



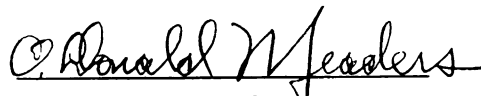
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A STUDY OF RECOMMENDATIONS FOR AGRICULTURAL EDUCATION
AND AGRICULTURAL EXTENSION IN IRAN 1950-1975

by

Zamanipour Assadollah

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ABSTRACT

A STUDY OF RECOMMENDATIONS FOR AGRICULTURAL EDUCATION
AND AGRICULTURAL EXTENSION IN IRAN 1950-1975

By

Zamanipour Assodollah

Purpose:

The purpose of this study was to discover, classify, and analyze the recommendations for agricultural education and agricultural extension based on documents published by the Government of Iran for the period 1950 to 1975.

The Government of Iran included agricultural education and extension in its national development plans as a means for increasing agricultural production and improving the living condition of rural inhabitants.

Many recommendations concerning the various aspects of agricultural education and extension were put forward to make the programs more relevant and effective in order to achieve the national objectives.

The historical analysis and a systematic review of the Iranian Government documents with respect to recommendations for agricultural education and extension were undertaken to provide a clear picture of the 25-year period under study. The study provided a systematic review of how the roles, objectives, and philosophy of

agricultural education and extension have been defined. In other words, the study provided insights to the expectations of the Iranian Government in regard to agricultural education and extension programs.

Methodology:

The primary source of data and information for this study were obtained from the Iranian Government documents; and the secondary source of data and information consisted mainly of publications from the United Nations.

Recommendations for agricultural education were presented under the headings of: the general philosophy and objectives of education, philosophy and objectives of agricultural education, administration, curriculum, instructional materials and equipment, students, teacher education and budget.

The recommendations made by the Government of Iran for agricultural extension were discussed under the similar headings of: philosophy and objectives of agricultural development, philosophy and objectives of extension, administration, role of extension agents, method of teaching, agent preparation, and budget.

Findings and Interpretation:

The prevailing political and social conditions had much influence on the nature of the philosophy and objectives of education expressed in the plans during the period under study. The philosophy and objectives of education tended to shift from emphasis in the first plan on spiritual aspects of life to emphasis in the fifth plan on the secular aspects of life.

The structure of agriculture and the government policy toward agricultural development had much influence on agricultural education philosophy. The administration of agricultural education which was the responsibility of the Ministry of Education during the second plan was later shifted to the Ministry of Agriculture. No reason was given for this shift.

In terms of curriculum, there was no clear statement to show that the planners had considered local and individual needs in constructing curriculum, even though Iran was identified as a country with a diverse physical, climatological, and social environment which should be considered in constructing curriculum in different regions.

Relatively little attention was given to recommendations for preparation of instructional materials and equipment for agricultural education.

The number of students in agricultural education increased from about 2000 in 1963 to nearly 19,000 in 1978. The percentage increase of the students in vocational education was higher than the percentage increase of students at the general secondary level. This change was one indication that the Government of Iran gave a higher priority to vocational education under the policy of training manpower for economic development. Public investment in education increased almost 1000% from 1956 to 1978, but the proportion of public investment in education decreased. The proportion of the budget allocated to vocational education constantly increased as the number of students in vocational education increased from 1956 to 1978.

The objectives of agricultural extension were considered to be consistent with the conventional philosophy of extension.

There was a lack of consistency between the agricultural development objectives and agricultural extension operational policies particularly in the third and the fifth plans. Since its beginning the agricultural extension program has always emphasized service to commercial farmers.

In terms of training extension agents, it seems that the Government of Iran did not have a well-defined policy to prepare adequate numbers of extension agents. However, the Government had the capacity to train a relatively great number of extension and development corpsmen to serve in the place of extension agents.

Demonstrations were considered as an effective method of teaching. Since most of the farmers were illiterate, the demonstration method seems to have been an appropriate method of teaching. The agricultural extension program was structured to serve three groups: the farmers, their wives, and the rural youth. The major role of extension agent was to teach the farmers better methods of farming, to work with farm women to improve food handling, shelter, and clothing, and to work with rural youth to improve their leadership and citizenship ability.

Although the budget allocated to agriculture increased with each plan, the proportion of the budget dedicated to agriculture actually decreased from 46.4% during the second plan to 5.5% during the fifth plan. The budget allocated to agricultural extension increased from plan II to plan V.

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The successful completion of any dissertation necessitates support from multiple sources. This dissertation is no exception. I am particularly indebted to my dissertation chairman, Dr. Donald Meaders. His friendship, standards of excellence and interest in my work was a major factor in the successful completion of my graduate education.

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CHAPTER I

INTRODUCTION

Introduction

This is a study about agricultural education and agricultural extension in Iran. The study focused on the official recommendations for use of the two educational programs as part of the overall plans to develop Iran during the period 1950-1978.

Agricultural education and agricultural extension are relatively new in Iran. The educational programs through schools and through villages were introduced into Iran as one of several methods to bring about improvement in agriculture. The two forms of education have been developed through the efforts of many persons and as part of official government actions. A brief historical background of the two programs will clarify their general nature.

Agricultural Education. The first agricultural school was established in 1901 near Tehran with a five-year curriculum and a staff of European teachers. The aim was to train technicians in agriculture, but the school was discontinued after seven years. In 1919, an elementary boarding school, known as the "farmers' school" was established by the Ministry of Agriculture. Another school was opened in 1922 near Tehran and became a secondary agriculture school in 1923. It offered a two-year course and one year of practical work at the Ministry of Agriculture model farm in Karaj.

a city located 30 kilometers west of Tehran. This school was also eventually discontinued. In 1938, another agricultural school at the secondary level was established in Karaj, mainly to train agricultural technicians. This school became a College of Agriculture in 1950, and in 1955 was separated from the Ministry of Agriculture and was attached to the University of Tehran.

In 1981 there were 22 agricultural secondary schools under the Ministries of Agriculture and Education, all of which were open to students of both sexes. Eight of the twenty-two agricultural schools were under the control of the Ministry of Agriculture. The Office of Education in the Ministry of Agriculture also conducted short term courses to train skilled agricultural laborers and to upgrade the level of knowledge and skills of those engaged in private agricultural activities, with special attention paid to local needs and problems. The agricultural schools operated by the Ministry of Agriculture were charged with the training of agricultural technicians to be employed by the Ministry. These schools were known as "Agricultural Training Centers." They provided free board and lodging. Sons of farmers were given priority in admission to the centers.

The fourteen agricultural schools under the Ministry of Education were designed to train personnel engaged in activities supporting agriculture, such as farm machinery maintenance, food processing, and rural trades. These schools were known as rural industrial schools.

Agricultural Extension. Agricultural extension in Iran is even younger than agricultural education. In 1953, the present foundation

and philosophy of extension work was introduced to Iran through the U.S. Point IV program. This new program provided for the first time a means to extend the results of research conducted at the few existing experiment stations to the farmers in the villages.

In terms of the historical background of agricultural extension in Iran, it is necessary to look at Iran after the second World War. At that time the country was experiencing two threats: (a) the potential fear of external military aggression and (b) the possibility of internal revolution growing out of subversion via a Communist agrarian movement. The U.S. wished to keep Iran in the Western camp by increasing its political stability through economic aid. Since Iran was faced with a shortage of educated manpower, technical aid was provided in the form of experts, advisors, and foreign training.

The majority of the Iranian people were living in the rural areas, so attention was given to rural development. Two rural programs were sponsored by the Americans. One was community development, which had been newly fashioned by American sociologists as a means for social reform; the other was agricultural extension, which was an old product of the American land-grant college and served as a means for agricultural progress. Both were instituted in Iran. The imported ideology and technology were seen as means to combat the threat of revolution and to improve the living conditions of the rural people.¹ It was expected that the multi-disciplinary approach to comprehensive development at the grass roots level would improve the welfare and increase the productivity of the people in the villages,

¹Akhtar Hamed Khan, Ten Decades Rural Development in India, Michigan State University, 1978, p. 16.

thereby conquering both poverty and disaffection in Iran. In connection with this policy, in January 1949, President Harry S. Truman announced the willingness of the United States to launch a whole new program for providing technical assistance to the underdeveloped countries.

Iran was one of the first countries to receive the technical assistance. The Point IV program, as it became known as, soon established itself in every major city throughout Iran. The most significant part of the Point IV program was agricultural extension, which was indeed a unique program for Iran. The Iranian extension service dates from 1953, when the Point IV program established a separate unit for extension within the Ministry of Agriculture. A team of American extensionists arrived in Tehran in February 1953 to begin the agricultural extension work.

The concept of agricultural extension as such was a revolutionary measure in the agrarian history of Iran. Prior to the American aid program, Iranian villagers had hardly seen an agricultural technician in their villages. Previously, only during the harvest did the Iranian peasant witness the presence of government agents, who came either to collect taxes or to purchase wheat for the government granaries. Therefore, when Point IV technicians in working clothes were seen around the villages, the farmers were often surprised and puzzled. The villagers soon discovered the reason for the frequent visits by the technicians. A number of demonstration farms were established by the agricultural extension agents in each ostan (province), and for the first time in the history of Iran the peasants came into direct

contact with agricultural specialists or district extension agents.

The Government of Iran included agricultural extension and agricultural education in the last five national development plans as one means of improving food production. In spite of many attempts made by the agricultural educators and the agricultural extensionists to improve food production during the period 1950-1975, however, Iran has shifted from a food sufficient country to a food deficient country. Many reasons, including improper and inadequate use of agricultural extension and agricultural education may have caused the shift. Since agricultural extension and agricultural education have been fully financed and controlled by the Government of Iran, a study of the recommendations made by the Government of Iran for various aspects of agricultural extension and agricultural education may help determine the role of agricultural extension and education in the above-mentioned shift.

Since one of the expressed goals of new Government of Iran is to restore self-sufficiency, therefore, at the end of the study, recommendations will be made regarding both agricultural education and extension which might be more useful in helping Iranian farmers to increase their production and to restore Iran's self-sufficiency again.

Need for the Study

Nearly 60% of the Iranian population lives in the rural areas. Since most of them are engaged in agricultural activities, the improvement of agriculture is basic to a higher standard of living and to progress toward economic freedom and national development. Agricultural

education and agricultural extension can play a vital role in improving agriculture, increasing production, and increasing the income of a great number of rural people. A clear understanding and an in-depth analysis of the philosophy, objectives, administrative structure, and the expectation of the Government concerning agricultural education and agricultural extension can facilitate understanding their role in agricultural development.

Historical analysis and a systematic review of the Iranian Government documents with respect to recommendations for agricultural education and agricultural extension may reveal a clear picture of the 25-year period under study. One may then see clearly what and how the changes have taken place, as well as how the roles, objectives, and philosophy of agricultural education and extension have been defined. The study also will provide insights to expectations of the Iranian Government in this regard.

This study may be useful to educational planners both in the Ministry of Agriculture and in the Ministry of Education. They might use it as a reference when they prepare and define the framework in which the extension agents could have a greater impact on improving and increasing agricultural production. Knowledge of the past and of the existing conditions is one of the prerequisites for improvement.

Finally, this study will be a valuable and useful reference for students who study agriculture in Iran, where no such study is available. It is assumed that the materials assembled in this study will benefit both Americans and others who share the field of educational endeavor.

The Purpose of the Study

The purpose of this study is to discover, classify, and analyze the recommendations for agricultural extension and agricultural education based on documents published by the Iranian Government for the period 1950 to 1975.

Statement of the Problem

During the past twenty-five years Iran has shifted from a self-sufficient food producing country to a deficient food producer. What were the roles of agricultural extension and agricultural education during this period?

Agricultural education and agricultural extension were introduced as means to help develop agriculture in Iran. The introduction of these two kinds of programs was followed by various efforts in each of the national plans to strengthen and to extend the programs. However, no comprehensive review of those plans has been made to determine the trends in the recommendations for agricultural education and agricultural extension. There are several questions which need to be answered as part of the systematic review of the recommendations contained in the government plans.

1. What was the role of agricultural extension and agricultural education in increasing agricultural production in the last twenty-five years in Iran?
2. What were the recommendations in each national development plan concerning the philosophy and objectives of education in general, and about agricultural education in particular?

3. What recommendations were given in each national development plan concerning administrative structure, curriculum, instructional materials, facilities and equipment, teacher-training, students, and the budget for agricultural education?
4. What recommendations were made about the philosophy and objectives of agricultural extension during the period under the study?
5. What role and scope of activities was recommended in each plan for extension agents?
6. What recommendations were advocated in each national development plan to organizational structure, and methods of teaching extension?
7. What funds were allocated for extension and agricultural education, and what proportion of the total agricultural budget do these represent?
8. Has agricultural extension been small-farmer oriented or commercial-farmer oriented, or both? Has this orientation changed during the period under study?

Methodology

Organization of the Dissertation

The study is arranged into five chapters. Chapter one contains the introduction, purpose, source of information and criteria for the selection of documents, methodology, need for the study, statement of the problem, limitations, and definition of terms. Chapter two is a review of the literature. In that chapter, the role of agricultural

education and agricultural extension in increasing agricultural production and alleviating rural poverty is considered. Chapter three is the heart of the dissertation, in which the five national development plans are reviewed. As a pattern for the review of each plan, the overall objectives of each plan, particularly for agricultural development and education, is described. Then, for each plan, recommendations, if any, for agricultural education under the following headings have been considered: general philosophy and objectives of education, philosophy and objectives of agricultural education, administration, curriculum, teacher education, students, instructional materials and equipment, and budget.

The recommendations made by the Government of Iran for agricultural extension have been discussed in Chapter four under similar headings of: philosophy and objectives of agricultural extension, administration, role of extension agents, methods of teaching, extension agents' preparation and budget. At the end of Chapter three and Chapter four, the recommendations for agricultural education and agricultural extension have been summarized in a table. Chapter five contains the conclusions and recommendations for further development and improvement of agricultural extension and agricultural education in Iran. The major questions which were posed in Chapter one have been answered.

Sources of Information

Data and information for this study were obtained from:

1. The five national development plans (begun in 1949 and ending in 1978) in Iran.

2. Reports and publications of the Ministry of Education and the Ministry of Agriculture.
3. United Nations, UNESCO, ILO, and FAO documents.
4. Materials supplied by the Near East Foundation.
5. Comprehensive surveys of annual government yearbooks.

Criteria for Selection of Documents

The documents used as primary sources were limited to those which were clearly identified as Iranian Government publications. The five national development plans which were official, well defined and internationally recognized documents were used. Documents used by the Ministry of Education, the Ministry of Agriculture, and the Plan Organization which reveal the official policy of the Government of Iran were also used. Finally, the reports of the Iranian Government delegations to regional and international conferences were used as reliable official documents.

Limitations

The study does not include agricultural education at the college level and above, but rather is limited to programs at below college levels.

The study also does not purport to evaluate programs or accomplishments which have taken place from 1950 to the present. Instead, the study focuses on recommendations which have been made regarding the programs.

Definition of Terms

The definitions given here describe certain terms which were used in the discussion of agricultural education and agricultural extension in Iran. The defined terms are helpful in conveying the information clearly and accurately.

Agricultural Education: A formal program of instructions of rural life and advancement of proficient farming practices.

Agricultural Training Centers: Second cycle secondary schools for training agricultural technicians. (Encompasses the grades 9, 10, 11 and 12.)

Rural Industrial Schools: Second cycle secondary schools for training technicians in the occupational fields which support agriculture.

Plan Organization: An official agency of the government created by the Iranian Legislature to implement national development plans financed through oil revenues.

Ostan: An administrative unit for governmental purposes. It may be referred to as a province. It is the largest subdivision of area in Iran.

Shahrestan: A subdivision of an ostan; each shahrestan is divided into many counties.

Land Reform: The redistribution of land or rights to land.

Public Domain Land: Land owned or controlled directly by the government.

Village: An area in which less than 5000 inhabitants lived was considered as a village by planners.

WA QF Land: Land placed in irredeemable trust for charitable or religious purposes.

Crown Land: Private villages and estates of the former Shah's family.

Pre-service Training: The academic preparation of future teachers of agriculture, extension agents, and agricultural specialists.

Factual Information About Iran

Geographic Location

Iran lies between 25⁰ and 40⁰ north latitude and between 44⁰ and 63⁰ east latitude. Iran, comprising approximately 628,000 square miles of land, is the second largest country in the Middle East. It is bounded on the west by Turkey and Iraq, on the south by the Persian Gulf and the Gulf of Oman, on the east by Pakistan and Afghanistan, and on the north by the U.S.S.R. and the Caspian Sea.

Population

Most of the Iranian people are of Indo-European stock. The majority of them speak Farsi, with an admixture of Arabic. According to the 1976 census, the population of Iran at that time was 34 million. The annual population growth rate has increased from less than 2 percent in the early 1900's to about 3 percent in the 1960's; it has subsequently leveled off or commenced a slight decline. The first census, done in 1956, accounted the total population to be 18,800,000 of which five million or 26% were living in the cities and 13,800,000 or 74% were living in the rural areas.

At the end of the fifth national development plan in 1978, the total population was 35,922,000, of which 16,991,000 people or 47.3 percent were living in the urban areas and 18,931,000 people or 52.7 percent were living in the rural areas. Iran's rapid economic growth, especially in the urban industrial sector, has caused a steady increase in the size of the urban population as shown in Table 1.¹ The recent high rate of urban migration is expected to continue, and the proportion of the rural to urban population will decline. The rural population will continue to increase in absolute numbers. However, the rural population, which is unevenly distributed among the 65,125 villages, is expected to reach 20 million in the mid-1980s.

Table 1. Distribution of Population in Urban and Rural Areas During the Five Development Plans.

Plan Period	Population (1000's)			Percent of Urban Population
	Total	Urban	Rural	
End of Plan I 1956	18,800	5,000	13,800	26
Plan II 1963	22,260	7,660	14,600	34.4
Plan III 1968	26,676	10,401	16,274	39
Plan IV 1973	30,329	12,900	17,429	43
Plan V 1978	35,922	16,991	18,931	47.3

¹Plan Organization, Iran's 5th Development Plan, Tehran Plan Organization (1975), p. 32.

Soil and Climate

With the exception of the Caspian area, Iran is an arid region, and the problem of water and irrigation is acute. Most precipitation falls during the winter months. The distribution of rainfall is largely controlled by the two factors of topography and disposition of land and sea in relation to rain-bearing winds. Annual rainfall varies from less than two inches in the desert to as much as 60 inches in the Caspian.

The climate of Iran is expressed by the old saying that "Iran has seven climates." The temperatures range from tropical to temperate. There is a marked temperature extreme from the north to the south. The southern part of Iran has mild to warm winters, while the northern half of the country has cold and snow. The climate throughout the country is hot and dry during the summer, with temperatures averaging 80 to 90 degrees Fahrenheit. The average mean maximum and minimum annual range of temperature in Iran is 50 degrees. This is one of the widest ranges of temperatures of any of the Middle Eastern countries.

The agricultural areas of the country correspond generally with the four natural regions. The northern part, known as the Caspian coastal region, is extremely fertile and produces most of the agricultural products of Iran. The western region, chiefly hilly grazing land, is the home of most of the nomadic tribes. The southwest is a rich cereal producing region and has a potential for increased production, especially in the province of Khuzistan. This southern region is noted for its production of sugar beets and fruits. The

fourth area, in the central and eastern part of the country, includes the huge desert and marshland region. This part of the country produces many of the fruit crops.

Pattern of Land Ownership

Prior to the land reform in 1962, the ownership of land in Iran could be divided into three general categories:¹ state domain land, WA QF land, and private land. The proportion of the ownership of the above categories was as follows:

1. Large land holding (more than five villages) belonged to 37 famous families. 38%
2. Medium land holding (from one village to five villages). 14%
3. WA QF land. 12%
4. Government's land (known as state domain land and included the former Shah's land known as "crown land"). 6%
5. Small land holding. 30%

Land Reform

During the years of the third and fourth plans, the institutional framework for agriculture was transformed. The third plan had extremely positive effects on the solution of basic problems regarding land tenure and land ownership. The rapid enforcement of land reform laws led to the abolition of feudalism. The reform provided that no owner would be allowed to possess more than one village, and also required him to sell to a farmer or sharecropper any lands which he had been working

¹A. K. Lambton, Landlord and Peasant in Persia (London: Oxford University Press, 1959), pp. 205-235.

up to that time (1962-63). This procedure was called the first phase of land reform. In the execution of the first phase of land reform, 14,685 villages were purchased and distributed among 631,769 farming families. In the second phase, which ended in 1966, a total of 52,864 villages and 17,718 farms were made subject to the provisions of the law, and one of the three alternatives provided by the law was chosen; in this way the legal status of 2,338,170 farm families was determined.¹

During the fourth plan, the establishment of numerous, better-financed, and more up-to-date rural cooperatives and joint-stock farming corporations provided bases for new forms of agricultural development.

According to the revised fifth development plan, the land tenure situation at the end of the fifth plan in 1978 was to be as follows: "Of the total area of about 4.13 million hectares of irrigated land at the end of the fifth plan, about 8 percent will be utilized by agro-industrial units, about 12 percent by farm corporations and rural producers, cooperatives, about 30 percent by agro-businesses and mechanized units, and about 50 percent by individual farmers."²

¹Plan Organization, Fourth National Development Plan (Tehran: Plan Organization, 1968), p. 90.

²Plan Organization, Iran's Fifth Development Plan (Tehran: Plan Organization, 1975), p. 88.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The purpose of this review of literature was to analyze the role of agricultural education and agricultural extension in increasing agricultural production and to discover if there is a positive relationship between the two. In other words, can better agricultural extension and education programs help increase agricultural production and contribute to alleviating poverty?

The chapter is divided into five main parts: Food and population worldwide; food and population in Iran; the role of agricultural education in agricultural development; the role of agricultural extension in agricultural development; and summary.

Food and Population

Food is by far the most basic necessity of mankind. Without food mankind simply cannot exist. Farms, ranches and orchards are essential for providing food for an increasing world population. Many reliable sources declare that the world population, especially in LDCs, will increase and will reach approximately seven billion by the year 2000, all of this in spite of reducing fertility. By the year 2000, the projected seven billion population should be eating over 14 billion kilo calories and about 435,000 metric tons of protein per day. This would double the 1965 world calorie

intake rate and more than double the 1965 protein intake.¹ In view of the expected trends in population, food supplies need to increase faster than the mouths to be fed.

The annual average growth of agricultural output was 2.8% in 1960, which was much lower than the 4% growth rate which was set up as a target by the United Nations. Poor achievement in the agricultural sector and rapid population growth have brought about a situation in which many of the third world countries suffer from a shortage of food. Most of the third world, increasingly unable to produce its food, depends more and more on supplies from outside. The grain imports of the third world nations rise from year to year, a fact which is already leading to political dependence and threatens to result in economic dependence.

Food and Population in Iran

Iran was almost self-sufficient in food production in 1950, but had to import 1500 million dollars worth of agricultural products in 1974.² Imported agricultural materials comprised 40% of the total value of the domestic agricultural production in that year, or a production valued at 3230 million dollars. According to the estimate of the Iranian Government, the 1978 level of production of the ten major agricultural products must almost double

¹Laurence Hewes, Rural Development, World Frontier (Ames: Iowa State University Press, 1974), p. 3.

²The Ministry of Economics, Foreign Trade Magazine, Tehran, 1975.

in order to meet the required demand in 1993.¹ This estimated required production level was based on a population growth rate of 2.93 percent between 1978 and 1998 and a nutrition level of 2800 calories/day.

In Iran in 1978 there was 2.5 million farm families on 3.68 million hectares of irrigated land and 5.77 million hectares of non-irrigated land. About 400,000 families had less than 0.5 hectares, and about 48 percent of the farms were less than 10 hectares in size.²

Raising the productivity in the rural subsistence section in Iran is crucial both in terms of human welfare and in terms of facilitating overall economic development. Iran has a growing agricultural population in spite of a rural to urban migration. There is an increasing number of small and subsistence farmers. And the urban sector is unable to productively absorb the in-migrating labor force.

Iran has several conditions which differ from other countries which are attempting to develop the agricultural sector. These include: (a) a large national income from the sale of oil, (b) a wide range of topographical, soil, and climatic conditions which affect the potential agricultural production; (c) agricultural experiment stations and other institutions for technological developments. Nearly 50% of the Iranian farmers are small and subsistence. Due to the poor water resources (in most parts of Iran), they are scattered throughout the country. They operate in

¹CENTO, Cento Seminar on Increasing Productive Capacity of Small Farmers, Cento, Lahor, Pakistan, 1978, p. 30.

²Ibid., p. 29.

a relatively static technological, economic, and cultural environment to which they have become very well adjusted and within which they operate efficiently as economic men. Given their economic nature, for them to break out of their efficient but poor status, they need incentives by way of profitable new technology (backed up by the required input supplies and marketing channels) and institutional change, including education.

Because of the money earned from the sale of oil Iran is in a good position to set up physical, technological, and institutional infrastructures which are essential for agricultural development. In the short term, Iran can import the required agricultural materials. The international prices of certain agricultural products might be cheaper than that of the cost of producing them inside the country.

In the long run, however, Iran should have a policy to develop its agriculture, particularly rural subsistence sector, and decrease the importing of agricultural products.

The Role of Agricultural Education in Agricultural Development

Agricultural education constitutes one part of the educational system in many countries. It may include instruction conducted by primary schools, secondary schools, technical schools and universities. It may include instruction to students in urban and rural areas, boys and girls, farmers and non-farmers. In other words, agricultural education includes instruction, at any of several academic levels, which deals with information about crops, livestock,

soils, farms, marketing and other agriculturally related fields of study.

Frequently education, in relationship to development, is described in three broad functional categories: formal education, non-formal education, and informal education. Formal education refers to those programs conducted through the institutionalized and chronologically graded schooling system. Non-formal education refers to organized, systematic educational activities conducted outside the formal institutions to provide learning experiences of various kinds to children, youth and/or adults. Informal education usually refers to the lifelong process by which individuals from infancy through adult-life learn: from family, friends, the radio, magazines, television, museums, theater and many other sources.

Agricultural education, in this study, was viewed as primarily formal education. The literature was reviewed in terms of agricultural education and development.

Agricultural production increases in Iran can mainly come from: land and water development; better seeds and fertilizers and adoption of an efficient system of production with particular stress on research, extension and education; farm mechanization with an emphasis on appropriate and intermediate technology; reduced losses at every stage from production to final consumption; supporting economic policies such as planning policies, price policies, marketing, and credit policies. For transformation of traditional agriculture, increasing agricultural production is necessary but not enough. Increased production should lead to increased income of

small subsistence farmers and improve their well-being.

As George L. Beckford says: "Agricultural development is the process through which the material welfare of the rural people of a country is improved consistently over time."¹ With respect to this definition, two main objectives must be pursued in the transformation of traditional agriculture in Iran. First, increasing the productivity of farmers, especially the small land-holders, and second, improvement of the well-being and prospects of rural people. What role can education play in achieving these two objectives? There are many essential elements for agricultural development in Iran, one of which is education. Education can play a vital role in promoting agricultural development. It has been increasingly accepted that far greater emphasis must be placed on the development and utilization of human resources as a key factor for all economic and social advance, since many of the obstacles to agricultural progress are human, social, and institutional, as well as economic and technical. Almost every aspect of the development of agricultural production calls for improved standards of education as well as for better technical and vocational training. A. H. Boerma, Director General of the FAO states that the human element is of unique importance in agricultural change and progress.² He emphasizes particularly the point that agricultural education and training are key factors in rural development, and that they are also integral components of the whole development process when suitably

¹George L. Beckford, Strategies for Agricultural Development, Food Research Institute Studies, Vol. IX No. 2, 1972, p. 150.

²A. H. Boerma, World Conference on Agricultural Education and Training, FAO, Unesco, ILO, Denmark 1970, p. 77.

adopted to local needs and conditions. He reports that the success of rural development in the next decade will largely depend on what the teachers and administrators of agricultural education are able to achieve. Louis Malassis explains that the world needs more people who have been properly trained such as farmers, farm technicians, and agronomists and who are respected members of society, aware of the importance of their role in ensuring the future of the human race.¹

In explaining the role of education in agricultural development, he says that education is not, of course, sufficient, but it is essential if the great battle against poverty, underemployment and famine is to be won. Ahmed Manzoor talks about rural development and rural transformation, which he believes to be the highest priority in LDCs. Agricultural educators, in his view, have a catalytic task to perform so that action is accelerated toward specific targets.²

Agricultural education and training have an important bearing on the three problems prevalent in the rural areas of Iran. These problems are inefficiency of production, inequality of distribution, and inadequacy of participation. Education and training are the human ingredients of productivity, the source of demand for and enjoyment of, more equal distribution, and the essential ingredient for fuller participation. Agricultural education can help reduce

¹Louis Malassis, The Rural World, Education and Employment (Paris: Unesco Press, 1976), p. 61

²Ahmed Manzoor, World Conference on Agricultural Education and Training, FAO, Unesco, ILO 1970, p. 105.

the imbalance in resources between towns and villages. The prosperity of rural communities and the welfare of those who live by the land are at the heart of the problem of the imbalance between town and country. A better balance is one of the fundamentals of the structure of society. Better, more widespread, and more appropriate agricultural education and training may modify the seriousness of this problem. It can open up the closed societies of rural areas to new and modernizing influences; it can also facilitate the introduction of new techniques and working methods that will enable more and more rural workers to increase their output, to work more fully and productively, and to increase their incomes, thus leading more decent and dignified lives. It can help to build a more dynamic and prosperous rural society for the future, which is an essential condition for balanced growth and political and social stability.

Thus, a review of related literature shows that education has been considered a key factor and an integrated part of packaged programs for agricultural development.

Agricultural Education in Primary Schools

Is the primary school capable of preparing the young for agriculture and should it do so? Should the study of agriculture be included in the programs of primary schools? At least three different views have been expressed on this subject. There are many who agree upon the ruralization of primary schools and say that agricultural subjects ought to be taught in primary schools. They focus on the aim and purpose of education. For example, Nyerere says that "the

aim and purpose of education is to prepare young people to live in and serve the society and to transmit the knowledge, skills, values and attitudes of the society."¹

Nyerere and others indicate that since agriculture is dominant in rural areas, the curriculum must relate to the real life of the community and should emphasize the value and dignity of agriculture. Lessons in agriculture should be given to full-time pupils in both primary and secondary school.

George Axinn believes that there is a great need for bringing useful, practical and simple applied agricultural technology to the curriculum in the first three grades of elementary schools in most countries of the world.² F. L. Brayne, who wanted to improve village life in India, considered the schools as the intellectual centers of the villages. He believes that the curriculum must contain a sufficient amount of agriculture, handicrafts, public health and hygiene, infant welfare, and other things necessary for the self-contained life of a village. This convinces the village boy before he leaves school that he can make a living out of the soil and that he and his family can be happy and healthy, well-fed and well-clothed, without ever leaving the village or abandoning his ancestral occupation.³ C. H. Smee considered the

¹J. Nyerere, Education for Self-Reliance (Dar-es Salam: Government Printer, 1967), p. 2.

²George Axinn and Thorat Sudhakar, Modernizing World Agriculture, New York, 1972, p. 137.

³F. L. Brayne, Village Uplift in India (Allahabad, India: Pioneer Press, 1927), pp. 130-120-121.

issue from the point of view of employment. He states that intuition suggests that the content of education offered at schools does affect occupational choice, and that the reason for giving an agricultural orientation to rural school curricula is that whatever the students' occupational aspirations, comparatively few rural school graduates will be able to find jobs in urban areas.¹ The aforementioned views can be summed up by saying that if agriculture is so vital to the life and progress of so many LDCs, it certainly seems reasonable that it should feature in the curriculum of both primary and secondary schools.

Those who disagree with agricultural education in primary schools emphasize four points: first, they say that the young people leaving primary school are too young to benefit from vocational training programs.² Second, they argue that one of the functions of the rural primary school, as of all primary schools, is to first detect the intelligence which the nation needs to carry out its development and then encourage the most gifted, whatever their social background, to continue their education at the secondary level. Therefore, if ruralization of primary schools deprives these students of higher education, it would be intolerable for both the nation's and the student's benefit and should be denounced in the strongest possible terms. No community can expect to keep

¹C. H. Smee, The Role of Education in Agricultural Development in Low-Income Countries, C. H. Smee (S.L.:S.N.).

²Louis Malassis, The Rural World, Education and Employment (Paris: The Unesco Press, 1976), p. 13. Unesco, FAO, ILO, World Conference on Agricultural Education and Training, (Unesco, 1970), pp. 48. Philip Foster, Education and Rural Development (Evan Brothers, 1974), p. 23.

its most gifted members if it does not offer them opportunities for change.¹ In addition, it is generally recognized that primary schools are unlikely to bring about radical change in the environment. They also will not enable the farmer to escape from his poverty. In such circumstances, the village dweller sees the primary school as a way of escaping from poverty only to the extent that it will enable him to leave the land altogether. Young people also tend to see migration to the towns as a way of escaping the hold of their social group, which is generally very strong in country areas. A clear explanation of this issue is found in the words of F. H. Harbison, who says, "in this age of rising aspirations and spreading mass communication, the sons of the farmers are not going to sentence themselves to traditional agriculture if they can possibly avoid it."² Fourth, there is no good in encouraging young people to choose farming as a career and providing them with technical training if, in fact, farming as it exists offers almost no opportunities for a better life and a reasonable cash income. Furthermore, it is useless to give vocational training in agriculture to young people who will leave the land in any case, either because their farms are too small or because there are, or will be, non-agricultural employment opportunities for them. The argument of those who believe that the interest of the students in agriculture and their environment should be awakened in the rural schools is

¹V. L. Griffiths, The Problems of Rural Education, Unesco, 1968, p. 76.

²F. H. Harbison, Human Resources Planning in Modernizing Economics, International Labor Review, Vol. LXXXV, No. 5, 1962.

also based on the aims of education. As they believe, one of the aims of the educational system as a whole should be to make all citizens aware of the importance of the rural world and of agricultural labor in improving societies and to inculcate a respect for manual labor and for nature. Therefore, the primary schools should encourage respect for the dignity of manual labor, and should create a sense of vocation and persuade gifted young country-dwellers to remain faithful to their background. Rene Maheu, Director General of Unesco, believes that the primary school can play a more useful part in awakening the interest of young people in scientific agriculture by teaching them biology, chemistry, geology, and climatology in a practical, rational way, related to a specific ecological context.¹ In his view, this is the remedy for the situations in which agricultural occupations have a low prestige, particularly in LDCs. It would certainly seem appropriate that from an early age, children in both urban and rural areas be made aware of the place of agriculture in the life and progress of their nation. There must be few areas of the world where it is not now possible to explain to children how through the application of science and technology, human skill and endeavor, traditional systems of agriculture can be transformed into a modern farming industry with all the benefits to rural society and the national interest which this implies. All of the three views cited here contain some truth. It goes without saying that the primary school should provide young

¹Unesco, FAO, ILO, World Conference on Agricultural Education and Training, Unesco, FAO, ILO, 1970, p. 81.

people with the tools of learning, reading, writing, arithmetic, and some knowledge of their future environment. Schooling must be based both on an analysis of the specific nature of the LDCs or regions and on the actual problems children face in their villages or families. Only then will school curricula impart to the children better knowledge of their country and community. The rural primary school should generally have four basic functions:

1. To teach basic skills of reading, writing and arithmetic.
2. To inculcate attitudes and patterns of thought which correspond to the goals of rural and overall development.
3. To be a genuine instrument of rural development.
4. To enable the more gifted pupils to go on to secondary school.

Agricultural Education in Secondary Schools

Agricultural education and training at the secondary level, as exemplified by the award of a particular type or level of diploma or certificate, are key elements in prompting change, especially in those countries in which agriculture occupies a dominant place both in the economy and in people's lives. As has been suggested, there is a close correlation between the role of the intermediate technician and the level of agricultural development.¹ In the early stages of development from subsistence or semi-subsistence farming, a primary need is for such people as agricultural extension workers, animal health assistants, technicians or experimental stations, and

¹FAO, Unesco, ILO, World Conference on Agricultural Education and Training, FAO, 1970.

others engaged in helping farmers and rural people improve production and their way of living.

At a later stage, when the market economy becomes more important, many agricultural technicians will be required. Increasing numbers will be required particularly in connection with refined production techniques, with cooperatives, with marketing and credit schemes, as well as for work in processing of projects.

The people who receive agricultural training at the secondary level will be working essentially in the field, the laboratory, the workshop, in storage and processing plants, and in community service, rather than in predominantly clerical duties. They must form the link between the findings of research and technology and the practical application of such research and technology in bringing about more efficient agricultural production.

In Iran, rural development is seriously hampered by a shortage of adequately trained people at the intermediate level. There are few LDCs which have satisfactorily solved the problem of producing adequate intermediate staff in both numbers and quality. It is obvious that different stages of development in Iran will require different levels of trained manpower. It would be a simple matter indeed if one could identify a single stage of agricultural development in Iran at a given time and train intermediate technicians for it. However, Iran, like other LDCs, has several stages present at the same time.

Iran has subsistence or semi-subsistence farming existing alongside areas of more advanced development and Iran has a sector

of highly advanced commercial agriculture.¹ Therefore, the training of the right kind of people in the right numbers at a given time is not easy, especially with respect to the limitations imposed by the availability of resources and facilities. As mentioned earlier, the main purpose of post-elementary education in agriculture is to prepare people for employment as technicians in a wide range of skilled occupations. The emphasis must always be on practical application, and the technician must aim at understanding the basic principles underlying modern methods in his chosen area, as well as at the acquisition of technical and managerial skills.

It should be repeated that the educational level attained in training is likely to be directly linked to the stage of development of a particular country. It is obvious that for countries at an early stage of development, it would be impossible to achieve the same standards that might be aimed at in highly developed countries. The educational programs in Iran, as in other developing countries, need to be strongly oriented to the practical and applied aspects of the subject. Since all subjects related to agricultural development are dynamic, it is important that the basic training be designed to encourage a flexible approach and enable those trained to keep abreast of new developments and to profit from subsequent in-service training.

Agricultural education and training are to be found in different countries under many different forms of administrative

¹Ibid., p. 105.

control. In some countries, it is an integral part of the system of general education. In others, it is under the Ministry of Education or the Ministry of Agriculture, or both. In Iran, all agricultural training centers are under the Ministry of Agriculture whereas rural vocational schools are under the Ministry of Education.

In most LDCs, agricultural education at the secondary level continues to be provided through separate schools. There are some arguments in favor of agricultural education through the separate schools, and other arguments for providing it as part of a comprehensive school.

It is reasonable to assume that the integration of technical agricultural education within the overall educational system, regardless of the desired administrative structure, must be achieved in stages. It would seem difficult in the short-term to train intermediate level personnel by attempting to infuse agricultural courses into a general curriculum. To make the training of such personnel part of general education would increase the length and cost of courses at a time when the LDCs need such personnel urgently and have only limited resources at their disposal.

The Role of Agricultural Education in Increasing Agricultural Production

Does schooling lead to higher farming productivity? Are years of schooling correlated with farming efficiency? Is the educated farmer more receptive to extension officers, or more innovative, than his unschooled neighbor? Surprisingly little work has been

done on these questions. One study which is relevant to such questions has been done in English-speaking central Africa. The study of a selected sample of coffee and cotton farmers in the Busaga and Bukedi districts of Uganda, showed that "progressive farmers" are those with a few years of primary schooling, while "leadership" farmers have generally completed primary levels IV or VI. But to find that progressive farmers are educated in no way implies that extended schooling will increase the number of good farmers. The predictive value of estimates of the rate of return to elementary education is similarly limited.¹

Another study done by a number of researchers in India indicated however that there was close correlation between the level of education and the adoption of new agricultural practices. They say that "farmers with higher level of education are better adopters."²

Africa is where most of this type of study has been done. From 1973 to 1976, P. Moock studied the output of maize in the Vihiga special rural development program in Kenya's western province. He sought specifically to explain differences in yields of maize in terms of managerial ability. Using the yield of maize as his criterion of productivity, he found that managers with four or more years of schooling generally obtained higher yields than did

¹C. H. Smee, The Role of Education in Agricultural Development in Low-Income Countries, C. H. Smee (S.L.:S.N.) 1966, p. 17-18.

²K. N. Singl, C. S. S. Rao, B. N. Sahay, Research in Extension Education, (India: Indian Society of Extension Education, 1979), p. 384.

managers with less schooling.¹ Another study which shows a positive relationship between schooling and productivity was done by Vanzetti in Zambia from 1972 to 1974. He studied the maize production in two areas of Zambia--Mumbwa and Katete. He found that productivity was positively associated with the education of the cultivator. Here, higher productivity of those with schooling arose primarily from the school's impact on motivation; that is, schooling increased a conscious desire to earn money regularly in order to improve one's standard of living. Because schooling was found to contribute little to farming knowledge per se, however, Vanzetti concluded that once motivated, cultivators could and did obtain relevant farming knowledge from other cultivators or, in the case of new crops, from the extension service.²

The Role of Agricultural Extension in Agricultural Development

The Meaning of Extension

The word "extension" means organized activities for conveying (extending) technical information to farmers and others. The word "extension" also implies that the messages to be communicated are selected by one set of persons and are then conveyed to other sets of persons. The audience is primarily a passive recipient, whose main option is to accept or reject the message.³

¹P. Moock was quoted in John Hanson, "Is the School the Enemy of the Farmers?" (East Lansing: Michigan State University, 1980) p. 64.

²Ibid., p. 66.

³Benedick Stavis, Agricultural Extension for Small Farmers (East Lansing: Michigan State University, 1978), p. 4.

Philosophy and Objectives

The philosophy for extension programs is to help people identify their own problems and opportunities, and then to provide practical, research-based information that will help them overcome these problems and take advantage of their opportunities. Extension work, usually described as non-formal education, is an out-of-school system of education in which adults and young people learn by doing. Extension service is a link between the people and the ever-changing discoveries in the laboratories. To be more specific, it is a "school of experience" without classrooms or prescribed courses of study. Its curriculum is based on the needs of the people it serves. Its students are people in the school of life. Its goal is to help these people attain a more satisfying farm, home, and/or community life.¹

Increasing Agricultural Production

Increasing agricultural production requires that the farmer has access to and has the skill and knowledge to use what science has discovered about soils, plants, animals, and machines. When modern material inputs are produced, distributed among the farmers at reasonable prices, and investment in agriculture becomes profitable, farmers are likely to be willing to use them. However, farmers must learn how to use the new materials and practices. Since most of the farmers in LDCs are illiterate, agricultural extension as non-formal education can play a vital role in teaching modern

¹Jafar Rassi, Extension Education Today (Rezaieh, Iran: College of Agriculture and Animal Husbandry, 1971), p. 86.

methods of agriculture to the farmers. The extension service should serve to stimulate farmer attitudes and aspirations which are conducive to acceptance of technological change. They should also disseminate to farmers the results of production-increasing research. Another function of extension is to provide training and guidance to farmers in decision-making. The mentioned functions of agricultural extension can lead to increased agricultural production. Several studies show that there is a positive correlation between agricultural extension and agricultural production. For example, a team of agricultural experts who traveled to Turkey, Pakistan, and Iran to study the impact of agricultural extension on increasing agricultural production reported that there was a direct correlation between the strength and capabilities of an extension service in a community and the numbers of improved practices being used by farmers in that community. Without exception, the areas showing the greatest adoption of improved practices were those having the strongest and best organized extension programs.¹

Another report indicated that the influence of the extension service on increasing cotton production through the Seyhan Irrigation project in Turkey between 1972 and 1976 was very encouraging.

That report indicated the extension service was introduced in an area which had ample water resources, but low yields. Over the five-year period, while the extension service expanded to cover the 100,000 hectare project area, farmers' net profit from cotton

¹Cento Treaty Organization, Traveling Seminar for Increased Agricultural Production, Regional tour, Cento, April 7 to May 30, 1962, p. 22.

cultivation (the main crop in the project area) steadily rose from about \$25 per hectare to over \$300 per hectare. Cotton yields, which had averaged 1.7 tons per hectare in 1966, reached over 2.8 tons by 1969, and nearly 3 tons by 1971. This was not the achievement of a few farmers alone. In 1966, no farmer in the area had a 3-ton crop, and 75 percent of all farmers had yields less than 2 tons. By 1969, no farmer had a yield of less than 2 tons, and 65 percent had yields above 3 tons. By 1971, 95 percent of the farmers had yields above 3 tons. The extension service stressed cotton, since it was the most important crop in the region. The service covered all crops, however, and good results were reported for wheat and vegetables as well.¹

The impact of new agricultural extension methodology (a training and visiting system) on increasing rice production in the canal area of the state of Rajasthan in India is very considerable. The program was launched in the area in 1975, and as a result, the paddy production increased from 2.49 tons per hectare in 1974 to 4.39 tons per hectare in 1978. Sugarcane production also increased from 40.8 per hectare to 60.5 per hectare and sugar beets from 8 tons per hectare to 30 tons per hectare. The area under cultivation was expanded from 714 hectares in 1975 to 1120 hectares in 1978.² In 1960, the amount of chemical fertilizer used in Hatay (a province in the southern part of Turkey) was 1,500 tons, and in 1966 it

¹Cento Treaty Organization, Cento Seminar on Increasing the Productive Capacity of Small Farmers, Cento, Lahor, 1978, p. 113.

²R. C. Sood, "Effective Agricultural Extension for Rural Development", Indian Farming, New Delhi, Oct/Nov. 1978, V. 28, p. 49.

increased to 45,000 tons. This rise in the usage of chemical fertilizer was reported to be due to agricultural extension activities.¹ In this province, the area planted to cotton increased by 20 percent, while production increased 50 percent during the period from 1960 to 1967.

As reported by province officials, agriculture extension again played an important part, by teaching the farmers the techniques of cotton growing, the use of good quality seeds, and desirable cultivation and irrigation techniques.

Increasing Rural Income

Agricultural extension programs can increase rural income by improving the productivity of small farmers and landless residents in the rural areas. The extension service in the Hatay province in Turkey has helped villagers to improve their way of life, increase their production, and earn more money. A project was conducted by the extension agents in three poor villages in the Hatay province. It started with the participation of 60 farm families in 1962. Later, it included all the villagers. The project continued for three years. The aim of the project was to make use of the leisure time of the villagers, to help them to earn money, and to prevent migration to other places. The first year, villagers were taught how to braid straw in various kinds of braids. In the second year, the women worked on hand and beach bags. The quality of the bags

¹Cento Treaty Organization, Cento Conference on Agricultural Extension, Cento, Ankara, Turkey, 1967, p. 97.

having improved, the third year could see the start of sales. The villagers earned 120,000 Turkish liras from the straw weaving alone in 1966.¹

Improving Rural Living Conditions

The ultimate function of extension is to bring about desired change. Changes are expected to appear in man's mind first before visible changes occur. Changes in his knowledge, changes in his habits and attitudes, and changes in his skills are basic to further change.

Chi-Wen Chang says that the farm women have changed a great deal since home-living improvement extension work was established in Japan. In the beginning, these women were shy and hardly talked at all when they were asked to give their opinions about such things as housing problems or food habits. They either kept quiet or simply said "we don't know. Please tell us." After years of contacts with the home advisors, and because of the group activities, they have been enlightened and became progressive. They often even tell the government officials what they should do to assist in furthering social and economical welfare.²

One case in Iran shows that the homemaking extension agent can play a major role in improving different aspects of the rural families' lives. The case study involves a young girl of 14, name

¹Ibid., p. 98.

²Chi-Wen Chang, Rural Asia Marches Forward (Laguna: University of Philippines, 1969), pp. 205-206.

Fatemeh, who was living in a village in Gilan Province in the north of Iran.¹ Her father had died years before the study, and she lived with her mother and a younger brother in a small, three-room house. This family was poor, and life was not good for them. Fatemeh's mother was working for other people and earned very little. The young boy was seven years old and very eager to go to school, but the family couldn't afford it.

A homemaking agent was assigned to this village and needed two rooms, one for her residence and one for her office. The Kadkhodah (headman) knew that Fatemeh's mother had two extra rooms, though they were not in very good condition. He thought the extra money from the rent would be helpful for Fatemeh's family. Fatemeh and her mother--though very critical of having a stranger in their house--agreed to rent the rooms to the home agent and so earn a little extra money. The rooms needed some repairs. The home agent started to make the necessary changes necessary, which included putting in a window, whitewashing the walls, improving the cooking facilities, decorating the room and providing simple storage for food and other items. All this was very interesting to Fatemeh. She followed the changes with great interest. A great desire to do the same things in her room was obvious. The problem was "money." The family did not have extra money for the kind of changes that the home agent had made in her rooms. This was an unhappy situation, of course.

¹ Cento Treaty Organization, Cento Conference on Agricultural Extension, Cento, Turkey, April 12 to 22, 1967, p. 214.

The home agent organized her youth club and Fatemeh joined it. The sense of belonging that Fatemeh got from the club gave her a lot of satisfaction to start with. From among the different club projects, she joined the sewing project. Living in the same house with the home agent gave Fatemeh an opportunity to work very closely with the agent and learn very quickly. She desired to share her knowledge with others, and later she was assigned as the sewing project leader, which gave her a lot of prestige and self-confidence. Now she sewed well enough to be able to sew for others, but she still needed a sewing machine. She bought this on credit, following the home agent's recommendation.

Fatemeh started to sew for others and used every minute of her spare time for this. She earned more money and used it for improvement in her home, since this was her primary goal. Later she participated in a poultry project and was able to make a small but sanitary poultry house with her new income. This project brought in still more income, as well as extra food for her family. Her mother and brother helped her with her projects, and eventually the brother was able to attend school. This was what the home agent had suggested to Fatemeh and many people in the village too.

Fatemeh married when she was 16. She left the house that had been her home for years in a much better condition, and her mother and brother were in a far better financial situation. She left her sewing machine for her mother, who could sew for others now, hoping she could afford to get another one for herself. The family had a poultry flock, a small dooryard garden, a sanitary toilet, and more important than all of these, a desire for better living. Fatemeh

was still attending the home agent's classes, since she still had much to learn about home management, family feeding, child care, and other subjects in order to be able to provide a happy life for her husband and children, and at the same time keep her social standing as a good village leader.

Thus, we see how the extension service can bring about a great change for the better in an individual's life, a change which then extends to improve the lives of persons in contact with that individual.

Summary

Iran with 18 million population was almost self-sufficient in food production in 1950, but had to import 1500 million dollars of agricultural products in 1974. According to the estimate of the Iranian Government, the 1978 level of production of the ten major agricultural products must almost double in order to meet the required demand in 1993.

In Iran in 1978 there were 2.5 million farm families on 3.68 million hectares of irrigated land and 5.77 million hectares of non-irrigated land. About 400,000 families had less than 0.5 hectares, and about 48% of the farms were less than 10 hectares in size.

Raising the productivity in the rural subsistence sector in Iran is crucial both in terms of human welfare and in terms of facilitating overall economic development.

Iran has several conditions which differ from other countries which are attempting to develop the agricultural sector. These

include: (a) a large national income from the sale of oil; (b) a wide range of topographical, soil, and climate conditions which affect the potential agricultural production; and (c) agricultural experimental stations and other institutions for technological development.

Due to the oil revenue, Iran is in a good position to set up physical, technological, and institutional infrastructures which are essential for agricultural development. In the short-term, Iran can import the required agricultural materials. In the long-run, however, Iran should have a policy to increase the level of agricultural production. Increasing agricultural production requires that the farmer has access to and has the skill and knowledge to use what science has discovered about soils, plants, animals and machines.

When modern material inputs are provided and distributed among the farmers at reasonable prices, and investment in agriculture becomes profitable, farmers are likely to be willing to use them. However, farmers must learn how to use the new materials and practices. The right kind of education can play a vital role in helping the Iranian farmers to increase their agricultural production.

Frequently, education in relationship to agricultural development is described in three broad functional categories: formal education, non-formal education and informal education.

Education and training are the human ingredients of productivity, the source of demand for, and enjoyment of, more equal distribution, and the essential qualification for fuller participation in society.

Agricultural education has been considered as a key factor and integrated part of packaged programs in agricultural development. Agricultural extension as non-formal education is an important type of education. It is an out-of-school system of education in which adults and young people learn by doing. Agricultural extension can play a vital role in increasing agricultural production, increasing the income of the rural people, and improving rural conditions. With regard to agricultural education in primary schools, three different views have been expressed. There are some who advocate teaching agriculture in elementary schools, whereas some disagree and yet others have ideas somewhere in between. As mentioned previously, researchers in these areas say that the interest of the students in agriculture and their environment should be awakened in the rural school. Some of the studies reviewed showed that there is close correlation between agricultural education and agricultural productivity. Agricultural education at the secondary level is a key element in promoting agriculture, particularly in countries where agriculture occupies a dominant place both in the economy and in people's lives. The main function of agricultural education at the secondary level in Iran is to prepare people as agricultural extension workers, animal health assistants, technicians on experimental stations, and as agents engaged in helping farmers and rural people to improve their standards and way of living. Agricultural education facilitates the introduction of techniques that will enable more and more rural workers to increase their output, to work more fully and productively, to increase

their incomes, and hence to lead more decent and dignified lives. In short, agricultural education and agricultural extension can help to build a more dynamic and prosperous rural society for the future which is an essential condition for balanced growth and political stability in Iran. The literature reviewed above provides the background for discussing both how agricultural education and agricultural extension were considered by the Government of Iran during the last quarter century and also what recommendations were advocated with regard to these two subjects.

CHAPTER III

RECOMMENDATIONS FOR AGRICULTURAL EDUCATION, 1956-1978

The purpose of this chapter is to discover, classify, and analyze the recommendations for agricultural education by the Government of Iran from 1956 to 1978. The intent is to present a clear picture of the recommendations for different aspects of agricultural education and agricultural extension during the period under study. The chapter will have two major parts. First, an introduction, through which a brief overview of the five national development plans are presented to give the reader a picture of the objective of economic development during the period under study. Second, the recommendations for agricultural education for each plan are discussed from the point of view of the general guidelines for education, philosophy and objectives of agricultural education, administration, curriculum, teacher education, students, instructional materials and equipment and the budget.

Introduction

Formalized planning has existed in Iran since the end of World War II. Soon after the war, a program for Iran's "reconstruction and development" was presented to the cabinet. It was a general plan for government expenditures. A consortium of foreign consulting

engineers was engaged to develop concrete projects. Those preliminary steps led to the founding early in 1948 of the Plan Organization which was to launch the country's first development plan. Iran's first development plan (1949-1955) was a blueprint for government expenditures for development for a seven-year period, and was imposed upon Iran by the international agency. The plan called for public sector investment expenditures amounting to 21 billion rials (\$656 million) over the seven-year period. The plan was never really implemented, however, owing to two major factors: (1) the lack of skilled administrators in the Plan Organization; and (2) the oil crisis of 1951, which cut off the flow of foreign exchange that had been earmarked for the plan. Serious disruptions in 1951 had followed the nationalization of the oil industry, and because of this, the first plan was abandoned in favor of the second plan, which was to cover the period 1956-1963. The second plan marked the point at which planning in Iran became a reality. The second plan, like the first, was not a comprehensive plan, nor did it have a unified approach. It was simply a list by the Plan Organization of projects to be undertaken and to be funded from the anticipated oil revenues. Plan financing came from the allocation of 80 percent of the oil revenues. The total projected funds were 71 million rials, adjusted upward to 85 one year later. The second plan's expenditures were to be allocated to four major economic sectors: (1) agriculture--irrigation; (2) industry and mining; (3) transportation and communication; and (4) social affairs. Expenditures were to be concentrated rather heavily on roads, dams, and other

types of social overhead capital. The problem of fiscal control and organizational efficiency became increasingly critical during the second plan. That led to the establishment of an Economic Bureau, later the Division of Economic Affairs, in 1958.

A staff of highly competent, young Iranian economists--many newly returned from graduate study abroad--were recruited for the Division. Through a grant from the Ford Foundation to Harvard University, a team of economic advisors drawn from Europe and the U.S.A. was attached to the Division. This group remained on the scene until September 1962. In mid-1959 the Division was assigned formal responsibility for preparing the third five-year plan.

The socio-economic situation at the time of the second plan was still essentially that of a feudal society, and as a result was extremely rigid both in terms of socio-economic mobility and in responding adequately to economic incentives. Perhaps the most effective development strategy under those conditions was the development program that exposed the economy to a number of alien technologies, ideas, and pressures. The initial result of the plan was cultural change through an institution-destroying phase. Once completed, the stage was set for the subsequent development plan.

The second plan has been considered a disaster from an economic point of view, because it was divorced from economic analysis. However, on non-economic grounds, it may have represented the best strategy at the time; that is, it was able to identify correctly Iran's institutions and the extent to which those institutions were incompatible with high levels of sustained

growth on a national or sectoral level.

The third plan, covering the period from 1963 to 1968, has been described as Iran's first effort at comprehensive planning. Its basic components were an investment program for the public sector and some forecasts for the private sector, with primary emphasis on achieving a rate of growth of six percent per annum.

The national development objectives in the third plan were: (1) to achieve a sustained annual growth rate of 6 percent in gross national product while maintaining reasonable price stability; (2) to create an optimum number of employment opportunities; and (3) to promote a more equitable distribution of income. In order to achieve these objectives, the following strategies were considered:

- A. Improvement of institutions, organization and administration.
- B. Raising the rate of domestic saving(s).
- C. Family planning as an important long-run welfare programme.

The cost of the plan was placed at 230 million rials (3.06 billion dollars) for the public sector and 150 billion rials (\$2.0 billions) for the private sector. As in the second plan, four broad sectors received the bulk of funds: (1) agriculture; (2) industry; (3) transportation; and (4) social affairs.

Two important events occurred during the third plan. The first was a substantial increase in oil revenues over the original estimates, which permitted major upward adjustments in the original plan. The final outcome of the adjustment which resulted from the higher revenues was a greater rate of economic growth than expected. The second event was the Shah's reform programs. Because of the effects

that these reforms had, particularly on agriculture, it is necessary to mention them briefly here. These reforms came under the headings of land reform; the nationalization of wood and forests, electoral reform, the political emancipation of women, the sale of government-owned factories to underwrite land reform, the creation of literacy and health corps and worker's profit-sharing plans.

The third development plan was instrumental in establishing the basis for future large-scale economic development, particularly in industry. The fourth plan (March 21, 1968 to March 20, 1973), began to incorporate into planning some of the innovations recommended by the technocrats, and in this sense it was an improvement over the previous plans, in terms of both formulation and implementation. This was evidenced by a greater degree of comprehensiveness, as noted in the following overall objectives: (1) an increase in the rate of economic growth through gradually increasing the relative importance of industry, raising the productivity of capital, and using modern technology of production; (2) a more equitable distribution of income through employment and social welfare policies; (3) a decrease in the dependence on foreign countries for meeting basic requirements and a diversification of exports, and (4) an improvement in administrative services by the introduction of basic changes in the administrative system and the extension of advanced managerial techniques to all ministries and private organizations. The overall growth rate target was set at 9 percent per annum. The plan also included targets for employment whereby the number of jobs was projected to increase by 966,000 during the

period covered by the plan. Iran's foreign exchange reserves were planned to increase by \$600 million. However, when it came to setting targets for price stability and income distribution, no specific figures were given.

In the fourth development plan, five broad sectors were considered for planning: (1) agriculture; (2) industry; (3) oil and gas; (4) water and power; and (5) services. The plan priorities, as inferred from its investment program, favored services, especially social overhead capital, which suggested a shift from directly productive activities that had been given a high priority in the third development plan.

As with the third plan, most of the quantitative objectives were surpassed by the fourth. The actual growth of the GNP was approximately 11.2 percent. In most sectors, except construction and agriculture, the targets were also surpassed. By contrast, the crucial balance-of-payments target was seriously under achieved.

The Fifth Development Plan (1973-1978), which was considered an ambitious development plan, was revised at the beginning due to the major changes which occurred in the international oil market price in 1973. As a result of the increasing price of oil, the fifth plan was not faced with a shortage of financial resources as were the previous plans. The total oil and gas revenues during the fifth plan were expected to be 6,6228,5 billion rials, some twelve times the corresponding figure for the fourth plan period. But this new financial opportunity created new constraints of a different nature, such as shortage of manpower, especially in technical

and specialized fields, and insufficient infrastructural facilities and raw materials--both mineral and agricultural as well as certain natural resources.

These constraints were among the most important criteria used to determine the general principles and basic guidelines for the revision of the fifth development plan. The general objectives of the fifth plan were as follows:

1. To raise the quality of life for all social groups.
2. To maintain rapid, balanced and sustained economic growth, together with minimum price increases.
3. To increase the income of various groups, particularly with an eye to raising living standards among low-income groups.
4. To expand comprehensive social, economic, political and cultural justice, with particular emphasis on the equitable distribution of services among all social classes and groups.
5. To improve the quality and increase the supply of active manpower so as to increase productivity and eliminate developmental bottlenecks.
6. To preserve, rehabilitate and improve the environment, and raise the quality of life, particularly in large centers of population.
7. To develop science and technology and promote creativity and initiative.
8. To establish relative competitiveness in the production and export of industrial goods, at the international level.

9. To utilize foreign exchange reserves to the fullest so as to remedy domestic shortages and check inflationary pressures.
10. To maintain and resuscitate the nation's valuable cultural heritage. During the fifth plan period, the GNP in real terms was expected to increase by 25.9 percent annually. Of the 4,698,80 billion rials of the total fifth plan investment, about 3,118,6 billion rials was to be in the public sector and 1,580,2 billion rials in the private sector.

Recommendations in Plan II, 1956-1963

General Philosophy and Objectives of Education

The second development plan clearly indicated that the basic failure of education in Iran was perceived to be due to pursuing the wrong educational philosophy. The system produced a distinguished intellectual elite and provided an institutional system by which the thoughts and actions of the common people might be effectively manipulated. The educational philosophy, and the technical details of the school system, were largely a copy of the traditional French system--characterized by extreme centralization of administration, authoritarian methodology, theoretical rather than practical studies, stereotypical and overloaded curricula, and a policy of eliminating rather than salvaging students who did not meet the arbitrary and rather artificial standards of academic excellence. In order to eliminate the above-mentioned shortcomings, it was recommended in the plan that "Iran . . . adopt a new educational philosophy which in general rejects the mentioned characteristics and seeks to produce

a trained and responsible leadership, develop free and original research, and promote the growth of a skilled, informed, and self-reliant citizenry."¹

The experts who formulated the plan felt that a decentralized system with an emphasis upon a democratic rather than an authoritarian method and with a much expanded, practical, and relatively elective curriculum offered the greatest hope for basic reform. According to them "the function of the educational system should be to train people to think independently and to act constructively for the welfare of the citizens."²

The basic educational objective of the second seven-year plan was the mobilization of all the resources of the nation, including its manpower skills and potentials for the purpose of developing the national economy and raising the standard of living. It was recommended that the educational expenditures be restricted to the projects which, while meeting the needs of the immediate moment, would also be consistent with a coordinated long-range program to raise the level of national well-being involving the use of all pertinent educational facilities.

The Philosophy and Objectives of Agricultural Education

The objective of rural and agricultural education was to make available to the farmer specific practices which would increase his

¹Plan Organization, The Second Seven-year Development Plan (Tehran, Iran: Plan Organization, 1956), p. 21.

²Ibid., p. 68.

productivity and hence help to raise his standard of living. It was, therefore, recommended that four programs be undertaken by the education section established by the Plan Organization in cooperation with other existing agencies. These programs consisted of the establishment of a four-fold village development program; the inauguration of a traveling educational mission; preparation of rural elementary school teachers competent in practical agriculture; and the improvement of existing higher education institutions which were producing skilled agriculturalists.

At the local level, the plan indicated that "the productivity of a typical Iranian village can be markedly increased through educational means if people are made literate, their health improved, their skills developed, and if they are trained in simple agricultural technology."¹ The experts who formulated the plan, therefore, recommended that a village program be inaugurated to accomplish the cited four-fold program. The local school teacher, usually the best-educated member of the village, was to be the local director of the program, and the school building used to house the project. The plan indicated that 4000 Iranian villages could be clustered into 892 groups, and construction of a single school was feasible in many of these groups. The actual course of instruction was to be determined by careful cooperation between the four agencies which were directly interested (education, industry, public health and agriculture) and was to be modified as the program progressed.

¹Ibid., pp. 140.

There was also a recommendation to attack the problem of illiteracy. Suitable textbooks were to be prepared, and the children in the schools were to be given specific training and encouragement to teach their parents to read.

The agricultural program had to follow the lines laid down by the agricultural extension agent for that region. Agricultural programs included a school demonstration garden or farm, training in the use of proper seeds, practice in simple preventive measures for control of plant and animal diseases, upgrading of poultry, improved techniques for tilling the soil, and demonstration of desirable practices in farm and irrigation construction. The education section established by the Plan Organization was to supply the technical supervision of the project and cover the initial cost of training the village school teachers who were to conduct the program. Other funds were to be paid by the related ministries.

Administration

There was a recommendation in the plan that agricultural training be made a responsibility of the Ministry of Agriculture instead of the Ministry of Education. According to the plan, this was the case in most countries with effective systems of agricultural training. The plan recommended establishing thirteen secondary agricultural schools in thirteen different provinces in Iran. A great need for such intermediate training in agriculture was recognized in the plan. However, the educators believed that it was unwise at that time to make definite recommendations regarding additional secondary agricultural schools. They stated their general ideas about these

schools as follows: "Eventually there should be a training program for rural youth which will tend to keep them on the land and make them better farmers."¹

At the beginning and during the early years of the plan, there were no trained personnel available to conduct such a program. If and when it was initiated, it was to be integrated closely with the program for general education. The plan organizers recommended, therefore, that the problem be referred to the Dean of the Agricultural College in the University of Tehran for study in cooperation with the Ministry of Education.

Curriculum

In terms of curriculum in the secondary agricultural schools, the recommendation was brief and broad: "The adoption of a democratic, free and decentralized system with a broad and diversified curriculum."² Curriculum in the rural teacher training schools was mentioned a little more in detail. The recommendation was that the curriculum should be broad and be designed specifically for the village development program. One half of the student's time in these schools should be devoted to agricultural and public health studies with emphasis upon practical field work. The College of Agriculture, which was the only college of agriculture in the country, was given responsibility for training teachers for the secondary agricultural schools and the rural teacher training schools.

¹Ibid., pp. 74

²Ibid., pp. 23.

The curriculum for the prospective teachers in the College of Agriculture consisted of courses in a general field of specialization such as agriculture, rural sociology, and curriculum construction, as determined by the Selection Board.¹ The students would not be permitted to take any totally unrelated subject merely because of personal interest or the possibility of getting a degree in the college. It is remarkable that nothing was recommended concerning curriculum in relation to local geographical, environmental, social, physical and economic conditions.

Instructional Material and Equipment

There was only one general statement in the plan about the preparation of suitable textbooks for rural teacher training schools, and no recommendation was given in terms of the required facilities, equipment and land.

Students

The plan clearly stated ten teacher training schools should be established; the size of each was set at approximately 160 students. This assured an annual production of approximately 700 rural students. Students who had finished the first cycle of high school, preferably from rural areas, were to be accepted for the existing agricultural high schools through an entrance examination.

¹The Selection Board was not described in the plan. It may have referred to a body of persons at the National level who would exercise a policy control over the curriculum in the College of Agriculture. However, it may have been a governance group within the College.

Teacher Education

In the second development plan, attention was paid to the training of teachers for rural schools. A rural teacher training school program was established in each of the ten ostan (province) to train teachers for the rural schools where agriculture was a prominent part of the study program. These schools offered a two-year course and accepted students who were residents of the rural areas, had completed the first cycle of the secondary school, and had indicated a willingness to go to the village for a period of not less than five years to teach in rural elementary schools. Incentives which would attract students to these schools were offered as follows: "Incentives should be offered to attract the best possible talent, possibly in the form of double pay and double tenure right during the period of village teaching, provision of suitable housing while in the village, and of the payment of a small stipend beyond the normal grant of free board and room while studying at the teacher training school."¹

According to the plan, students were to be recruited from small towns and villages, and preference was to be given to young men of character who had demonstrated practical ability in agriculture. The responsibility of training teachers for these schools and the secondary agriculture schools was given to the College of Agriculture.

One of the options given students during their fourth year at the college was that of spending one year, with the privilege of a

¹Ibid., pp. 142.

second at full pay, as an instructor in practical agriculture at a rural teacher training school. Such an option was expected to be attractive to the university agricultural students since it assured a paid position for them. According to the plan, the directors of the rural training schools would be trained agriculturalists, and the head of each teaching department involving agriculture would be a graduate from the College of Agriculture. Each student who was in the above mentioned optional program was to be paid 30,000 rials (\$400) per year, and the number of these students was to be 30 each year.

Budget

The plan devoted 400 million rials (\$53 million) to rural and agricultural education.

Recommendations in Plan III, 1963-1968

The Philosophy and Objectives of Education

The Government of Iran viewed education as one of the most powerful aids in achieving national goals. An educated populace would provide opportunities for progress, both material and spiritual, which were not open to the uneducated. The aim of the Iranian education system during this plan was the development of the full potentialities of the individual through knowledge and training. The ultimate objective was the education of all citizens in preparation for a better life. The intention of the government, to be achieved as rapidly as human and physical resources allowed, was that no lack

of personal means, no remoteness of location, and no physical handicap would prevent any child from obtaining all the education from which he, or the nation through him, could benefit. Every young Iranian with the ability to learn and the willingness to work was entitled to a full education; this was a right.

During the third plan, the first priority was given to the continued expansion of primary education.¹ The eventual aim was to bring all the nation's children to school, and by the end of the third plan period 60 percent of the children in the age group 7-13 were to be attending primary school. The expansion of secondary education was considered a lower priority. Instead, a higher priority was given to the expansion of a system of vocational education at the secondary level. The second major priority was given to teacher training and retraining.

In the third development plan, agricultural education was defined as a special form of vocational training. The plan indicated that the schools should emphasize agriculture at all levels. There should be no special agricultural schools at the primary level, simply an orientation of the curriculum towards the interests of the rural areas.

Philosophy and Objectives of Agricultural Education

The philosophy and objectives of rural education and training programs in the third plan were as follows:

¹Plan Organization, Education in the Third Development Plan (Tehran, Iran: Bureau of Information and Report, 1969), p. 19.

1. To provide rural youth with a basic education oriented toward a rural environment.
2. To provide technical agricultural training at various levels to some portions of the younger members of the agricultural work force.
3. To provide training for high level agriculturalists as indicated by national needs.
4. To enable agricultural training institutions to conduct research and offer guidance in local agricultural undertakings.

Administration

The system of agricultural education comprised a vocational agriculture program in the second cycle of the secondary level of the 6-3-3 structure. Teacher training schools and the second cycle high schools attached to them constituted agricultural training centers. Teachers for rural primary and first cycle secondary schools were trained at these centers. Agricultural training centers were operated under the Ministry of Education.

When the literacy corps was formed in the second year of the third plan, rural teacher training programs were discontinued at these centers, and one of the outstanding agricultural education programs was discontinued.

During the second half of the third plan, in 1967, the administration of the agricultural training centers was transferred from the Ministry of Education to the Ministry of Agriculture. The agricultural training centers operated by the Ministry of Agriculture

were then charged with the training of agricultural technicians to be employed by the Ministry. Sons of farmers were given priority in these centers and were gradually provided with scholarships of free board and lodging. The secondary agricultural high schools under the Ministry of Education, later named Rural Vocational Schools, were designed to train personnel engaged in activities supporting agriculture, such as farm machinery maintenance, food processing, and rural trades.

The establishment of five more rural vocational schools was recommended during the third plan. Also, it was recommended that the thirteen existing agricultural training centers be improved and five more second cycle secondary schools attached to them be established.

The third plan also recommended that a special school for training foresters be established. That school was to offer one-year courses for 30 students. Candidates normally were expected to possess tenth grade certification. Training was also provided for a minimum of 90 forest guards each year. The training program for forestry was organized and administered by the Forestry and Range organization with the cooperation of the Ministry of Education and the College of Agriculture.¹

From the standpoint of adult agricultural education, short courses and conferences for agricultural land owners and village

¹Plan Organization, Manpower in Third Plan Farms (Tehran, Iran: Division of Economic Affairs, 1961), p. 36.

leaders were to be held annually. Such activities occurred in Tehran and the provinces in cooperation with the College of Agriculture, under the auspices of the Ministry of Agriculture, in fulfillment of the following main purposes.

- a. To discuss problems of village level government workers.
- b. To provide information on new techniques in agriculture.
- c. To acquaint them with the agricultural policy of the government and with opportunities for the improvement of villages.

Curriculum

There is a clear statement in the third plan that primary and first cycle secondary schools in rural areas should not attempt to provide agricultural training. Instead, they were to offer a modified academic curriculum designed to familiarize students with special features of rural life and to cultivate in them an interest and appreciation of village life and farming.¹ Teachers for these schools would receive special training in rural sociology and basic agriculture. In the third plan, the second cycle secondary schools attached to the agricultural training centers continued to train agricultural technicians. It was recommended that these schools teach courses such as farm mechanics, farm management, cooperative management, animal husbandry, and horticulture.² It was advised that the agricultural training centers be located in a government owned village whenever possible. These villages had to be formed

¹Ibid., pp. 34.

²Ibid., pp. 35.

with the help of the students, thus providing practical training for them as well as a source of income to the schools. Courses such as rural sociology were recommended to be added to the curriculum as required for the training of extension agents or others in the agricultural training centers.

Instructional Materials, Facilities and Equipment

Nothing in the way of instructional materials, facilities, buildings and land was recommended. The plan did emphasize, however, that whenever possible the agricultural training centers should be established in a government owned village. This village was to be formed with the help of the students, as mentioned above.

Students

Five hundred rural primary teachers were to be graduated from the 13 agricultural training centers each year. In the secondary cycle agricultural schools, 330 regular students were studying at the beginning of the third plan.¹ In addition, 350 extension agents were receiving training in these centers in 1961.

Teacher Education

It was recommended that 30 students in the College of Agriculture be trained each year as prospective teachers for agricultural training centers and their attached second cycle agricultural schools. According to the recommendation, the National Teachers' College had to cooperate in providing such training.

¹Ibid., pp. 33.

Budget

A total budget of 887,525,000 rials was allocated to the agricultural training centers and secondary cycle agricultural schools during the third plan.

Recommendations in Plan IV, 1968-1973

Philosophy and Objectives of Education

The general objectives of the fourth education plan were to develop education rapidly while maintaining a better balance and relationship between different kinds and levels of education, to improve the quality of education, and to establish greater compatibility and consistency between the country's educational system and the diversified and increasing manpower requirements of different productive, social and cultural sectors. On this basis, a new system of education was envisaged by the fourth plan.

This new system involved a major change in the structure of education in Iran, in which the school cycle, instead of comprising two six-year periods of primary and secondary education, was divided into three periods consisting of a five-year primary period, a three-year academic guidance period, and a four-year secondary period. The new system was oriented towards structural change as well as changes in the bases, principles and objectives of education. The basic objective under the new system was to prepare individuals for participation in different fields of productive and economic development by recognizing and respecting their inherent talents.¹

¹ Plan Organization, The Fourth National Development Plan (Tehran Iran: Plan Organization, 1968), p. 265.

Additional objectives were to develop students for their role in the new society and for active and effective participation in modern political life; to enable them to make proper use of their social rights; to attain the capacity and competence necessary for membership in a free and progressive society; to stimulate their interest in the culture and civilization of Iran while strengthening them mentally, intellectually and physically; and to elevate their aspirations and give them moral and intellectual balance as well as to cultivate the belief in a creative and positive social philosophy.

Considering the intensive emphasis of the fourth plan on industrial development, technical and vocational training was given a high priority during the plan period. It was thus necessary to direct a great number of students to the technical and vocational fields required. Because of this, the target of long-term training in industrial, agricultural, technical and vocational schools was the increase of the number of students from 17,000 at the end of the third plan period to 50,000 at the end of the fourth plan period.¹

Philosophy and Objectives of Agricultural Education

The major objective of technical and vocational training in agriculture was to provide the specialized manpower required for agricultural production and agricultural services within the sphere of operations of the public and private sector. This objective was realized at different levels as follows:

- a. At the technical training level, the objective was to train agricultural technicians.

¹Ibid., pp. 268.

- b. At the vocational training level, the objective was to train farmers. (The objective of agricultural education at the state and local level was not mentioned in the fourth plan.)

Administration

In the fourth plan, decentralization of the administration of the Ministry of Education was recommended, and many steps to be taken to this end were mentioned. For the first time, a plan recommended the encouragement of the local population to participate in the administration and supervision of educational affairs by means of educational councils at provincial and rural district level, to further this administrative policy and in order to encourage the local population to participate in educational affairs. It was suggested that the administration of all agricultural training centers be placed under a Board of Trustees in which the representatives of the agricultural private sector participated.¹ In order to ensure coordination among training units and the maximum utilization of the resources of all units and departments of the Ministry of Agriculture and regional development organizations, a council was formed within the Ministry of Agriculture. This council was under the chairmanship of the Minister of Agriculture or the deputy minister, and had as members the directors of the regional development organizations. The technical secretariat of the council, to be called the Agricultural Training Organization, was also responsible for the administrative, technical, and financial affairs of the agricultural

¹Ibid., pp. 276.

training centers. As in the third plan, the administration of rural industrial schools remained under the Ministry of Education.

Curriculum

Agricultural training was considered as an essential factor in achieving the agricultural targets set by the fourth plan. According to the plan, the correct utilization of investments in the various agricultural fields depended upon training a large number of agricultural workers, technical foremen, technicians, and agricultural engineers and also increasing the level of knowledge of responsible personnel who worked in the field. For this purpose, it was recommended that the programs of training centers and agricultural colleges be arranged so that they both met the technical needs of the country in the agricultural sector and also trained a sufficient number of technicians. In order to achieve this objective, the Ministry of Agriculture was given the responsibility to train technicians in various fields rather than teaching traditional and non-applied subjects to secondary school graduates. Furthermore, training livestock foremen, orchardmen, skilled farmers, row planters, repair workers, deep well technicians, and mechanics and assistant mechanics for farm machinery was also recommended. The establishment of special courses to teach modern methods of agriculture, animal husbandry and livestock vaccination to the children of farmers and tribesmen was recommended as well.

Instructional Materials and Equipment

The preparation and publication of textbooks in Persian covering all fields of vocational and technical training for theoretical

and practical purposes was recommended.

Students

The number of industrial and agricultural technicians required by the fourth plan was estimated at 18,490. The plan for training specialized personnel required by the plan was stated as follows:

"Training of all agricultural technicians required in both the private and public sector (about 6030 personnel in all). Training of about 70,000 farmers, who will in turn train about 220,000 farmers."¹ Based on the estimation of supply and demand of manpower in fourth plan, there was no shortage of trained manpower in the agricultural sector when compared to the industrial and service sectors.

Teacher Education

Unlike the previous plan, there is no clear statement in the fourth plan regarding the required number of teachers for rural industrial schools and agricultural training centers. However, the plan recommended close cooperation among agricultural colleges and higher teacher training centers in order to train teachers for specialized agricultural courses. There was also a recommendation for increasing the salaries of teaching staff and technical personnel. The plan indicated that the average earnings of teaching personnel at agricultural training centers was not to be less than those of similar personnel in other training centers.²

¹Ibid., pp. 268.

²Ibid., pp. 276.

Budget

From the 35 billion rials allocated to education during the fourth plan, 4176 million rials was to be spent for technical and vocational training including agricultural education.

Recommendations in Plan V, 1973-1978

Philosophy and Objectives of Education

The educational program of the fifth plan was based on the assumption that the educational system should be capable of responding to Iran's growing needs for manpower training and preparation of qualified scientists and technologists. Also, education was considered as a means for mobilizing the nation for progress and independence. The instillation of a spirit of discipline, social cooperation, and national pride among young people was another objective of education in the plan. The short-term objective of educational development was to quickly supply manpower requirements of the industrial, agricultural, and service sectors.¹

Philosophy and Objectives of Agricultural Education

The philosophy and objectives of agricultural education were not mentioned separately in the fifth plan. In the case of technical and vocational education, including agricultural education, however, the major objective was stated as follows: "to expand the capacity of schools and educational centers at such a pace that by the end of the sixth plan equilibrium will have been created between the

¹Plan Organization, Iran's Fifth Development Plan, Government of Iran (Tehran: Plan Organization, 1975), p. 200.

supply and demand of technical and vocational skills and specializations."¹ To this end, it was envisaged that 500 new technical and vocational units would be established to train people at various levels in industrial, agricultural, and service fields. As a result of this increased capacity, 72,000 grade-one technicians (those with more than a high school level education), 132,000 grade-two technicians (high school diploma level), and 650,000 skilled and semi-skilled workers were to be trained in industrial, agricultural, and service fields.² The objectives of agricultural education at the state and local level were not discussed.

Administration

In spite of recommendations in the previous plans for the decentralization of the educational system, the administration of education still remained centralized during the fifth plan. Agricultural training centers were under the Ministry of Agriculture and the secondary rural vocational schools under the Ministry of Education. In order to speed up technical and vocation education in these schools, the establishment of a Board of Trustees in each school was recommended.

In order to utilize the existing educational facilities in the proper way and to increase the educational capacities of the agricultural training centers, the establishment within the Ministry of Agriculture of a unit named Agricultural Education was recommended.

¹Ibid., pp. 204.

²Ibid., pp. 204.

Curriculum

Flexibility in the curriculum construction of vocational and technical schools was recommended.¹ It was recommended that practical and theoretical aspects of the subjects be taught in such a way so as to prepare the graduates of the vocational and technical schools for both the world of work and for continuing their higher education. Teaching the principles of cooperatives, including management and accounting courses, was strongly recommended to be included in the curriculum of agricultural training centers.²

Instructional Materials, Facilities, and Equipment

Utilization of modern technology in education was recommended in the fifth plan. A center was to be established in order to discover the proper ways of using modern technology in educational programs. The center would be in close cooperation with the national radio and T.V. organization, the center for printing educational books, and the teacher training center. There was no statement in the fifth plan regarding the instructional materials and equipment required for agricultural education.

Students

At the end of the fourth development plan, there were nine agricultural training centers with a combined capacity of 1350 students and fifteen rural vocational schools with a combined capacity of 3500 students. In the fifth plan, the establishment of seven

¹ Plan and Budget Organization, Barnamai Panjom Omrani Kashvar Fifth National Development Plan (Tehran, Iran: Plan Organization, 1973), p. 649.

² Ibid., p. 217.

additional agricultural training centers and fourteen rural vocational schools was recommended. Thus at the end of the fifth plan there were to be 16 agricultural training centers with a combined capacity of 6400 students and 29 rural vocational schools with a total capacity of 12,000 students. Students who finished their first cycle of secondary school (end of guidance period, grade 8) and showed a high aptitude for vocational subjects would be admitted into the agricultural training centers. The sons of farmers living in rural areas were to be given priority in admission. During the fifth plan period, 2500 students were to be graduated from the agricultural training centers.¹ According to the fifth plan, the total number of graduates from vocational schools at the diploma level was to be 132,000.

Teacher Education

In order to train the teachers required for the agricultural training centers and the rural vocational schools, the establishment of a higher educational unit was recommended. The educational programs of this unit were to be based on two years of studying, then 3 to 5 years of teaching in the related areas, followed by two more years of simultaneous studying and teaching. The graduates were to receive the bachelor's degree and were to be employed as regular teachers. But before the establishment of this unit, the required teachers for the agricultural training centers and the rural vocational schools were to be from among the university graduates in agriculture, their preparation involving a short-term pre-service training course provided by the universities.

¹Ibid., p. 652.

Budget

Of the total 128.5 billion rials of public investment for education in the fifth plan, 22.7 billion rials was devoted to vocational and technical education, including agricultural education.¹

¹Ibid., p. 687.

Summary of Recommendations for Agricultural Education from 1956-1975

Plan Period	Philosophy & Objectives of Education	Philosophy & Objectives of Ag. Education	Administration	Curriculum	Instructional Material	Teacher Education	Students	Budget
1956-1963 Plan II	To produce trained & responsible leadership, to develop free and original research, to promote the growth of a skilled, informed and self-reliant citizenry. Education should train people to think independently and to act constructively for the welfare of the citizen	To make available to the farmer specific practices which would increase his productivity and hence help to raise his standard of living.	Agricultural training should be responsibility of the Ministry of Agriculture instead of the Ministry of Education. Establishing 13 secondary agricultural schools in 13 provinces and 10 rural teaching training schools was recommended.	Broad and diversified for agricultural high schools. For rural teacher training program, 1/2 of the time was to be devoted to agriculture and public health with emphasis upon practical field work.	Preparation. Suitable textbooks for rural teacher training schools.	College of Agriculture was given responsibility for training teachers. 30 students were to be trained each year as teachers. Such students were to be paid \$400 in the fourth year of studying in the college.	Students who had finished the first cycle of high school, preferably from rural areas, were to be accepted for agricultural high schools through an entrance examination.	400 million rials for rural and agricultural education.
1963-1968 Plan III	Education was considered as a most powerful aid in achieving national goals. The ultimate objective was the education of all citizens in preparation for a better life. Every young Iranian with the ability to learn and the willingness to work was entitled to a full education; this was a right for them	To provide rural youth with a basic education oriented toward a rural environment, to provide technical agricultural training at various levels, to provide training for high level agriculturalists to enable agricultural training institutions to conduct research & offer guidance.	Rural teacher training programs were discontinued. Administration of agricultural training centers was transferred to the Ministry of Agriculture. The secondary agricultural high schools, later named rural vocational schools, were administered under the Ministry of Education.	Agricultural training centers offer courses such as farm mechanics, farm management, cooperative management, animal husbandry, and horticulture.	Nothing was mentioned in this regard.	30 students in the College of Agriculture be trained each year as prospective teachers for agricultural training centers.	Sons of the farmers were given priority in these centers & were to be given scholarships. 330 students were studying in these centers at the beginning of the plan. 500 rural primary teachers graduate each year during the years covered by the plan.	A total budget of 887,525,000 was allocated to the agricultural cultural centers & rural vocational schools.

Discussion

The educational system of Iran in spite of small changes and improvements, is still a copy of European model. In this model, primary school is designed to lead to secondary school, which leads to the university. Almost all of the Iranian rural youth who finish primary school leave the villages in order to continue their education or to find jobs in the cities. Rural schools, in the view of villagers, are the government institutes through which their children can escape from the traditional subsistence farming, drudgery and misery.

Vocational schools also provide a minimum of technical education which is closer to reality. The proportion of students in vocational education including agricultural education is very low in Iran. The graduates from the agricultural high schools want to become officials and desire higher levels of education to obtain a higher grade more rapidly. The Extension Agent wants to be a senior agricultural assistant, who in turn wants to be an agronomist. All of them desire to have a white-collar job in the Ministry of Agriculture or in the other related government departments. Some of the agricultural graduates are absorbed in the non-agricultural sectors. The result is that the agricultural sector suffers from the lack of skillful and trained manpower who could serve agriculture directly. The reason is that employment in the agricultural sector usually provides a lower level of salary than in other sectors; the rural villages and towns are viewed as less desirable for raising a family; and finally, the career advancement and

professional development opportunity are seen as more limited than for persons employed in other sectors.

The use of formal schooling as a means for improving agriculture in Iran was accompanied by some new units in the national government. It also required the development of a new class of professional workers, the teachers of agriculture and teacher educators in agricultural education. Both of these two developments were implemented rather slowly and required the adoption of new policies and practices. During the period under study it appears that these new developments were seen more as extensions of existing policy than as necessitating policies to support new institutions.

The concept of teaching students to perform various tasks in agriculture, such as planting, selecting seeds, fertilizing and controlling diseases, was quite new. The older purposes of schooling, to teach about something, were difficult to change. Consequently, much of the instruction in the agricultural schools was about agriculture and only some instruction was carried to the doing level.

The Government of Iran implemented a land reform program at the beginning of the third development plan in 1961-63. It was a positive step to help small farmers to increase their agricultural production. In the fourth and fifth national plans, the government policy which supported the small farmers, was shifted to support large holding and commercial farming. Many agro-business companies and farm corporations were established by the government during these two plans. The policy of "bigger is better" was pursued and the government tried to provide new technology primarily for these

corporations. The result of this policy was that only small part of agricultural sector became mechanized and commercialized and the rest of the sector remained stagnant and undeveloped.

The government policy, especially during the fourth and fifth national plan (1968-1978), was also to promote industrialization and urbanization as rapidly as possible.

Data in Table 2 show that the amount of plan funds to be invested in Agriculture and Irrigation, Industry and Mining, and Education increased with each plan. However, two major trends may be noted. The proportion of the total public investment funds in each plan dedicated to the three named sectors decreased from 100 percent in Plan I to 18.7 percent in Plan V. In Plan V much of the money for the public investment was designated for military and investment in corporations in other countries.

The second trend related to the shift in proportion of money allocated to each of the three sectors: Agriculture and Irrigation, Industry and Mining, and Education. The planned investments in Industry and Mining were less than in Agriculture and Irrigation in Plans I, II and III. In Plan V, Agriculture received 5.6 percent of the total public investment, while Industry and Mining received 8.8 percent.

The Educational sector received the largest proportion of the money in Plan I. Thereafter, it received a smaller proportion until in Plan V it received only 4 percent of the total budget.

Considering the failure of the agricultural sector to keep up with the overall economic growth of the country, and the importance of education in increasing the supply of skilled labor, it

seems that even in the fifth plan not enough attention was paid to these two sectors with respect to the allocation of funds. The Iranian Government, through its expenditure, has largely stressed investment in military, infrastructure and industrial development, neglecting (or at least being very unsuccessful in) the two areas of agriculture and the training of skilled manpower for agriculture.

The sectoral contribution of agriculture to the gross domestic product decreased from 31.4 percent at the end of Plan I in 1956 to 8.00 percent at the end of Plan V in 1978. The contribution of oil and industry to the gross domestic product has increased drastically during the above mentioned period, as shown in Table 3.

Table 2. Public Sectoral Investment in Billion Rials

Plan Period	Total Public Investment	Agriculture & Immigration		Industry & Mining		Education	
		Amount	% of Total	Amount	% of Total	Amount	% of Total
Plan I 1949-56	21	5.25	25	2.94	14	12.81	61 ¹
Plan II 1956-63	75	35	46.4	12	16	13	17.3
Plan III 1963-68	230	49	21.3	28.6	12.6	18.1	7.8
Plan IV 1968-73	480	65	13.3	125.3	26.1	35	7.3
Plan V 1973-78	3,118.6	176.86	5.6	277.14 ²	8.8	127.77	4.00

¹Infrastructure and social development included education.

²Excluded mining.

The above mentioned facts show that the traditional system of agriculture is still prevailing in most parts of Iran. It goes without saying that the traditional agricultural system has no place for educated people.

More than training is necessary for development; those who have been trained must be able to find a suitable place in the socio-economic structure of the country.

As F. H. Harbison wrote: In this age of rising aspirations and spreading mass communication, the sons of farmers are not going to sentence themselves to traditional agriculture if they can possibly avoid it. The sons of the Iranian farmers are no exception. The modernization of agriculture and rural life is essential to the further development of Iran and better utilization of the newly trained agriculturalists.

Table 3. Sectoral Contribution to the Gross Domestic Product in Iran.

Sector	% of Gross Domestic Product				
	End of Plan I 1956	End of Plan II 1963	End of Plan III 1968	End of Plan IV 1973	End of Plan V 1978
Agriculture & Animal Husbandry	31.4	25.4	24.5	18.5	8.00
Oil	17.2	20.9	13.8	19.5	48.7
Industry & Mining	13.6	14.5	21.3	22.00	16.1
Service	37.8	39.2	40.4	40	27.2
Total GDP in Billions of Rials	278.2	353.6	523.8	1,111	3,514

CHAPTER IV

RECOMMENDATIONS FOR AGRICULTURAL EXTENSION 1956-1978

The purpose of this chapter is to discover, classify, and analyze the recommendations for agricultural extension by the Government of Iran from 1950 to 1975. The intent is to present a clear picture of different aspects of agricultural extension during the period under the study. The chapter will have the following parts: First, the introduction through which a brief discussion of three different models of agricultural extension will be presented. Second, the recommendations for agricultural extension for each plan will be discussed under the headings of: general objective of agricultural development, philosophy and objectives of extension, extension agent preparation, method of teaching, role of the extension agent, extension administration, and budget. A brief overview for this material will be presented in a table.

Introduction

The approaches taken to agricultural extension in LDCs have often been described as either the colonial extension model or the conventional extension model. A third model, called the dialogical extension model, has more recently been developed.

Perhaps Great Britain was the first colonial power which used extension as a means for increasing agricultural production. India

was their country for the development. The British had two main objectives in mind: First, by increasing production, they could bring about prosperity and happiness for the populace and as a consequence, political stability for their colonies, especially India. Secondly, they could export cash crops produced in India and make a profit. They tried to increase production in two ways: First, through the demonstration of better farming by agronomists and second, through the mobilization of peasants by deputy commissioners. It was assumed that villagers would obediently do whatever the officers asked them to do. The agronomists taught them to use cow dung for manure, not fuel, to plough deeper, to sow good seed, and to weed better.

In other colonies, before World War II, the primary attention of agricultural research was devoted to major crops such as rubber in Malaysia, sugar in the Philippines, coffee in Kenya, palm oil in Nigeria, coffee in Brazil, and bananas in Honduras. Staple food crops were either ignored or received scant attention.¹

All these crops on which attention was focused and resources expended were the crops needed in industrial Europe and which provided much needed funds for the support of colonial administrations and local development. The colonial governments generally concentrated their extension effort on introducing and expanding production of one or more export crops in particularly favorable regions. Extension services provided the package of practices to be followed

¹Barima K. Twan, Development of Agricultural Education, University of Ghana, 1977, p. 17.



while coordinated services supplied the necessary physical inputs and marketing services, usually through marketing boards or private companies. The methods used in extension under the colonial system took the form of directives to which the farmers submitted rather than accepting them of their own free will.¹ The farmers had to plant specific land with specific crops, to follow prescribed cultivation practices and time schedules and to sell their products only to designated organizations at designated prices.

After the World War II, the American government and international agencies accepted the principles and methods of colonial rural reconstruction and extension. In the early 1950s, two major rural programs sponsored by the Americans and exported to the LDCs, including Iran, were community development, to serve as a means for social reform, and agricultural extension, to serve as a means for promoting agricultural progress.²

The main objective of the agricultural extension program in Iran was to persuade and help farmers increase production by adopting improved technical practices. It sought to improve rural family life by teaching home economics to women, and to create modern young farmers through youth clubs of the 4-H type. The technical messages were usually relayed to local agents from experts at higher echelons in the form of recommended practices to be

¹ Philip H. Coombs, Attacking Rural Poverty: How Non-Formal Education Can Help (Baltimore: Johns Hopkins University Press, 1977), p. 17.

² Hamed Khan, Ten Decades of Rural Development - Lesson from India, Michigan State University, 1977, p. 16.

disseminated to farmers through demonstration and individual consultations. In this model, the primary target group, in principle, included all farmers, their wives, and adolescent children. However, priority was often given to particular classes of farmers, notably the larger and more progressive ones, or those in selected geographical areas or those growing particular crops.

With respect to the shortcomings of the conventional extension model and based on the new concept of development which focuses on basic human needs and liberation, instead of focusing on growth and modernization, a number of authors have suggested the need to change the model.¹ If agricultural extension is to contribute to the development of the large majority of the poor and subsistence farmers in LDCs, it needs to adopt a different strategy and a new relevant and authentic model. This new extension model has been called the dialogical model. The concept of dialogue or the idea of an open two-way communication was first discussed by Paul Freir.² Basically, dialogue is the horizontal sharing of ideas between teachers/learners and learners/teachers in a process of reflecting and acting on the world in order to understand it and change it. The model assumes that both the farmer and the extension agent know something about the subject of interest. Although one may have

¹George Axinn, Non-Formal Education and Rural Development. Michigan State University 1976, p. 40. Lima Lele, The Design of Rural Development (Johns Hopkins University Press, 1975), p. 62. Benedict Stavis, Agricultural Research and Extension in China, World Development Vol. 6, pp. 631-645, May 1978.

²Paul Freir, Pedagogy of the Oppressed (New York: The Seabury Press, 1970), p. 79.

more knowledge or knowledge which is better in the sense that it more critically reflects the situation, this does not make one superior to the other. Finally, a dialogical extension model implies that to some extent the extension model for each country should be unique. The basic concepts mentioned above should be shared, but the model should have flexibility and adaptability to the local situation.

As mentioned, the dialogical extension model is based on the idea of open two-way communication. It should be pointed out here that in the conventional model of extension the need for a two-way flow of ideas between the agent and the farmers has been emphasized. The problem is that this idea has rarely been put into practice at least in the way suggested by Paul Freir. In the LDCs there has always been a top-down approach to development which implied a one-way role for communication. The dialogical extension model is a relatively new, theoretical model and, in spite of its various mentioned advantages, has not been adopted in any specific country. Some aspects of the model appear to be based on idealism which needs to be tested in real situations.

The conventional extension model still dominates in most LDCs including Iran. In 1953, this model was introduced to Iran through the U.S. Point IV program. The Agricultural Extension Service has been expanded quantitatively and qualitatively over the last quarter of the century. The Government of Iran has included agricultural extension in each of the last five national development plans as one means of increasing agricultural production. The purpose of

this chapter is to discover, classify, and analyze the recommendations for different aspects of agricultural extension by the Government of Iran from 1953 to 1975.

Recommendations in Plan II, 1956-1963

Philosophy and Objectives of Agricultural Development

The agricultural section of the Plan Organization stated the aims of the plan for agriculture in words which may be summarized as follows:

1. To increase the production of foodstuffs for the population.
2. To produce necessary raw materials for domestic industries.
3. To increase the export of agricultural products.

Philosophy and Objectives of Agricultural Extension

The philosophy of the extension service in the second plan was stated briefly as follows: "Agricultural extension service should serve to bring directly to rural people the information discovered and assembled at the various institutes and sub-institutes."¹

Extension Administration

In 1953, the organization of extension was established under the Ministry of Agriculture. It had three divisions: Agriculture Extension, Home Economics, and Youth Activity. In the second development plan, the establishment of an agricultural research and

¹Plan Organization, The Second Seven-year Development Plan (Tehran, Iran: Plan Organization, 1956), p. 71.

extension institute was recommended. The philosophy behind the establishment of this institute was to overcome a major problem; the lack of scientific information and knowledge about soils, crops, livestock, machinery, farm management, and marketing. An advisory committee consisting of three members was suggested to run the institute. One member was to be appointed by the Ministry of Agriculture, and one by the directors of the Plan Organization. The third was to be a foreign advisor appointed by the director of the institute. The advisor had to coordinate the activities of the Ministry of Agriculture and the Plan Organization. The director of the institute would have two principal assistants, one in charge of research, and one in charge of extension. These men would have enough specialists under their supervision in the central office to direct the respective fields of work in various ostan (province).

The creation of four main departments--Animal Science, Plant Science, Agricultural Economics, and Agricultural Engineering and Irrigation--was suggested for research and extension activities. In addition to the institute conducting a nationwide program of research in the various phases of agriculture, the extension agents would play an important part in determining the type of research work needed. They were to keep the Ministry of Agriculture informed (through the associate director of extension) as to the need for special programs to combat insects, control disease, or cope with famine. The extension specialists at the institute and the specialists at the ostan stations were to cooperate to keep the work of the extension agents properly coordinated. The extension

agents would keep the central organization advised of any special problems requiring emergency measures. Finally, the plan recommended that there be an overall organization extending from the national level through the ostan to the shahristans. Only through such a complete setup could improvement programs in plant and animal management, soil and water conservation, and rural living be taken to the individual farm level.

The second development plan recommended establishing a minimum of four major ostan research and extension stations; eventually one research and extension station would be established in each ostan. The ostan stations were necessary because soil and climatic conditions vary so widely in different parts of the country that research done at a central station would have but limited application.

Role of Extension Agents

The extension agents would be expected to carry out a constructive program of adult education with rural families. According to the plan, it would be their job to explain to farmers the advantages of adopting practices proven profitable by the research workers at the ostan stations and substations. Extension agents would assist with any special programs launched in their territory, such as disease and insect control programs, emergency relief programs, and the organization of companies or cooperatives to serve the rural people. They would cooperate in educational and health improvement projects. The agricultural extension specialists and

agents in the various ostans were to have the experience necessary to control work at the local level. They were to regularly collect and send into the ostan centers the specific information about the time of occurrence and the prevalence of various pests. Working with the land owners and villages in conducting the pest control program was another role of the extension agents. It was recommended that the extension agents be responsible for training local leaders for many types of work and also for organizing local people and areas for plant pest control, for livestock disease control programs, and for other projects of this type. The desired character of extension agents was described as follows: "They must be persons with a desire to serve agriculture and who are willing to live and work with the rural people. They must have good judgment and a broad training in agriculture."¹

Methods of Teaching

Teaching by demonstration was recommended as the most effective way to secure the adoption of new ideas. The emphasis was on several types of demonstrations to be carried out in a number of rural areas under the supervision of agricultural extension personnel. Since most of the peasants were illiterate, it was suggested that much use be made of demonstration farms. Demonstration farms might be of many types and could serve different purposes. They would prove to be one of the most effective devices for convincing peasants that their level of living could be increased through the use of new farming practices. The demonstration farms were to demonstrate profitable combinations of land, labor, and capital

¹Ibid., p. 71.

in the form of water, machines and livestock. It was considered very important to show how the product per worker could be increased by the use of machinery. It was recommended that one demonstration farm be established for each of ten ostans (province).

Extension Agent Preparation

The extension agents were to be men with broad training in agriculture, having sound judgment and the ability to gain the confidence of peasants and tribesmen. According to the plan, they must be interested in the welfare of the peasants, be willing to live in isolated places, and be willing to spend much of their time working in rural communities. In terms of pre-service training, the plan indicated that all extension specialists were to be agricultural college trained men. It was recommended that the Plan Organization cooperate with the University of Tehran to provide for the graduation of approximately 100 men a year from an expanded four-year college course in agriculture. It was also recommended that plan funds should be used to provide buildings and laboratories which were needed for this purpose. In addition, the plan funds should be used to provide an expert staff to train the persons needed in the field of agricultural research and extension and needed as teachers for the rural teacher training schools (the same as recommended in the section of the plan concerning agricultural education). For the few years of the plan, it was recommended that a number of the staff members be foreigners, to ensure adequate teaching in several fields and to promote cooperation with the research and extension institute.

According to the plan, the curriculum for extension specialists while emphasizing practical aspects, should include courses in agriculture and basic sciences such as chemistry, botany, entomology, zoology and mathematics, as well as courses in composition, rhetoric, and perhaps humanities. Nothing was mentioned in this plan concerning either the ways of preparing agricultural extension and home economic extension workers or the number of agents needed.

Budget

In the second development plan, the projected expenditure for agriculture was 35 billion rials, of which about 360 million rials was to be spent for agricultural extension.

Recommendations in Plan III, 1963-1968

Philosophy and Objectives of Agricultural Development

The objectives of the third plan agricultural program were (1) to increase production to meet the nation's demand for food and agricultural raw materials to the extent practicable; (2) to raise the rural level of living; and (3) to improve the equitability of income distribution. Production targets included a growth rate in agricultural production of 4.1 percent per year. Per capita food supplies were to increase 7 percent during the plan period. The plan emphasized widespread application of better planting stocks, better cultivation techniques, the use of fertilizer and the extension of irrigated areas through the use of wells and small surface systems. According to the plan, major reliance was to be placed on individual farmers, who would be supplied information through the

agricultural extension service and who would be helped by a three-fold increase in government-sponsored agricultural credits. It is unusual that the land reform program was initiated and implemented during the third development plan but no statement can be found in the third plan concerning land reform. However, there are some recommendations about improving the land tenure situation; such recommendations included completion of distribution of public domain land, leasing of all "Wa QF" land, and renting it at fixed terms for long periods to tenants.

Philosophy and Objectives of Agricultural Extension

In terms of the philosophy and objectives of agricultural extension, the plan considered the agricultural extension service as the primary channel through which information about third plan agricultural programs and the techniques necessary to implement them would be channeled to farmers.¹ The plan indicated that the maximum emphasis would be placed on training personnel and preparing them for their responsibilities.

Administration

Previous experience in Iran had demonstrated that more effective impact was made in those villages where programs designed to improve agricultural practices and rural living were launched through activities involving women and youth, as well as the farmers themselves. Thus, extension worked through a "triangle" approach involving men, women and youth to reach farm families. In the third plan, it was assumed that the cultivators who see new techniques

¹Plan Organization, Agriculture in Third Plan Frame (Tehran Iran: Division of Economic Affairs, 1961), p. 195.

help make their children healthier or make their homes more comfortable are likely to have more confidence in extension recommendations about the possibilities of increasing agricultural production through new techniques.

The extension service was village-oriented, and its primary administrative level was Shahrestan.¹ The principal representative of extension was the local agent, of which there were 1300 at the beginning of the plan. It was recommended that the number of extension agents increase to 2500 by the end of the plan in 1968. To the fullest extent possible, the extension agents had to depend on village leaders to help extend the effectiveness of their program and organize special extension committees and local agricultural councils where desirable.

Role of Extension Agents

As mentioned above, three groups were the main clientele for extension agents in the third plan. They were the farmers, their wives and the rural youth. Thus, the organization of agricultural extension was divided into three sections. The role of extension agents who were working in the Agriculture Division was to teach the farmers better farming methods. The role of the extension agents who were working in the Home Economics division was to work with farm women to improve food handling, shelter, and clothing for farm families. Their program centered around food preparation, better nutrition, clothing, environmental sanitation, and child care. The role of the extension agents who were working in the

¹ Ibid., pp. 196.

Rural Youth Division was to work with farm boys and girls to teach them through actual work projects in their homes, the young people then demonstrating to their parents and neighbors the effectiveness of new techniques.

Although the plan clearly indicated that major reliance should be placed on individual farmers in the extension programs, there was a recommendation that the extension agents should not be spread evenly over the country. Instead, they should be grouped in those regions where production programs were concentrated and where the chances for increased agricultural production were greatest.¹ This policy is obviously in opposition to the agricultural development objective in the third plan which emphasized the equality of income distribution among the farmers. The desire to achieve a better distribution of income within agriculture implied that special steps, such as even distribution of extension agents throughout the country, should be taken to improve production in the poorest, least-favored, lowest-producing regions of the country. But with the extremely limited personnel and institutional resources available for government programs, the production-orientation of the plan argued for committing these resources to the most promising regions, which were also those already enjoying the highest income. So the poorer regions would just go on being neglected during the third plan. It goes without saying that one of the most important steps which should have been taken to help provide equal income distribution among the farmers was implementation of a land

¹ Ibid., p. 197.

reform program. Land reform was overlooked in the third plan and only correction of land tenure was recommended.

Methods of Teaching Extension

Actual demonstration was recommended in the third plan as the best method of teaching by extension workers. According to the recommendation, extension workers should rely heavily on the demonstration method, planting plots of land belonging to cooperative farmers to introduce improved practices. Thus they and their immediate neighbors could see for themselves what would be necessary to increase production.

Extension Agent Preparation

It was recommended that extension agents be trained at three different levels. Full agents would have 12 years of education plus two years specialized extension training, and associate agents would have nine years education plus one year specialized training. To the extent practicable, the emphasis was on training full agents. To back up the local agents, the training of a staff of 200 agricultural extension specialists was recommended. These specialists were to be college graduates and were expected to have specialized training in one or another of the subject fields necessary to bring to Iranian farmers technical information about animal husbandry, horticulture, cereal crops, cotton, sugar beets, irrigation, etc. A recommendation was made that the extension agents be natives of the regions in which they were to work. In-service training was also considered in order to upgrade the professional competence of

the agents and staff. There is an indication in the third development plan that the extension service was to continue and expand its program of seminars, training conferences, in-service training, and foreign training to enable it to constantly upgrade the professional competence of its staff and to constantly introduce new techniques to farmers. Its budget had to be adequate for this purpose. According to the plan, 1200 extension agents were to be trained during the plan and the number of extension agents was set at 2500, to be available by the end of the plan. To enable the extension service to carry out its responsibilities, a maximum training program for agents and specialists was recommended. The organization of extension had about 800 homemaking extension agents at two levels: one level consisted of agents with nine years education plus nine months pre-service training and the other level consisted of agents with 12 years education and 6 months pre-service training. Training homemaking extension agents was discontinued in the third development plan.

Budget

There is a statement in the third plan that the extension workers were to have a budget adequate to provide them the transportation, fuel, equipment, and supplies needed for their demonstrations and other projects. They were to be given a housing allowance or provided housing where suitable rental housing was not available. The development costs of the extension service, including women's and youth work was recommended to be three billion

rials during the plan period.¹ This included only development allocation. In addition, the organization of extension continued to have its regular budget funds. The total development budget in the third plan for agriculture was 49.6 billion rials.

Extension and Development Corps

In September 1964, a special army called the Extension and Development Corps was formed by the Ministry of Agriculture. Since it was a special means of preparing extension agents, the major aspects of this corps are discussed here.

The philosophy and objectives of the corps were declared to be:

"to raise the living standards of the rural population and promote their welfare by teaching them modern principles of agriculture and better methods of increasing farm and livestock production, as well as leading the way for the locals to develop, improve and expand rural industries, and actually reconstruct and modernize the rural areas, a special army, or corps, to be named the Extension and Development Corps shall soon be created."²

The preparatory work took just over four months to be completed.

The first term of the extension and development corps' four months training course was officially started on April 1, 1964, at the Academy of Military Science, Tehran. Military courses were taught by the faculty of military sciences, and courses dealing with agriculture, development and economics were taught by instructors assigned by the Ministry concerned. All the necessary equipment that would have to accompany each individual corpsman to his

¹Ibid., p. IX.

²Cento Treaty Organization, Cento Conference on Agricultural Extension, Ankara, Turkey, April 12 to 22, 1967, p. 62.

post was gradually provided and made ready. Such equipment included vehicles, technical kits and outfits, supplies of fertilizers, improved varieties of seeds and seedlings, sprayers, spraying materials, as well as extension pamphlets and brochures and publications.

Parallel to this measure were certain other steps taken in the districts and provinces of the country. Local extension services identified all specific rural farms and areas which were to be served by the individual corpsmen. These were supposed to have a total minimum population of 300 inhabitants. Each area had to be able to be adaptable to farming and livestock and horticultural practices. All the provinces submitted their lists of requirements to the central headquarters and applied for the right number of drafted corpsmen required locally.

The extension and development corps was composed of various categories of high school and university graduates proficient in such areas as agriculture, architecture, economics, polytechnical art, social sciences, and veterinary sciences. The entire period of service served by each corpsman was 18 months, covering a four month training course and 14 months of service in rural districts. Approximately two years later, the entire period of service was increased from 18 months to two years, including a six-month training course and 18 months of service in the rural areas. The university graduates drafted into the extension and development corps usually served the organization and the nation with the rank of second lieutenant. The high school graduates served their military service as sergeants in the army.

The organizational setup of the extension and development corps consisted of:

- A central supervisory office, located in the central extension organization of Tehran,
- Provincial supervisory offices,
- Supervisory links on teams, and
- General project operation teams, functioning at the village level.

The drafted extension and development corpsmen with a full high school diploma, frequently referred to as technicians, usually served the rural areas under the direct supervision of a university graduate in agriculture. The average number of such technicians was ten, depending on the distance to be traveled by the technician within his area of operation. The drafted university graduates in mechanics, civil engineering and economics, who joined the extension and development corps actually served the provincial rural areas in their specific fields of training. They were directed by guidelines and instructions given them and were assisted by the spirit of self-help cultivated among the rural inhabitants. The first group, which entered the field in 1965, was composed of 223 university graduates and 274 high school graduates. The corps was expanding steadily, numbering approximately 1700 at the end of the third plan in 1968.

Recommendations in Plan IV, 1968-1973

Philosophy and Objectives of Agricultural Development

The general objectives of agricultural development in the fourth plan were as follows:

1. A minimum average annual growth of 5% of the gross product of the agricultural sector in order to meet the constantly increasing nutritional demands of the population as well as to supply raw materials for domestic industries and export.
2. Increasing the productivity of labor and land through the dissemination of modern techniques of production and operation.
3. Raising the employment level in rural areas by diversifying occupations, developing cottage industries, and providing new employment opportunities for those entering the rural labor market during the plan period.
4. The conservation, development, and improvement of natural resources such as water, soil, pastures, forests, fish and wild game--as well as the effective and reasonable exploitation of these resources.
5. Transforming the structure of rural society on the basis of cooperative and self-help activities.

To achieve these objectives, the plan recommended the maximum utilization of land already under cultivation, the cultivation of virgin land, the establishment of large agricultural units and joint-stock forming companies, the expansion of animal husbandry, the wider application of extension services, and the employment of modern techniques.

Philosophy and Objectives of Agricultural Extension

In the light of the above mentioned objectives for agricultural development, the philosophy and objectives of agricultural extension in the fourth plan were identified as follows: "Extension of modern agricultural principles, research and studies carried out can only be fruitful if their results are extended to villages and rural areas."¹ In addition to the continued execution of the extension and development corps programs and the use of agricultural engineers and specialists in the agricultural extension organization, the fourth plan recommended making the extension workers more efficient. Nothing was mentioned which clarified the objectives of agricultural extension at the state or local levels.

Administration

The agricultural extension organization remained under the Ministry of Agriculture in the fourth plan. No change occurred in the pattern for administration of extension except for the research institutes. During the fourth plan, it was advised that all activities concerning agricultural research work be conducted on a large scale. Furthermore, agricultural research programs were to be coordinated by the National Scientific Research Institute affiliated with the Ministry of Science and higher education. This stipulation applied to all organizations active in agricultural research whether they were government organizations, colleges, or private establishments. Instead of scientific research being undertaken independently in various separate units, the planning for all

¹Plan Organization, The Fourth National Development Plan (Tehran, Iran: Government of Iran, 1968), p. 109.

research activities concerning farming, gardening, plant improvement, pest and disease control, soil fertility and related fields became centralized in a unified organization. Furthermore, the plan indicated that the research workers were to be granted certain benefits and privileges so that in the future, those talented in research work could devote themselves to research instead of accepting administrative posts.

Role of Extension Agents

There was no recommendation in the fourth plan concerning the role of extension agents. Perhaps the role of extension agents was to be the same as that mentioned in the third plan.

Methods of Teaching

Nothing was recommended in the fourth plan with regard to the method of teaching to be used by extension workers. The utilization of local radio station for broadcasting the results of research was recommended.

Extension Agent Preparation

Although there is no clear statement regarding extension agent preparation in the fourth plan, a full utilization of all agricultural training centers was recommended for this purpose. The selection and recruitment of 200 agricultural graduates annually as extension workers was also recommended. In order to increase the level of knowledge among these extension workers and to assist in the practical training of young villagers, all agricultural

training centers were recommended to be utilized. In other words, depending on the type of farming and local crops, short courses were to be provided in these centers and also in villages and on farms. Such courses would give practical training in modern agricultural principles to a number of farmers.

The establishment of refresher courses in various agricultural fields for employees of the Ministry of Agriculture was another recommendation made with respect to extension agent preparation.

Budget

Of the 65 billion rials devoted to agricultural sector by the fourth plan, 1.5 billion rials was allocated to agricultural extension. The plan recommended that adequate funds be allocated to supply extension workers and those serving in the extension and development corps with equipment, transport, audio-visual equipment and so on.

Recommendations in Plan V, 1973-1978

Philosophy and Objectives of Agricultural Development

The overall objectives of the agricultural sector during the fifth plan were as follows:

1. To exploit natural resources in such a way that even while making the optimum utilization of them, they were to be rehabilitated and preserved for future generations.
2. To increase levels of agricultural production and the farmer's per capita income so as to close the gap between rural and urban per capita incomes (this was to be accomplished

through the use of advanced agricultural technology in the various operating units, particularly cooperatives, farm corporations, agro-industrial companies, meat and dairy complexes and agri-business--in such a way that agricultural production would increase during the fifth plan period at an average annual rate of seven percent).

3. To reduce under-employment in the rural areas by placing greater emphasis on intensive agriculture using advance technology, establishing small-scale industries in the rural areas, developing and propagating handicraft and non-agricultural activities, integrating agriculture and stock breeding and beginning rural reconstruction work.
4. To provide welfare facilities for the rural populace.

Philosophy and Objectives of Agricultural Extension

As in the previous plans, the philosophy and objectives of agricultural extension in the fifth plan was to bring to the farmers the technical information and modern methods of agriculture discovered in the research institute and research stations. Nothing was mentioned in the plan concerning the philosophy of agricultural extension at the state and local level.

Administration

The administrative structure of the extension organization was the same as in the fourth plan. The establishment in the Ministry of Agriculture of a new council by the name of the Council of Research and Agricultural Education was recommended. This council

was to consist of representatives from the Ministry of Agriculture, the Ministry of Cooperative and Rural Affairs, the Ministry of Science and Higher Education, and the Plan Organization. The major objective of this council was to coordinate the effort of different ministries and organizations which were involved in research concerning agricultural affairs and rural society in Iran. All new research projects were to be both approved and under the control of this council. According to the plan, the technical service for the extension agents working at the village level would be provided by the specialists working at the ostan centers and at the shahrestan research stations. These specialists would visit the village extension agents either as part of a program or at the request of the extension agents. This would help extension agents solve their technical problems in the villages. Problems which could not be solved at the village would occasion further experiments at the ostan or shahrestan research stations.

Role of Extension Agents

In the fifth plan, the role of extension agents was changed. In addition to guiding and advising the farmers in using modern methods of agriculture, it was recommended that agents select as a model farmer one progress-minded farmer from each village under their scope and concentrate their educational efforts to improve and increase his practical and theoretical knowledge.¹ As a result, his production would increase and his fellow farmers were

¹Ibid., p. 219.

expected to follow him in adopting modern methods of agriculture. The role of the extension and development corpsmen remained the same as in the fourth plan.

Method of Teaching

As mentioned above, the extension agents were to select a progress-minded farmer from among the villagers and teach him different aspects of modern agriculture. Then, the extension agent would use this farmer's land as a model of a modern farm in order to convince the other farmers to adopt the new methods of cultivation and also to show them the profitability of using the new techniques.

Extension Agent Preparation

The proper combination and optimum utilization of the government's technical and financial assistance in the poly-functional cooperatives established in rural areas necessitated the presence of an agricultural extension agent in each of the cooperatives. For this reason, it was recommended that the number of extension agents be increased to 3000 during the period covered by the fifth plan.¹ In order to train the extension agents, the plan recommended the employment of the agricultural diploma holders who had completed their military service in the Extension and Development Corps. The extension organization would conduct short-term courses as a pre-service training for former corpsmen in each ostan. Through these courses they would become acquainted with the local conditions

¹ Plan Organization, Barnami-Panjom-I Omrani Kashvar (Tehran, Iran: Plan and Budget Organization, 1973), p. 218.

under which they would work.

In addition, 4100 extension and development corpsmen were to serve agriculture over the period covered by the fifth plan. Their training program was to be the same as it was in the fourth plan. In terms of training extension agents at the university level, it was recommended that all colleges of agriculture include agricultural extension courses in the curriculum of the last year and that at least two colleges of agriculture establish an extension department.

Budget

In the fifth plan, the total fixed investment in agriculture by the public sector was 176.85 billion rials. Of this, 5.5 billion rials was devoted to agricultural extension and the in-service training of the personnel of the Ministry of Agriculture and the Ministry of Cooperatives and Rural Affairs.



Summary of Recommendations for Agricultural Extension

Period	Philosophy & Objectives of Ag. Development	Philosophy & Objectives of Ag. Extension	Administration	Role of Extension Agent	Methods of Teaching	Extension Agent Preparation	Budget
1956-1963 Plan II	1. To increase the production of food-stuffs for the population. 2. To produce necessary raw materials for domestic industries. 3. To increase the export of agricultural products.	To bring directly to rural people the information discovered and assembled at the various institutes and sub-institutes.	The organization of extension was under the Ministry of Agriculture. It had 3 divisions: agricultural extension, home economics and youth activities. Establishment of 4 agricultural research & extension institutes was also recommended. An advisory committee consisting of 3 members to run the institute was suggested.	Explain to the farmers the profitability of adoption of new practices. Collect and send regularly into the ostan research centers the specific information about the time and occurrence and the prevalence of local various pests. Carry out adult education and training of local leaders for many types of works.	Teaching by demonstration as the most effective way to secure the adoption of new ideas.	Plan organization cooperates with the University of Tehran to provide for the graduation of approximately 100 men a year from an expanded four-year college course in agriculture. There was to be 1300 agents at the end of the plan.	360 million rials was allocated to agricultural extension.
1963-1968 Plan III	1. To increase production for food and raw materials. 2. To raise the rural level of living. 3. To improve the equitability of income distribution. Production target was set for 4.17 growth per year.	Agricultural extension was considered as the primary channel through which information about third plan agricultural programs and the techniques necessary to implement them would be channeled to farmers.	The administrative pattern was like the previous plan. The primary administration level was shahrestan and the principal representatives of extension was the local agent. The local agent had to depend on village leaders to help extend the effectiveness of their programs.	To teach the farmers better farming methods. To work with farm women to improve food handling, shelter and clothing for farm families. To work with farm boys and girls to teach them through actual work projects in their home.	Actual demonstration was recommended as the best method of teaching extension.	Extension agents were trained at 3 different levels. Full agents would have 12 yrs. of education plus 2 yrs. of specialized extension training. Associate agents would have 9 yrs. education plus 1 yr. specialized training. To back up these agents, 200 college graduates as extension specialists were to be trained. 1200 extension agents were to be trained during the plan.	3 billion rials was allocated to agricultural extension.



Summary of Recommendations for Agricultural Extension

Philosophy & Objectives of Ag. Development	Philosophy & Objectives of Ag. Extension	Administration	Role of Extension Agent	Methods of Teaching	Extension Agent Preparation	Budget
Plan IV 1968-1973 1. An average annual growth rate of 5%. 2. Increasing the productivity of labor & land. 3. Raising the employment level in rural areas. 4. The conservation, development and improvement of natural resources. 5. Transforming the structure of rural society on the basis of cooperatives & self-help activities.	Dissemination of modern agricultural practices to the villages and rural areas.	No change occurred in administration pattern of agricultural extension except for the research institutes. It was advised that all activities concerning agricultural research work be conducted on a large scale.	There is no recommendation concerning the role of extension agents.	The utilization of local radio station for broadcasting the results of research was recommended.	The selection and recruitment of 200 agricultural graduates annually as extension workers was recommended.	1.5 billion rials was allocated to agricultural extension.
Plan V 1973-1978 1. To increase levels of agricultural production and farmers' income so as to close the gap between rural and urban per capita income. 2. An average annual growth of 7%. 3. To reduce under-employment in the rural areas. 4. To provide welfare facilities for the rural populace.	To bring to the farmer the technical information and modern methods of agriculture. The major objective of this council was to coordinate the effort of different ministries and organizations which were involved in research concerning agricultural affairs and rural society in Iran.	A new council named the council of research and agricultural education was to be established in the Ministry of Agriculture. The major objective of this council was to coordinate the effort of different ministries and organizations which were involved in research concerning agricultural affairs and rural society in Iran.	The agents select as a model farmer one progress-minded farmer from each village & concentrate their educational efforts to improve and increase his practical & theoretical knowledge. As a result, his production would increase and his fellow farmers would follow him in adopting modern methods of agriculture.	The extension agents select one progress-minded farmer in each village and teach him the modern methods of agriculture. Then, the extension agent would use this farmer's land as a model of a modern farm in order to convince the other farmers to adopt new methods of farming.	The employment of the agricultural diploma holders who had completed their military service in the extension and development corps. The number of extension agents was to be 3000 during the period covered by the plan. In addition, 4100 extension and development corpsmen were to serve agriculture in the fifth plan.	5.5 billion rials was devoted to agricultural extension & training of the personnel of the Ministry of Agriculture & the Min. of Coop.

Discussion

According to recommendations of the second plan, the extension agent had to work in favorable areas where agricultural production could increase rapidly. These agriculturally favorable areas were always in the possession of landlords who also enjoy political power. During the fifth plan, the issue of land ownership emerged. Again a high priority for assigning extension agents and development and extension corpsmen was given to agricultural share companies, agri-businesses, and agricultural corporations. Thus agricultural extension in Iran has served primarily commercial farmers since it was founded.

There has not been consistency between the agricultural development objectives and agricultural extension operational policies expressed in the third and fifth national development plan. In the third and fifth development plans, there were recommendations that the extension agents should not be spread evenly over the country. Instead, it was recommended that they be grouped in those regions where production programs were concentrated and where the chances for increased agricultural production were greatest. This policy was obviously in opposition to the agricultural development objectives in the mentioned plans which emphasized the goal of equality of income distribution among the farmers.

The most important question posed in the first chapter was that of why Iran has shifted from a self-sufficient agricultural producer in 1950-1958 to a food deficient country, forced to import 40% of the total value of domestic agricultural production in 1974.

In order to answer this question, the agricultural production, the growth of population, and the growth of per capita income during the period under study which affect the demand for food were studied.

As regards agricultural production, the average production, yield per hectare, and area under cultivation of five major crops--wheat, barley, rice, sugar beets, and cotton--in each of the five national development plans was calculated. The data were obtained from the statistics yearbook of the Food and Agriculture Organization. The data presented in Table 4 show that the production of wheat increased 193 percent, the areas under cultivation 159 percent and yield per hectare 4 percent, during the period under study.

Barley production increased 40 percent from 1949 to 1978. Areas under cultivation increased 40 percent during the same period.

Rice production increased 246 percent during the period under study, and the yield per hectare increased by 111 percent during the same period.

Sugar beet production increased drastically by 789 percent, and the yield per hectare increased 120 percent in the same period.

Finally, as Table 4 shows, cotton production increased 90.44 percent and yield per hectare 349 percent. This was despite the decline caused by an outbreak of boll weevils which occurred during the fifth plan.

The average increase in production of the five major crops was 250% from 1949 to 1978. The increased production was due in part to both an increase in the area cultivated and changes in technology and management. The changes in technology and management

Table 4. Average Annual Production for Five Major Crops During Each Plan Period and Percent Increase from Plan I to Plan V in Iran 1949-1978.

Production Measures	Major Crops	Plan Period					% Increase Plan I to V
		Plan I 1949-56	Plan II 1956-63	Plan III 1963-68	Plan IV 1968-73	Plan V 1973-78	
Average Annual Production (1000 Tons)	Wheat	1879	2873	3784	4194	5507	193
	Barley	857.7	936	945	527	1203.6	40
	Rice	432.5	860	984	1163.8	1498.5	246
	Sugar Beets	504.1	849.16	1650	3794.6	4489	790
	Cotton	90	184	264.6	269	171.4 ¹	90.44
Average Annual Yield (100K/H)	Wheat	9	8	9.2	7.7	9.37	4
	Barley	10.1	8.18	7.92	6.75	6.77	-33
	Rice	18.6	23.38	32.6	32.24	39.24	111
	Sugar Beets	11.22	12.95	16.56	19.89	24.7	120
	Cotton	3.40	4.91	7.02	11.26	15.28	349
Average Annual Area Under Cultivation (1000 Hec-tares)	Wheat	2085	3580	3990	5142	5400	159
	Barley	714.16	1064	1000	1302	1007	41
	Rice	234.5	364	304.3	376	410	75
	Sugar Beets	41.16	49.5	99.67	159.8	175.6	327
	Cotton	197.5	309	383.6	349.7	318	61

¹This decline was due to an outbreak of boll weevils which seriously affected the production of cotton.

included the construction of many dams to provide irrigation water, land reform, extension activities, credit allocation to agriculture, the use of technology and fertilizer, and the adoption of new methods of agriculture during the period under study.

Chemical fertilizer was not used during the first development plan. During the second plan the average annual fertilizer use was about 24 thousand tons, and during the third plan this increased to 86 thousand tons. During the fourth plan, it was 256 thousand tons, and finally during the fifth plan it was 566 thousand tons annually.

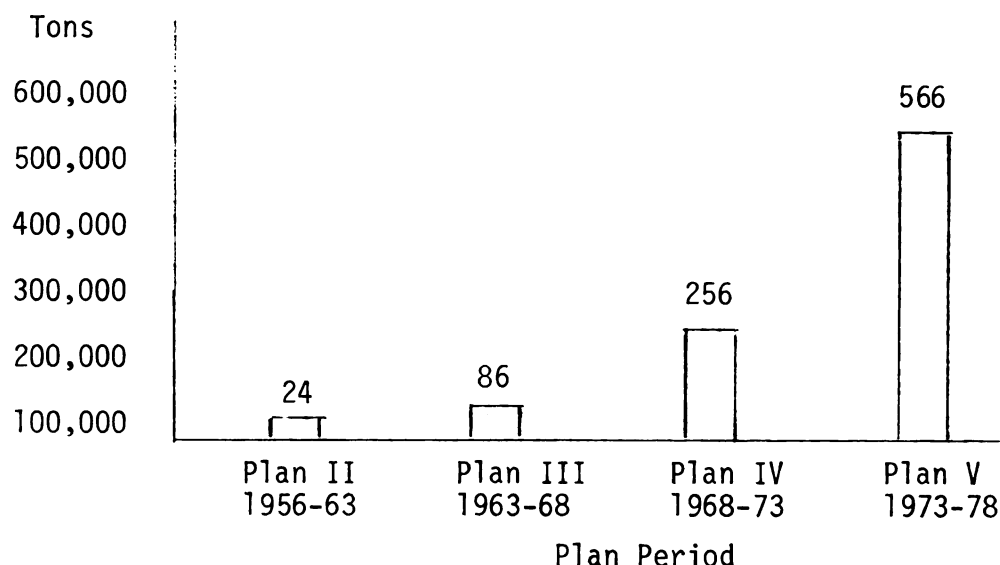


Figure 1. Average Annual Fertilizer Consumption in 1000 Metric Tons in Iran.

Again extension service was one of several probable contributors to increasing the fertilizer consumption.¹

Although the proportion of the labor force in agriculture decreased from 56.3 percent at the end of Plan II to 34.3 percent at the end of Plan V, Table 5 shows that the total number of employed persons in agriculture remained almost the same during all five plans. This means that during the fifth plan, each farmer was two and one-half times more productive than each farmer during the second plan.

¹Jafar Rassi, "Extension Education Today," (Razaiah, Iran: Razaiah College of Agriculture, 1971), p. 80.

Part of this increase can be attributed to agricultural education and agricultural extension, which probably had a positive role in making farmers more productive.

Table 5. Distribution of the Employed Labor Force in Three Major Sectors at the End of Each Plan.

Plan Period	Total Employed Labor Force in 1000	Agriculture & Animal Husbandry		Industry & Mining		Service	
		Labor Force	%	Labor Force	%	Labor Force	%
End of Plan I 1956	5910	3330	56.3	1245	21.6	1335	22.1
End of Plan II 1963	6420	3242	50.6	1632	25.4	1549	24
End of Plan III 1968	6932	3372	49	1686	24	1874	27
End of Plan IV 1973	7711.4	3410.4	44.5	2103	27	2198	28.5
End of Plan V 1978	10510 ¹	3600	34.3	3770	36.7	3140	29

¹It was projected by the planners.

Per capita income at the end of Plan I in 1956 was 85 dollars per year. It increased steadily during the second, third, and fourth development plans.

Due to the increase of the price of oil in 1973, the per capita income increased dramatically during the fifth plan and reached 1986

dollars at the end of that plan as shown in Figure 2. The per capita income in Iran had increased 2236 percent from 1956 to 1978.

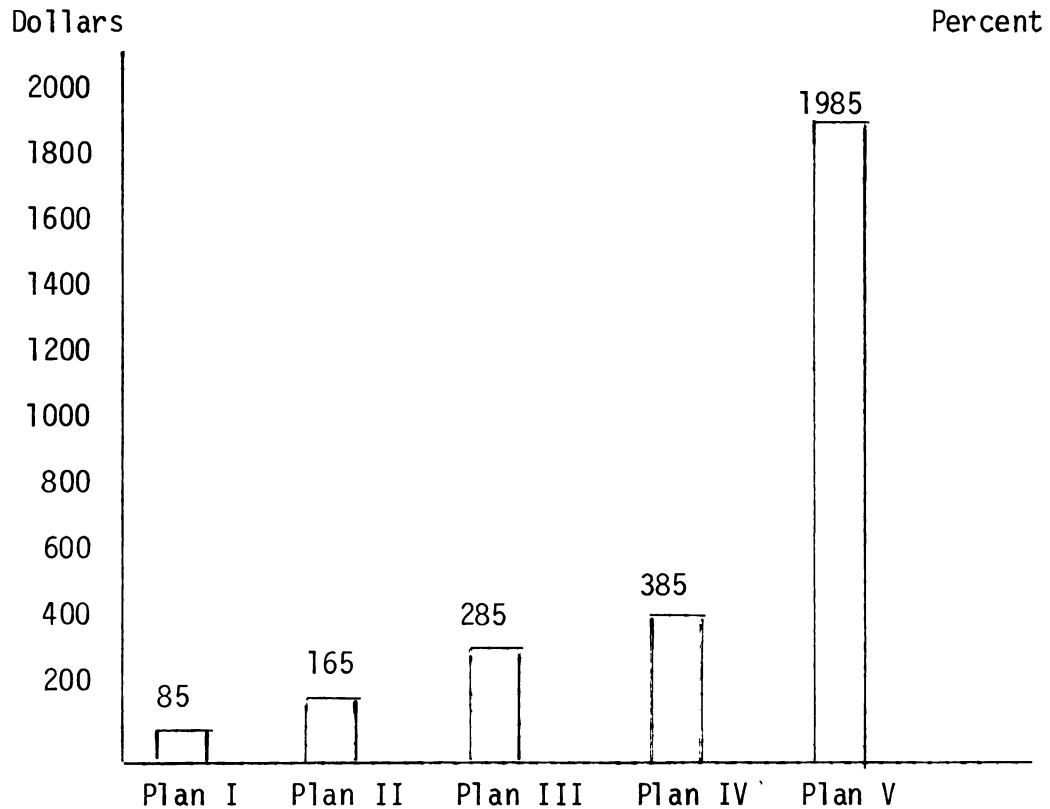


Figure 2. Per Capita Income at the End of Each Plan in U.S. Dollars and Percent increase from One Plan to Next.

As mentioned earlier in Chapter I, the population of Iran has doubled during the period under study, and the average annual production of five major crops has more than doubled. Therefore, Iran should still be self-sufficient (at least at the 1950 nutritional level), but the reality is that Iran has imported 40 percent of total value of domestic agricultural production in 1974.

The crux is that the deciding factor in rising demands for food was not only the rate of population increase, although this was indeed

very important; the key to the demand of food was the rate at which the national income was increasing. The per capita income at the time in which Iran was self-sufficient was 85 dollars, but in 1978 it was 1986 dollars, over 20 times larger than that of the earlier era. With so many people eating at low nutritional level in the 1950s, higher incomes implied a higher income elasticity for food in general and a very high one for several individual food items. With higher incomes, people could devote more of their income to food; thus the demand for food would increase. In addition, the acceleration of industrialization meant a surge in demand for raw agricultural materials such as cotton, sugar beets, oil seeds, and tea. It also meant that the country shifted from an agricultural to an industrial economy with a high proportion of the population and employed labor force living in the cities. Many people in the labor force moved from the agricultural sector to the urban industrial and service sector. In 1978, about 47.3 percent of the population was living in the cities. Since the urban population had a higher and regular income, it spent a higher proportion of its income for food. The World Bank indicated that the daily caloric intake per capita for rural peasants was 1842 with a daily protein intake of 60 (gram per capita) in Iran in 1971. The corresponding figures for urban wage earners were 2132 calories and 65 grams.¹

The factors of (1) the increasing population; (2) the increasing per capita income, which implied important structural changes in demand; (3) the acceleration of industrialization, which required more demand for agricultural raw materials; and (4) the

¹World Bank, "Rural Development," World Bank, Feb. 1975, p. 82.

employment of many foreigners (particularly military personnel), caused the agricultural sector to fall short of demand. This happened because the agricultural sector had a relatively low rate of growth when compared with other sectors of the economy. In order to meet the higher demand for food, especially in the 1970s, Iran's government began to import much food from abroad, paying for it with money from oil revenues. The question posed here is that of why the agricultural sector could not have a high rate of growth thus allowing it to meet the high food demand. Answering this question is not within the scope of this study, but several factors which contribute to the slow growth of agricultural output are discussed here briefly.

The implementation of land reform in the early 1960s encouraged small-scale peasant farming based on traditional Iranian villages. However, before the farms had been given a reasonable chance to succeed, the policy was reversed and official finance and encouragement began to be centered on large-scale cooperatives and agribusinesses. During the fourth and fifth plans, the agricultural policy continued under the premise that "bigger is better." Priority was given to large farm units capable of using technically, capital-intensive methods. For example, during the fifth plan, the government spent 48.60 billion or 27 percent of the total budget allocated to the agricultural sector on farm corporations, which occupied only 10 percent of the total irrigated land.

The amount of the budget allocated to agriculture increased during the period under study but the proportion of the plan funds allocated to agriculture has constantly decreased from 46.4 percent

in the third plan to 5.6 percent in the fifth plan. However, the plan organization policy was to give farming grants to agricultural development banks and agricultural cooperative banks rather than to individual farm projects. These banks in turn made loans to rural cooperatives and farm corporations, and to a somewhat lesser extent provided supervised loans distributed among a number of selected areas. All too often, however, this money remained unavailable to individuals needing help. It would obviously be difficult in a large country such as Iran for one central organization to provide the funds for the needs of widely scattered and greatly differing individual farmers.

Another factor which contributed to the slow growth of agricultural output during the last quarter century was the pricing policy. The government was more concerned with the cost of food for urbanites, keeping the price low for equity and perhaps political reasons. Desirable as this may have been for a large part of the population, it undercut efforts to stimulate agriculture, the source of income for about half the population. The prices of agricultural products were kept low while the wage rate was rapidly increased 30 to 40 percent in 1975-1976.¹ The result was that increased production costs tended to depress rather than stimulate growth.

Another bottleneck of agricultural development has been the small number of trained extension workers, as well as the inefficiency of the existing group. During the years of the third plan,

¹ Henry H. Smith, Area Handbook for Iran (Washington, D.C.: The American University, 1978), p. 324.



only enough extension workers were trained and available to inoculate possibly one-fifth of the country's livestock against such diseases as anthrax, and sheep and goat pox.¹

Most extension agents were deeply involved in the implementation of land reform, and nobody in the government was thinking about training extension agents. The Development Extension Corps which was established at the end of the third plan was indeed a means to train extension agents in a short time, but due to factors such as inadequate practical training and social distance between corpsmen as the agents of change and the villagers as the target group (a distance based on differences in language, education, economic level, age, family status, etc.), the corps did not have much effectiveness in increasing agricultural production. Also inadequate moisture in most parts of the country, inefficient methods of irrigation and the failure to use water resources to their fullest extent, the lack of roads and adequate transportation (which kept production in some farming areas from progressing beyond the subsistence level), the lack of research concerning dry-farming areas, and primitive cultivation techniques all have contributed much to the slow growth of agriculture.

Due to these factors, the contribution of agriculture to the gross domestic product has constantly decreased, from 31.4 percent at the end of the first plan in 1956 to 8 percent at the end of the fifth plan in 1978. As shown in Table 6, the actual average annual growth of the GNP has always been more than predicted. (Except during

¹Agricultural Development Bank of Iran, Annual Report, 1973, p. 17.

the fifth plan; this was due to both an overly optimistic target growth rate and to the political problems which emerged at the end of the fifth plan). The actual average annual growth of industry has always been more than predicted too. The average annual growth of agriculture, however, has been less than predicted. The difference between the predicted rate of growth and the accomplished rate of growth has always been negative for agriculture.

Table 6. Average Annual Growth of GNP, Agriculture, and Industry, in Iran.

Plan Period	Average Annual Growth of GNP			Average Annual Growth of Agriculture			Average Annual Growth of Industry		
	Predicted	Accomplished	Differences	Predicted	Accomplished	Differences	Predicted	Accomplished	Differences
Plan II 1956-63	5.7	6.6	+0.9	-	6	-	11	-	-
Plan III 1963-68	9	10	+1	4	2.6	-1.4	12	13	+1
Plan IV 1968-73	9.4	11.2	+1.8	5	4	-1	15	20	+5
Plan V 1973-78	25.9	21.7 ¹	-4.2	7	2.4	-4.6	18	-	-

¹At constant price

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The Government of Iran included agricultural education and agricultural extension in the National Development Plan as a means to increase agricultural production and improve the well-being of the farmers.

Recommendations were made by the government on the various aspects of agricultural education and agricultural extension in order to enhance their role in increasing agricultural production during the 25-year period, 1950-1975. The information and data regarding these recommendations were obtained from the five national development plans and various international and regional conferences on agricultural education and extension in which the official Iranian delegation took part. Their recommendations for agricultural education were classified and analyzed in Chapter III. The classification and analyzing of recommendations for agricultural extension was done in Chapter IV.

This chapter is devoted to conclusions and recommendations for further improvement of agricultural education and extension in Iran.



Conclusions

Agricultural Education

The prevailing political and social conditions had much influence on the philosophy of education expressed in the various plans during the period under study. The philosophy and objective of education tended to shift from emphasis on spiritual aspects of life to emphasis on the secular aspects of life.

In the second development plan, the philosophy and objective of education concerned training people to think independently and to act constructively. The third plan was concerned with preparing all citizens for a better life. In the fourth plan, during which Iranian society shifted from a feudal system toward industrialization and relative social freedom, the philosophy of education was changed in order to serve the emerging society.

The main objective of education in the fourth plan was to develop students for their role in the new society and to prepare them for active and effective participation in modern political life. At the time of the fifth plan, Iran had reached a high level of urbanization and industrialization, but the lack of trained manpower was a barrier to the carrying out of development projects. The philosophy and objective of education in this situation was to quickly supply the manpower required for different sectors of the economy.

In the second development plan, the structure of agriculture was feudalistic, and primitive agricultural practices were common. The philosophy and objective for agricultural education was to make

available to the farmer specific practices which would increase his productivity and raise his standard of living. In the third plan, during which the agricultural sector enjoyed some technological advances, the philosophy for agricultural education concerned the provision of technical agricultural training at various levels, especially concentrating on the need for research workers. In the fourth plan, the government's policy was to establish agricultural cooperatives and agri-business companies. Agricultural technicians and trained farmers were required to serve the new agricultural structure.

It was recommended in the fourth plan that the objective of agricultural education be the training of both agricultural technicians and farmers. In the fifth plan, many technicians were required to run the agri-business companies and rural cooperatives, so the establishment of seven additional agricultural training centers and fourteen rural vocational schools was recommended. Again, the structure of agriculture and the government policy toward agricultural development have had influence on agricultural education philosophy.

In terms of administration, during the second development plan, the administration of agricultural education was the responsibility of the Ministry of Education; in the middle of the third plan it was shifted to the Ministry of Agriculture. In this plan, rural teacher training programs were discontinued, thus eliminating one of the outstanding programs. The reason given for closing the rural teacher training centers was the establishment of a literacy corps.

Although the establishment of such a corps was a half-way measure for supplying teachers for rural schools, due to many reasons (such as the urban background of the corpsmen, the short duration of service in rural schools and the lack of technical training), the corps could not function as well as rural teacher training program to provide effective teachers. The political situation at that time undoubtedly prompted the decision to close the rural teacher training centers.

In the fourth plan, rural vocational schools were placed under the Ministry of Education, and the agricultural training centers were under the Ministry of Agriculture. A Board of Trustees was set up to administer the agricultural training centers, working with participation from the private sector. In the fifth plan, the organization of agricultural education within the Ministry of Agriculture was established to coordinate the technical affairs of the centers.

In terms of curriculum, there were no clear statements to show that the planners had considered local and individual needs in constructing curriculum, even though Iran is a country with a diverse physical, climatological, and social environment which should be considered in constructing curriculum in different regions. In the fifth plan, since many technicians and managers were needed for large commercial agricultural units, it was recommended that the principles of cooperatives, farm management, and accounting be taught in the agricultural training centers.

Training teachers of agriculture has been the responsibility of one institution, the College of Agriculture, located in Karge.

The teacher education program was started there prior to 1956. Since the students who were admitted to the college usually had an urban background with a natural science or mathematics diploma and since there was no special curriculum for them in the college, they could not easily be prepared as teachers of the practical aspects of agriculture. In the fifth plan, the establishment of a higher educational unit for this purpose was recommended. This was certainly a positive step since it offered teaching and studying programs simultaneously and offered a professional teacher training program.

Preparing instructional materials and equipment for agricultural education has been given very limited attention. There were some broad statements regarding the preparation and publication of suitable textbooks covering practical and theoretical fields. In the fifth plan, utilization of modern technology in education was recommended--a broad and vague statement.

The students who finished the first cycle of high school and passed the entrance examination were admitted to the agricultural training centers. Sons of farmers have usually been given priority in admission.

The number of students in agricultural education increased from nearly two thousand in 1963 to more than 18 thousand in 1978 as shown in Table 7. At the end of the third plan, because of the closing of the rural teacher training centers, the number of students in agricultural education had decreased. Later, by 1978, there had been more than a twenty-fold increase over the 1968 enrollment.



Table 7. Number of Students Enrolled in Iran's Elementary, Secondary, Vocational and Agricultural Education at the End of Each Plan (in 1000s).

Level of Study	End of Plans				% of Growth from Plan II to Plan V
	1963	1968	1973	1978	
Elementary	1,554.55	2,570.67	3,424	5,000	221.7
Secondary	336	658	1,328	1,878	460
Vocational	9	13.802	59.70	165	1,711
Agriculture	1.895	.830	4.850	18.400	870

The percentage of increase of the students in vocational education was higher than the percentage of students at the general secondary level. However, the actual numbers of general secondary students was more than 10 times larger than the number of vocational education students. The higher rate of increase in numbers of vocational education students was one indication of the higher priority given to training manpower for economic development. The rapid increase in numbers of agricultural students between 1968 and 1978 probably reflects government policies aimed at increasing trained manpower for agricultural production and agribusinesses.

During the period 1956 to 1978 there were two major shifts in the public investment in education. Public investment in education increased almost 1000 percent from 1956 to 1978, but the proportion of public investment in education decreased as shown in Table 8. The proportion of the budget allocated to vocational education constantly increased as the number of students in vocational education

increased from 1956 to 1978. While the proportion of the total plan budget allocated to the Ministry of Education (MOE) decreased from 17 percent to 4 percent from Plan I to Plan V, the proportion of the MOE budget allocated to vocational education increased from 4.6 percent to 17.9 percent. In conclusion, the two major shifts were: (1) a smaller percentage of the total budget allocated to education; and (2) a higher percentage of the education budget allocated to vocational education.

Table 8. Plan Budget Allocated to Ministry of Education, Iran
(In Millions of Rials)

Plan Period	Total Plan Investment	Investment In Education		Budget for Voc. Edu.	
		Amount	% of Plan	Amount	% of Plan
Plan II 1956-1963	75,000	13,000	17.3	600	4.61
Plan III 1963-1968	230,000	18,100	7.8	724	4
Plan IV 1968-1973	480,000	35,000	7.3	4,176	11.9
Plan V 1973-1978	3,118,600	127,770	4	22,700	17.88

Agricultural Extension

Three main objectives were stated for agricultural development by the Government of Iran during the period under study: They were (1) increasing production by a specific target percentage in order to provide required food for the population and raw material for

industry; (2) equalizing income distribution; and (3) reducing unemployment in rural areas. These objectives are common and can be found among the objectives for agricultural development of almost all LDCs. The development of appropriate policy for achievement of the objectives is fundamental. The agricultural extension program was viewed as one of the ways to try to achieve the agricultural development objectives.

The objectives of agricultural extension were found to be exactly the same as the conventional philosophy of extension. The objectives of extension programs were to bring to farmers the technical information and modern methods of agriculture discovered in the research institutes and research stations.

An inconsistency was found between the agricultural development objectives and agricultural extension operational policies expressed in the third and fifth national development plans. In both the third and fifth development plans, there were recommendations that the extension agents should not be spread evenly over the country. Instead, they should be concentrated in those regions where production programs were concentrated and where the opportunities for increased agricultural production were deemed to be the greatest. This policy was obviously in opposition to the agricultural development objectives in the mentioned plans which emphasized the goal of equality of income distribution among the farmers.

The responsibility of training extension specialists was given to the College of Agriculture within the University of Tehran. Extension agents for the village level positions were trained by

the extension organization. Up to the middle of the third plan in 1964-1965, these agents were trained at two levels. Regular full agents with 12 years of education and associate agents with 9 years of education were both prepared through pre-service training programs. In the third development plan, the extension agents were so deeply involved in the implementation of land reform that no recommendations were made for training new extension agents. The government policy shifted toward training the development and extension corpsmen who were to serve in the place of extension agents.

In the fourth development plan, it was recommended that 200 college graduates be recruited annually for the extension organization. In the fifth plan, the extension agents were to be selected from among those who had finished their military service in the extension and development corps, and there were to be 3000 of them by the end of the fifth plan.

It seems that the Government of Iran did not have a well-defined policy for training an adequate number of extension agents to serve the farmers who were scattered in more than fifty villages throughout the country. If the number of agents which had been recommended to be trained really had been trained and had been placed, by the end of the fifth plan, there should have been 2700 extension specialists and 3800 extension workers at village level. Mr. Rene Domont who visited Iran in 1975 and who prepared a report for the Government of Iran wrote that there were only 1000 extension agents (who worked at their desks in their offices rather than in the field). He added that there was only one agent for each 3000 farm families.¹ Regardless

¹ Khabar Namah, New Paper, AZAR 1355, December 1976, No. 48, p. 5.

Table 9. Recommended Number of Extension Agents in Each Plan in Iran

Kind of Agents	Plan Period			
	Plan II 1956-1963	Plan III 1963-1968	Plan IV 1968-1973	Plan V 1973-1978
Village Agents (high school level)	800	1000	N.A.	2000
Extension Specialist (college level)	500	200	1000	1000
Total	1300	1200	1000	3000

of the reliability of Domont's report, it is obvious that in terms of training extension agents, the government was far below its target. The main reason for this handicap in training was the establishment of the development and extension corps in the middle of third plan in 1965-1966. The government could prepare many corpsmen through a six-month, low-cost training program thereby causing the regular training of extension agents to be neglected. From 1965 to 1968, the end of the third plan, the extension and development corps had 1679 Ph.D., M.S., and licenciates and 6196 diploma holders. From 1968 to 1973, the period covered by fourth plan, it had 2464 Ph.D., M.S., and licenciates and 5648 diploma holders. During the fifth plan about 20,000 corpsmen served in the corps. Extension and development corps, in spite of many shortcomings which were explained in Chapter III, was a creative approach for training extension agents.

The demonstration method of teaching was recommended in plans two and three as the most effective method for use by extension agents.

In plan four, utilization of local radio stations for broadcasting the results of research was recommended as an additional method. In plan five, teaching modern methods of agriculture through model farms was to be used to convince other farmers to adopt new methods of agriculture. Since most of the farmers were illiterate--especially during the first, second and third plans--demonstration seems to have been a reasonable method of teaching. Utilization of radio stations for this purpose was useful since most of the major cities were covered by the radio and T.V. during the fourth and fifth plans.

Extension service in the second and third plans was structured to serve three groups: the farmers, their wives, and rural youth. Extension agents were to teach the farmers better methods of farming, and to teach the farm women to improve food handling, shelter, and clothing. They were to work with rural youth to improve their leadership and citizenship ability through actual work projects. In the fourth plan, there was no statement to identify the role of extension agents, and in the fifth plan the selection and teaching of one progress-minded farmer from each village was considered as the main role of the extension agent. The Ministry of Agriculture has had the responsibility of directing extension activities since it was established in 1953. This organization has three divisions: agricultural extension, home economics and youth activities. It is located in the capitol city and the administrative pattern in each Ostan and Shahrestan has the same three divisions. No major changes

have occurred in this pattern since it was established in 1953.

Although the budget allocated to agriculture increased with each national development plan, the proportion of the budget dedicated to agriculture actually decreased from 46.4 percent during the second plan to 5.5 percent during the fifth plan as shown in Table 10.

Table 10. Iran's Budget Allocations for Agriculture and Agricultural Extension in Billions of Rials

Plan Budget	Plan Budget	Agricultural Budget		Ag. Extension Budget	
		Amount	% Total	Amount	% Total
Plan II 1956-1963	75	35	46.4	.360	1.02
Plan III 1963-1968	230	49	21.3	3	6.12
Plan IV 1968-1973	480	65	13.3	1.5	2.32
Plan V 1973-1978	3118.6	176.85	5.6	5.5	15.28

Since in the second half of the third plan, the training of home extension agents was discontinued completely and most of the extension agents were transferred to the organization for land reform to implement the land reform program, the extension agent training program was hampered, and as mentioned earlier, attention was paid to preparing development and extension corpsmen. Therefore, as Table 10 shows, the amount of money allocated to extension was drastically decreased from 3 billion rials in the third plan to 1.5 billion rials in the fourth

plan. The training of development and extension corpsmen was the responsibility of the Ministry of War, the Ministry of Agriculture, and the Ministry of Cooperative and Rural Affairs. The budget for that training program was prepared by these ministries separately. Therefore, as Table 10 shows, the amount of the budget allocated to extension (which was, of course, a part of the total budget allocated to the agricultural sector) was drastically decreased from 3 billion rials, during the third plan, to 1.5 billion during the fourth plan. The extension budget was greatly increased in the fifth plan, however. The reason was that in this plan, about 20 thousand development and extension corpsmen were serving agriculture, in addition to the regular extension workers. In addition, the total public budget allocated to agriculture in the fifth plan was almost three times more than the budget allocated in the fourth plan.

According to recommendations of the second plan, most of the extension agents were assigned to work in favorable areas where agricultural production could increase rapidly. These agriculturally favorable areas were owned or controlled by landlords who also enjoyed much political power. During the fifth plan, the issue of land ownership emerged again in the form of agricultural share companies, agri-businesses, and agricultural corporations. Priority of assigning extension agents and development and extension corpsmen was given to the agricultural corporations and agri-business companies and thus agricultural extension has been serving commercial farmers since it was founded.

Although evaluation of extension service was not within the scope of this study, there are some indications which show that,

in spite of many difficulties and shortcomings, the extension service has contributed to an increase of agricultural production and an increase of the productivity of farmers.

The study showed that the average production of five major crops doubled from 1950 to 1975. Also, on the average, each farmer doubled his farm's productivity during the same period. At least part of this increase of production and farmer's productivity can be attributed to agricultural extension and agricultural education.

Recommendations for Improving Agricultural Education

The information and interpretations of this study, coupled with the experience and observations of the author, prompt the following program recommendations.

1. In a large country such as Iran, there are extremely wide variations in economic and social conditions, raw materials, people, skills, traditions, habits, and the availability of or demand for different commodities. These variables must be borne in mind when setting up technical and vocational training establishments in different parts of the country, and programs must be adjusted so as to turn out the best product possible for a given situation.
2. With respect to the insufficient food production, one of the primary objectives of Iranian agriculture in the future should be to continue to increase production of food and fiber. It is strongly recommended that agricultural teachers and supervisory personnel be assigned a larger measure of responsibility for offering training to farmers. Highest priority

should be placed on subject matter that will result in practices used to increase agricultural production.

3. Technical and vocational training programs in agriculture must be planned according to the economic situation and manpower needs of the country based on statistical studies, along with estimations of future development in the various branches of the agricultural sector. The goal should be to have available sufficient trained manpower, and at the same time students in the agricultural training centers and rural vocational schools could look forward with confidence to immediate and steady employment upon graduation. The Ministry of Education and the Ministry of Agriculture, which are responsible by law to offer formal training to agricultural extension agents, agricultural technicians, and training young farmers, should seek to maintain a balance between each program and to coordinate the number of persons trained with the objectives of the development plans of the country. In order to do that, a coordinating committee at the national level should be formed with representatives from both ministries involved in training agricultural personnel and from the Plan Organization. This committee would be responsible for planning, conducting, and evaluating the programs of agricultural education.
4. At the ostan level, a Board of Trustees should be organized to determine plans for improvement of the agricultural training centers and rural vocational schools. It is recommended that

a representative from the geographical location, a representative of the agricultural cooperatives, and a representative of different political and religious groups be included in the Board of Trustees.

5. It is recommended that the curriculum offered by the rural vocational schools and agricultural training centers be prepared in close consultation with the education officials of each Ostan and that they include subject matter and courses that are considered most valuable for that area and community. Agricultural education will be enhanced if the training provided is related to and of benefit to the community. Since water has been one of the scarcest resources and greatest obstacles for agriculture throughout the country, it is recommended that teaching irrigation techniques of water handling, maintenance of ditches, the restoration and extension of the ancient Qanat system, the use of water according to the kind of crop grown, and the method of organizing cooperative irrigation districts for better distribution of existing water should be included in the curriculum of all agricultural training centers and rural vocational schools. Teaching the principles of agricultural extension should also be included.
6. It is recommended that up-to-date teaching and training materials relevant to local agricultural conditions and needs be prepared. There is also a need for improvement and expansion of such basic teaching and training facilities as laboratories, libraries, workshops, and farm and field laboratories.

7. It is recommended that a higher proportion of students at the secondary level be directed toward vocational education, including agricultural education.
8. It is recommended that a higher education unit be established to prepare teachers for agricultural training centers and rural vocational schools, something which was even proposed in the fifth development plan. It is also recommended that the students with rural background who graduate from the agricultural training centers and rural vocational schools and who show strong academic ability be selected for this higher education unit. This unit should be attached to KARAGE College of Agriculture where most of the facilities and equipment are already there.
9. It is recommended that rural teacher training centers be opened again. The Iranian Government in particular should fill the vacuum left by the dismissal of the literacy corps after the revolution in 1978. Teachers who are rural-oriented in outlook and training are needed in order to be development stimulators when they serve in rural areas.
10. It is recommended that a higher proportion of the national plan budget be devoted to education. A higher proportion of educational budget should also be devoted to vocational education including agricultural education.



Recommendations for Improving Agricultural Extension

1. It is recommended that one of the objectives for agricultural development should continue to be the equalization of income distribution among the farmers and other rural inhabitants. If this is retained as an objective, then the supporting policies and practices will need to be given additional development and implementation.
2. It is recommended that the agricultural extension program be directed primarily to the small landholder farmers. The improvement of production and marketing by the small farmers would be consistent with the agricultural development objective of equalization of income distribution in the rural area. In order to support this program emphasis, it will be necessary to have other agricultural policies which are favorable to the small farmers, policies such as those for pricing of agricultural inputs.
3. It is recommended that the administration of the extension program be decentralized for the planning and supervising functions. It is essential that the regional and sub-regional characteristics of Iran be utilized when planning the priorities for the extension program in various parts of the country. It is also essential that the sub-cultures of the regions and villages be considered when both planning for and supervising the implementation of the extension program. The organization for planning should involve farmer representatives as one means of getting the farmers to respect and trust the extension



workers. The number of regions and sub-regions for planning and supervising needs to be determined so as to reflect the diversity of Iran.

4. It is recommended that the administration of the extension program be altered so that the extension workers have a dual accountability through the Ministry of Agriculture and through the Rural Council. (The Rural Councils were established through Plan V. These councils consist of officials elected by the people of the village(s) contained in each council).
5. It is recommended that the extension agents should be distributed evenly throughout the country on the primary basis of number of farmers. Such a distribution would be consistent with the objective of agricultural development which emphasizes equalization of income distribution.
6. It is recommended that the staffing pattern of three agents in a given local unit be continued. The pattern of three agents (agriculture, home economics and youth) provide opportunities for the extension program to relate to farming, family and youth, all of which together represent much of the life of the farm family.
7. It is recommended that the demonstration method of teaching be continued and reinforced for all three program areas: agriculture, home economics and youth. In addition, the more general availability of radios, and television sets make it feasible to recommend the expansion of the number and quality

of special programs for people in the rural areas.

8. It is recommended that the number of both extension agents and extension specialists be increased. The educational level for the expanded number of extension workers should be kept at the diploma level; and the educational level for the specialists should be diploma plus specialized training or at the baccalaureate degree level. It is further recommended that the salaries and other employment benefits be kept as competitive as possible with wages and benefits in other sectors of the economy.
9. It is recommended that the educational programs for preparation of both extension agents and extension specialists be based on instruction in practical agriculture; and include instruction on the agricultural technology which has been developed and/or tested in Iran. The institutions which serve to prepare the agents and specialists should receive sufficient support to have strong instructional programs in practical agriculture. It is further recommended that the in-service programs for extension agents and extension specialists include two regular components: first, the in-service provided after employment and prior to assignment to a specific post; and second, the regular in-service to keep the agents and specialists up-to-date. The in-service programs should be a primary responsibility of the Ministry of Agriculture (Extension Division) in cooperation with the experiment stations and the institutions which provide



pre-service training to agents and specialists.

10. It is recommended that a higher proportion of the public budget be devoted to agricultural sector. It is also recommended that a higher proportion of the agricultural budget be spent on agricultural extension.



APPENDIX

APPENDIX

Recommendations for Further Improvement of Agricultural Extension

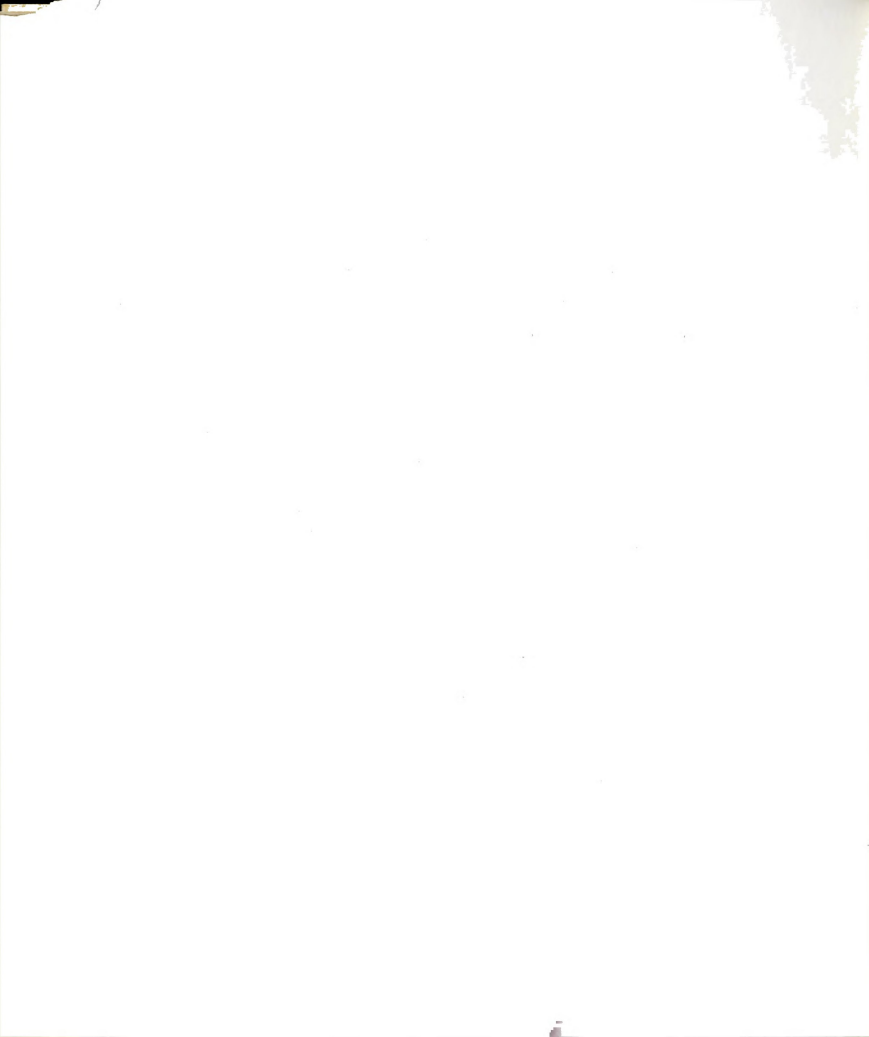
As mentioned in the introduction of Chapter IV, there are three extension models: the colonial extension model, the conventional model and the dialogical model.

Iran has not been an official colony of any power during the last four centuries, so the colonial extension model was not exercised in Iran. After the second world war, the conventional extension model was introduced in Iran by the Americans. This model has certain shortcomings and weaknesses when it is instituted in third world countries.

First, it is more appropriate for agricultural growth, not agricultural development. Second, the extension agents are usually from urban, educated and elite classes who are only responsible to the government.

It has been demonstrated over and over that extension agents are not always right and that many extension recommendations are unsound.¹ Thus, the assumption underlying the conventional approach that all recommendations are good and that the experts are always right has been rejected by many. Third, the assumption that the peasants are ignorant and docile, the conceptual colonial legacy,

¹Lele Oma, "The Design of Rural Development," Johns Hopkins University Press, published for the World Bank 1975 , p. 62.



seems to be a fallacy. While often lacking formal education, through experiences and the informal sharing of ideas, farmers have, in fact, developed a wealth of knowledge about agricultural production and survival in an often harsh environment. They also have a much better understanding of their problems, needs, resources, priorities, culture, and so on than extension agents, who tend to be outsiders and to belong to a different socioeconomic class.

Fourth, the conventional extension model rests on the assumption that knowledge exists somewhere outside the learner in an absolute or fixed manner. The teaching/learning process is often seen as the process of giving this knowledge to the learners or helping the learners to obtain this knowledge. So learning is the result of teaching and what the teacher does. In this model, the agents teach the farmers and the farmers are taught. The extension agents are active, the farmers are usually passive. Freir has criticized this concept and believes that knowledge cannot be poured into a learner's mind like tea into an empty cup.¹

Fifth, the organizational structure of conventional agricultural extension is centralized, hierarchical, and bureaucratic. In most cases, the decisions are made centrally and flow from top down to the extension agent. Therefore, there is a lack of farmer participation in the process of decision-making.

Sixth, the conventional extension model contributes to increased income differentiation in the rural areas. It is a common belief that this model is based on diffusion theory which suggests

¹Paul Freir, Pedagogy of the Oppressed (New York: The Seabury Press, 1970), p. 61.



that the most effective extension strategy is to focus on progressive or model farmers. New ideas would spread readily from these early adapters to their slower neighbors (this was the exact recommendation by the Government of Iran in the fifth development plan). The early adapters would thus benefit more from the new agricultural practices. As a consequence, the rich farmers would become richer and richer. In order to overcome these shortcomings, a new model of extension was developed in the 1970s. This was the dialogical extension model. The dialogical model is based on the idea that the basic aim of education is to develop people, not only as a means of development but as a goal in itself. While increased productivity, the development of new ideas, and the development of the agricultural sector are seen as important, they are only important to the extent that they benefit the general population. The philosophy of this model is based on liberation development theory, and its objective is the development of farmers--especially subsistence farmers--and the satisfaction of their needs. The organizational structure is decentralized and flexible. The decisions are made locally by both farmers and extension agents. The farmers participate actively in all the processes of decision-making. The extension agents are selected from among the farmers or their sons, and they are responsible to both the government and to the farmers. The extension agent and the farmer are both involved in a process of learning actively. Both are expected to think on their own. Learning by doing is considered a main concept of teaching and learning.

Characteristics of the Colonial, Conventional and
Dialogical Agricultural Extension Models

Characteristic	Model		
	Colonial	Conventional	Dialogical
1 - Underlying development theory	Colonialization	Modernization	Liberation
2 - Basic goals	Increase export cash crop production. Increase food production for the sake of political stability.	Introduce innovations, increase production.	Satisfy human needs
3 - Organizational structure	Colonial hierarchical Bureaucratic	Hierarchical Bureaucratic	Decentralized Flexible
4 - Staff	Colonial Commissioners. Indigenous educated elite responsible to colonial government.	Educated generally. Urban elites responsible only to the government.	Same as farmers. Identify with the farmers. Responsible to both the government & farmers.
5 - Decision-making	Centralized, top-down by the colonial agronomists or private foreign companies.	Centralized, top-down by the agent for the farmers.	Decentralized, by the agents and farmers together.
6 - Agent-farmer relationship	Agent is viewed as an authoritarian, exploiter and alien figure. The farmer is considered as an ignorant, illiterate, docile and passive entity by the agent.	Agent teaches and farmers are taught. Agent is active and farmers are passive.	Both are involved in a process of learning. Both are active. Both have a good attitude to each other and friendly relationship.

Characteristic	Model		
	Colonial	Conventional	Dialogical
7 - Clientele	Small portion of larger, progressive farmers. In India, the poor villagers were also considered as clientele for political reasons.	Generally progressive commercial farmers.	Small subsistence farmers.
8 - Concept of teaching and learning	Learning is the result of teaching. The agent knows everything which is good for farmers and pours it into the minds of farmers who are passive and have empty heads.	Learning is the result of teaching. Learning is the result of what the agent does.	Learning is mostly the result of the activity of the learner.
9 - Teaching method	Banking Top-down Force	Banking top-down Indoctrination Exhortation	Dialogue Interaction Problem-posing Reflection and action.



This model is recommended as an appropriate model of agricultural extension in Iran.

The philosophy of development as has been stated by the new Government of Iran is the development of humans. This philosophy emphasizes (1) agricultural development as a means for meeting the basic needs of all Iranians and providing self-sufficiency in food production and (2) rural development as a means for equalizing income distribution and providing welfare facilities for the rural inhabitants.

From this philosophy, appropriate policies must be drawn. Policies for taxation, pricing, marketing, education, health, and other social services must be directed toward meeting the basic needs and toward developing self-sufficiency. Then, in order to implement these policies, appropriate instruments must be considered. One of the appropriate instruments for implementing educational policy which is so suitable for agricultural development is the dialogical extension model. The large number of illiterate Iranian villagers can be educated to a point where they can run their own affairs and be able to become self-reliant by increasing productivity through their own dedication and hard work.

There are some social, cultural and religious factors in Iranian society which are favorable to the success of this model. These factors have become more visible and powerful because the new government is trying to support the religious aspects of Iranian society. According to Islam, the search for knowledge is necessary for every man and woman, and should be pursued from birth to death.

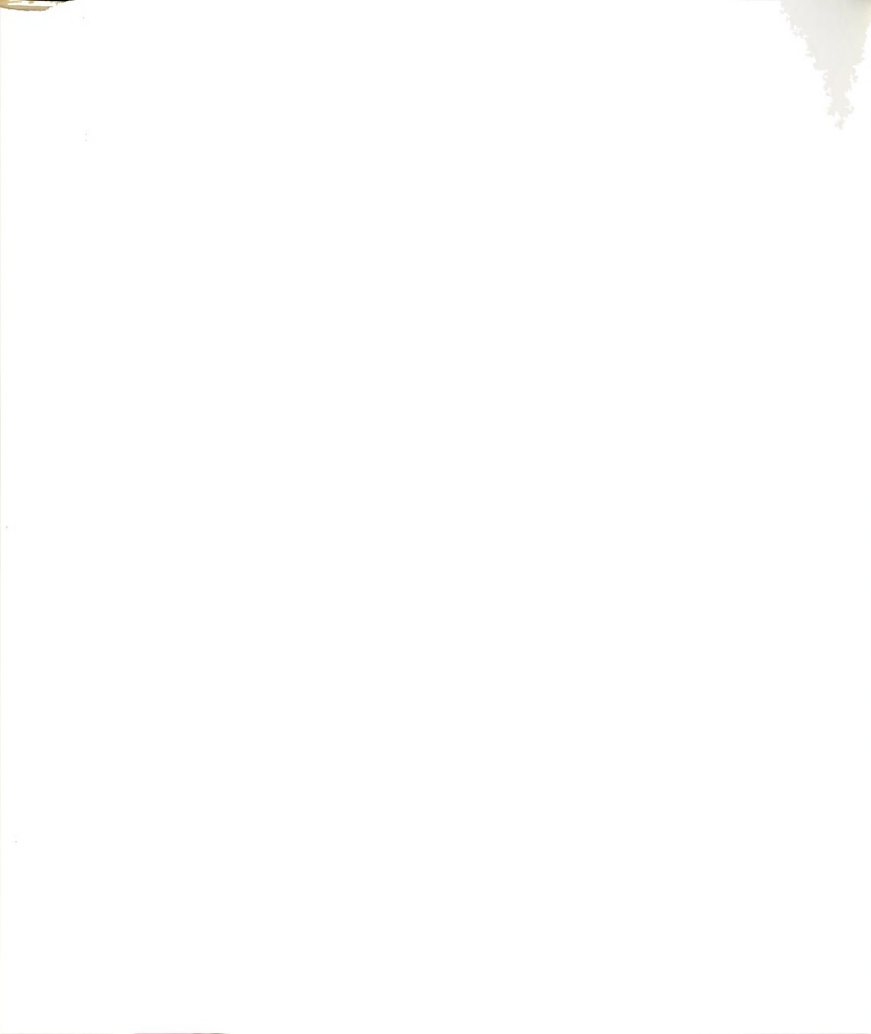


According to Islamic teachings, the Moslem should pay one-fifth of his net income as tax to the Islamic government. In an abstract sense, the tax for earning new knowledge is teaching the knowledge to somebody who doesn't possess it. Also, each Moslem should feel a responsibility for the affairs of other Moslems; otherwise he or she is not considered a Moslem. Islam emphasizes social and economic equality, and strives to provide the basic needs for all members of the society. These beliefs are particularly strong among the villagers and contribute to the feeling that each farmer must learn the new ideas about agriculture. Those who know the new methods must teach the farmers who do not know. All of the farmers and villagers should feel responsible for each other and for the community. Extension agents should try to teach the farmers in an environment of friendly equality, and the farmers who learn more and sooner than others should teach their fellow farmers. The Islamic concepts of social and economic equality imply that extension service should be small-farmer oriented, not commercial farmer-oriented as was the case during the last 25 years. Following this line, the extension agents should be distributed equally throughout the country, thus ensuring that all farmers have access to the extension service regardless of their geographical remoteness or their poor natural resources.

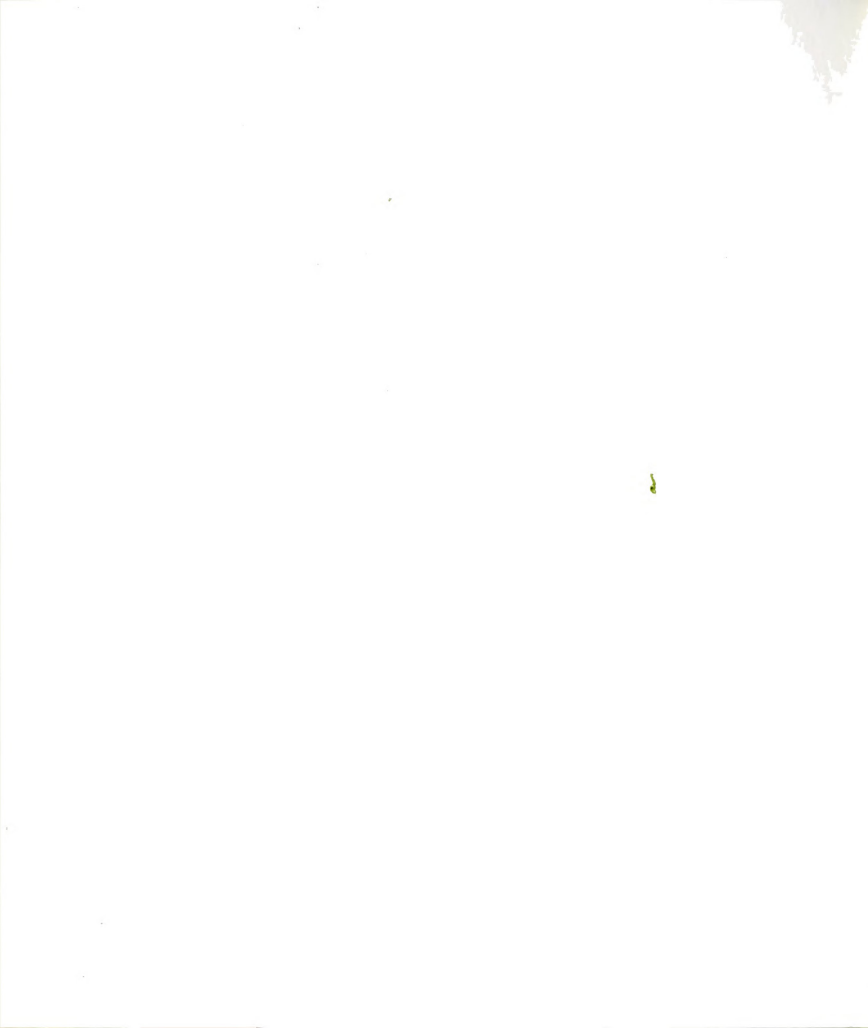
The agricultural development objectives and agricultural extension objectives should be consistent with each other. In addition, there should be strong government commitment to rural development.

The Islamic concepts discussed above provide a favorable basis for the application of the dialogical extension model. Its success

will depend on the structure of power in the new Government of Iran, the structure of agriculture, the development policies, and the social and religious awareness of Iranian farmers.



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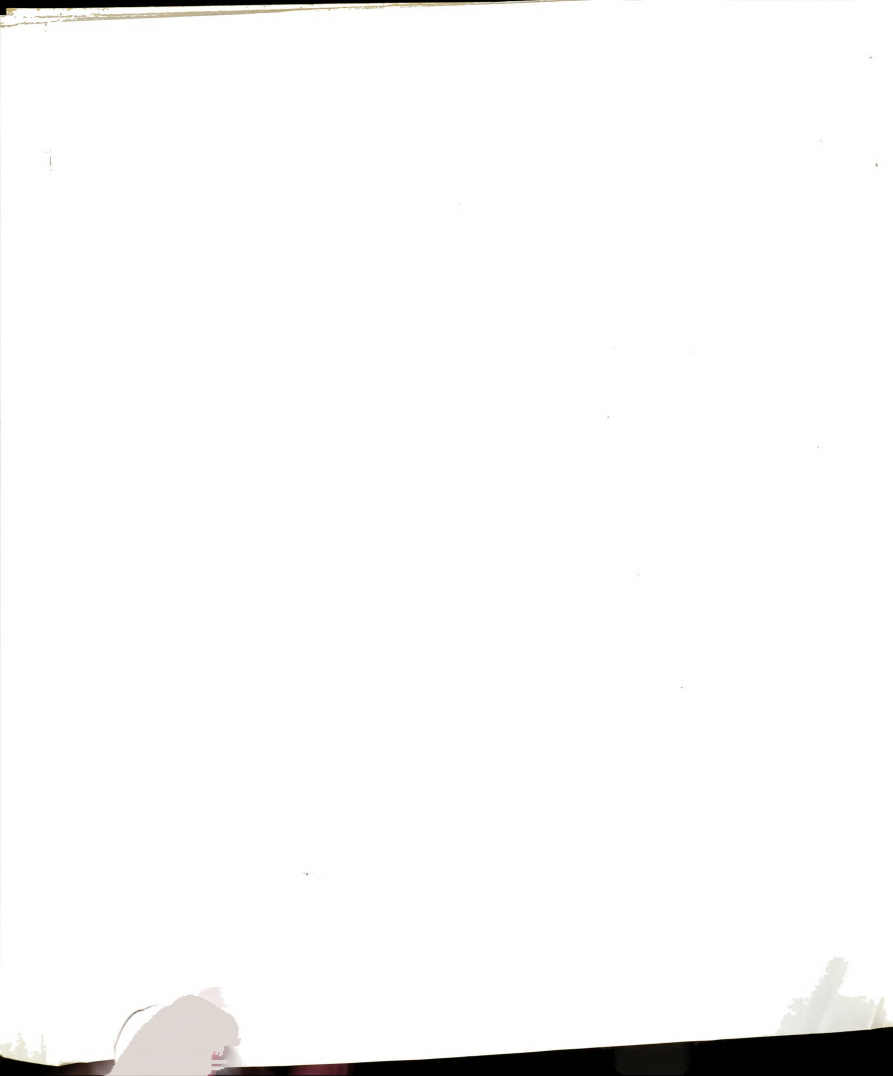
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