. The practical aspects of agriculture should receive the highest priority in this curricula.
5. Applied agriculture should become an integral part of the over-all curricula of all urban high schools.
6. The agriculture curricula of the urban high school should be oriented toward the needs of the community and the college-bound students.
7. The completion of the suggested agriculture program in the urban high schools should become a pre-requisite for those entering a college of agriculture.
8. The curricula of agricultural colleges should become more of an activity type curricula and less of a subject matter one. The concept of "learning by doing" should be heavily emphasized in the curricula.

The above suggestions should be helpful in giving the needed agricultural background to village Extension workers and subject

matter specialists; however, the art and science of teaching rural people is as important a qualification for an Extension worker as his agricultural background. As far as the education of Extension workers in Extension methods goes, the quantity of training has received more attention than its quality. Those who have evaluated the training of Extension workers in Iran believe that they do not receive sufficient training and sometimes the qualifications of those who conduct the training, especially in homemaking, is questionable. The quality of training is low and is not geared to the needs of extension workers. "Training is largely to impart information, not to develop skills and programs" (18, p. 19). The following guidelines could be helpful in upgrading the quality of training given to Extension workers.

1. The colleges of agriculture should include courses in Extension methods in their curricula for those who want to work in Extension Service.
2. Under the present conditions, where the Extension worker has neither farm background and experience nor knowledge of Extension methods at the time of recruitment, the duration of training should be increased from three months to at least two years as in many other countries.
3. The people who conduct the training should be highly qualified, not only academically, but also have practical experience in their field.



4. The quality of Extension education should be improved and training should be more than imparting information and become a skill developing process.
5. Supervision should be used effectively for training individual agents on the spot.

### Recruitment and Selection of Personnel

The employment of Extension workers in Iran is not based on any uniform or pre-determined standards. Three months training in agriculture and Extension Methods qualifies the volunteers to become a village extension worker and the possession of a degree from an agricultural college, and attending a short course in extension methods is enough for employment as a supervisor or a subject matter specialist. Personal characteristics of the employee, his background and competence, which may be as important as his professional knowledge and even more so in extension work, are never considered. Many times the political influence of the applicant and his connections are the deciding factors whether he gets a job or not. Such practices and their detrimental effects to Extension is recognized by those who have evaluated Extension Service in various countries including Iran. "Extension operations should be free from political interference. All personnel should be employed on a merit basis" (23, p. 28).

Policies regarding Extension workers, after their employment, are not conducive to good Extension work. An Extension worker once employed has neither an idea of what is the highest position he can achieve, nor what he has to do to be promoted and the conditions for promotion. Lack of sound policy encourages undesirable practices for promotions. Regardless of the quality of the work an extension worker performs, he continues to receive his annual raise and it is very difficult to discharge him of his duties if he does not do satisfactory work.

The services of agents and supervisors who do unsatisfactory work are not terminated; instead they are transferred from one province, village, or position to another. Some of them are getting their salaries regularly and are not even reporting for work each day (18, p. 19).

To improve the present methods of employing extension workers and also attract a large number of qualified people to the field of extension, certain steps must be taken.

1. To develop a job analysis form for various positions within the extension service, listing in detail the functions that must be performed by people occupying these positions, and explain in detail the qualifications required of people who should occupy these positions.
2. Interviewing should become part of the employment process, and to prevent the possibilities of political pressure or reduce it, interviewing must be conducted

by more than one qualified and unbiased person. The job analysis form should be used as a guideline for the interviewer.

3. The applicants, after being considered qualified for employment as extension workers, should go through a probationary period of one year before being hired on a permanent basis. This step would complete the screening process.
4. Standards for achieving higher positions and promotion should be identified.
5. Promotion and salary increases should be given on the basis of individual's competence and accomplishments rather than duration of his service.
6. Qualifications of village extension workers, at the time of employment, should be considered. It happens quite often that the personal characteristics of the individual are as important and even more so in carrying out his functions successfully than his professional qualifications. The following are some of the characteristics and qualifications that should be sought from village extension workers: (a) it is essential that the individual have a rural background; (b) experiences in agriculture would be desirable; (c) minimum requirement should be a

degree from a Normal Agricultural school; (d) special courses in extension work and related subjects are necessary; (e) high technical ability in a broad field; (f) teaching ability; (g) ability to plan and cooperate with others; (h) vision and leadership; (i) effective speaking and writing; (j) tact and interest in people; (k) enthusiasm with reliability.

7. The qualifications desirable for a supervisor and subject matter specialist are generally similar to those of a village extension worker except in subject matter area. Minimum requirement for them would be a Bachelor's degree in an agricultural field. Specialization in a particular field of agriculture is essential for the specialist.

### Supervision of the Personnel

The lack of proper and adequate supervision within the Extension Service at various levels is one of the major factors hindering the effectiveness of extension service in Iran. The supervision, especially at the village level, is so inadequate that some of the village Extension workers do not report for work each day while getting their salaries regularly (18). Lack of adequate means of transportation, poor road conditions and improper placement of Extension workers in relation to supervisors, are the three major

factors conducive to poor supervision. To improve the situation the following suggestions should be considered:

1. Provide adequate transportation for the extension workers who must travel, and ensure that transport presently available is used to the best advantage.
2. "A study of distance between the province supervisors' offices and their respective field agents reveal astonishing facts. With rough roads and shortage of transport, the average distance between the agent and the supervisor is 121 kilometers" (13, p. 9). In some of the larger provinces like Khorasan this figure is 230 kilometers. The only logical solution seems to be to place the supervisors in the sharestan (town), thus, reducing the area they would cover. This would mean an average of 10-12 supervisors per province. These supervisors should be responsible to the director of agriculture in sharestan and director of extension service in their respective province.
3. The possibilities of establishing several regional supervisors to supervise a group of 3-4 provinces each should be studied.
4. The supervisors should make a distinction between supervision and inspection.

## Coordination

### Coordination Between Research and Extension

When Extension Service was first organized, it took over functions that were performed in part by semi-independent technical bongahs (departments) of the Ministry. The bongahs did not fully accept the new situation due to the lessening of their power and functions, and continued to do their work in the usual manner, independent of each other and extension service. This action and agreement of Ministry officials with it demonstrates recognition by the government that research and extension are two separate functions (13).

There is little doubt that under such an organizational pattern, the transfer of research findings to farmers and farmers' problems to research workers would be inefficient. Unfortunately the limited research done by Technical Bongahs are not available to all. "... the findings are either locked in files or published in technical bulletins, and are useless for extension teaching and practical farming!" (23, p. 7).

Much of the future increase in crops and livestock production in Iran, as in most other countries of the world, will have to come from improved technology which can be provided only through research and education. If research were to bring changes, it must

be of practical value to farmers and be transferred to them, and the prerequisite for this is the close cooperation and coordination of research and extension. There are several possible ways to improve the present research set up and bring a close coordination between it and extension service.

1. The formation of an Extension Coordinating Council under the chairmanship of Deputy Minister, and the membership of heads of Technical Services (Bongahs) and Extension Director. Such a council would discard the present system which is organized on a commodity basis with little coordination between the work of various agencies even that of Technical Services, and would bring a closer functional system of organization. An Extension Coordinating Council would allow for Extension Service and Technical Services to synchronize their work and serve each other's purposes.
2. Under the present system, research is organized on a commodity basis in the Technical Services and these services are represented in each province through a subject matter specialist. Once a specialist is sent to a province his connections with the Headquarter is severed. This situation can be changed by using the subject matter specialist as a connecting link between

extension and research, thus bringing coordination between their activities of extension and research. This can be done by opening the channels of communication between Technical Services and Extension Services at the national level, and the Specialist and the Extension in provinces.

3. The research facilities and staff should be expanded and, there is also a need for decentralization of research and conducting it at the province and local level. Presently all the research is done at the national level and at few locations.
4. Since research is organized on a commodity basis, there is no research in the area of agricultural economics. Farmers have little idea of what to produce or the most economical way to produce it. Lack of information in agricultural economics is not only a problem to farmers but also is a handicap for extension workers who advise farmers, and government officials responsible for formulating and implementing agricultural policies.
5. A better use of research results from other countries has been neglected. Often research from other countries can be applied in Iran with minor adaptations to suit local conditions.
6. There are a number of qualified people in Iran who have



graduated from foreign universities and have experience in research. People with such a background are either doing administrative work or teach in colleges on a part time or full time basis. By mobilizing this group in the research area the volume of research can be expanded.

7. Agricultural colleges should become involved in research. Presently there are four agricultural colleges in Iran, however, no research is conducted by them except by the one in Karaj. Considering the variation in climatic conditions and types of agriculture from one part of the country to another, it would not be possible to do research on all commodities in one location. This is where agricultural colleges in the provinces can markedly assist in relevant research projects.

#### Relationship Between Headquarters and Provinces

The link between headquarters, national Extension Service and province extension teams is weak. "This situation seems to stem from the fact that Iranian extension organization is so closely patterned after the United States that the latter has actually influenced local thinking to the extent that people speak of 'national' and 'state' extension offices" (13, p. 11). It should be explained that in Iran

the provinces are mostly created on a geographical basis and all of the officials in provinces are selected by the national government, and provinces have no internal independence. In spite of such a situation, and considering the limited background of Extension workers in provinces, the provinces are left to themselves too much, with little supervision from national extension service.

Considering the nature of relationship between national government and provinces, and lack of adequate experience and training on the part of most Extension workers, a closer cooperation and supervision of Extension work in provinces would be desirable. However, this should not become a means of controlling and hindering extension work in provinces, since too much control at the central level, considering the poor communication between national government and provinces, results in complications for people in provinces as it is evidenced presently.

#### Integration Not Segregation

Operation of various segregated and independent agencies within the Ministry of Agriculture has already proved to be detrimental to principles of coordination and efficient operation. The unwillingness and resistance to cooperation and coordination is wide-spread among the departments of the Ministry. There has been insufficient coordination and cooperation within the organization. There have

been few programs planned on participation by each agency, but rather many unrelated and uncoordinated programs proliferated by the individual agencies (18). The present organization of the Ministry which is on a commodity basis, is conducive to isolationism and it has also affected the Extension Service. "Extension has experienced the same peculiar tendency found throughout the Ministry, that is, to become separated from the other Ministry organizations" (18, p. 19). Recently the government has gone as far as deciding to separate home extension service from the total extension service and place it in a newly established Ministry. This type of policy and the present organization of Ministry of Agriculture are not conducive to successful operation of Extension Service which needs the help and cooperation of various government agencies.

If the segregation of departments prevents cooperation and coordination of activities between them then it seems logical that the best way to bring about the necessary cooperation and coordination between various departments within the Ministry, which is essential to successful operation of Extension Service, would be to integrate them. Bringing together the departments whose functions are related to one another under a single leadership, not only would increase efficiency of operation, but the duplication of many efforts and inefficient use of funds which is presently common, would cease. Considering that the ultimate goal of agencies like Community

Development Bongah, Agricultural Extension Service, Home Extension Service, Rural Youth Clubs, etc., are to help the rural people, then it is reasonable to believe that this goal would be reached much easier if these organizations would be integrated under a single leadership, rather than working independently of each other.

In bringing coordination between research, extension and other organizations, it is important that principles of coordination be kept in mind. Some of these principles are: (1) recognize that each agency is responsible for its own work; (2) have a clear understanding of the functions of each agency; (3) interest in a common objective or outcome is essential; (4) coordination and integration must be definitely planned; (5) the plan agreed upon should be carried out.

### Decentralization

Extreme centralization is one of the main features of Iran's government. Centralization at the national level is not only a barrier to efficient operation of the Extension Service at the province and local levels, but also is in contradiction with one of the major principles of extension, i. e., to help people to analyze their own problems and suggest solutions for them. Centralization of the Extension organization at the national level is considered an inhibiting factor to improvement of Extension by those who have evaluated Iran's Extension Service. It is through the process of

decentralization that the majority of the people could find the opportunity to become involved and interested in the matters important to them, and thus, to the nation.

It is the people of a country that make a country what it is. Thus, Extension, and for that matter any other public organization that wants to be successful, must enjoy a public support which would come only through their participation in the decision making process and carrying them out.

It should not be expected to find too much enthusiasm or success on the programs carried out by the people in the beginning, considering that people are traditionally accustomed to national government doing everything for them, and also a low rate of literacy, especially among the rural people. For this reason the decentralization process must take place gradually with adequate supervision and help, and with stimulation from the experts. Public participation is a must for the success of extension programs.

### The Extension Program

Since the beginning of extension work in Iran, the principle of the farmers' participation in extension programming has been amply emphasized, however, there is little evidence of programs evolving from the villages. It also seems that the ability of extension agents and farmers to think out their problems and projects locally has been

over estimated. A general review of projects on the extension program of various provinces reveals that programs are too similar in nature and with a limited number of projects. Assistance from province supervisors and subject matter specialists has not been sufficient to correct the situation (13). For the improvement of program building the following steps should be considered.

1. The village leaders should become involved in building extension programs and carrying them out. It is only through involvement of local people in extension programs and activities that they come to understand the aims of extension and become willing to cooperate with the Extension Service in meeting their own needs.
2. The lack of experience of village Extension workers and local leaders in program planning should be compensated through the help of supervisors and subject matter specialists. By increasing the number of the latter at the province level and providing them with adequate transportation or stationing them in various towns in provinces, closer to rural people and village Extension workers, not only program planning, but also other Extension activities in villages could be highly improved through closer contact of the specialist and the supervisor with the village Extension worker.

3. The programs drawn up in villages should be examined and approved by a committee of experienced people at the province level before being implemented.
4. The scope of extension programs should be broadened to cover all aspects of rural life, that is the rural family and its members.
5. The extension program should give not only what is needed but why it is needed. It should be an elaboration of the organization's public policy in such a way that anyone can find out just how the policy affects him.
6. It is essential that principles behind the process of building extension programs be accepted. Some of the important principles in program building are: (a) to base the programs on the analysis of facts in the situation; (b) select problems based on needs; (c) determine objectives and solutions which offer satisfaction; (d) it has permanence and is flexible; (e) has balance with emphasis; (f) it has a plan of work; (g) it is a continuous process; (h) is a teaching process; (i) provides for coordination; (j) provides for evaluation of results (10).

### Legislation for Extension Service

There is no extension legislation in Iran, and for this reason the extension does not operate on a firm financial foundation. The frequent fluctuations in Extension's budget, changes in its organization, that is, transfer of its employees to another Ministry, or severing of home extension from the total extension service, changes of goals and methods of operation with changes in personnel, are all indications of a need for legislation in Extension Service. Such a legislation would allow for setting up practical objectives and goals for extension service to meet the needs of the rural people and determining the ways and means of reaching these goals. "Sound legislation and adequate financial support are essential in building any public service and in providing it with a dedicated and well trained corps of workers. Extension Services are no exception" (22, p. 19).

A sound extension legislation for Iran should include the following:

1. Provision for a legal basis for the operation of the Agricultural Extension Service. This can be done by getting the parliament to recognize the Agricultural Extension Service and its role in the improvement of rural life.
2. Provision for the division of the country into districts for administrative, supervisory and operational purposes.



3. Provision for transfer of regulatory duties from the Extension Service to another unit of government.
4. Provision for close working relationship between extension, research and instruction.
5. Provision for freedom from political involvement.
6. Provision for organizing of all educational programs regarding rural development and welfare under a single institution.

#### Supporting Services

There is no doubt of the vital role that extension could play in educating farmers and helping them to learn and adopt new and advanced farming practices. However, the availability of basic materials and supplies to farmers, needed for farming, in sufficient quantities would be a pre-requisite to the usefulness and success of extension's efforts. The lack or insufficiencies of various agricultural commodities are not only obstacles to increasing agricultural production but also a problem to Extension workers in conducting their functions. A village extension worker, in stating the problems of his work, mentions "He has demonstrated many of his good small tools but there are no places where a farmer can buy them" (14, p. 76). A province extension director also recognizes the lack of farm supplies as a problem. "There is the problem of finding a source of

supplies for recommended equipment and supplies" (14, p. 78). If there is going to be an increase in agricultural production through the application of extension principles, provision for production supplies and equipment and credit are prerequisites.

Recommendations for production requisites are:

1. Promote and encourage private enterprises, especially those which produce items the farmer needs to increase his yields such as fertilizer, seeds, machinery, tools, chemicals, etc.
2. Ensure that the farmers' needs for seed, fertilizer, equipment, plant protection materials, services, etc. are met as required, and when required within reasonable distance of the users.
3. Ensure, before granting licenses for making tractors and farm machines in the country or importing them, that the firms getting the license set up facilities for the training of operators, provision of spare parts and repairing equipment as early as possible.
4. Place increased emphasis upon expanding fertilizer production facilities and make fertilizer available at the right time of the year and in a place where the farmer can get it with reasonable effort.

Surveys in the CENTO region countries - Iran, Turkey and Pakistan shows that the lack of credit for production needs and capital development is a major reason why farmers do not adopt improved practices (4). The following recommendations should be considered:

1. The government should consider giving priority to agriculture in the allocation of resources both for capital development and agricultural lending; as agriculture develops, the rural areas will constitute the primary market for the products of industry.
2. The government should allow agricultural credit institutions to function as autonomous organizations free from any political influence.
3. Supervised credit should be considered essential to an agricultural credit program.
4. Effort should be continued to simplify the procedures and shorten the time required for farmers to obtain loans.
5. It should be made possible for farmers to obtain loans in kind as well as in cash and where practicable to make repayment likewise.
6. Farmers should be allowed to make re-payments of medium and long term loans in installments.

7. More credit should be made available to progressive-minded farmers.
8. Credit should be made available where suitable shortage facilities exist, for farmers who want to borrow to hold produce from harvest when prices are low until later when prices are better, using the produce as a security for the loan.
9. Full cooperation and coordination between the agricultural credit institutions and governmental and autonomous organizations concerned with agricultural activities, should be developed.
10. The government should consider licensing and regulating private credit since for some time to come a large percentage of agricultural credit will be furnished by private money lenders and other non-institutional sources.
11. More consideration might be given to making production loans for carefully selected crops or commodities that will tend to reduce the necessity of using foreign exchange for imports or bring increased foreign exchange from exports.
12. Increased credit should be made available for farmers to buy fertilizer and other production requisites.

Cooperatives are playing an increasingly important part in the development of agriculture and more of them are being established constantly. Credit is being emphasized the most among the cooperatives, however, there is a need for the cooperatives to broaden their scope of activities and make their services more useful and efficient to their members. The following recommendations could be helpful in improving the cooperatives in Iran and making them more useful to the farmers:

1. Farmers can be helped to understand how they can organize cooperatives to procure the things they need for increasing their production or for marketing it more efficiently and profitably.
2. Intensify encouragement and support and place greater emphasis on educating members in cooperative principles and practices, and in training of managerial staff.
3. The government should assist in the development of cooperative societies, and consider promoting local initiative and leadership so as to enable the societies to manage their own affairs.
4. Ensure that there is close coordination between cooperatives and other agencies dealing with rural development.

#### IV. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

##### Summary

The struggle for higher living standards is universal. The direction of this struggle, however, varies from country to country; in some countries it means struggle to produce enough food to avoid hunger, for others it means struggle for luxuries of life. Need for additional food supplies is critical in two-thirds of the nations, representing 75 percent of the world population.

The reason for difficulties in increasing food production in the developing countries is mostly due to the lack of technical knowledge and "know how" on the part of the people involved in food production. This problem has been recognized in almost all parts of the world. One of the efforts to meet this challenge has been to establish an Agricultural Extension Service in most countries.

The Extension Service was established formally in Iran in 1953, to play an active role in improving the living standards of rural people, through teaching them ways of increasing production of agricultural commodities. Although Extension has made some contributions, progress has been slow as evidenced by the agricultural status of the country.

Pressure on the agricultural sector of the economy is increasing and some of the more important factors contributing to it

are: (1) agricultural production of most of the major crops is not adequate to meet the domestic needs; (2) the continuous growth of population at a rate of 2.5 percent per annum is resulting in a greater demand for food. Furthermore, recent government policies, to promote industrial development, would increase the purchasing power of the people. Considering the present nutritional level, this would mean a sharp increase in demand for food.

In meeting the challenge of food production, efforts being made by the government are mostly to provide production requisites to farmers. It should be kept in mind however, that a farmer needs to have education and "know how" before he can effectively utilize these production requisites. Education is the area that has been most neglected. Studies in Iran indicate that lack of technical knowledge on the part of the farmers is the main inhibiting factor in increasing agricultural production. These studies have pointed out the role of Extension Service in meeting this challenge.

This graduate study was conducted to develop guidelines for improving the present Extension Service in Iran. It is believed that implementing these guidelines and recommendations would enable the Extension Service in Iran to play a vital role in developing the nation's agricultural economy.

In conducting this study, the author has contacted all the possible sources that have been directly involved in the development of

the Agricultural Extension Service of Iran since the date of its establishment. Some of the more important contacts include Iran's Agricultural Extension Service and some of its key officials at the national level; the Agency for International Development and Food and Agricultural Organization of the United Nations. The related literature in the Oregon State University Library was studied, and relevant information was incorporated in this paper. The author has also drawn upon his knowledge of Extension and Iran in conducting this study.

### Conclusions

The Agricultural Extension Service has existed in Iran for a period of about 20 years, however, it has brought little change to Iran's agriculture during this period. If there are going to be changes and improvements in Iran's agriculture, it must be brought about by the rural people, and the Extension Service is the organization that can help them to bring about these changes. It should be kept in mind that only an efficient and well organized Extension Service can do this job. On the basis of findings of this study the author concludes that improvements should be made in Iran's present Extension Service in order to make it an effective institution in helping people to meet the challenges of agriculture.



### Recommendations

1. The Agricultural Extension Service should be organized to function as the educational arm of the Ministry of Agriculture, and not only as a service organization.
2. Professional competence should become the sole criterion for the selection of extension workers. A rural background or extensive farming experiences should ultimately become prerequisites for employment in the Extension Service.
3. Agricultural science should become an integral part of the total curricula of all high schools in Iran. High School agriculture must be of a practical nature and provide the students with practical farm experience.
4. The over-all curricula of all agricultural colleges should be upgraded and improved to give the students the kind of education that would be helpful to them and useful to their country. This step would increase the supply of well trained persons for Extension and other needs.
5. Research and Extension should work as a team. To make the Extension Service a more effective and useful organization to rural people, the different research organizations in the Ministry of Agriculture should coordinate

their activities with those of the Extension Service, rather than working independent of the Extension Service and one another. A change of organizational pattern from one of divided services to one of unified services, would bring a much closer cooperation and coordination between the agencies within the Ministry.

6. Provisions should be made for the farmers to have access at all times to all the various agricultural materials and supplies they need.
7. Provisions should be made to make credits of various kinds available to the farmers who need them. Credit should be given when it is needed, where it is needed and in the needed amounts with a minimum of red tape.

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