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A PROPOSED EDUCATIONAL PROGRAM FOR AGRICULTURAL
DEVELOPMENT IN IRAQ

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

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* * * * * *

The Ohio State University
1968

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CHAPTER I

THE PROBLEM AND ITS SETTING

Iraq possesses an impressive potential in the way of water resources (the Tigris and Euphrates Rivers), mineral resources, oil, and a vast area of fertile land. The total population of the country is about 3,550,000 and the area is 425,265 square kilometers.

Iraq is a member of the Arab world, and it is, generally, an agricultural country. The population is small relative to the area and the natural resources. The country is sparsely populated and primitive. The population is small because the people are not able to master their environment. The two rivers and the environment remained untouched because of the lack of capital and an unstable political structure. The twin rivers, the Tigris and Euphrates, can provide enough water to irrigate all the land that can be brought under cultivation. The land, in general, is not poor, and with a good system of irrigation and improved methods of farming, accompanied by the use of modern implements and farm machinery, the area under cultivation could be tripled, thus tripling the yield. But there is a sharp contrast between the economic potential and the actual situation; that is, the poverty prevailing in the country. The standard of living of the majority of the population
is very low, the income per capita is 102.9 Iraqi Dinar (the Iraqi Dinar is equal to $2.30 American money). 

About 65 percent of the population is illiterate, and most of these are in the rural areas. A large number of the people are subject to different kinds of diseases as sanitary conditions are poor and their houses are quite primitive; others are still moving around living in tents. Most of these people are the nomadic Bedouin who travel in search of grass and water so their movements are seasonal. The fundamental reasons for these conditions are a low output and low productivity coupled with a lack of incentive for investment. Most of the land is not cultivated for most of the year. Manpower remains underdeveloped and considerable unemployment exists in rural areas as well as in major cities. Though there has been considerable progress towards industrialization the country remains essentially agrarian. The skills of the labor force are typically those appropriate to basic agriculture or the handicraft production of household goods. The characteristic production unit is the family of the single proprietor, and more than half of the economically active workers are unpaid family members.

Purpose of the Study

The purpose of this study was to identify significant
agricultural, educational and social problems through an analysis of the historical development of Iraq. In addition, appropriate educational and sociological models were identified which would be useful in stimulating the adoption of innovations in agriculture and education. Finally, an educational plan was recommended for instituting the adoption of new agricultural procedures.

Need for the Study

Iraq is constrained by the lack of "human capital" in the form of skills, technical knowledge and the attitude and motivation necessary for industrial organization. Economic development depends on the ability of the nation to expand its physical resources; particularly the machines, the tools and other capital goods necessary for more efficient production techniques. It is obvious that a large stock of capital equipment cannot contribute to greater efficiency and expanded production in the absence of the human skills essential to its use.²

It is accepted that the first requisite of economic growth and social change is the development of an appropriately skilled labor force. There has not been an appropriate skilled labor force in proportion to the technical require-
ments for modern industry in Iraq. The ability of the Iraqi economy to change its structure to industrial farms, to insure full employment, and to raise productivity to develop levels which will permit higher standards of living, is directly dependent on a massive investment in its human resources — education is the primary instrument for the realization of these changes.

Education is both a means to economic progress and an objective of progress. That is, expenditure for education takes the form of both consumption and investment. The use of education is to earn a living, and to enjoy the fruits of living.\(^3\) It is not easy to make the distinction in practice and we also have to note that both the individual and society use education as a means of preserving and developing their values systems. It is a function which does not fall under either production or consumption in the economic sense.\(^4\)

Iraq is committed to democratic forms and equality of economic and social opportunity. These objectives demand the extension of general education at the primary level and advancement of secondary education; the limits to this expansion are largely dictated by the supply of high level education.\(^3\)

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\(^3\)UNESCO Economic and Social Aspects of Educational Planning, Paris, 1964.

manpower. This fundamental economic need gives a high priority to vertical extension of the educational system and emphasizes scientific and technical education. In other words, the most immediate need is professional and technical manpower to permit the rapid development of industry.

The above statements clearly point out the need for a careful analysis of the existing agricultural education situation in Iraq. The previous statements suggest that the application of research findings in the area of adoption of innovations in agricultural and educational practices would be helpful in developing a workable plan for agricultural education in Iraq.

Specific Objectives

The following are the objectives which will guide the study:

1. To describe the effects of land reform on farm products, on output per unit of land and on the farmers.

2. To describe the effect of the land reform on the total national economy.

3. To describe the current social structure and economic status structure of the country and compare it to that before the land reform.

4. To identify appropriate sociological and educational models which would be useful in stimulating the adoption of agricultural and educational innovations in Iraq.

5. To identify the most effective educational procedure that the government might use to bring about change in the method and technique of farm prac-
tices and to induce the farmers to adopt or utilize innovations.

6. To recommend a plan for implementing the educational program to bring about the adoption of farm practices.

**Basic Assumptions**

The following basic assumptions were central to this study:

1. There are better ways of making a living than those now practiced by the Iraqi and these must be found and introduced in such a way that the people will adopt them and work towards improving their standard of living.

2. Professional leaders with adequate knowledge, skills and ability are necessary to guide and help the people solve their problems.

3. Education is a prerequisite for people to change and changes in the mind and heart (attitude, belief, understanding and skill) must come before changes in ways of doing things.

4. To induce people to adopt and continue using new ideas requires four major improvements: technological, economic, social and educational, and the four areas are interrelated and inseparable. To be adopted and used continuously, a recommended change must be technically sound, economically feasible, culturally compatible and educationally attainable.

**Limitations**

The following limitations were recognized:

1. A lack of objective data (especially of first hand data).

2. The lack of current data concerning the agricultural development and economic condition of the farmers, and concerning the types and areas of
The lack of research studies of extension and program planning in Iraq.

The lack of recorded data concerning the previous programs of agricultural extension and their consequences.

Statement of the Problem

Iraq is an agricultural country, but some industrialization is in progress. Because of the abundance of water and fertile land, the majority of the people are farmers, and they have created the distinctive character of Iraqi society. The bulk of the work in starting any program has to be done by the government, and the government officials plan, implement and evaluate all programs without the participation of the local people or consideration of their opinions.

The department of agriculture is no different than any other governmental department, and consequently there is little understanding or communication between the Iraqi government and the people it rules.

The availability of agricultural production factors has not contributed much to the farm yields. Most of the crops give low yield per capita of rural population. The main reasons for such a low yield are the use of old and primitive tools and equipment, inefficient methods of production, inadequate systems of irrigation and drainage, high illiteracy among the rural people, a poor marketing
system, lack of incentives toward high production, and lack of loans or capital for the small farmers. But the farmers have begun, very recently, to acquire the knowledge and to recognize their needs which could move them to work actively for their own betterment. The Iraqi people, especially the rural people, do not deal with banks and they are not used to banking systems. They prefer to go to the lenders from whom they can get loans more quickly and without being intimidated by all of the papers and forms which a banker requires.

It is the duty of the extension worker to teach the farmers the advantages of dealing with the bank and the banking system. But the extension workers usually deal solely with physical programs, that is, to get high yields only, without consideration of educational objectives. The staff of the department of agriculture extension is not specialized in the field and many staff members are not well trained to do the job. The department also lacks specialists in different fields. In order to do the job it should do, the department of agricultural extension must become an independent organization free of any influence, and the administrators must be free in making decisions to meet the needs of the people.

Method of Investigation

The validity and hence the value of this study will
mainly depend on the reliability and validity of the data.

The data on which this study will be based were collected by using a combination of methods of data collection. The combined methods enabled this investigator to bring together specific facts from different sources for comparison and analysis. Each data gathering device has both merits and hazards or limitations. The researcher collects the kinds of data that could be utilized to fit his model, his objectives and his research design. The research design used in each study is tailor-made and there is no set of firm rules which can be set down. No one design can be looked upon as either right or wrong, but each must be judged in terms of its appropriateness for a given research situation.5

Sources of Data

Several methods were used to collect the needed data for this study. These sources consisted of official records, current literature, and the writer's knowledge and experience which he has gained through his career in the department of agriculture. Below is a brief description of each source that has been used in collecting the data.

Official Records

The Iraqi government does not publish an annual report

detailing the results achieved in each year. Each ministry publishes an annual report which describes its annual activities. The annual report of the department of agriculture includes almost all the information related to agriculture, such as: time of ploughing and sowing, size of area planted with each crop, nature and conditions of the farms, time of harvest and yield of different crops. All of this information is estimated and not based on actual counts. However, there are many publications which are accurate and dependable. These include: Alwagaea Aliraguyia, the statistical Abstract, the annual reports of each ministry concerning their achievements, budget and expense, the government census of population (but the population census is not complete in regard to job classification) and others.

Current Literature

There are few books that deal with the Iraqi situation compared with the number of books that have been written about some other underdeveloped countries. These few books are not up to date, but they do contain accurate and useful information about the background of the country, and about some developments and incidents in the social, economic, educational and political fields.

Some recently published papers were valuable sources

of information. These papers address themselves to specific problems, and most of them are written in the Arabic language. Another source of information was the theses and dissertations written in the United States about Iraq.

**Personal Experience**

The writer has worked in the Board of Development and Ministry of Development, Fourth Technical Section, in Iraq; where he was in charge of the agricultural extension campaign from 1957 to 1959. At the same time he was the secretary of the Sugar Beet Committee. The main object of this committee was to introduce the sugar beet as a new crop to be adopted by the farmers in the northern part of the country. In late 1959, the writer was transferred to the Department of Agricultural Extension. He worked in the department until 1961 and was in charge of the agricultural extension. With the cooperation of the F.A.O. representative, he worked at planning a program for the adoption of new farming practices.

In late 1961, the writer was transferred to the Baghdad Agricultural Department where he worked in agricultural extension for the Baghdad province only.
Definition of Terms

The following terms have been used in this study and are defined below to facilitate understanding by the reader:

1. Agha -- Head of tribe in Northern part of Iraq.

2. Dinar -- A standard unit of Iraqi money equal to 2.30 American dollars.

3. Donum -- Measurement of an area equal to 2500 square meters, or, .60 acres.

4. Fellah -- Farmer, plural Fellahin.

5. Gadha -- An administrative unit smaller than the Liwa and larger than the Nahiya.

6. Liwa -- The largest administrative unit, the country is divided into fourteen Livas.

7. Miri Sirf -- (Amerya Sirfa) Land that is owned by the State (State Land).

8. Nahiya -- An administrative unit smaller than the Gadha.

9. Sheikh -- Head of a tribe (chief).

10. Innovation -- Any idea perceived as new by the individual.

11. Diffusion Process -- The spread of a new idea from its source to its ultimate user or adopter.

12. Adoption Period -- The time which is required for the adoption of a new practice to occur.

13. Adoption -- The continuous use of a practice by the individual.
CHAPTER II
HISTORICAL BACKGROUND

Iraq is one of the Arab states which is located in southwestern Asia. It is considered the cradle of civilization. The earliest era in Iraq's history probably dated back to 6000 B.C. Many innovations have developed since then which have contributed to the growth of human civilization. Irrigation projects, some of which are still in existence, are one sign of the early development of the area. The two rivers, the Tigris and the Euphrates, allowed the development of productive agriculture through irrigation. The development of the ancient cities and the nourishment of trade came as a result of surplus food supply and some technology. The development of vocational specialization and the creation of leisure for wealthy people were initiated. The basic ideas and techniques that marked man's emergence from his prehistoric past, such as the wheel, the plow, metallurgy, massive architecture, writing, mathematics, complex government, and written codes of law have also influenced Iraq.¹

The Islam appeared in 627 A.D. and Iraq became an

Islamic nation. The golden age, as it has been called, occurred during the Abbaside Caliphate, and at that time (754-1258 A.D.) Baghdad became a major cultural center of the world.

By the thirteenth century, the Arabic language was the main language used in the fields of science, philosophy and literature. Islam is of prime importance in the Moslem's life. It did (and still does, in many Arab countries) enter into politics, social life, education, and many reform development programs.

In many Arab states, Iraq, Egypt, Syria, Saudi Arabia, Yemen, Algeria and Tunisia, religion has now lost much of the dominance of its role in public affairs, but it still plays an important role in social life. Religion plays no part in most educational institutions, but it has its own role in some religious colleges. The role of religion in education will be discussed later.

Agriculture in Iraq was well developed during the Abbaside dynasty. The country supported, at that time, about twenty million people. At the present time the country does not produce enough food to feed seven million people.

In 1253, the Mogul invaded Iraq and destroyed almost everything that had been achieved by the people as well as the country's cultural progress. The Turks succeeded the Mogul and the country came under the direct rule of the Ottoman empire. In fact, the Turks considered themselves
the Moslem rulers of the entire Arab world during the sixteenth century.

The Ottoman Empire ruled Iraq until the First World War. In 1918, the British government captured Iraq from the Turks, and Iraq was under British rule until 1921. On August 23, 1921, the kingdom of Iraq was established, and on October 3, 1932, Iraq was admitted to the League of Nations as a full fledged member.

The census taken in 1947 indicated that the population at the time was 4,316,135. According to the 1965 census, the population of Iraq was 3,550,680.

Recently, Iraq has attained a position in the forefront of nations of Western Asia and the Arab world. The population of Iraq today shows combinations of different features — racial, cultural and religious mixtures as well as the Arab and Kurdish dichotomy and some minor enclaves of persisting racial distinctions. The Iraqi people, in political, social, cultural and economic areas, have much to offer in high and sensitive intelligence and the capacity for progress. They have before them those peculiar problems of government created by the existence of varying levels of education among the people, the political and social structure of their society, and by the striking regional dif-

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ferences within the Republic of Iraq. The country is rich in natural resources. These resources include a large area of tillable land and two large rivers and their tributaries. Proper use of these resources will certainly make Iraq an important crop producing country. The oil wells which are now under full operation are of interest to most oil consuming nations. With such a wealth, the country is expected to have a rapid natural development in the oil industry and other domestic affairs; and these will attract considerable foreign interests. The realization of this progress and development poses many problems — problems of economics, of industry, of scientific development in both agriculture and irrigation, of rapidly expanding public services, of administration and finance, of the abiding East-West dilemma, of the modern Islamic world, and of the evolution of a relatively backward people into a people capable of dealing with the problems of full modernization.  

Since World War II, agriculture in Iraq has shown encouraging development. The expansion of agriculture, use of fertilizer, the construction of flood control dams, reclamation of land, and the development of drainage systems are evident in some places. This is probably a result of the belief that agriculture is the most important sector of the economy (except for the oil industry). However, fluc-

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tuations in emphasis between agriculture and industry are very obvious as a result of changes in the power structure and the leaders themselves. The lack of good planning for agricultural development is probably the main factor that causes the lack of agricultural development in Iraq.

**Geographical Dimensions**

Iraq is divided into three regions. The regions are based on geographical characteristics. The desert is in the western part of the country, the valley in the middle, and the highland area in the eastern part. Each division has its own characteristics, which are different from the others.

**Soil**

Iraq is situated in the Middle East belt of unproductive soil. It is typical of arid lands, with high temperature and very little natural vegetation. As compared with other areas however, it has an advantage: most of its irrigable soils are alluvial and rich.

About sixty percent of the land that is irrigated by flow is affected by salt and 20 to 30 percent was abandoned during the period between 1937 and 1957. This accumulation of salt is due to much water and the lack of proper drainage systems.

**Physical Characteristics**

The general condition of the climate in Iraq is con-
continental. It is composed of a long summer, short winter and a very short period of autumn appears in November, and a very short spring season, which may occur during the month of April only.

The winter season is characterized by cold weather comparable to that of similar latitudes on the Syrian coast. The different parts of Iraq have a similar pattern of seasonal climatic changes. In the summer time there is not as much variation as in the winter. Iraq is more unified climatically than in other geographical aspects. The long summer in Iraq makes extensive human effort difficult, an effect noticed immediately by those who come to Iraq from other parts of the world in which the climate is temperate.

The bordering countries of Iraq are Persia (Iran) on the east; Turkey on the north; Syria, Jordan and Saudi Arabia on the west. On the south lies the Arabian Gulf. All of these countries are Islamic and with the exception of Turkey and Iran, all are Arab.

Natural Resources

Land and water are the country's most important resources, followed by oil. Water is a critical factor and water management is one of the most important problems to be considered by the government. The northern and northwestern parts of the country (mountain zone) receive enough rainfall for cultivation and crop production. The crops
that grow in other parts of the country depend on artificial
irrigation, and the main sources of water for this are the
Tigris and the Euphrates rivers. The water of these two
rivers is controlled by dams for flood control as well as
storage for irrigation in the summer time.

**Underground Water; "Artesian Wells"**

As mentioned earlier, the shortage of water during
the summer is the main reason for the mobility of the
nomad people as well as for some of the farmers and herds­
men.

One of the most difficult problems that the government
faces in settling the nomadic people is the shortage of water
during the summer season. Water storage projects are one of
the possible ways to provide for the settlement of the no­
madic people. Unfortunately, the arable land on which these
projects are locates is not large enough to absorb all the
people who want to settle. So, the government started a
new series of projects. These projects are the digging of
Artesian wells in the desert to fill the settlers' need for
water.

There are 1,170 Artesian wells distributed throughout
the country. Most of the water from these wells is used for
drinking by the settlers and by their livestock. Some of
these wells may be used for crop production but only on a
small scale. There are many small agriculture units de­
pending on wells for their irrigation water.

The Artesian wells are distributed throughout the
country as follows:\textsuperscript{5}

1. 100 wells in the northern and southern deserts
2. 120 wells in Kirkuk, Arbil and Sulamaniya liwa
3. 100 wells in Aljazera desert and Mosul liwa
4. 350 medium depth wells in various parts of the
country
5. 500 shallow wells throughout the country

Population

An estimate of the active labor force in Iraq for the
period 1957-1965 has been made by the Department of Labor
and Wages.

The population was classified into two categories,
urban and rural. An area with a population of 5,000 or more
was classified as urban and areas with less than 5,000 people
were considered rural. The nomads were also classed as
rural populations.

The lower limit of those of working age is thirteen
years. For the upper age limit distinctions were made be­
tween urban and rural and between male and female workers.
The end of the 55th year of age for males and the 45th year
for females were accepted as the upper age limits for workers

\textsuperscript{5} Government of Iraq, \textit{The Five Year Detailed Economic
in the urban sector. For the rural sector the limits were 51 and 41 years of age respectively.\textsuperscript{6}

**Classification of Population**

According to a special publication distributed in 1967, the population of Iraq was 3,550,630.\textsuperscript{7} This is an estimated figure which is based on the assumption that the rate of increase is 3.5 percent. In actuality however, nothing is known with certainty about the rate of increase, although birth and death rates are high.

The distribution of the population according to age based on five year intervals is shown in Table 1.\textsuperscript{8}

\textsuperscript{6}Ibid., p. 52.

\textsuperscript{7}Arab Information Center, Educational Planning in the Arab World. No. 13, New York, 1967, pp. 147-150.

\textsuperscript{8}Ibid., p. 143.
Table 4

Age Distribution of Iraq Population at Five Year Intervals

<table>
<thead>
<tr>
<th>Age Intervals</th>
<th>Male (T Total)</th>
<th>Percent</th>
<th>Female (T Total)</th>
<th>Percent</th>
<th>Total (T Total)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>84,871</td>
<td>19.5</td>
<td>797,676</td>
<td>19.0</td>
<td>1,646,391</td>
<td>19.3</td>
</tr>
<tr>
<td>5-9</td>
<td>667,675</td>
<td>15.5</td>
<td>99,160</td>
<td>14.1</td>
<td>1,279,636</td>
<td>15.0</td>
</tr>
<tr>
<td>10-14</td>
<td>457,030</td>
<td>10.5</td>
<td>421,028</td>
<td>10.1</td>
<td>878,058</td>
<td>10.3</td>
</tr>
<tr>
<td>15-19</td>
<td>330,761</td>
<td>7.6</td>
<td>340,060</td>
<td>8.1</td>
<td>670,821</td>
<td>7.9</td>
</tr>
<tr>
<td>20-24</td>
<td>252,438</td>
<td>5.6</td>
<td>261,286</td>
<td>6.7</td>
<td>513,724</td>
<td>6.2</td>
</tr>
<tr>
<td>25-29</td>
<td>300,314</td>
<td>6.9</td>
<td>298,079</td>
<td>7.1</td>
<td>598,393</td>
<td>7.0</td>
</tr>
<tr>
<td>30-34</td>
<td>205,791</td>
<td>5.9</td>
<td>277,038</td>
<td>6.6</td>
<td>482,829</td>
<td>5.6</td>
</tr>
<tr>
<td>35-39</td>
<td>213,267</td>
<td>5.9</td>
<td>235,015</td>
<td>5.6</td>
<td>448,282</td>
<td>5.2</td>
</tr>
<tr>
<td>40-44</td>
<td>226,324</td>
<td>5.2</td>
<td>201,518</td>
<td>4.8</td>
<td>427,842</td>
<td>5.0</td>
</tr>
<tr>
<td>45-49</td>
<td>169,743</td>
<td>3.9</td>
<td>130,147</td>
<td>3.1</td>
<td>299,890</td>
<td>3.5</td>
</tr>
<tr>
<td>50-54</td>
<td>161,038</td>
<td>3.7</td>
<td>159,535</td>
<td>3.8</td>
<td>310,573</td>
<td>3.8</td>
</tr>
<tr>
<td>55-59</td>
<td>134,924</td>
<td>3.1</td>
<td>138,544</td>
<td>3.3</td>
<td>273,468</td>
<td>3.2</td>
</tr>
<tr>
<td>60-64</td>
<td>91,400</td>
<td>2.1</td>
<td>95,561</td>
<td>2.3</td>
<td>186,961</td>
<td>2.2</td>
</tr>
<tr>
<td>65-69</td>
<td>65,286</td>
<td>1.5</td>
<td>67,173</td>
<td>1.6</td>
<td>132,459</td>
<td>1.5</td>
</tr>
<tr>
<td>70 and over</td>
<td>156,685</td>
<td>3.6</td>
<td>159,535</td>
<td>3.5</td>
<td>316,221</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,352,383</strong></td>
<td><strong>100</strong></td>
<td><strong>4,198,257</strong></td>
<td><strong>100</strong></td>
<td><strong>8,550,680</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The preceding table (TABLE 1) shows that the largest age group is that between 0-4 years, and this indicates that Iraq has a high infant mortality rate.

The country is sparsely populated with the people gathered around the big cities and near the rivers. The population density ranges from 12 persons per square mile in the Dulaim Liwa to 64 persons per square mile in the Baghdad Liwa, but these are only averages and have little meaning since they include a large desert which is not inhabited.¹⁹

Iraq is divided into fourteen provinces or Liwas for administrative purposes. Each Liwa is divided into smaller administrative units called Gadhas. The number of the Gadhas in each Liwa varies according to the number and size of the settlements in the Liwa, the size of the Liwa itself and the importance of the area economically and socially. The Gadha is divided into still smaller units called Nahiyas. In each Nahiya there are a number of villages.

The distribution of the population for the year 1963 according to the Liwas, is shown in Table 2.

Baghdad Liwa has the largest number of people. This is probably because of the concentration of the industries providing more job opportunities.

¹⁹Harris, op. cit., p. 33.
### TABLE 2

**DISTRIBUTION OF THE POPULATION BY LIWA**

<table>
<thead>
<tr>
<th>Liwa</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baghdad</td>
<td>802,284</td>
<td>747,320</td>
<td>1,549,604</td>
</tr>
<tr>
<td>Basra</td>
<td>289,072</td>
<td>287,043</td>
<td>576,115</td>
</tr>
<tr>
<td>Mosul</td>
<td>421,306</td>
<td>398,673</td>
<td>819,979</td>
</tr>
<tr>
<td>Kurkuk</td>
<td>220,219</td>
<td>210,447</td>
<td>430,666</td>
</tr>
<tr>
<td>Arbil</td>
<td>143,982</td>
<td>141,507</td>
<td>285,489</td>
</tr>
<tr>
<td>Diala</td>
<td>185,054</td>
<td>174,428</td>
<td>359,482</td>
</tr>
<tr>
<td>Amara</td>
<td>166,491</td>
<td>170,823</td>
<td>337,314</td>
</tr>
<tr>
<td>Kut</td>
<td>148,450</td>
<td>162,180</td>
<td>310,630</td>
</tr>
<tr>
<td>Nasiriya</td>
<td>221,253</td>
<td>252,975</td>
<td>474,228</td>
</tr>
<tr>
<td>Dvaniya</td>
<td>244,839</td>
<td>255,145</td>
<td>499,984</td>
</tr>
<tr>
<td>Kerbela</td>
<td>153,530</td>
<td>155,324</td>
<td>308,854</td>
</tr>
<tr>
<td>Ramadi</td>
<td>146,067</td>
<td>134,227</td>
<td>280,299</td>
</tr>
<tr>
<td>Hilla</td>
<td>194,372</td>
<td>190,644</td>
<td>385,016</td>
</tr>
<tr>
<td>Sulaimaniya</td>
<td>165,878</td>
<td>153,893</td>
<td>319,771</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,502,797</strong></td>
<td><strong>3,434,629</strong></td>
<td><strong>6,937,426</strong></td>
</tr>
</tbody>
</table>


The significant differences among the people of Iraq are not those of race or of physical characteristics, but
are those of religion, language, and social and cultural traditions which are well recognized by the people themselves. But there is the pervading Arab identification, formed in the countries under Arab domination which is reflected in the dominance of the Arabic language and in an ideal image of the perfect Arab rooted in the history of Arabic culture.11

The Arabic language is the official language of the country and it is spoken by at least four-fifths of the people. The separation of communities and the lack of intercommunication and integration have caused some variation in spoken Arabic, but these variations are not of importance.

With improved communications the nomads are "floating" to the villages, and the villagers are drifting to the towns and cities. This kind of "pull" on all segments of the population has altered the character of the society of the country. This slow migration of people is breaking down the isolation which traditionally has maintained the barriers blocking interaction between rural people and city dwellers.

A distinction which can be seen easily is that between the tribe (rural) and the city (urban). The tribe is composed of nomads, herdsmen and settled cultivators, whose differences from each other are mainly in function. Most of the farmers are of tribal origin and this coupled with

11Harris, op. cit., p. 36.
the tribal organization and morality has largely survived the farmers' transformation from nomadic to settled people. The development of modern communications has diminished the trade in camels which was, at one time, the main source of income for these people. The enforcement of government laws and authority has provided them with protection, money and many other means of income.

The nomadic people today are living their lives in the same way that their ancestors did thousands of years ago. They move from one place to another to find the water and grazing land necessary to their herds. They usually derive most of their livelihood from the animals (camels and sheep) and obtain the other necessities from the settled people in exchange for the animals and their products. The rest of the tribes are well settled, and most of them are settled in villages.

The rural people are no longer so isolated as they once were. They obtain information from the radio, political activities and most of all from relatives who have been to school or have moved to cities. The development of agriculture coupled with improved communication not only has helped diminish tribal and urban differences, but has created common interest between tribal members and city dwellers.

Social Structure

Looking at the Iraqi people in general, one finds
distinct social groups. Each social group is, to a large extent, culturally traditional within itself, but different from the others because of differences in physical environment and in ethnic and religious origin.

The Iraqi society may be divided into two parts, urban and rural; and the rural segment may be further divided into two, the rural farmers and non-farmers, and the Bedouin.

**Bedouin — Desert Nomad**

The Bedouin are the nomadic people who live outside of the areas of cultivation and who must migrate in search of pasture for their flocks. The economy of the Bedouin is based upon the breeding and raising of animals, mostly camels and sheep, but some goats and horses as well. The Bedouin also depend on the exchange of commodities with settled cultivators or caravans with which they come in contact.

Their dependence upon animals for their livelihood and the scarcity of water and grazing land away from river villages makes the nomadic life necessary and suitable. They must settle near the wells or rivers during the summer when they badly need water. The life of the nomadic people is hard and simple; they subsist on camels' milk and dates during most of the year. Housing consists of tents made mostly of goats' hair (and they are all black). Health conditions are poor, but no worse than those of the poor farmers and villagers.
The Farmer

The farmer (fellah), considers himself a member of one tribe and he usually exhibits distinctive tribal characteristics. The Iraqi farmer lives in a mud hut or one room house. The large group of farm people is divided into smaller groups: sharecroppers and fellahin (plural of fellah) or agricultural laborers. Each of these receives a piece of land from the landlords and farms it. But the two groups differ in income and social position. The sharecropper receives half of the crop, while the fellah receives a smaller share. These shares vary from season to season and from one area to another. The major difference between sharecropper and fellah appears to be bargaining power. Sharecroppers are those who, through family connections, can exact a greater share from the landlord. Fellahin do not have sufficient education to compute the size of their debt or the size of their share of the crops, or are fearful of having their land taken away by the sheikh and given to another fellah.  

The village with its more complex division of labor also has a more complex social system than that of the nomadic tribes. In the economic sphere, certain groupings are evident: tenant farmers or sharecroppers, craftsmen and tradesmen, small landowners and large landowners. The unequal distribution of land, wealth, prestige, power and skills within

12 Ibid., p. 36.
the village sorts the villagers into a class system. The fellah who has no land is ranked the lowest and he is also one of the poorest. There are more farmers who own their land in the northern part of the country than in the southern part, however, both are ranked low and both are poor. Both husband and wife work hard, and the work is well divided, as to who is to do what according to custom. The men spend their leisure time in their huts or at the teahouse if there is one, or at the sheikh's guesthouse where they have free coffee. A United Nation's expert on handicraft estimated that the Iraqi fellah has one hundred idle days a year. Most of the wheat and barley cultivators have nothing to do in the summer when there is not enough water to irrigate all of the land that was planted to winter crops. Rice growers stay idle all winter until the spring flood.

In the great Mosayib project, where there is enough water all year round, the farmers mostly grow the kinds of crops that require fewer farming operations, in order to have spare time to spend in the teahouse. Most of the farmers are not motivated toward better farming. They are well satisfied with the subsistence living.

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13 Ibid., p. 23.
14 Ibid., p. 23.
Urban People

According to the census of 1957 the total population of Iraq was 6,339,960 people, out of which 2,436,443 are urban (39.2 percent), 3,787,622 rural (59.7 percent) and 65,895 Bedouin, Nomads (1.1 percent). The urban population has a more complex social structure than that of either the Bedouin or the rural people. The occupations and the positions in the towns and big cities are differently ranked and differently rewarded. The occupational specializations are important and rewarded differently in terms of economic and social prestige. Different occupations are highly evaluated in terms of prestige rather than income. On the top of the socioeconomic stratum of the urban society are cabinet members, the top government personnel, the sheikhs, and the wealthy merchants and landowners. The elite group is estimated to number less than 2 percent of the total population. Below this elite segment is the growing and highly stratified middle class within which the greatest changes are taking place. The majority of this middle class are the educated people who comprise the government system. The majority of the urban population belongs to the lower class; the small shop-keepers in working class districts.

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15 Ibid., pp. 78-79.
16 Ibid., p. 79.
The ranks of the middle class are swollen by recruits from the urban lower classes. In this climbing process education is the key factor, and without it a person stays at the lower level.\textsuperscript{17}

TABLE 3 shows the distribution of the labor force according to type of jobs and the percentage of each.

\begin{table}[h]
\centering
\begin{tabular}{lll}
\hline
Area of Work & Number & Percent \\
\hline
Agriculture    & 1,907,435 & 67.6 \\
Industry       & 225,733   & 3.0  \\
Commerce       & 107,225   & 3.8  \\
Building & Constr. & 84,652 & 3.0  \\
Transport      & 126,977   & 4.5  \\
Domestic Science & 369,646 & 13.1 \\
\hline
Total          & 2,321,724 & 100.0 \\
\hline
\end{tabular}
\caption{Distribution of Labor Force in Different Sections of the Economy}
\end{table}

\textit{Source: Educational planning, op. cit., p.150.}

This table indicates that slightly more than two thirds of the labor force, 67.6\%, are engaged in agriculture. Domestic service comes next with 13.1\%, and industry with 3.0\% comes next. The high percentage of the labor

\textsuperscript{17}\textit{Ibid., p. 79.}
force engaged in agriculture is because of the lack of the use of machinery in agriculture.

Summary

Iraq is one of the Arab states, and is considered the cradle of civilization. It is an agricultural country, and the two rivers, the Tigris and the Euphrates, have allowed the development of productive agriculture through irrigation.

The country became a member of the Islamic world, and Baghdad the capitol, was a major center of the world. The Mogul invaded Iraq in 1253 and destroyed most of what had been achieved. The Turks succeeded the Mogul and the country came under the rule of the Ottoman Empire. Then in 1913 the British captured Iraq and dominated it until 1921 when Iraq became an independent state.

Land and water are Iraq's chief resources, followed by oil. The country is sparsely populated; the population is about 3,550,000. Of this population, 67.6 percent is rural and most are engaged in agriculture or some related industry. The people are poor and the income per capita is low.
CHAPTER III

FACTORS AFFECTING AGRICULTURE

Iraq, as has been stated by Lord Salter, in his book The Development of Iraq, has an altogether exceptional opportunity of achieving a development which within a few years would substantially increase her economic resources and raise her general standard of living.¹

This statement was made thirteen years ago, but during these thirteen years the progress that has been achieved is much less than what was predicted. The reasons it seems to the writer are poor leadership has been unsuccessfully rotating in power; a lack of good planning, a lack of insight, and a lack of sacrificing personal favor on the part of the leaders for the public affairs, and probably the lack of well trained personnel to hold key positions in the administration.

Iraq, first of all, is an agricultural country but this does not mean that it cannot be an industrial one too. The combination of potential resources could be utilized for the development of industry as well as agriculture. Agricultural research is now in progress in order to find the best possible means and methods for further development and to raise the living standard of the farmers and to bolster

the national economy.

In addition to the effort of the Central Bureau of Statistics, other departments of the Ministry of Planning are engaged in some technical studies. These studies are aimed at the appraisal of various development projects and possible investment alternatives. These studies and others like them are indispensable for the promotion of the economic projects.

The Agricultural Department has undertaken the study of the agricultural pattern, productivity, and man power utilization in the various parts of the country. This study is trying to supply insight into the agricultural conditions and traits of various regions and of the country as a whole. Estimates have been made as to the land/man ratio, the degree of utilization of land, the intensity of land utilization, the gross output per unit of land the structure of agricultural output, the labor requirements, man power utilization, etc. The study has shown many discrepancies in various regions with regard to net output of each season of the agricultural population, and utilization of labor force. The average use of the labor force in agriculture was estimated to be about sixty percent. The differences among the various regions are extensive. The study has supplied

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certain criteria for the economic choice of the development areas.

**Land Ownership**

The Ottoman Government had issued a land code in 1353, the purpose of which was to introduce a compulsory registration of titles to all miri land (state land), as the necessary basis for reforms of the tax system. The object of the land code was to reform the system of taxation through a direct contact between the real cultivator and the state.

Before the introduction of the land code, most of the land was miri land and was held by the owner without legal right. The land holders included settled villagers, members of communities practicing semi-communal forms of cultivation, tribes exercising customary rites of ownership over large areas, and large landlords who had received grants of land from the Sultan. The attempt was not only a failure but also added to the general confusion.³

Legally, the miri land belongs to the state, and the state has the authority to grant a title to a piece of land. The Turkish government tried to create a strong central administration over the cultivators in order to gain the maximum revenue and to weaken all rival sources of power. Even

though the code was not intended for a reform, it could have been a measure of land reform in favor of small ownership if it had been effectively carried out.

The land code explicitly prohibited the recognition of any form of collective ownership or collective farming. It was carefully specified that "the whole land of a village or a town cannot be granted in its entirety to all of the inhabitants nor to one or two persons chosen from among them. Separate pieces are granted to each inhabitant and a title is given to each showing his right of possession." Grants were made in most cases without examination of conflicting claims. Influential nobles and tribal chiefs (with the help of corrupt officials) were also able to register a large area in their names. In the northern part of the country whole village are registered in the Agha names. Agha is the name of the chief in the north, like shield in the south.

In the south the idea of land registration did not work. The villagers or the farmers feared that the registration was a preliminary to a call for military service or a tax collection; these fears resulted in the falsification of returns. The whole land was registered in the name of the tribal chief, city notable, or in the name of an old person in the family. Individuals disregarded the titles that were granted to them and continued the collective or

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semi tribal method of farming. The Ottoman land code continued and its effect was felt even during the British mandate from 1920 to 1932. The code was used for political purposes to win the support of the sheikhs.5

The tribal system of cultivation was partly communal and partly individual. The method of farming necessitated some communal organization since the individual farmers could not take care of the land by themselves. Such things as clearing the land, building dams across the channels required some sort of cooperation. The individual cultivator under such a system of farming is neither an individual farmer nor a farm laborer but he is a cultivator of communally owned land. At the beginning of the twentieth century the tribal system of cultivation started breaking up as a result of settlement for permanent cultivation, the opening of markets for the harvested crops (for cash value), the replacement of the kinship structure with a well organized political structure and most importantly as a result of technical change.

Land Tenure

Independent farmers who own the lands that they farm are few in number and are located primarily in Baghdad province. The agricultural lands are owned under various types of land tenure by a very small group of tribal sheikhs,

5Ibid., p. 63.
Aghas and landlords. Sharecroppers, as they are called in the United States, make up most of the farming class.

About 63 percent of Iraq's population is engaged in agriculture or some kind of industry which is connected with agriculture. The Land tenure is the most complex problem in Iraq and it lies behind most of the social, economic, and political problems of the whole country.6

The majority of the Iraqi farmers are sharecroppers. They farm the land and give to the landlords a certain percentage of the harvest. That percentage varies from one area to another, and depends on the type or irrigation system. According to Harris, the sharecroppers surrender up to fifty percent of their crop to the landowners in return for the use of the land and certain materials and facilities.7 A typical distribution of the crops in southern Iraq before 1953 was ten percent to the government, 7.5 percent to the principle tenant or sublessor, 2.5 percent to the sublessor's bailiff, and 40 percent to the landlord, with the remaining 40 percent going to the peasant.

The tenant's share varies according to services provided by the landlord who may furnish seeds, draft animals, and loans to the farmer to provide pump irrigation water.

6Ibid., p. 76.
7Harris, op. cit., pp. 197-98.
Some farmers in the southern part of the country retain between twenty and forty percent of the crop, while in the northern areas (which have enough rain for some dry farming and where the peasant is less dependent upon materials and services provided by the landlord) the tenant's share may rise as high as 30 or 90 percent. (This is for non-irrigated winter crops and the percentage may dip as low as 50 percent for the irrigated summer crops.)

The government has not provided the farmers with any of the economic or social services, in fact, the legal social system has reduced them to a state of virtual servitude. According to Kindelberger, in recent times in Iraq tribal lands have been appropriated as private property by the sheikhs and now large estates dominate the irrigation zone. The fellah or serf who worked the land had to pay two-fifths of his produce to the sheikh, two-thirds if the sheikh furnished the seed, and five-sevenths on pump irrigated land. A 1933 law which governed the rights and duties of the fellahin said that the fellah could not leave the land if he owed the sheikh a debt unless he paid this agricultural debt to the sheikh or landlord immediately, and that even if he made such a payment he was still required to re-

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8Ibid., p. 193.
9Qubain, op. cit., p. 83.
ceive a certificate of release from the landlord. Without such a certificate, he was prohibited employment on any other plantation, in any government office, or in any private business establishment of any kind, including domestic service in private homes. The farmers are always in debt to their landlords or to the sheikhs and so are virtually serfs attached to the land.

According to law No. 50 1932, the following classifications of land were established:

1. Mulk - privately owned or absolute private ownership. In most cases this type of land ownership was restricted to urban property.

2. Matruka - public land, mostly desert. This land is reserved for public use and is considered state land.

3. Wajf, property or land belonging to religious groups and institutions.

4. Iiri Land - It is either granted in tapo (permanent tenure) or in Lazma, where the occupier had been settled and had cultivated the land for 15 years or more or, it is Iiri sirf from Amirya sirfa, which means absolute state property. This type of land definitely belongs to the government with no previously established tenancy.

The government set about demarcating and registering land in accordance with the above classifications. By 1953 about 65,000,000 donums had been classified, as shown in TABLE 4. According to the Agriculture census of 1953 the

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12 Salter, op. cit., p. 139.
land holding in liwas totals 25,536,000 donums (see TABLE 5). Industrial holdings vary in size from an average of 6,384 donums in the Amara liwa to 25 donums in the Basra liwa. There were twenty-nine holdings in Amara, each of more than 20,000 donums but none in Basra liwa. On the other hand there were 10,614 holdings of less than 4 donums in Basra liwa and none so small in Amara liwa.\textsuperscript{13}

\textbf{TABLE 4}

\textbf{LAND CLASSIFICATION}

<table>
<thead>
<tr>
<th>Type of Land</th>
<th>Number of Donums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private land</td>
<td>224,143</td>
</tr>
<tr>
<td>Public Land</td>
<td>5,034,155</td>
</tr>
<tr>
<td>Wagf Land</td>
<td>711,922</td>
</tr>
<tr>
<td>Miri Land</td>
<td>60,473,066</td>
</tr>
<tr>
<td>Total</td>
<td>64,503,291</td>
</tr>
</tbody>
</table>


Iraq, counting all liwas except deserts, has an area of 241,913 square kilometers which equals 96,477,200 donums. The cultivated units and holdings are about 32,154,313 donums which include 2,009,304 donums of uncultivable land.\textsuperscript{14}

\textsuperscript{13}Ibid., p. 190.

\textsuperscript{14}Statistical Abstract, Ministry of Planning, 1960, p. 86.
Topa was the predominant type of land tenure, accounting for 33.3 percent of the total area of all types of tenure, 32.9 percent was Lazma, 14.6 percent was Miri sirf and 11.5 percent was unsettled lands.\(^{15}\)

**Table 5**

**Distribution of Agricultural Holdings According to Size**

<table>
<thead>
<tr>
<th>Size</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 donums</td>
<td>24,270</td>
</tr>
<tr>
<td>4 donums and under 20 donums</td>
<td>25,849</td>
</tr>
<tr>
<td>20 donums and under 60 donums</td>
<td>25,349</td>
</tr>
<tr>
<td>60 donums and under 100 donums</td>
<td>27,214</td>
</tr>
<tr>
<td>100 donums and under 200 donums</td>
<td>14,691</td>
</tr>
<tr>
<td>200 donums and under 1000 donums</td>
<td>17,574</td>
</tr>
<tr>
<td>1000 donums and under 2000 donums</td>
<td>12,028</td>
</tr>
<tr>
<td>2000 donums and under 3000 donums</td>
<td>1,702</td>
</tr>
<tr>
<td>3000 donums and under 4000 donums</td>
<td>632</td>
</tr>
<tr>
<td>4000 donums and under 5000 donums</td>
<td>356</td>
</tr>
<tr>
<td>5000 donums and under 10,000 donums</td>
<td>233</td>
</tr>
<tr>
<td>10,000 donums and under 20,000 donums</td>
<td>424</td>
</tr>
<tr>
<td>20,000 donums and over</td>
<td>104</td>
</tr>
</tbody>
</table>


\(^{15}\)Ibid., p. 86.
Economic Conditions

The economic conditions in the north differ from those in the south. In the plains region of the rainfed zone, production is highly unstable and depends on the amount of rain and the time of rainfall.\(^{16}\)

The large landowners in the Mosul Liwa region are predominantly city merchants. They have acquired the land either by inheritance or by lending to impoverished cultivators and taking the land when the debts cannot be paid. In any case, they usually acquire the land cheaply. The northern holdings are very small in comparison with the southern holdings. The largest landowners in the north have 20,000 donums (12,000 acres).

The rental fee for land is lower in the north than in the south because the population in the north is sparse and the marketing of products is difficult; on irrigated land where pump water is used, the landowners take a share of up to 50 percent of the gross products. In the southern part of the country the share of the landowners ranges between 66 and 75 percent, on dry land the rent is low.\(^{17}\)

The differences in farming practices between the southern and central parts of Iraq, where peasant proprie-

\(^{16}\text{Ibid.}, \text{p. 190.}\)

\(^{17}\text{Ibid.}, \text{p. 91.}\)
tors are almost unknown, and the rainfed zone in the northern part of the country where there are many peasant proprietors and where the landowners take a smaller share, indicate the roles of incentive in agricultural productivity.\textsuperscript{13}

Better plows and stronger draft animals, cows, oxen and mules are found in the north. In the south, cows are usually used for plowing. But the possibility of starvation is more likely in the north than in the south because the northern farmers depend entirely on the rainfall. A lack of rainfall during the farming season will cause great damage to the economy of the north.

Governmental attempts to improve the farmers' situation would be relatively ineffective because of the perpetuation of inefficient, unscientific farming practices in the system of land tenure.\textsuperscript{19} In the words of a United Nations expert on education who visited Iraq in 1950:

\begin{quote}
The agricultural productivity of ... Iraq has fallen to an extraordinary low level. The superficial causes of this lamentable state of affairs are primitive methods of husbandry, the lack of application of power and science to the land, insufficiency of irrigational facilities and the misuse of those which exist. Until improved methods of cultivation, stock raising, harvesting and marketing accompanied by a sound system of agricultural education both in schools and at the adult level are applied, there can be little prospect of the land of Iraq being that rich source of wealth through which the people may live more abun-
\end{quote}

\textsuperscript{13}Ibid., p. 125.

\textsuperscript{19}Adam Goodrich Dorin \textit{Iraq, People and Society},
dantly. These improvements, however, are not likely to materialize under the existing land tenure system.\textsuperscript{20}

The dominating land tenure structure out of the earlier tribal system under which the Bedouins and the Tribesmen have secured paternalistic protection from their sheikhs had been caused by the Ottoman and Mandate powers of the sheikhs themselves, whose rising standard of consumption has caused their exactions to increase and their services to diminish.

**Irrigation and Water Control**

The current laws and regulations governing the use of water in Iraq have their origin in the Ottoman Civil Code, and since 1922 amendments have been promulgated by the Iraq government. In 1927 the Ministry of Communication and Work declared all rivers and waterways in the country to be part of the irrigation system. The government has the right to expropriate private land for the construction of facilities which are in the public interest. However, all private owners must obtain licenses to construct local installations of their own. In order to do this their projects must be

\textsuperscript{20}Ibid., p. 125.
deemed worthy and he must be able to make satisfactory agreements with neighboring proprietors.21

**Lift Irrigation**

Pump machines are used extensively for lift irrigation along both rivers. The agricultural census shows that 6,654 pump machines with a total horse-power of 233,154 are in operation in Iraq. Most of these pump machines are privately owned, but they are controlled by a licensing system.22 The total area that is irrigated by pump machines is 992,000 donums.

**Crops and Method of Farming**

Iraq's land can be divided into six areas according to soil conditions and types of vegetation. 1) The Alpine region in high mountains, 2) the forest on mountain slopes, 3) the grasslands of the northern plateau, 4) the great deserts in the west and southwest and the Jazira desert between the Tigris and the Euphrates rivers, 5) the alluvial plains of central Iraq (composed of silt deposited by the rivers), and 6) the marshlands of the extreme south which are subject to annual flooding.23

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21 Harris, *op. cit.*, p. 206.


23 Arab World, special issue, p. 23.
Kinds of Crops

The largest and most commonly grown crop in Iraq is barley, next largest is wheat. Lentils, vatch and flax constitute the main winter crops. The main summer crops are tobacco, rice and sesame and production is lower than in winter. The date palm is considered an important source of revenue. Iraq produces about 30 percent of the world's dates. There are 21,613,112 date palms. The farm worker is concerned primarily with subsistence living; he grows crops and keeps animals to provide food for himself and his family. If he is a sharecropper his share of produce may provide him with some money for other purposes but in most cases it hardly provides sustenance. Plantation farmers and peasant proprietors may grow vegetables or fruit as a cash crop if they are near a market, or they may grow specialized cash crops such as tobacco if their geographical location is suitable. Barley and wheat are the largest grown crops and they are grown both in rain-irrigated lands and marginal areas and in artificially irrigated lands. The following tables show the main winter and summer crops and the area of cultivation devoted to each.

---

24 Ibid., p. 23.

25 Salter, op. cit., p. 191.
<table>
<thead>
<tr>
<th>Crop</th>
<th>Year</th>
<th>Cultivated Area</th>
<th>Production (in tons)</th>
<th>Yield per Donum (Kilo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>59-60</td>
<td>5,085,000</td>
<td>592,000</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>60-61</td>
<td>5,385,000</td>
<td>858,000</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>61-62</td>
<td>6,363,000</td>
<td>1,085,000</td>
<td>171</td>
</tr>
<tr>
<td></td>
<td>62-63</td>
<td>6,818,000</td>
<td>488,000</td>
<td>72</td>
</tr>
<tr>
<td>Barley</td>
<td>58-60</td>
<td>4,151,000</td>
<td>804,000</td>
<td>194</td>
</tr>
<tr>
<td></td>
<td>60-61</td>
<td>4,164,000</td>
<td>811,000</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>61-62</td>
<td>4,758,000</td>
<td>1,125,000</td>
<td>236</td>
</tr>
<tr>
<td></td>
<td>62-63</td>
<td>4,874,000</td>
<td>79,000</td>
<td>162</td>
</tr>
<tr>
<td>Linseed</td>
<td>59-60</td>
<td>34,000</td>
<td>4,700</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td>60-61</td>
<td>36,100</td>
<td>4,800</td>
<td>133</td>
</tr>
<tr>
<td></td>
<td>61-62</td>
<td>4,770</td>
<td>6,600</td>
<td>138</td>
</tr>
<tr>
<td></td>
<td>62-63</td>
<td>47,100</td>
<td>6,200</td>
<td>132</td>
</tr>
<tr>
<td>Lentils</td>
<td>59-60</td>
<td>41,400</td>
<td>5,600</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td>60-61</td>
<td>46,600</td>
<td>7,300</td>
<td>157</td>
</tr>
<tr>
<td></td>
<td>61-62</td>
<td>44,600</td>
<td>7,500</td>
<td>168</td>
</tr>
<tr>
<td></td>
<td>62-63</td>
<td>38,700</td>
<td>6,200</td>
<td>160</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crop</th>
<th>Year</th>
<th>Cultivated Area (Donums)</th>
<th>Production (in tons)</th>
<th>Yield per Donum (Kilo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>1960</td>
<td>305,700</td>
<td>118,300</td>
<td>387</td>
</tr>
<tr>
<td></td>
<td>1961</td>
<td>255,000</td>
<td>68,500</td>
<td>268</td>
</tr>
<tr>
<td></td>
<td>1962</td>
<td>363,200</td>
<td>113,100</td>
<td>311</td>
</tr>
<tr>
<td></td>
<td>1963</td>
<td>430,800</td>
<td>143,200</td>
<td>332</td>
</tr>
<tr>
<td>Sesame</td>
<td>1960</td>
<td>40,912</td>
<td>5,600</td>
<td>137</td>
</tr>
<tr>
<td></td>
<td>1961</td>
<td>38,300</td>
<td>4,500</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>1962</td>
<td>38,700</td>
<td>5,100</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>1963</td>
<td>40,500</td>
<td>6,100</td>
<td>151</td>
</tr>
<tr>
<td>Cotton</td>
<td>1960</td>
<td>123,738</td>
<td>7,531</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1961</td>
<td>147,678</td>
<td>8,507</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1962</td>
<td>137,000</td>
<td>8,197</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1963</td>
<td>98,496</td>
<td>3,852</td>
<td></td>
</tr>
</tbody>
</table>

Vegetables

Vegetables are grown in areas near large towns, but are not an important item of diet in many parts of the country. Many farmers in the southern livas never grow vegetables on their farms because it is customary in those livas for the farmers to grow only grain on their farms and it has become a matter of pride. The people in those livas import most of the vegetables they need from other areas.

The total area of vegetable growth in Iraq was 293,006 donums, out of which 67,350 donums were planted with watermelon, 44,139 donums were planted with other melon (a variety of cantloupe), 51,695 donums were planted in tomatoes, and 27,054 donums were planted in broad beans and other kinds of vegetables. TABLE 3 shows the areas that were planted with vegetables for the years 1957 and 1953.

Method of Farming

Iraq is primarily an agricultural country but the oil industry also plays an important role in its economy. Oil is the major export of the country and it accounts for about two-thirds of foreign exchange receipts. It pays for most of the country's imports and is the largest single source of

26 Statistical, op. cit., 1960, p. 87.
TABLE 8

VEGETABLE CROPS GROWN IN IRAQ

<table>
<thead>
<tr>
<th>Kind of Vegetable</th>
<th>Area (in Donums)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watermelon</td>
<td>67,350</td>
</tr>
<tr>
<td>Other Melon</td>
<td>44,139</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>51,695</td>
</tr>
<tr>
<td>Cucumber</td>
<td>25,932</td>
</tr>
<tr>
<td>Broad Beans</td>
<td>27,054</td>
</tr>
<tr>
<td>Egg Plant</td>
<td>14,010</td>
</tr>
<tr>
<td>Turnips</td>
<td>7,167</td>
</tr>
<tr>
<td>Spinach</td>
<td>3,454</td>
</tr>
<tr>
<td>Lettuce</td>
<td>2,115</td>
</tr>
<tr>
<td>Carrots</td>
<td>2,518</td>
</tr>
<tr>
<td>Cabbage</td>
<td>922</td>
</tr>
<tr>
<td>Potatoes</td>
<td>605</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>473</td>
</tr>
<tr>
<td>Green Pepper</td>
<td>1,516</td>
</tr>
<tr>
<td>Okra</td>
<td>16,391</td>
</tr>
<tr>
<td>Green Beans</td>
<td>3,010</td>
</tr>
<tr>
<td>Squash</td>
<td>9,141</td>
</tr>
<tr>
<td>Onion</td>
<td>18,177</td>
</tr>
<tr>
<td>Others</td>
<td>1,537</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>298,006</strong></td>
</tr>
</tbody>
</table>

Source: Statistical Abstract 1960, p. 87.
national income, (60 percent). Agriculture directly supports about 75 percent of the total population, but it produces only a subsistence income in kind for the majority of the farmers.

The majority of the Iraqi farmers still use the simple plow which has been used for thousands of years; the main sources of energy are the draft animals: oxen, cows, donkeys and mules. The harvesting is done with sickles of the sort which have been used since the middle ages. Besides these historical tools there are a few modern power driven tractors, combines and harvesters.

The department of Agriculture is trying very hard to improve the farmer's situation. It imports purified seeds of superior quality and increases them on government farms in order to make the seeds available to all farmers. The government sells these seeds to the farmers on a cost basis. Besides the government, there are a number of agencies which import large quantities of different varieties of seeds, shrubs, fertilizer, insecticides and small farming tools.

One method through which the government could improve agriculture would be to provide drainage in existing cultivated lands and the nearby land that has recently been brought

\[27\text{Harris, op. cit., p. 160.}\]
\[28\text{Ibid.}\]
under cultivation. The salination of the soil has been caused by wasteful use of irrigation water.

Most farmers farm half of their cultivatable land for one year and leave the other half fallow. The next year however, the land is not completely free of vegetation. The grass grows and is used for grazing. Fertilizer is not used much except on vegetables and orchards. Fertilizer is expensive and the farmers have not completely adopted its use. Animal manure is used for fuel and is not applied to enrich the soil, except in very few areas.

Conditions could be improved by tilling the soil in the uncultivated year to destroy the weeds and to increase the activities of the micro-organisms. The application of fertilizer at this time would increase the yield for the next year's crops. Full benefit from the use of fertilizer, however, would not be realized without a proper system of crop rotation which would mean a whole new method of farming. Even if fertilizer was available cheaply as a result of the processing of the natural gas, the farmers still would have to be convinced of the advantages of using it and be taught how to use the fertilizer in the most profitable way.

Farming and Farm Mechanization

The use of farm machinery in Iraq was given its first impetus by the United States Lend-Lease Program during World
Until then there were no modern agricultural implements used in the country. The wooden plow of ancient times was the only one known. The Iraqi government since then has adopted a policy of introducing farm equipment and generating a demand for it among the farmers. Some of the devices used to put this government policy into effect are:

1. Agricultural Machinery Administration was established in 1956.

2. Settlers on state land are encouraged to use modern machinery.

3. Loans are made available to newly independent farmers by the government agricultural bank for purchasing farm equipment.

4. Building farmshops for repairing farm machinery and equipment when it is needed.

After the 1953 revolution the farm equipment that the government owned was distributed throughout the fourteen liwas. These implements are for rent to the farmers on an hourly basis. TABLE 9 shows the number of farm machines in the country and TABLE 10 shows the number of farm machines owned by the Ministry of Land Reform.

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29 Gubain, op. cit., p. 106.

<table>
<thead>
<tr>
<th>Item</th>
<th>1954</th>
<th>1955</th>
<th>1956</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractors</td>
<td>333</td>
<td>260</td>
<td>381</td>
</tr>
<tr>
<td>Plows</td>
<td>185</td>
<td>179</td>
<td>282</td>
</tr>
<tr>
<td>Cultivators</td>
<td>184</td>
<td>96</td>
<td>107</td>
</tr>
<tr>
<td>Combines</td>
<td>154</td>
<td>70</td>
<td>214</td>
</tr>
<tr>
<td>Automatic Trailers</td>
<td>17</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>Disc. Harrowers</td>
<td>58</td>
<td>27</td>
<td>76</td>
</tr>
<tr>
<td>Ditchers</td>
<td>6</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Threshers</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Grain Drills</td>
<td>135</td>
<td>179</td>
<td>282</td>
</tr>
<tr>
<td>Mowers</td>
<td>not listed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### TABLE 10

**FARM MACHINES OWNED BY THE MINISTRY OF LAND REFORM**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractors</td>
<td>263</td>
<td>382</td>
<td>372</td>
<td>254</td>
<td>129</td>
<td>526</td>
</tr>
<tr>
<td>Plows</td>
<td>186</td>
<td>281</td>
<td>222</td>
<td>201</td>
<td>99</td>
<td>289</td>
</tr>
<tr>
<td>Cultivators</td>
<td>96</td>
<td>107</td>
<td>138</td>
<td>62</td>
<td>62</td>
<td>162</td>
</tr>
<tr>
<td>Combines</td>
<td>70</td>
<td>213</td>
<td>335</td>
<td>82</td>
<td>131</td>
<td>15</td>
</tr>
<tr>
<td>Automatic Trailers</td>
<td>30</td>
<td>31</td>
<td>55</td>
<td>23</td>
<td>20</td>
<td>49</td>
</tr>
<tr>
<td>Disc. Harrows</td>
<td>27</td>
<td>77</td>
<td>53</td>
<td>40</td>
<td>42</td>
<td>49</td>
</tr>
<tr>
<td>Threshers</td>
<td>-</td>
<td>6</td>
<td>-</td>
<td>9</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Grain Drills</td>
<td>-</td>
<td>10</td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Mowers</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
<td>24</td>
<td>50</td>
<td>35</td>
<td>24</td>
<td>-</td>
</tr>
</tbody>
</table>

*Source: Report of the Department of Machinery 1963*
Land Reform

The condition of land tenure and land ownership remained confused and unsettled until 1953, when the revolution resulted in the declaration of the land reform law. The government is trying to solve the agricultural problems and to build a country where there is respect for the individual.

The solution of the Agrarian problem must involve a socially equitable and fair distribution of farming land among the poor farmers. The changing of the relationship system of farming to a new cooperative production will, hopefully, raise the standard of living of the farmers, increase the output of the farming lands and consequently develop the economy of the country.

The new Republic passed the Land Reform Law in 1953. According to this law, the following objectives are to be accomplished.31

1. To destroy feudalism as a way of production and to destroy the political influence which the feudal lords enjoy as a result of their ownership of vast areas of land and of directing policy in accordance with their own interests; influence which was used to place obstacles in the way of governmental administration.

2. To raise the standard of living of the great majority of the people, namely the peasants, and to give them the opportunity to raise their social standards in general.

3. To establish a cooperative system in the production centers which in turn will guarantee the introduction of scientific production methods.

4. Classify agricultural relations between those concerned by fixing a just share for all those participating in production.

There are 1,400,000 farm workers who owned no land of any kind, and in addition to that there are at least three million people who live in rural areas without a stable means of living, continually moving from one place to another seeking a livelihood. On the other hand, there are only 3,619 persons who owned large estates of land ranging from 1,000 to 1,000,000 donums. The sum total of the area owned by these is estimated to be 13,000,000 donums, including 600,000 donums owned by only 272 persons. The total area of the privately owned arable land is some 22,000,000 donums.32

Land Reform of 1945

The Sujaila Land Development Law No. 23 of 1945 was the first planned scheme of resettlement. This law was replaced by another law and then in 1952 it was further sup-

implemented by ordinance No. 52, 1952. The law has six main objectives:

1. To make improvements in the techniques of production and the expansion of agriculture.

2. To assist and encourage the Iraqi farmer, and to create a class of small peasant proprietors.

3. To have full employment of the agricultural labor force.

4. To settle the Nomadic tribes.

5. To create a modern rural society.

6. To reclaim and exploit all state land.

The Iraqi government was concerned with development and distribution of state land only. The state land distribution did not disturb the old system of land ownership, and the large holdings of the landlords were safe. In fact, some of them gained more land through irrigation and drainage projects.

Economically, not much has changed in the farmer's living conditions. Practically all of them have the same low standard of living, low income and low social position as before. Also, there has been little contribution to the economic development of the country through the distribution of state lands. The distribution of the state lands was not accompanied by financial aid, nor did it affect the large holdings. The farmers received the lands with no further

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33 Subain, op. cit., p. 92.
assistance. The farmers know how to farm, but they do not have the needed facilities for the full use of their land. The thing they needed most was capital to manage their affairs. Since the government did not make loans to help them, these farmers went to the lenders where they could get cash or goods. The interest was very high, in some cases it reached 75 percent or even 100 percent. The debt usually accumulated and the interest got higher and higher. Al-Hilali tells of one of the lenders who took over a farm of a man because he lent him half a dinar (61.40).³⁵

Land Reform of 1953

According to the Land Reform Law Act, No. 30, 1951, the distribution of land will cover the landlord's lands and the state land; each farmer will receive a piece of land, the size of which depends on the location and the type of irrigation system. The government offers a wide range of facilities besides the land and it makes loans to the needy farmers. The department of farm machinery makes all kinds of farm machinery available to be used on the farms on a rental basis. There is a Farm Union in each liwa with a division in farm area, cooperative communities and social organizations too. The government owns the Cooperative

Bank which makes loans to the farmers, and the Agricultural Bank which renders the same service. These two banks are operated to help the small farmer.

The policy of the monarchy government was to keep Iraq principally an agricultural country. But even with the abundance of land and water the yield of the land and the reward of the agricultural worker remains very low, and the people who live by agriculture continue to live in conditions of great poverty and are subjected to total, partial or seasonal unemployment, because less than half of the area is cultivated. The only remedy for such a situation is the extension of irrigation and improved methods of farming. However, such technical improvement could only be carried out if social conditions were reformed and the feudal system which prevailed in Iraq before the Revolution of 1953 was completely abolished. It was to this end that the government of the republic passed the Agricultural Land Reform Law on the 3rd of September 1953. The law fixes the maximum amount of land that can be owned or held on lease from the government by any one person at 1,000 donums of artificially irrigated land or 2,000 donums of rain irrigated land. Land in excess of these amounts is to be confiscated by the government and redistributed, together with the state land in small holdings.

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35 The Islamic Review, December, 1959, pp. 45-47.
to the farmers. The size of these holdings is to be not less than 30 donums and not more than 60 donums of artificially irrigated land, or not less than 60 donums and not more than 120 donums of rain irrigated land.36

Another provision of the Land Reform Law of 1958 is that in the partnership between tenant and landlord, the share of the tenant will be not less than 50 percent; before it was between 30 and 40 percent.37

The aims of the Land Reform Act are:

1. The eradication of feudalism as a socio-economic system of Agrarian relation.

2. The protection of the middle class of the peasantry.

3. The transformation of this feudal system into a system of cooperation based on small ownership by peasants.38

As one of the Land reform ministers explained, the aims of the Land Reform Act were derived from the nature of the revolution itself, which was aimed at the eradication of imperialism and feudalism.

TABLE 11 shows the total area that has been distributed to the farmers by this Act.

36 Ibid., p. 45.

37 Ibid., p. 45.

### TABLE 11

**TOTAL FARM AREA (IN DONUMS) DISTRIBUTED UP TO 3-12-1963**

<table>
<thead>
<tr>
<th>Liwa</th>
<th>Donums Distributed</th>
<th>Number of Plots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosul</td>
<td>572,064</td>
<td>6,640</td>
</tr>
<tr>
<td>Arbil</td>
<td>133,686</td>
<td>1,843</td>
</tr>
<tr>
<td>Kurkuk</td>
<td>176,575</td>
<td>1,620</td>
</tr>
<tr>
<td>Sulaimaniya</td>
<td>33,747</td>
<td>1,549</td>
</tr>
<tr>
<td>Baghdad</td>
<td>186,376</td>
<td>4,564</td>
</tr>
<tr>
<td>Diala</td>
<td>63,554</td>
<td>1,416</td>
</tr>
<tr>
<td>Hilla</td>
<td>176,693</td>
<td>4,411</td>
</tr>
<tr>
<td>Ramadi</td>
<td>6,226</td>
<td>148</td>
</tr>
<tr>
<td>Kut</td>
<td>367,557</td>
<td>8,818</td>
</tr>
<tr>
<td>Kerballa</td>
<td>11,415</td>
<td>722</td>
</tr>
<tr>
<td>Diwaniya</td>
<td>57,586</td>
<td>1,973</td>
</tr>
<tr>
<td>Amara</td>
<td>11,156</td>
<td>700</td>
</tr>
<tr>
<td>Basra</td>
<td>3,866</td>
<td>700</td>
</tr>
</tbody>
</table>

Financial Assistance

It is very important to provide some facilities and financial aid for the settlers. The government has established the Agricultural Bank and then after that the Cooperative Bank was established.

Most of the banks that operate in Iraq are concerned with transactions and the urban people conduct most of these transactions. Credit, therefore, could only be obtained from the traditional money lenders at rates of interest varying between 50 and 300 percent.\(^\text{39}\)

The main objectives of the Agricultural Banks are to contribute to the improvement of the standards of agriculture and to increase agricultural production. For the achievement of this, the bank undertakes the following:\(^\text{40}\)

1. To make loans to cultivators for agricultural purposes including the purchase of pumps, agricultural machinery, tools, cattle, poultry, farm animals, apparatus for dairy and the necessary buildings and enclosures for such animals and apparatus.

2. To establish stores and warehouses for the storage of farm products.

3. To make loans on the security of agricultural products stored in silos belonging to the Grain Board or in storerooms of the Dates Association of in the jinneries, official or private, or in the


\(^{40}\)Ibid.
other storehouses officially recognized as bonded warehouses.

4. No person may be lent more than 1.13. 300 in one or more transactions. The period of the loan should not exceed fifteen years.

The cooperative Bank has the following aims:

1. To foster and develop cooperation.
2. To issue loans to all types of cooperative societies.
3. To help the cooperative societies to market their products and supply them with fertilizers, etc.
4. To accept deposits from cooperative societies and others.
5. To stand as guarantee for cooperative societies.
6. To provide facilities to cooperative societies for the storage of their products.

The outcome of the Land Reform

The Review of the governmental reports concerning the achievements of the Ministry of the Agrarian Reform showed more evidence of land confiscation, land leasing and land distribution than economic achievement on both levels, the farm families and the national economy. Some of the achievements of the Ministry of Agrarian Reform are:

1. The total area that was requisitioned is 7,175,311 donums.
2. The area that was leased to the farmers and that under temporary management is 7,053,376 donums of

land available to 216,039 families numbering 1,080,440 citizens.

3. 547,649 donums have been distributed to 11,796 farm families.

4. The total number of the agricultural cooperatives in Agrarian reform areas is 190 with 17,260 members.

5. Agricultural credits from the Agricultural Bank amounted to I.D. - 1,242,563.

6. There are 412 tractors and 237 automatic combines at machinery hiring stations and mechanical units. There are also 351 water pumps, all working for the irrigation and reclamation of distributed and leased lands.

These achievements of land requisitioning, leasing and distribution are not much if the time elapsed is considered. This could be the result of at least two important factors first, the unstable political structure, and the frequent changing in Agrarian Reform Administrators; and secondly, the uncertainty of the definition and meaning of the concept of socialism. The regime, in theory is socialism; in practice it is nothing but confusion. The government has not been able to spell out its policies, it seems to me, because the government has not yet defined the concept of socialism in a way that applies to the policies and philosophy of the rulers. Also, the difficulty in finding well trained personnel who are loyal to the socialists ideals is a hindrance to the land reform development.

As Simmons has put it:

There are some indications that land re-
form is not expected to be carried out at planned rate. The law of direct tax on agricultural land means that Land Reform Law has not been implemented on schedule. The marketing cooperatives have not been established yet as the law required. A progressive tax on income would be easier to collect than the land tax. And, by passing such laws, it means that the government is reconciled to the fact that reform and development of cooperatives are not going to be carried out at such a rate in the near future.  

The contribution of the land reform to the economic conditions of the farmers and to the nation has not yet been decisive.

The increase in the yield of farm production after the Land Reform took place is not much over what it was before 1953. At the beginning of the Land Reform the sheikhs and the landlords tried many different methods to reduce production on the farms, especially on irrigated ones. But regardless of how the sheikhs and the landlords have tried to prevent the success of the Land Reform and crop production, the farmers went along with it and have gained momentum with time. The creation of farmer societies was helpful to the farmers in maintaining this momentum and a strong effort by the government has also assisted. The farmers need someone to go to when they are faced with problems and the farmers' societies provide a place to go; the farmers' societies in turn carry the farmers' problems to responsible personnel.

42 John L. Simmons, Middle East Forum, November, 1963, p. 33.
The farmers are now more apt to ask and take advice from the experts and Agricultural Agents. They, themselves, have begun asking for the solutions to their problems.

In general, the economic contribution of land reform to the nation's economy is still not high. The lack of rain during 1959-1960 and 1960-1961 seasons has limited the production of winter crops in the rainfall zones, and this makes it very difficult to compare results. Also the lack of cooperation between the landlords and the farmers is another factor contributing to the low yield for those growing seasons.

But even though the total output of the farm land products is not higher than before 1958, the distribution of land to the farmers still helps the general economy of the country. The net income of the farmers on the average is much higher than before. And the income from the farm products will be utilized by the farmers and their families which will generally raise the standard of living for them. Before 1958, the farm income was used by the shiekhs and the landlords in a variety of ways for luxurious living, and a great deal was spent outside of the country.

In 1964, the government had signed a truce with Iraqi Kurdish and planned for the social benefit of agriculture. These plans include the construction of roads, schools and hospitals; the development of industrial projects (depending
upon raw materials of the area); and an improvement and modernization of agricultural techniques. A number of irrigation and drainage projects have been planned.\textsuperscript{43} Climate is a limiting factor; about one half of Iraq is desert or semi-desert and rainfall is not enough for farming except in some parts of the north. Flooding rivers have never been under full control and they have caused loss of life, property and crops. The overwhelmingly long and hot summer is an additional detrimental factor.

The population structure (as has been mentioned in Chapter II) is ethnically heterogeneous, and marked differences between the social groups such as the Bedouin, the land owners, tenant farmers, Kurds, various religious sects and others have involved endemic conflicts that have resulted in poor communications and misunderstandings of national goals. It appears from the recent records that, to a great extent, the complexity of ethnic, linguistic, social, religious and political factors has been the greatest deterrent to overall development.\textsuperscript{44}

\textsuperscript{43} U.S. Department of Agriculture, \textit{The Agricultural Economy of Iraq}, 1965, p. 2.

\textsuperscript{44} \textit{Ibid.}, p. 2.
Summary

In this chapter, two main concepts were discussed; land ownership and crops and methods of farming.

Land ownership was a feudal type. Few persons owned most of the arable land in Iraq. Most of the land was Miri Sirf land (state land), but it was held by the shiekhs and landlords without legal right. Very few individual farmers own the lands they cultivate, and the rest of the farmers are sharecroppers. The farmers live on what is barely a subsistence level. They grow much wheat, barley, cotton, tobacco and vegetables. Most of them still use the old method, the plow, a wooden plow pulled by draft animals. Farm machinery is used now but on a very small scale. The government is doing its best to encourage the use of farm machinery.

In 1958 the Army took over the power and the Land Agrarian Law was enacted to abolish large landownership. It also specified the type of relationship that should exist between the farmers and the landowners. This relationship is based on the cooperative lease. The government has also established the practice and has completed the distribution of a large area of land to the farmers who owned no land.

The development of agriculture usually proceeds in stages. Some authors use three stages, others use more than three stages. Johnson and Mellor have divided the development of agriculture into three phases: one, of preconditions;
a second phase of labor use, capital saving technique; and a third phase of capital use, labor saving improvements. 45

"Preconditioning" means the break up of the traditional pattern of rural life. People must be aware of the opportunities for increasing their income, participating in the market, and acquiring mobility between the farm and the town. The most important thing to be considered in this stage is the land reform. By land reform, the land should be taken away from the feudal class which owns land for status and prestige or as a hedge against inflation and who is not concerned with either production for market consumption or getting the land into the hands of people who are willing to till it and produce. In the second stage, education should be well established and advanced to improve scientific understanding, the development of better seeds and methods of farming, the application of fertilizer, the development of rural credit institutions, marketing arrangements and farm-to-market roads. The final phase is the stage where mechanization is introduced and used. 46 Iraq now is in the second phase of its development although some farm machinery is now in use (but on a small scale).

45 Kindelberger, op. cit., p. 218.
46 Ibid., p. 219.
In Iraq (as well as in most of the underdeveloped nations) agriculture and industry compete for national resources and capital allocation. We have to realize that there is a relationship between agriculture and other sectors of the economy which makes agricultural expansion equally important. Of course, industrial expansion itself depends on agriculture in several major ways.

The agriculture of Iraq is generally characterized by low productivity per land unit and individual farmer. With all of the natural resources that are available for good agricultural production (abundance of fertile land and water) the yield is low and of poor quality. This situation of low yield and poor quality of products is caused by many factors, some of which are:

1. Primitive nature of farming techniques.
2. High rate of illiteracy among the peasants.
3. Lack of incentives for the farmers to adopt innovations. Most of the farmers resist technical change.
4. Lack of investment in progress.
5. The decline of the government to provide adequate facilities for the newly created independent farmers.
6. Need of proper scheme of irrigation and drainage systems.
CHAPTER IV
HISTORY OF EDUCATION

Progress and development of education are not an absolute phenomenon, nor are they disconnected with intricate historical, social, administrative, economic and political problems. It is extremely difficult therefore, to judge the amount and scope of any educational progress without considering those factors which may either retard or accelerate progress.\(^1\)

No more serious challenge confronts Iraq today than that of education, both as a means of building a new social structure and as an instrument of technological progress. The problem is one of vast dimensions. The problem is not only vast, but its solution has assumed critical urgency in view of Iraq's development program.\(^2\)

The dark era through which Iraq passed at the time of the Mogul invasion and through the Ottoman rule and up to the first World War has had its effect on the country's educational development. The Turkish language, a language foreign to

\(^1\) Arab Information Center, "Education in the Arab States," New York, 1966, p. 27.

\(^2\) Qubain, op. cit., p. 205.
the Arab world, was used in the schools. This and other discriminating factors kept a large number of the Iraqi people away from the schools. Up to 1850 education in Iraq was dominated by the Islamic tradition of religious and classical learning. The curriculum of elementary schools was based on memorization of the Kuran. Reading and writing were secondary subjects and received little emphasis. Higher education was available only to a small minority and was concerned largely with Islamic Theology and the mastery of classical Arabic.3

In the mid-nineteenth century, reform of a secular system of public education was established throughout the Ottoman Empire and Iraq was part of it. However, this system of public education was so limited that it did not begin to replace the Mulla or Kuttab, the traditional religious schools (some of which are still operating). When the country came under the British Mandate in 1921, the Ottoman organized school system began to expand slowly. At that time, there were only 84 primary schools, one teachers' training school which was barely higher in educational level than a primary school, a law school with no collegiate standing and only three technical schools of elementary level. At that time, not only was there an appalling shortage of teachers,

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3 Arab Information Center, op. cit., p. 27.
but also of administrators, judges, engineers, physicians and other necessary professionals.\footnote{Ibid., p. 28.} Schooling during the Ottoman Empire was available only to wealthy males. Educational institutions multiplied rapidly after 1920 even before the growth of oil revenues, and the compulsory education law of 1940, which requires that each child go to school for at least six years wherever facilities are available. The law has had no need of enforcement because classrooms are filled to overflowing just as quickly as teachers can be trained to staff them.\footnote{Goodrich, \textit{op. cit.}, p. 116.} The enrollment in the schools and colleges after the First World War was very great as is evident in TABLE 12.

\begin{table}[h]
\centering
\begin{tabular}{lcc}
\hline
Year & Number of Schools & Number of Students \\
\hline
1920-21 & 89 & 8,001 \\
1962-63 & 4,680 & 1,119,368 \\
\hline
\end{tabular}
\caption{An Estimated Number of Schools and Students for the Years 1920-21 and 1962-63*}
\end{table}

*Source: Arab Information Center, \textit{op. cit.}, p. 28.

Education in Iraq is centralized under the Ministry of Education. It is responsible for the organizing of the
school system, recruiting and promoting teachers, setting the examinations and curricula, administering the general (public) examinations and approving the textbooks. The volume of instruction, books and the subjects of instruction are the same in all of the fourteen liwas. The final examination papers for the primary, intermediate and secondary schools are formulated by a committee of specialists in the Ministry and are sealed and sent to the Educational Director in each liwa. This Director, in cooperation with local inspectors, supervises the conduct of the examination. The answers are corrected by a special committee of teachers who have been chosen from among teachers, each one in his area of specialization. The results usually are sent directly to principals of the schools who in turn submit them to the students before the results are released in the newspapers.6

In 1951 the authority over the elementary schools was transferred to the Administrator of each liwa, but the Ministry still has supervisory power and that of making up the curriculum. The idea of this transfer of authority is to decentralize and to relieve the Ministry of Education of concern with small details.

6Ibid., pp. 31-32.
Level of Education

The system of the schools in Iraq is a system composed of schools and institutions from kindergarten to the colleges at the University level. A chart of the Iraqi educational system is on page 79. The level of the education is based mainly on the primary school. Children enter these schools at the age of six years for a period of six years. The pupils then attend the secondary schools for six years, three years at the intermediate level and three years at the secondary level. A period of four to six years is then devoted to college. There are many professional and vocational schools. The primary and secondary schools operate on the 6-3-3 year plan as compared with the American 8-4 year or 6-3-3 year plans. Kindergartens are maintained by the Ministry of Education and by some private agencies. Public education in Iraq is almost entirely free and it is financed from the central budget of the government. The following table (TABLE 13) should give an indication of the increasing importance of education.

The educational institutions in Iraq are not fairly distributed all over the country. Most of the facilities are in big cities and urban areas, very few are in rural areas.
TABLE 13
AN ESTIMATED EDUCATIONAL BUDGET FOR THE FISCAL YEARS
1920-1921 TO 1963-1964*

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Educational Budget</th>
<th>% of Total State Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920-21</td>
<td>527,306</td>
<td>2.3</td>
</tr>
<tr>
<td>1930-31</td>
<td>1,190,280</td>
<td>7.3</td>
</tr>
<tr>
<td>1940-41</td>
<td>3,430,840</td>
<td>11.8</td>
</tr>
<tr>
<td>1950-51</td>
<td>10,077,847</td>
<td>13.8</td>
</tr>
<tr>
<td>1960-61</td>
<td>67,170,764</td>
<td>20.7</td>
</tr>
<tr>
<td>1963-64</td>
<td>94,500,000</td>
<td>23.3</td>
</tr>
</tbody>
</table>

*Source: Arab Information Center, op. cit., p. 32.

Since the revolution of 1958, there has been an increase in student enrollment in the primary schools. In 1957-58 pupil enrollment at the primary level was 430,000 while in 1963-64 the pupil enrollment was 867,283, an increase of 102 percent. TABLE 14 shows the government elementary schools enrollments by sex in each liwa.

The instruction of children is free to all regardless of creed or race and is offered to those between the ages of six and fourteen. The Ministry of Education specifies subjects to be taught and prohibits the use of textbooks that have not been approved by the Ministry. The primary school

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Fig. (1) THE IRAQI EDUCATIONAL SYSTEM
Table 14.

Number of Pupils and Schools by Province.

<table>
<thead>
<tr>
<th>Province</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
<th>Boys</th>
<th>Girls</th>
<th>Mixed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pupils</td>
<td>Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baghdad</td>
<td>176,244</td>
<td>94,877</td>
<td>271,121</td>
<td>402</td>
<td>138</td>
<td>381</td>
<td>921</td>
</tr>
<tr>
<td>Mosul</td>
<td>66,500</td>
<td>22,470</td>
<td>88,975</td>
<td>213</td>
<td>59</td>
<td>162</td>
<td>954</td>
</tr>
<tr>
<td>Arbil</td>
<td>16,538</td>
<td>5,799</td>
<td>22,337</td>
<td>102</td>
<td>21</td>
<td>60</td>
<td>163</td>
</tr>
<tr>
<td>Kirkuk</td>
<td>31,389</td>
<td>17,407</td>
<td>43,866</td>
<td>142</td>
<td>27</td>
<td>107</td>
<td>276</td>
</tr>
<tr>
<td>Sulaimaniya</td>
<td>10,651</td>
<td>5,379</td>
<td>16,030</td>
<td>45</td>
<td>13</td>
<td>19</td>
<td>77</td>
</tr>
<tr>
<td>Diyala</td>
<td>36,654</td>
<td>11,958</td>
<td>48,622</td>
<td>154</td>
<td>55</td>
<td>101</td>
<td>310</td>
</tr>
<tr>
<td>Ramadi</td>
<td>22,271</td>
<td>7,150</td>
<td>75,421</td>
<td>132</td>
<td>32</td>
<td>57</td>
<td>221</td>
</tr>
<tr>
<td>Kut</td>
<td>22,317</td>
<td>7,042</td>
<td>29,359</td>
<td>93</td>
<td>33</td>
<td>62</td>
<td>208</td>
</tr>
<tr>
<td>Hilla</td>
<td>35,744</td>
<td>11,861</td>
<td>47,605</td>
<td>65</td>
<td>29</td>
<td>124</td>
<td>220</td>
</tr>
<tr>
<td>Kerbella</td>
<td>27,495</td>
<td>11,600</td>
<td>39,095</td>
<td>75</td>
<td>37</td>
<td>20</td>
<td>172</td>
</tr>
<tr>
<td>Diwaniya</td>
<td>35,260</td>
<td>11,114</td>
<td>46,374</td>
<td>82</td>
<td>33</td>
<td>112</td>
<td>227</td>
</tr>
<tr>
<td>Nasariya</td>
<td>33,677</td>
<td>8,861</td>
<td>42,538</td>
<td>64</td>
<td>26</td>
<td>34</td>
<td>224</td>
</tr>
<tr>
<td>Amara</td>
<td>21,525</td>
<td>7,332</td>
<td>28,857</td>
<td>64</td>
<td>20</td>
<td>104</td>
<td>185</td>
</tr>
<tr>
<td>Basra</td>
<td>61,486</td>
<td>27,006</td>
<td>88,492</td>
<td>100</td>
<td>39</td>
<td>152</td>
<td>291</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>603,757</td>
<td>245,465</td>
<td>949,222</td>
<td>1,733</td>
<td>562</td>
<td>1,634</td>
<td>3,929</td>
</tr>
</tbody>
</table>

Source: Educational Statistics, op. cit. p. 23
course ends in a special primary examination given by the Ministry of Education to all students of primary schools in Iraq. No student can go to an intermediate school, whether public, private or foreign without showing that he has done similar study.

The Secondary Education

The general secondary education consists of two phases; intermediate of three years, and senior high of three years. The intermediate schools have the same curriculum for all students, divided into three years at the senior high level, the student has to select either the scientific or the literary field.

Co-education is found in many primary schools, especially in Baghdad, and is found in almost all colleges but at the intermediate and senior high levels, students are separated according to sex. In 1920 there were only three incomplete secondary schools for boys, and none at all for girls. The enrollment has increased very rapidly, 1,421 times since 1920, 75 times since 1930, 11 times since 1940, and about 7 times since 1950.\(^8\)

In 1961-62 the number of students in the secondary schools constituted 16.4 percent of the total number of

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\(^8\)Arab Information Center, *op. cit.*, p. 48.
students at all levels of education, and 2,271 per 100,000 of Iraq's population. TABLE 15 shows the number of students in secondary schools (both public and private).

### TABLE 15

**STUDENT ENROLLMENT IN SECONDARY SCHOOLS**

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>114,248</td>
<td>38,800</td>
<td>153,048</td>
</tr>
<tr>
<td>Private</td>
<td>32,302</td>
<td>4,460</td>
<td>36,762</td>
</tr>
</tbody>
</table>


**Vocational Education**

The progress that the country has made in different fields especially in industry and in agriculture has raised a significant problem; the need for skilled laborers. The only means of meeting the demand was through the establishment of technical educational institutions. The educational institutions in Iraq have always been criticized on the grounds that they did not adequately train young men and women in the skills of different trades.

Ever since the establishment of the state of Iraq, theoretical learning dominated in all schools. This provided the civil servants needed in the government, but the economic development of the country and the urgent needs

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for well trained skilled workers and technicians have given the Ministry of Education the impetus to study the problem of vocational training.\textsuperscript{10} It is apparent that with the increased importance of industry, agriculture and other occupations, the people could not afford to remain content with a system of education which did not equip the younger generation for their role in expected future development.\textsuperscript{11}

There were only four technical schools in Iraq in 1955; one each in Baghdad, Kirkuk, Basra and Sulaimaniya. The number of students in 1955-56 was 808.\textsuperscript{12} This number is increasing rapidly.

There are four types of vocational secondary schools; agricultural, industrial, home economics and commercial. All of these schools start after the primary school except for the commercial school which begins after the intermediate schools.\textsuperscript{13} TABLE 16 shows the number of students of each vocational school in every province.

There are only two commercial schools, both in Baghdad province. The total number enrolled in 1957-58 was 9,978 as compared to 6,995 in 1963-64; a decrease of 25 percent.

\textsuperscript{10}Arab Information Center, \textit{op. cit.}, p. 8.

\textsuperscript{11}Ibid., p. 48.

\textsuperscript{12}Qubain, \textit{op. cit.}, p. 217.

\textsuperscript{13}Educational Statistics, \textit{op. cit.}, p. 90.
Table 16.

Number of Students of Each Vocational School in Every Province.

<table>
<thead>
<tr>
<th>Province</th>
<th>Agricultural School</th>
<th>Industrial School</th>
<th>Home Economics School</th>
<th>Comm. School</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baghdad</td>
<td>-</td>
<td>530</td>
<td>91</td>
<td>252</td>
<td>1,692</td>
</tr>
<tr>
<td>Mosul</td>
<td>192</td>
<td>359</td>
<td>485</td>
<td>-</td>
<td>1,036</td>
</tr>
<tr>
<td>Arbil</td>
<td>-</td>
<td>-</td>
<td>224</td>
<td>-</td>
<td>224</td>
</tr>
<tr>
<td>Kirkuk</td>
<td>114</td>
<td>245</td>
<td>245</td>
<td>-</td>
<td>604</td>
</tr>
<tr>
<td>Sulaimaniya</td>
<td>116</td>
<td>122</td>
<td>122</td>
<td>-</td>
<td>360</td>
</tr>
<tr>
<td>Diyala</td>
<td>2</td>
<td>208</td>
<td>-</td>
<td>253</td>
<td>461</td>
</tr>
<tr>
<td>Ramadi</td>
<td>173</td>
<td>-</td>
<td>33</td>
<td>-</td>
<td>206</td>
</tr>
<tr>
<td>Kut</td>
<td>218</td>
<td>-</td>
<td>137</td>
<td>-</td>
<td>355</td>
</tr>
<tr>
<td>Hillah</td>
<td>-</td>
<td>-</td>
<td>120</td>
<td>-</td>
<td>120</td>
</tr>
<tr>
<td>Kerbala</td>
<td>-</td>
<td>144</td>
<td>74</td>
<td>-</td>
<td>218</td>
</tr>
<tr>
<td>Diwaniya</td>
<td>251</td>
<td>102</td>
<td>158</td>
<td>-</td>
<td>511</td>
</tr>
<tr>
<td>Nasiriyah</td>
<td>191</td>
<td>-</td>
<td>119</td>
<td>-</td>
<td>310</td>
</tr>
<tr>
<td>Amara</td>
<td>114</td>
<td>-</td>
<td>166</td>
<td>-</td>
<td>280</td>
</tr>
<tr>
<td>Basra</td>
<td>-</td>
<td>284</td>
<td>337</td>
<td>-</td>
<td>621</td>
</tr>
</tbody>
</table>

Source: Educational Statistics - op. cit. p. 92
This decrease is due to the decrease in commercial schools attendance. Most of the teachers who teach in commercial schools are graduates of the Commerce College.

**Higher Education**

At the time of the country's independence in 1921, there was only one college, the Baghdad Law College. The total number reached thirteen colleges in 1956-1957, with a total enrollment of more than 5,000 students. All of the colleges in Iraq with the exception of women's college and Shariaa College for men are coeducational. According to Educational Statistics, higher education consists of:

1. Baghdad University, consists of 18 colleges and 7 institutes.
2. Al-Hikma University consists of two colleges (private)
3. Al-Mustansiriya University (private)
4. Al-Shaab University (private)
5. Five Institutes under the direct control of the Ministry of Education

The Law of the University of Baghdad No. 60, 1956 was enacted and in 1957 steps were taken to nominate its presi-

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dent and a five member founding council whose function was to organize the colleges for the admission to the university. After the revolution of 1958, an amendment to the Law of the University (No. 28, 1958) abolished the five member founding council and the University Council became responsible for coordinating entrance requirements. Coordinating the administration and supervision of the various colleges and raising their overall standards were also duties of the University Council. Accordingly the colleges that were established during the period from 1908 to 1955 in Baghdad, that is, the College of Law (1908); the College of Education (1923); the College of Medicine (1927); the College of Pharmacy (1936); the College of Engineering (1942); the College of Women (1946); the College of Commerce (1947); the College of Arts (1949); the College of Shariaa (1952); the College of Agriculture (1952); the College of Dentistry (1953); and the College of Veterinary Medicine (1955), are all affiliated with the University and the following institutes are incorporated as well.¹⁷

1. Institute of Industrial Engineering

2. Institute of Languages

3. Institute of Public Administration

4. Institute of Engineer Training

5. Institute of Forestry

¹⁷Arab Information Center, op. cit., p. 61.
Two more universities were established — one in Mosul Province and one in Basra Province.

The course of study in most of the colleges is four years except for the College of Medicine which is six years and the Colleges of Pharmacy, Dentistry and Veterinary Medicine which are all five years. The university confers the degree of Bachelor of Arts and Bachelor of Science in the relative field of specialization.

At the beginning of 1960, the Colleges of Arts, Agriculture, Engineering, Sciences and Education started graduate programs in which students may work for the Master of Arts and Master of Sciences Degrees.

College education (as other types of education) is free and the colleges and institution facilities are open to all qualified students. The Iraqi government provides the needy students with partial or complete support, board, clothes and books. Most colleges have their own dormitories. Financial support to the University comes entirely from the general budget.

Agricultural Extension

Agricultural Extension in Iraq is a division of the General Directorate of Agriculture. There are two more agricultural departments in the General Directorate of Agriculture; the Department of Plant Protection and the Department of Agricultural Economics.
To be very effective, agricultural extension must be essentially educational, must be directed toward satisfying the needs of the people and it must be started at the level of understanding of the majority of the populace. Extension education must be based on planned local programs that take into account regional and national situations and needs. In any extension program development, it is imperative to have the participation of voluntary leaders (which unfortunately is not the case in Iraq).

Agriculture Extension personnel in Iraq work directly with the farmers; teaching them and encouraging them to adopt new practices that are found by the research department. The extension personnel are mostly concerned with the application of improved methods and practices.

Iraq established Agricultural Extension Education in 1952, and then set up an office in each liwa. The duties of Agricultural Extension have been and still are, to a certain extent, regulatory. The officers (mostly county agents) conduct locust control and certain types of plant and animal control; distribute seed and fertilizer, insecticide and fungicides; conduct some farm demonstration and collect information (a great deal of which is guess work rather than empirical observations or direct questions).

The services that the Agricultural Extension office offers are very limited in scope but have been expanding since 1958. The growth and development of the Agricultural Extension office does not correspond with the demand that is expressed by the newly independent farmers. The independent farmers are hoping for more prosperous lives and better living conditions and it is the responsibility of the Agricultural Extension office to offer these farmers all the necessary information, knowledge and techniques available for modern farming. Most Iraqi farmers are illiterate. They know what they need, but they do not know how to achieve their goals. It seems that it is the responsibility of the government in general and the Agricultural Extension office personnel in particular, to guide these farmers to the right approach.

The necessary facilities that could be well utilized to benefit all concerned are not available. As Olison says, "Future emphasis should be placed on putting more flesh on the skeleton organization."\(^{19}\) This, he said, could be done by:

1. Providing information to workers and farmers, and improving teaching aids through (a) Publication of easy to read bulletins and circulars with helpful information. (b) Improving press, radio and television programs and relationships. (c) Development of teaching aid materials such as charts,

slides, posters, cinema etc., and providing a section for production maintenance and distribution of demonstration equipment and supplies.

2. Improving the method of office reporting and activities of all Agricultural Extension personnel in the fields and in the office.

3. Complete staffing of personnel. (a) Assistant Director of field specialist. (b) Establish a youth program with a well trained officer in charge. (c) Initiate an extension program for women.

4. Provide adequate transportation. This is an important factor which should be thoroughly studied and considered.

Training programs or refresher programs should be established and conducted regularly and systematically. These could be in the form of conferences, workshops, short courses and field trips.

Program Planning and Implementation

The Agricultural Extension personnel seldom (if ever) consult the farmers of the area in which they are working. All planning procedures come from the top of the government downwards to the farmers; plans are never originated by the farmers in collaboration with the agents. It is always in the department of Agriculture Extension that the plan of action is formulated, designed and carried out without even being discussed with the county agents of the area in question. The county agents are informed about the plan and then they contact the farmers and tell them about it at the time of implementation. The extension program is mainly concerned with the farmer and his family, nutrition, their
health, and also with their general welfare. There have been many plans set up by the Department of Agricultural Extension and most of these are demonstrations of how to protect the fields from pests, insects and weeds; how to increase the yield with and without the use of fertilizer; and how to use fertilizer and improve seeds.

Even though the main concern of Agricultural Extension has been with the farmer and his land, it also aims indirectly at developing in the village people the ability to make a better living and to live better lives as individuals, as family members, and as citizens of a community and a nation.

There is a director of Agricultural Extension in each liwa who is directly connected with the General Director of Agriculture and indirectly with the Director of Agricultural Extension. This newly organized setting of the Agricultural Extension Organization would function more efficiently if the Agricultural Extension Organization were to become a General Directorate of Agricultural Extension Service.

Educational Problems

Throughout history, educators have thought and written about the problems of education. The study of education should not only be concerned with the art and science of teaching, but must go beyond these to the study of the relation of the school to its parent society and the place of
education as a whole in the life of the individual and his culture.

Educational needs should compete with the needs of other sectors of the society such as industrialization, agricultural development and social welfare. Priorities must be determined to maximize social returns for all levels of education, especially higher education. The type of education should be the kind that can strike a balance between traditional ideals of good life and the demand for modernization.

Research should precede any plan for changing and revitalizing educational principles so that these changes satisfy and meet the country's situation and needs. Any program for technical progress and agricultural expansion must be based on the available capital, resources, quality of population, their level of education and their potential.

In Iraq, until recently, higher education was of a classical nature. It was mostly fitted to the elite and not to the masses of the Iraqi population. At the present time some changes are taking place, but not radical changes. Higher education is open for all people but the enrollment is limited because of the limited number of institution buildings and instructors and the large number of poor students who cannot afford to go to college. Among the limited number of instructors, very few of them devote some time for teaching and research. Even though they are competent, their
net income is very low and for this reason most of them have to work extra hours to meet their financial needs. Libraries are very few and those that do exist are lacking in recent books. Some instructors use notes that have been used for twenty years or more. As a result the quality of higher education in Iraq is poor and not up to date and the students are not very receptive to new ideas or knowledge. A large number of the students are only interested in passing the examinations to get their diplomas which serve as a means for acquiring better jobs.

On the whole, the structure of the University and Colleges does not promote harmony between the faculty members and the students. The relationship is always of a very formal types. The method of instruction is the lecture which in many cases is a form of dictation because of the lack of textbooks. The instructors give the impression that they are well informed and knowledgeable and are not to be disputed.

The students in general are not satisfied with university affairs and they are further frustrated because of the lack of job opportunities. Finding a position is made even more difficult by the routine government requirements (especially the requirements for security department approval, a process which may take months).

The problems of education in Iraq are many and it would take many detailed research projects to pinpoint
them and their causes and remedies. The following are some of the important ones.

1. Lack of facilities.
   a. good buildings
   b. adequate equipment
   c. good modern equipped laboratories
   d. well equipped libraries
   e. modern training facilities

2. Instructors
   a. need more well-qualified instructors
   b. lack of incentive for instructors to do research
   c. low salary which forces the instructors to work outside of the educational sphere or do extra hours of teaching
   d. Lack of in-service training for all teachers on all levels

3. Economic Factor
   a. need enough funds for educational purposes fund allocation for education is not proportionate with other sectors
   b. Higher education is concentrated in three large cities only
   c. students from poor families cannot afford to go to college

4. Curriculum and Instruction
   a. Curriculum in many colleges is not based on the needs of society and for this reason, many graduates cannot find jobs
   b. Vocational education does not correspond to industrial and agricultural development and need.

5. Administration
   a. Inefficient and inadequate administrative unit that can coordinate and interrelate intra and inter institutional
   b. Lack of training in administration will cause inefficient management and direction

6. Political and social factors
   a. Changing power and political structure made educational planning unstable
   b. Bureaucratic administrative behavior aggravates problems
c. Lack of guidance and recreation facilities in and outside the educational institutes adds to the problems

Summary

Education in Iraq on all levels is a state function, and it is centralized under the Ministry of Education. The education in Iraq is free to all and is offered to those between the ages of six and fourteen years. Children enter schools at the age of six, for a period of six years. The secondary schools are of six years too, three years at the intermediate level and three years at the secondary level.

There has been a great increase in student enrollment and in the number of schools on all levels since 1921. The number of technical schools has been increasing rapidly since 1955. There are three universities in Iraq, one in Baghdad, one in Mosul and one in Basra.

The Agricultural Extension Department was established in 1952. It works mainly and directly with the farmers.
CHAPTER V

SOCIOLOGICAL AND EDUCATIONAL MODELS FOR ADOPTION OF INNOVATION

The countries of the world differ in their agricultural resources and problems, level of living, needs, cultural values, social organization, educational levels, or government organization and services. Before any step toward program planning can be taken, the extension staff should know the agricultural situation and the real needs of the people. Obtaining all the needed information is a special challenge to the program planners. The extension staff must find out the living conditions of the people, their resources, their knowledge about agriculture, their attitude toward adopting new ideas, knowledge about unrealized opportunities and the kind of volunteer leadership available at the local level.1

Different models of diffusion and adoption of innovation have been developed and utilized, some of them in the context of rural sociology or anthropology and some by researchers with an educational orientation. Some of these formulations are considered pre-models and they suggest only sets of variables entering innovation and diffusion, while

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others are more inclusive. However, all are either process models or stages of adoption models on a time dimension.

Choosing a particular model depends on the educational agency and what it is trying to accomplish. The extension agency is charged with the responsibility of providing the people with the most effective educational program possible. Extension staff members who are effective must accept the philosophy of democratic program building and be trained in putting the process to work. The objective of the extension service is to promote learning, and it is only through learning that the fundamental aims of the extension service can be met. Therefore, teaching is the primary function of the extension worker. The extension workers must think of themselves as teachers whose methods are based upon sound principles of education and methods of teaching.

**Methods of Teaching in Extension**

The teaching methods in extension are classified into three categories or groups of methods.

1. Mass methods, which mainly are used to create awareness about new ideas or innovations among the people. Under the mass media category would be radio, television, newspaper, bulletins, slides, posters, film strips and movies. These methods are useful in working with part-time farmers and people living in suburban areas and urban centers.²

2. Group Methods. These include meetings, group discussions, result demonstrations, method demonstrations, farm visits, conducted tours and short courses of instruction. Through these methods people can ask questions, exchange views and ideas and stimulate each other's actions. These methods are better used with educated and more progressive people.

3. Individual Methods. These methods would include farm visits, office visits, telephone calls, home visits and letters.

All of the above methods are tools that could be applied or used in many ways. The individual contact methods furnish the most direct opportunities for influencing people, and all of the other methods of group and mass procedures are dilutions or compromises created by necessity.

The above are the main methods that are used by extension workers to influence farmers to change their practices for better ones and to adopt new ones. Each of the above methods has certain advantages and limitations and the professional extension worker should be able to know when and how to provide each type of learning experience to the best advantage. It is apparent that the use of several methods is better than any single method, however, a combination of several methods, though effective, is more costly. In se-

\[3\text{Ibid.}, \text{p. 47.}\]


\[5\text{Savile, op. cit., p. 56.}\]
lecting a method for teaching it is necessary to see to it that it will be both effective and economical. "Effective method" means that it should bring about the behavior change as planned by the extension worker. To do so, the extension worker, as a teacher, must have certain characteristics and aptitudes which would help him to win the respect, trust and friendship of the people with whom he works and teaches.

First, one of the important characteristics is the ability to communicate easily with those he teaches. Secondly, he should be able to reach the people in such a way that they feel that they can approach him at any time. He must be approachable. Thirdly, he should have infinite patience, that is, he should be patient and tireless in explaining, instructing and preparing. The extension worker must be wise, reasonable, sensible, judicious, impartial and strong-minded. Finally, he should know his job very well. He should avoid making technical mistakes and therefore, he must be careful to learn all that he can and be positive about what he says. He must be quick to learn what is right and confident in his ability to say and do what he knows to be the right thing.6

In order to be successful, an extension worker must have a thorough knowledge of almost all of the following

6Kelsey, op. cit., pp. 47-49.
areas: 1. social systems, 2. program planning and development, 3. human development, 4. extension organization and administration, 5. educational process, 6. communication, 7. effective thinking, 8. technical knowledge, and 9. research evaluation.7

The extension agent works in a social system that has two parts, a knowledge center and a client group. The agent's function is to link the resources of the knowledge center to the needs of his clients. That is, utilizing part or parts of the contents of one system or systems to benefit another system. Through his acts, the agent is expected to play, either singly or in combination, the roles of analyst, advisor, educator and innovator.8 The agent serves as an analyst and his main commitment is to interpret a situation for the client. The agent serves as an advisor — his main concern is to recommend to the client one of a number of alternatives. The agent serves as an innovator — his main concern is to create an innovation to satisfy a special need of the client.9

9Ibid., p. 225.
It should be stressed that the success of the agent in any one role depends particularly on his technical knowledge and background experience in subject matter areas, and also on his knowledge and experience in program planning and evaluation processes.¹⁰

Extension teaching is informed teaching and is mainly concerned with the teaching and practical application of useful information in agriculture and in the home. Extension deals mainly with adults and young people in situations in real life. It may cover any subject dealing with agriculture or the home. It concentrates on the interests or the needs of the people at a certain time and place. To do efficient work the extension worker must always seek incentives that will insure that the people are keen to learn what he teaches them; he must learn to show them what to do and how to do it skillfully. They must want to take part in the work and obtain satisfaction from a job well done.¹¹

The nature and extent of society's investment in the development of its educational system enables man to manipulate the natural resources in that particular society. The importance of the extension of knowledge through educational


¹¹Ibid., p. 3.
procedures versus the discovery of knowledge through research procedures is not yet fully realized. This situation is apparent to most developing nations.

In most of the developing nations change is achieved not only through extension education but in most of the development programs (especially in agricultural development programs), the major focus is on physical and quantitative achievement. The educational objectives are almost completely neglected, and the emphasis is focused on quantitative production.

People can be taught and they can learn by a well planned educational process, and they can make substantial permanent improvements on their farms, in their homes and in their communities. The main aim of learning is to develop behavior, attitudes, skills and the ability to use technical methods. Some societies have a free choice, others do not. In free choice societies people cannot be forced to act according to government's directions. Program planning to achieve goals of any kind, economical development, social justice or democratic growth, without emphasis first on educating people or motivating and training them to help themselves cannot in the long run be successful in a democratic social order.13

12Ibid., p. 225.
13Ibid., p. 225.
In Iraq, in some agricultural extension programs, the government uses some form of compulsion directly or indirectly to hasten the process of adoption, and this use of compulsion has sometimes been backed by legislative actions. Many of the extension workers would refuse any compulsion being adopted in extension, as they do not believe that it brings a change in the people's thinking and thus that no sooner is the compulsion relaxed, than the people tend to revert to the old way. Compulsion is surely an undesirable method of extension, and even its mention may drive people otherwise agreeable to the idea to adopt a hostile attitude towards it and thus defeat its purpose. There are two forms of compulsion:

1. Compulsion by force.

2. Compulsion by proper education exercised in such a way that the people do not feel it.

The first type of compulsion is undesirable and, therefore, must not be used. The second type of compulsion preceded by education, does not have the adverse effect of the first. Constant efforts are necessary to bring about this compulsion in a way that people do not feel its sting. Compulsion preceded by education and exercised in the interest of the program and the people if properly planned and enforced, can be a tremendous force in the adoption of vari-

\[14\text{Ibid.}, \ p. \ 3.\]
ous extension programs. The extension worker's main objective is to see that the farmers adopt the innovation and accept it and utilize it in their daily activities. The adoption process is one type of decision making. Decision making is the process by which an evaluation of the meaning and consequences of alternative lines of conduct is made.\textsuperscript{15}

**Adoption Process**

The adoption process is divided into five stages. These stages are arbitrarily divided for the conceptual process. Breakdown of these stages is consistent with the nature of the phenomena, congruent with previous research findings, and potentially useful for practical application.

The stages of the adoption process are: 1. awareness stage, 2. interest stage, 3. evaluation stage, 4. trial stage, and 5. final adoption. It is not necessary to have only five stages in the adoption process. There could be more or fewer. These stages are well utilized in introducing a new innovation for any group. Modification may be needed in the approach but not in the principles.

Adoption is the yardstick by which we can measure the progress toward the objectives. Innovation has been defined by some authors as follows:

1. A new idea, new things, an invention.
2. An idea or practice which departs from that generally prevailing in the community.
3. A certain opinion.
4. A personal goal, a seeking of activity.

Characteristics of Innovation

Each innovation has its unique characteristic and its effect on the members of the social system. The characteristics of an innovation certainly affect the rate of its diffusion. Some innovations diffuse from first introduction and may spread in the social system in a very short time; others are very slow and require fifty or more years for diffusion throughout the social system.

Research has shown that the characteristics of an innovation have a great deal to do with its rate of adoption. It is the characteristics of the innovation not as seen by the experts but as perceived by the potential adoptors that really matter.16 This fact was emphasized by Wassen, who utilized many case examples to show that "The case of difficulty of introduction of ideas depends basically on the nature of the "new" in the new product, the new as the customer views the bundle of services he receives in the newborn."17

The key point is not whether or not an innovation has some advantages over the idea that it is going to replace,

16Ibid., p. 123.
17Ibid., p. 123.
but whether the individual perceives the relative advantage of the new idea (innovation). 18

Similarly, it is the potential adopter's perceptions of the compatibility, complexity, divisibility and communicability of the innovation which will affect the rate of its adoption. 19

The above five characteristics of an innovation are interrelated with each other, but they are conceptually distinct. Below is what is meant by these five characteristics of an innovation.

1. Relative advantage, is the degree to which an innovation is superior to ideas it supercedes. It is usually expressed in economic profitability, but the relative advantage dimension may be measured in some other way. The relative advantage is a matter of perception of the new ideas.

2. Compatibility, refers to the degree to which an innovation is consistent with existing cultural values and past experiences of the adopters. Research studies in Michigan and New York have revealed that an individual is likely to adopt new ideas if he values efficiency, progress, science, achievement, and material comfort. 20

18 Ibid., p. 123.
19 Ibid., p. 124.
values security and conservatism he is most likely not going to adopt new ideas or practices.

3. Complexity, refers to the degree to which an innovation is relatively difficult to understand and use. Any new idea can be classified on a complexity-simplicity continuum. Some innovations are very clear in their meaning to the member of a social system. Others, not quite so clear. Any new ideas which are relatively simple to understand and conceive will be accepted more quickly than the complex ones.

4. Divisibility, is the degree to which an innovation may be tried on a small basis. Some innovations may be divided into smaller units for a comparison of trial results with some previous practices.

5. Communicability, refers to the degree to which the results of an innovation diffuse to other persons.

It has been found that there is a variation of support for the above characteristics. The economic factor (cost) is greatly disputed, but compatibility, complexity, divisibility and communicability are well supported as important factors.

**Selection of a Model**

Many different models have been formulated for social as well as for educational change. But there is no single best planning theory or model which could be selected and
used in different situations or different communities. Each country and even each set of circumstances requires a tailor-made plan and procedure. The form or type that planning model will take depends to a certain extent on the scope of the planned program and the availability of tools for its implementation.

Two forms of models were discussed in chapter 5, one was suggested by Clark and Guba and the other by Everett Rogers. Each one can be used very effectively and efficiently. It is always true that the type of social and educational model should emerge from the current situation, needs of the people and social setting.

**Adoption Model**

New ideas may be adopted or accepted on an entirely individual basis and others may be adopted by groups of individuals. The innovations require group adoption.

The first type, that is an installation of educational innovation deals with individual persons and not with social systems or groups of persons in the social system, is a mental procedure. Rogers has utilized this concept and suggests it is a mental process.

The paradigm below, (Figure 2) illustrates a theory of adoption of an innovation by an individual. This theory according to Rogers is not the only theory pertaining to innovation and adoption, but it is a summary of current re-
search and theory in the field of social sciences, psychology, sociological theory, social psychology, cultural anthropology, and the traditions of diffusion research.  

The paradigm portrays the adoption process and the pertinent variables in a way that is very readily understood.

Another important model of innovation, diffusion and adoption has been developed by Guba and Clark. The model shows the processes and the functions that might take place before the innovation will be adopted and utilized in daily practices, a classroom, that is to become institutionalized.

Any innovation before fully adopted has to go through certain stages as mentioned. Dissemination and demonstration are two important elements in any diffusion process. Dissemination is a process mainly concerned with creating widespread awareness of existence of the innovation. Demonstration is the other process through which communication is built and provides evidence that the innovation can be examined thoroughly and critically tested.

Adoption, which is the final stage where the innovation is incorporated into social system. There are three stages into the adoption process: trial stage, installation and institutionalization. Trial is the tentative trying out of the practice and ideas, and it is used to provide

\footnote{Ibid., p. 307.}

\footnote{Egon C. Guba and David L. Clark, "An Examination}
Figure 2  
Paradigm of the Adoption of an Innovation by an Individual within a Social System
assessment for the quality, suitability, value and utility. Installation is the phase through which of operationalization and institutionalization, regularize the innovation to fit its characteristics to the characteristics of the adoption institution. Figure No. shows the function of each stage and the relationship of the stages.

Adoption and Adoptors

Practically no individual accepts new ideas or practices as soon as he hears about them. The time lapse from the first hearing about an idea to final adoption may range from a few days to several years. The decision to change is ordinarily the product of a sequence of events and influences operating through time rather than an abrupt metamorphosis. Not all decisions are of a five stage sequence. Some decisions may be made on the basis of habit or tradition or at least without extended deliberation. Another variation involved is decision making is the time lag between first knowledge about and first trial or adoption of


## Objective

- **To advance knowledge**
  - Formulate a new solution to an operating problem or to a class of operating problems, i.e., to innovate

## Criteria

<table>
<thead>
<tr>
<th>Validity (internal and external)</th>
<th>Face Validity (appropriateness)</th>
<th>Institutional Feasibility</th>
<th>Intelligibility</th>
<th>Credibility</th>
<th>Adaptability</th>
<th>Effectiveness</th>
<th>Continuity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides basis for invention</td>
<td>Produces the invention</td>
<td>Engineers and packages the invention</td>
<td>Informs about the invention</td>
<td>Builds conviction about the invention</td>
<td>Tries out the invention in the context of a particular situation</td>
<td>Operationalizes the invention for use in a specific institution</td>
<td>Establishes the invention as a part of an ongoing program; converts it to a &quot;non-innovation&quot;</td>
</tr>
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## Relation to Change

| Provides basis for invention | Produces the invention | Engineers and packages the invention | Informs about the invention | Builds conviction about the invention | Tries out the invention in the context of a particular situation | Operationalizes the invention for use in a specific institution | Establishes the invention as a part of an ongoing program; converts it to a "non-innovation" |

### Notes
- **Validity**
  - Internal
  - Face Validity
  - Estimated Viability
  - Impact (relative contribution)
- **Face Validity**
  - Appropriateness
- **Institutional Feasibility**
  - Generalizability
  - Performance
- **Intelligibility**
  - Fidelity
  - Pervasiveness
  - Impact (extent to which it affects key targets)
- **Credibility**
  - Consequence
  - Evidential Assessment
- **Adaptability**
  - Feasibility
  - Efficiency
  - Action
- **Acceptiveness**
  - Valuation
  - Support

**Fig. 3** A CLASSIFICATION SCHEMA OF PROCESSES RELATED TO AND NECESSARY FOR CHANGE IN EDUCATION*
of a new idea or practice. This may take a few hours or days, or several years. The time span varies with individuals, the nature of the change involved, and the situation in which the individual finds himself when he learns about change alternatives.\textsuperscript{26}

The rate of adoption is highly influenced and affected by the characteristics of the innovation or new ideas. Cost is very important in this respect, because risk is always present when new innovations supersede the existing ones. Situational factors are also important in the adoption process. A farmer may delay change because the new practice is not too profitable and because he cannot afford to operate the new innovation.

The North Central Regional Rural Sociology Subcommittee proposed in 1955 categories of adopters in decreasing order of innovativeness. The order is, innovators local adoption leaders and later adopters.\textsuperscript{27} Adoptor categories are the classification of individual adopters within a social system on the basis of innovativeness. The adopter categories proposed are numerous and the criteria which the adopter are categorized in different category is innovativeness.

Innovativeness refers to the degree at which an individual is relatively earlier to adopt new ideas than other

\textsuperscript{26}Ibid., p. 24

\textsuperscript{27}Rogers, \textit{op. cit.}, p. 149.
members of the social system. Other adopter categories are used by many researchers, but in general the following five categories are mostly used and utilized in the adoption of innovations: innovators, early adopters, early majority, late majority, and laggards. Members of each above category have certain characteristics which set them apart from other category members.

**Sources of Information and Their Effect on Stages of Adoption Process**

The sources of information that would affect each stage of the adoption process represents only one type of the influencing factors that function when changes are considered and made by individuals. There are many different factors that may bring a change in social system. Some factors are related to the individual himself; others are cultural, still some social and some situational in nature. Figure 3, shows some of the individual and social factors which operate at each stage in the adoption process.
Fig. 1. The process of acceptance of new farm practices and factors influencing that process.
The general characteristics of the innovators are as follows:

1. They are young, average age.
2. They have relatively high social status.
3. They have high education, prestige and income, inpersonal and polite.
4. Seek information from out their circle.
5. They are viewed as deviants by their peer groups and by themselves as well.
6. They have the capacity to analyze the power structure in a group or institution.
7. Understand communication processes.
8. They have the ability to understand the value of the group they are trying to influence.

In the previous chapters the author has described briefly the social, economical, educational structure; population, population structure and natural resources of Iraq. Some of the problems that impede the progress of education, economics, and in general community development have been presented in chapters three and four, in a very brief form.

The studies that have been compiled so far, even though not a complete listing would provide a good base or background on which to apply the principles of a diffusion and adoption of innovations. This base provides a framework to suggest a theory to introduce change with Iraqi farmers on the one hand, and some suggestion for
educational improvement on the other hand. The change that is implied for the Iraqi farmers, not only relates to change in methods and techniques in farming practices, but also to change in attitudes, behavior, skills and understanding.

There are many schemes and models bearing or related to the process of change and innovation diffusion, but the implication is that available models, useful as they are, do not go far enough. The available formulations have, to a certain extent, clarified the process of change, identified the stages of innovation, adoption, and at the same time have suggested taxonomies and categories of tasks that must be performed to make change more or less certain, and not merely random or accidental and unplanned. However, they are generally descriptive, contextual or much too global.

Choosing a model and adopting it per se may be dangerous, especially when that particular model has not been developed for that particular social system.

Importing a model from another social system to be applied in a completely different social system is more dangerous. It is more desirable to use a model which has

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29 Ibid., p. 25.
been developed for the particular social system, otherwise, the imported model must be modified before it is introduced.

In Iraq, especially in the rural areas, people have factions due to a variety of reasons such as social, economic, political, and religious, and direct attack on these factions to modify them or replace them with better ones may hamper the extension worker in his effort to have farmers and their families accept new ideas or improved practices. Such an act may make the situation very difficult and complicated. The aim of the extension worker is to help individuals and their family members to become self-reliant and active citizens and to be conscious of their responsibility for their own welfare, and the welfare of the community of which they are a part. This, of course, could only be accomplished through well organized and developed extension educational programs.

Factors Affecting Extension Education

In order to be an effective extension worker one must understand the people with whom he works. Working with people to bring about certain changes in their behavior is not simple and easy. The complexity of different factors, economic, social, cultural, and environmental are all contributing to affect the behavior and attitude of these clientele.
Social Factors

In patterned behavior the physical structure of any society or community is visible, but its social structure is very tangible and complicated and less evident. The understanding of social structure of any community the relationships that exist between the members, its leaders and the characteristics of the leadership and other factors which influence the promotion of change is essential for effective planning and prediction of future events.

For any society to function efficiently an educated population whose members are able to absorb new knowledge and a labor force sufficiently skilled to operate good industrial and agricultural enterprises is required. Training of people to perform effectively requires a high level of educational institutions which are lacking in most of the under-developed nations.

The development and spread of education will show the disintegration of cooperative farm work. Many children of school age are now enrolled in schools, and many families are no longer dependent on their children as sources of labor as they used to be. In the urban population and people of middle class income, the premium once placed upon large families is now disappearing.\(^{30}\)

Education has influenced the social structure and family type. The extension workers should be aware that every community is characterized by some degree of social differentiation and that a very important difference is in the influence which certain community members have over the behavior of other members. Many such persons are considered leaders because they have accepted the community norm, and have accepted the social and the economical values of their community. For that reason, most of the extension teaching has been directed to educate the leaders since: (a) they are more likely to adopt some new practice than is the average community member; and (b) they are more likely to directly or indirectly influence others to adopt the new idea.31

Teaching and Democracy

Many people in many countries in the world except for some socialists countries belong to privileged groups. They enjoy all facilities, economics, power, prestige and educational facilities. Education must be adjusted so that it will never be a source of class difference.32 This means that every student should have the facilities and opportunities for education according to ability and motivation, and not on the basis of financial ability only. People

31 Sanders, op. cit., pp. 78-79.
32 Alsammarae, op. cit.
should not be sent into the world of work without proper education. Equal opportunity should prevail for all children and continuous education must be provided for those persons who are able to benefit from education.

An outstanding philosopher of education, John Dewey, steadily emphasized the need for an education in which the youths learned to respect others, to recognize their worth and dignity and acknowledge their concern. Young people must develop their own personal capacities, becoming educated to personal initiative and adaptability.

Democracy as a concept means different things. It is not merely a form of government, but a way of living together in a highly complex society with a highly complex social structure which is undergoing a rapid change.

Democracy can be interpreted to encompass four interrelated ideas:

1. It is a form of social organization which emphasizes the optional development of all individuals.

2. The highest personal development can be achieved through the cooperation of all individuals, and every individual should consider the effect of

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his act upon another.

3. The optimal development of all individuals can be realized when all people have faith in intelligence as a method to be used in solving individual and group problems.35

The significant kind of learning in a society where democracy is prevailed is characterized by reflective thinking, rather than by mechanical habit forming in the learners.36

Democracy depends to a large extent on the citizens who should believe and have faith in teaching for learning in a method of intelligence and as a method of solving problems that the people might face and practice in their daily lives. It is a process whereby people look for solutions to their problems by way of continuous inquiry, collecting data about facts, and by sifting facts in a research procedure.

In a democratic society, group thinking and group ideas and opinions are highly prized. It is through this type of democratic action that the democratic institutions, programs and policies, or any decision can be effectively evaluated and a constructive change be proposed and achieved.37

35Ibid., p. 103.
36Ibid., p. 104.
37Hatam A. AlSamarrae, paper on Factors Affecting Methods of teaching with implication for teaching Agriculture, 1967.
Application and Implication

To stimulate agricultural growth and development through the application and utilization of the scientific knowledge is a key problem of economic development. A large number of farmers must be reached and must accept integrated programs which a range of services and commitments from technical advice to market assurances. To help the Iraqi farmers especially at this stages requires enormous numbers of trained men and women who must essentially be rooted in their country's culture and problems. The complexity of the task, combined with the need to reach farmers with all essential services requires a long term program. The necessary emphasis upon the application of science makes educational institutions obvious instruments of this national policy. But again, they require long term commitments with adequate financial help and a large amount of reasonable freedom.

Iraq urgently needs to increase the quantity and improve the quality of agriculture output. But, increasing the quantity and improving the quality of agricultural production is a problem in the application of science and technology to the development of its agricultural resources. This, of course, involves more than just knowing what the available techniques to apply or how to develop new techniques to achieve the prescribed objectives. Even though appropriate techniques are available the difficulty is to
convince the individual farmer that he will produce higher yields under the existing situation or circumstances. To convince the farmer requires, effective education and demonstration at the village level. He must believe that he and his family will benefit sufficiently from the results to make it worth while to assume the production and economic risk involved.\textsuperscript{38}

**Leaders and Decision Makers**

To introduce new innovations (ideas) to farmers in a community it is very necessary to communicate relevant knowledge to the decision makers in that particular community, and if the decision makers of the community are to adopt decisions on the basis of the knowledge made available to them, they must have clear criteria defining the desirable relationship between system and its environment. The decision makers must be convinced and motivated to act in the interest of the group.

Experiences have clearly proved that results are likely to be disappointing if efforts are largely confined to one or two aspects of the total problem. It does little good to convince a farmer that certain agricultural practices or techniques will increase the yield. But even though he believes that, still the economic and social risk in-

involved in adopting them are greater than he can afford, or that his share of increased output will be so small that the effort is not worth while.

To adopt new improved methods and techniques the farmer needs the necessary supplies and equipment and should be able to finance their purchase either from his own resources or through a loan at reasonable cost, on terms suited to his situation and terms.

The following conditions have to be met if new innovations are to be adopted.39

1. The improved practices have been tested and demonstrated to farmers.

2. He must be convinced that the new practices will result in increased output and will be sufficiently to justify his assuming the risks involved.

3. The supplies and the necessary equipment to carry out improved practices must be available at the village at the time the farmer needs them at prices he feels he can afford.

4. Credit must be available on terms suited to the need of the farmer and at reasonable cost.

5. The marketing system must be reasonably efficient and returns to the farmer a fair share of the price paid by the consumer.

A change certainly will not occur in vacuum. There

39Ibid.
should be someone who assumes the leadership to arouse the interest of the farmers and to develop a plan for change, and to delegate a specific job to those members who are willing and able to work.

In every society and community, there are leaders who are members of the community. They must see the whole community and be willing to devote some of their time and effort to develop activities. Even though they are democratically minded, they cannot always wait until they have educated the people of their community in the spirit of democratic responsibility. A leader must be honest and guided by good sense, and by the rest of the members of the community. He should be on guard constantly against the desire to dominate or to gain recognition and power. His aim should be to learn what his community needs and how he can be most helpful in meeting those needs. He must cooperate and help members of his community in carrying out programs which are going to be in the interest of the community. He usually puts the well-being of his people ahead of his own desires when they conflict. It is necessary that available leadership be totally marshalled if the program of area development is to succeed in substantially raising the income and the level of living.

Methods Used in Introducing New Innovations

It has been mentioned earlier that there are three
main teaching methods: Mass method, group methods and individual methods. The primary responsibility of the extension service is to provide instruction for its clientele. Instruction are usually given through learning experiences. Tools, methods and processes are ways of communication. There are a variety of teaching devices to influence persons to change their practices. Each method has its advantages and limitations, but they supplement each other and together they provide the stimulus for interest, desire, action and satisfaction.

In the traditional society, with traditional agricultural practices, progress can be made through the dissemination of such knowledge to the farmers. The dissemination of such knowledge to the farmers is an enormously difficult job. For the Iraqi farmers, with 95% illiteracy, this requires a long time. An educational program is the only means to accomplish such an objective. Educational institutions of different kinds are imperative for the dissemination of the required knowledge. It is then very necessary to prepare an assessment of national educational needs of different kinds on elementary, vocational and higher educational levels, and to arrive at detailed plans including financial estimates, for meeting these needs. The focus should be on the needs in the field of education. Some of the proposed educational institutions will educate and train the young in rural areas to become the future farmers.
At the present, the Iraqi farmers are generally conservative and unwilling to accept an innovation. The traditional farmers tend to be shrewd and realistic in their evaluation of the new idea that has been handed to them by government personnel. They want to be sure that the experiments are not undertaken at their expense. The role of the demonstration plays an important part in convincing the farmers of the value of the new idea, and also an important check on the ability of the techniques being recommended by extension workers.40

The demonstration, at the present time, is the most important method of teaching the Iraqi farmers. The demonstration is a means to an end and not an end in itself. It initiates a process of learning, motivates and encourages the farmer to change his old habits, customs, traditions, and practices and may change the farmer's attitude and builds progress. It is a complete adoption process when the awareness of the need for change ends in the adoption of the demonstrated program in actual practice.41 Demonstration is a powerful tool in agricultural extension. It helps in communicating ideas, practices, and techniques about agriculture and similar fields, to individual and group directly and indirectly interested in them. Demonstration differs


from other methods of teaching in that it helps to convince people more quickly than any other method through the triple process of observing, hearing and learning by doing and experiencing things for oneself. The combination of these three processes makes demonstration one of the most powerful teaching methods.

Other important methods of teaching that can be used in teaching the Iraqi farmers at the present time according to their performance are:

1. Meeting and group conference
2. Radio Program
3. Personal contacts
4. Audio, visual aids
   a. Posters
   b. Films
5. Office visits

Because of the lack of facilities some teaching methods at the present time are not possible. Lack of a telephone network makes it impossible to use this method as a means of teaching. The absence of electricity in rural areas makes it impossible to use some audio-visual aids. The high rate of illiteracy among rural people, especially the farmers, makes the use of press and readability not practical to use.

It is up to the county agent to decide which method would be more effective, practical and economical to use in his area under the existing circumstances.
Summary

The theory of diffusion, the adoption process, the adopter categories were defined and discussed. The diffusion of innovation was defined as a process by which an innovation spreads. The adoption process is the mental process through which an individual passes from first hearing about innovation to final adoption. Five categories of adopters were used in the rate of adoption. Innovators, early adopters, early majority, late majority and laggards.

Two types of models for adoption of an educational innovation were suggested. One was developed by Guba and Clark and the other by Rogers.

The role of local leaders in the adoption of innovation was discussed, and the development of leadership is evaluated.

Different teaching methods in extension are listed and their effect on learning process is considered an important factor in the process of adoption.
CHAPTER VI
SUMMARY AND IMPLICATION

Iraq, as has been mentioned in the first chapter, is an agricultural country, with an impressive potential which includes water, mineral resources, oil and a large area of fertile land. The area of the country is 444,445 square kilometers (116,840 square miles) and the population is 8,550,681. The country is sparsely populated. The population is small because the people have not been able to control the environment, mainly because of lack of capital and an unstable political structure.

People in general are poor and many of them live at a subsistence level. Per capita income is about 102.9 Iraqi Dinar but the wealth of the country is not distributed evenly. Illiteracy is very high, about 65 percent. Manpower remains undeveloped and a large number of people are unemployed. It is very easy for an observer to notice this. A large number of people at working age spend their time in coffee shops. The main factors for such a situation are low input and low productivity coupled with a lack of motivation for investment.

The population of Iraq is made up of several combinations of racial cultural and religious components. The
Iraqi people have much to offer in high and sensitive intelligence, and the capacity for progress in many different fields. With increased oil revenue, the country is expected to have a rapid development in many aspects of life.

The agricultural sectors have been considerably improved since World War II, and the national income has increased by 11 percent since 1955. One of the difficulties found by the national leaders is whether the emphasis should be on the agriculture sector or the industrial sector or both. Each government has placed a different emphasis between the industrial sector and the agricultural sector. This appears to be unwise program planning for the whole national economy.

Iraq is divided for administration purposes into fourteen liwas. Each liwa is administered by an appointed administrator.

The population is classified into two categories, urban and rural. An area of 5,000 or more is an urban area, and areas with less than 5,000 is rural. People are gathered around the big cities and near the rivers or wells. With improved roads and availability of communication nomads are migrating to the villages and the villagers are drifting to towns and cities and with such a shift the different segments of the population have altered the character of the Iraqi society. A distinction can be seen between tribe
(rural) and city (urban). The tribes are composed of herdsmen, nomad, and settled cultivators, and urban is composed of government officers, merchants and domestic servants.

The increased use of the scientific approach in solving human problems, especially in the reduction of the infant death rate, has caused an increased demand for food and nutrition. The current literature has shown that the present world food situation is critical especially in underdeveloped countries and that methods which are now being used to transmit new means for agricultural development are ineffective.

Agriculture is a dynamic enterprise and changes in all facets occur. However, there is an urgent need for quicker, more efficient and effective innovations to meet the crisis with which the people are faced today. Communication is a critical factor which either speeds up or slows down the process of change. It all depends on the effectiveness of diffusing new and superior information to the producers, distributors and consumers. Legans summed it up as follows: "Progress is slowed as a result of too many people saying the wrong things in the wrong ways to the wrong people. Much misunderstanding results from faulty communication. What is needed is more people saying the right things, at the right time, in the right way to the right people."¹

¹Paul J. Leagans, "Some Concepts Purported to be
The resources available to the Ministry of Agriculture of Iraq for a large scale agricultural program are inadequate to bring about the rural transformation which is very necessary to continuous economic development. The production of different crops by the traditional methods must be increased through the application of some new techniques and improved methods of production. The government has tried a variety of ways such as, land reform, irrigation, and drainage schemes, and agrarian reform to expand and improve the agricultural production and rural development but these attempts have not been very successful. The main reason for some of the failure has been the lack of sufficiently well-trained personnel with a correct spectrum of relatively simple agricultural skills and knowledge on the farmers' side.

About 95 percent of the rural people are illiterate. Almost every farmer is a victim of some endemic disease. Houses are made of mud or reed, and they are all lacking running water and other facilities. The farmers are isolated and there is a gap between the farmers and the educated segment of the population. The shiekhhs have always tried to prevent a direct contact between their followers (farmers)

and the educated people. Also they have tried very hard to prevent the children of the farmers from attending schools.

The gap is gradually closing now, and the children of the farmers and the poor are climbing the social ladder at a faster rate than ever. The changes constitute a state sponsored socio-economic and political revolution, and they have brought sudden destruction to the clear limit between the farmers, the landlords, and the other social classes.

The effort of the government in the last ten years to give the farmers some economic security and independence has not accomplished what was anticipated. Most of the farmers own the land that they farm. In the other area of reform: education, health, rural welfare, capital formation and community development, the government should commit itself sincerely and faithfully in each of these problems to bring about some solutions which will contribute to progress in rural areas.

Problems and Development

Even though Iraq is an agricultural country, industry has a very bright future. The most prosperous industry in the country is the oil industry. The economic development of Iraq has been implemented by the establishment of Ministry of Planning which is entrusted with the:

1. General planning for Iraq economy.

2. Allocation of fund for each plan of action.
Land Classification

The state owns all Miri Sirf land and has the right to grant a title to cultivate the land. The tribal system of cultivation has been the dominant type of farming. This method of farming dictated some communal organization because the individual farmer could not take care of the land by himself.

At the beginning of the twentieth century, the tribal system of cultivation started to disintegrate as a result of settlements for permanent cultivation, and of the opening of markets for cash value harvested crops and of the organization of political structure which replaced kinship structure.

The classification of land is determined by law No. 50, 1932 as the following:

1. Milk land
2. Matruka land—this land is reserved for public usage.
3. Wagf land—or religious land.

In 1953 about 65,000,000 domums had been classified into the above categories.

Economic Situation of the Farmer

There are big discrepancies between the north and the south in regard to the farmers' situation. The land holdings in the north are very small compared to that in
the south. The rent of the land is cheaper in the north. The share of the landlords in the north is about 50 percent, whereas in the south the share ranges between 65 to 75 percent in favor of the shiekhs. The general condition of the farmers both in the north and the south is not significantly different. It is characterized as:

1. Low yield per unit land
2. Subsisting living
3. High rate of illiteracy
4. Poor housing and health

Crops Production

The land is divided into six areas according to the soil conditions and type of vegetation. Each area has its characteristics and effect on the type and nature of the crops that are grown in each.

Barley is the largest crop grown, followed by wheat, lentils, vetch and linseed constitute the main winter crops. Vegetables are grown mostly in areas around big cities. The total area that is planted with vegetables varies from season to season.

Still a large percent of Iraqi farmers use the simple plow, driven by animals: cows, oxen, mules, horses and donkeys. Farm machinery are spreading very fast. The government is adopting the idea of introducing farm machinery.

The Department of Agriculture is trying with all its
facilities to improve the farming methods and farm products. Through cooperation with the research department new varieties of improved seeds, insects and pests control and the use of fertilizer are introduced to the farmers.

The farmers use a fallow type of cultivation, that is, the farmers cultivate half of their land for one year and leave the other half fallow.

**Land Reform**

In 1958, a revolution overthrew the kingdom and a new republic was established. The whole idea of agrarian problem is to be solved, and a new relationship of farming, based on cooperative production is to be established. The new Republic passed the Land Reform Law in September, 1958. According to this law, the large holdings and the state lands are to be distributed to the farmers who owned no land. The size of each plot should not be less than 30 donums or more than 60 donums, in irrigated zone, or more than 120 donums in rain fed land.

The outcome of land distribution in regard to the national economy was not as much as was expected. But the farmers have benefited most. Their income is much higher than before.

**Education**

Education in Iraq is the responsibility of the Ministry of Education. The education system is comprised of
schools and institutions starting from kindergarten to the university level. Education in Iraq is free for all persons who are qualified. The enrollment on all levels has greatly increased since 1921. Theoretical learning was and is still the dominant form in all schools. However the government realized the need for technical schools to train students who are needed in industry and agriculture. The general characteristics of the education are:

1. High enrollment on both high and low level.
2. An increased in number of schools.
3. An increase in vocational education.

A large number of technical schools are now operating in Iraq, mostly in Baghdad, and many agricultural schools are operating in different parts of the country.

**Agricultural Extension**

Agricultural Extension is a division of the General Directorate of Agriculture. It works directly with the farmers and it is contributing to the development of farms and farm products as well as to the farmers themselves. It is educational, but it is not mainly concerned with educational principles.

Agricultural Extension was founded in 1952, and now there is an office in each liwa. The main difficulty that the agricultural extension personnel encounter are transportation facilities, well trained personnel and funds.
Extension is a public educational agency and its main aim is the development of educational program both in agriculture and home economics. In the meantime, it should assist people in solving relevant problems or in meeting specified needs. Agriculture Extension is an educational system for providing people with knowledge and to help them change their attitudes behavior and understanding, and improve or introduce new skills and techniques. Other functions of Extension are to teach people how to assess their own needs and how to solve their own problems. The Extension teacher teaches people how to help themselves in this respect, he does not teach people subject matter, but how to think, not what to think.

The agricultural extension department is not operating very efficiently and is far from satisfying the people's needs. The main reasons for this condition are:

1. Lack of well trained personnel
2. Lack of funds, communication facilities and well planned extension programs

The significance of program planning and implementation is basically a means of speeding up the process of economic and social change now taking place.

Habits, customs and traditions do not change or disappear overnight and new ones cannot be imposed with just explanation if they are to be effective. The most effective and lasting change is that which springs from the grass
roots with guidance and assistance from above. The govern-
ment should initiate an extension program based on informa-
tion which would be collected from contact with the con-
cerned people. Getting the needed information from the local
people will specify the problems and identify the real needs.

**Adoption Models**

Two types of adoption models were suggested, one was
formulated by Clark and Guba and the other one was developed
by Everett Rogers. The first could be used very well in
adoption of an educational innovation. The second model is
very useful, particularly in introducing an agricultural in-
novation.

**Educational Problems**

Throughout history, educators have thought and writ-
ten about the problems of education, the study of education
should not only be concerned with the art and science of
teaching, but must go beyond these to the study of the re-
lation of the school to its parent society and the place of
education as a whole in the life and culture of the indivi-
dual.

Educational needs compete with the needs of other
sectors of the society, such as industrialization, agricul-
tural development and social welfare. Priorities must be
determined to maximize social returns for all levels of edu-
cation, especially of higher education. The type of education should be the kind that can strike a balance between traditional ideals of good life and the demand for modernization.

Research should precede any plan for changing and revitalizing educational principles, so that these changes satisfy and meet the country's situation and needs. Any program for technical progress and agricultural expansion must be based on the available capital resources, quality of population, their level of education and their potential.

In Iraq, until recently, higher education was of a classical nature, it was mostly suited to the elite and not the masses of the Iraqi population. At the present time some changes are taking place, but not radical changes. Higher education is open for all people but the enrollemnt is limited because of the numbers of institute buildings and instructors and large numbers of poor students who cannot afford to go to college. Among the limited number of instructors, very few of them devote full time to teaching and research. Even though they are competent their net income is very low, and for this reason most of them have to work extra hours to meet their financial needs. Libraries are very few and those that do exist are lacking in recent books. Some instructors use notes that have been used for twenty years or more. As a result the quality of higher education is not adequate, or up to date, and the students are not
very receptive to new ideas or knowledge. A large number of the students are only interested in passing the examinations to obtain their diplomas, in order to obtain better jobs.

On the whole, the structure of the university and colleges does not promote harmony between the faculty members and the students. The relationship is always of a formal type. The method of instruction is the lecture type, and in many cases a form of dictation, which is caused by the lack of textbooks. The instructors give the impression that they are well informed and knowledgeable and are not to be disputed.

The students in general are not satisfied with university affairs and are frustrated because of the lack of job opportunity and the difficulty of the government requirements especially the requirement of security department approval for appointment. This process may take months.

The problems of education in Iraq are many and it would take extended research to pinpoint them and their cause and remedies. The following are some of the important ones.

1. Lack of facilities
   a. Good buildings
   b. Adequate equipment
   c. Good modern equipped laboratories
   d. Well equipped libraries
   e. Modern training facilities
2. Instructors.
   a. Need more and well qualified instructors
   b. Lack of incentive on the instructors side to do adequate research
   c. Low salary, which forces the instructors to work outside of the educational sphere or do extra hours of teaching
   d. Lack of inter service or training for all teachers on all levels.

3. Economic Factor
   a. Need enough funds for educational purposes. Fund allocation for education is not proportionate with other sectors.
   b. Higher education is concentrated in three large cities only.
   c. Students from poor families cannot make it to college

4. Curriculum and instruction
   a. Curriculum in many colleges are not based on the society's needs and for this reason many graduates cannot find a job.
   b. Vocational education does not correspond with industrial and agricultural development and need

5. Administration
   a. Inefficient and inadequate administrative unit that can coordinate and interrelate intra and inter institutional
   b. Lack of training in administration will cause inefficient management and direction

6. Political and social factors.
   a. Changing power and political structure made educational planning unstable.
   b. Bureaucratic administrative behavior aggravates problems.
   c. Lack of guidance and recreation facilities in and outside the educational institutes add to the problems.
CHAPTER VII

PROPOSED PROGRAM FOR AGRICULTURAL
DEVELOPMENT IN IRAQ

Planning a Program

Planning and initiating a program for the improvement of the existing situation means that the present situation of the rural people in Iraq is not what it should be and could be. Through program planning and development, something new and different must prevail.

The development of adequate efficient agriculture is a slow, painful process in many developing countries because their governments tend to emphasize industrial development. Agriculture's integration into modern economy has not been effectively accomplished. The industrial revolution, on the other hand, has its fullest impact on peasant agriculture. Unless agriculture succeeds the same as industry in making fullest use of scientific knowledge and advanced technology, it is bound to remain a depressed branch of a national economy, and the gap in income between the rural people and their urban counterparts will grow wider and wider.

Changes in the rural situation in Iraq are imperative. These changes must help create better conditions. Changes that are important to people are those that help them to
meet their needs. Knowledge is one answer through which people can meet their needs. Opportunities for acquiring knowledge in Iraq, as mentioned earlier, are limited to comparatively few privileged people. But through extension education, practical knowledge can be provided to many people, regardless of their educational level or age. Extension education, or informal education, is usually for persons who are out of school and want to learn how to apply modern science in their daily life. Extension is an informal educational system, and most of its students are rural farm people of all ages.

The Goal of Extension

Extension education differs from formal education in that it does not have classrooms, prescribed courses of study, or regular meeting time and place. Through extension education, people learn new scientific facts about agriculture and homemaking. People learn how to apply this scientific knowledge to improve their farms and homes, and to raise their level of living. They learn how to budget their time, how to use their land and money for their own greatest good, and how to work with other people for the common good locally and nationally.

Extension education is mainly concerned with agricultural production, with improved farming methods, better seeds, fertilizer, use of appropriate tools and machines,
insecticide and other farm practices. It is also concerned with the use of agricultural products and income in providing better nutrition, better health, better housing, greater security, recreation and better understanding. It teaches people how to do things, but not what to do. How to make decisions, but it should never order them to make decisions and changes. Extension may help people to obtain credit and teach them how to use borrowed money wisely, but it does not provide the farmers with the money for agricultural improvement. It teaches them how to control and why certain controls are important, but it does not regulate the people's actions. It teaches them how to think, but not what to think.

And rural people will fully support and participate in an extension education program if they are sure and positive that the extension program will be for their benefit and will fulfill their needs.

One director of extension said that "it is the function of the Extension Service to teach people to determine accurately their own problems, to help them acquire knowledge used in the solving of these problems, and to inspire them into action." ¹

Leaders and Leadership

Every community has its own leaders, and when action

¹International Cooperation Administration, Washington D.C., p. 6.
is necessary to accomplish some objective, the leaders must be recruited to provide needed leadership and direction. The extension worker is mainly responsible for identifying the leaders in the community where he is to work. He should involve the key individuals in the beginning stage of the extension program, soliciting their counsel and advice. At the same time, the leaders in agriculture should understand the purpose of the extension service, its objectives and its goal, and what needs this serves for the rural people. In the Iraqi rural situation, the following guiding principles are essential to the development of an effective extension service and should be carefully considered by the officials in the department of agriculture.

1. The main purpose of the extension should be recognized as assisting rural families through education to realize the maximum benefits from the use of their available resources.

2. Extension education should be understood to mean the teaching of technical knowledge useful in solving recognized problems of rural families. It involves developing the confidence of the rural people in cooperative work.

3. Extension education should serve and be available to all people equally and without favor or cost to any individual.
4. The extension service should be adapted to the social order and organization in the community.

It is very important also to see that local leaders put the well-being of the local group ahead of their own desires where they conflict.

The needs for, and the requirements of, local leaders are:\2

1. To organize local groups.
2. To teach their neighbors and friends, thereby spreading the influence of the extension worker.
3. To be the source of information and technical knowledge for people so that extension work can continue when the extension worker is away.
4. To improve economic and social living conditions by self-help.

**Type of Extension Programs**

The aim of an extension program is to teach people how to achieve a better standard of living through their own effort. This requires a well planned program which involves a careful collection and examination of all the factors affecting the people's lives, studying their problems and special needs, producing plans for the satisfactory solution of these problems, and training local leaders to carry on the plans.

\2Savile, *op. cit.*, p. 82.
There are three types of program planning: (1) predetermined program, (2) people involvement, and (3) cooperation between the extension staff and the clientele. The predetermined extension program is the type of program which has been and still is, practiced in Iraq. The program is planned by the county agents in the villages under the direction of the Administrators in the department of agricultural extension.

Principles of Program Planning

A successful plan of action should have a clear statement or purpose for the local people. The soundness, timeliness, vitality, and economic or social importance of the program is an important factor in determining continuity of public support. The following are some of the principles of program planning:

1. The program should be oriented to the level of the rural people in the area.

2. The program must be educational, with educational objectives to bring about improvement in the ability of the people to solve their existing problems individually or as a group.

3. Local people must participate in a democratic way in program planning, implementing and evaluating with the extension personnel.

4. The program must be flexible enough to meet all the necessary changes when they emerge or are needed.

5. Objectives must be well defined so people will understand them.

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"Kelsey and Hearne, op. cit., p. 141."
6. The Program must fit the local situation and be feasible given the available facilities, personnel, funds, time and natural resources. Objectives must be practical and achievable in a given period of time to avoid discouragement of the participants and those who are concerned.

7. Program planning is a continuous process. It does not stop or end when a solution to a present prescribed problem is found. Every learning experience enables the people involved to discern more clearly their true objectives and real needs.

It is very important for the extension staff to know that there is a logical connection between the factual information which must be assembled, and the program planning and the field of activities of the extension service. The field that would be covered by program planning determines the kinds of information which are needed for the setting up of short and long term programs.

Proposed Program for Agricultural Development In Iraq

The Department of Agricultural Extension is considered the institution of educational extension through which a program of action should be developed and implemented with the cooperation of the local people.

The main aim of the extension service today as in the past, is the improvement of farm and home conditions, and of the level of living through teaching rural people the necessary technical and social knowledge.

An extension program is defined as a set of clearly defined, consciously conceived objective which are to be
achieved through extension teaching. Furthermore, extension program planning is a process by which the people in the country, through their leaders, plan their own extension program. County and state professional extension staff members assist in this process, of which the end result is a written program statement. Good planning requires staff team work, sharing and cooperation with other concerned people. Most of the problems require some interdisciplinary approach, and thus an extension staff cannot function effectively by themselves alone. Planning also requires that the extension worker know how to lead groups so that the higher quality of planning needed will be done. This, of course, requires careful consideration, adequate concern with the people's main problems, accurate data adequately interpreted by the planning committees, effective involvement of the people in analysis, and true group decision making.

Before starting any program planning it would be very necessary to form a committee consisting of extension staff and selected local leaders. The committee as a joint body would investigate and study the situation and analyze it.


The committee would be comprised of a subject matter specialist, an administrator, a county agent, and three to six members of the area. The committee would study what is available in material, equipment, seed, fertilizer and natural resources, and also related facts that may help in making suggestions, and what has been done elsewhere in similar projects or programs.

The situation in Iraq already discussed in earlier chapters is here concisely summarized.

Iraq is one of the developing countries, and Buchanan and Ellis have defined a developing country as "one which on the average affords its inhabitants an end product of consumption and material well-being appreciably inferior to that provided by the well developed countries."\(^6\)

Another description of developing nations is that given by Stanly. The developing country is that which is characterized by mass poverty which is chronic, and not the result of some temporary misfortune, and by obsolete methods of production and social organization, which means that poverty is not entirely due to poor natural resources and hence could presumably be lessened by methods already proved in other countries.\(^7\)

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The above two definitions of developing countries suggest that one can improve income per capita and national income through better allocation of resources by methods which are well known and by having a well balanced planned program.

The extension program which the writer would suggest to be applied in the rural area of Iraq consists of five essential steps, as follows:

1. Analysis of the current situation to determine the relative importance of each problem. To reveal what has been done about these problems and what are the consequences.

2. Deciding upon objectives to be accomplished. Identify the most significant needs of the people and program goals.

3. Develop a teaching plan which would coincide with the objectives.

4. Make an objective evaluation of the procedures and methods used and the outcome of the whole program.

5. Reconsider each step periodically in the process of implementation. Necessary and useful changes may be made if needed. Then start the cycle all over again with the needed modification.

The above five steps constitute the essential phases of the intended program of change through educational procedure.

As mentioned earlier in this chapter, the agricultural extension program which is predetermined solely by the extension staff, is impractical and ineffective. Only when

\[8\] Leagans, op. cit., p. 7.
local people are involved in planning extension activities will a program work well. Also, the farmers when involved, will feel that the program belongs to them and for their benefit.

The situation in the countryside of Iraq is:

1. Small farms, and poor farmers
2. Inadequate diet
3. Low yield per unit level
4. Primitive method of farming
5. Lack of fertilizer and insecticide
6. Poor marketing
7. Poor storage facilities
8. Poor roads and lack of communication

The study of the situation would reveal the problems and the objective.

As has been mentioned in the previous chapters the main problems of the rural people are low production, low income per capita and lack of knowledge in using improved methods of production. But more fundamental problems are poor housing, poor family health, poor nutrition and low rate of literacy.

The above cited problems in the rural area would help the planning committee to identify and determine the important needs of the community.

The extension program is mainly concerned with the
farmer and his land. Its aim in general is to develop in village people the ability to make a better living and to live better as individuals, as family members, as citizens of the community and the nation. The main problem confronting the leaders of the country is how to solve the current problems and attain the prescribed objectives.

The Program

The agricultural program suggested for the Iraqi farmers would be of short duration, a two or three year plan. It would be applied in different areas at different times. The reasons for applying it in different areas at different times are: (1) lack of funds to carry a large scale program, (2) lack of well trained personnel in the department of agricultural extension, (3) lack of coordination and cooperation between related departments in the ministry of agriculture and other ministries.

The program will be mainly concerned first of all with making decisions about the objectives to be achieved after the study of the situation. The objectives should reflect the primary needs and interests of the people. Deciding on the objectives should not be a monopoly of the officials alone or the people alone. Decisions concerning objectives should be made jointly by the officials and the people.
The Objectives

The objectives of the program would be:

1. To have the farmers understand the value of chemical fertilizer in crop production
2. To have the farmers understand the effect of chemical fertilizer in the physical property of the soil
3. To have the farmers understand how to use chemical fertilizer in crop production
4. To have them understand how and where to get chemical fertilizer

Rationale for These Objectives

The farmer has a small to medium size plot, the average size in the irrigated zone is ranged between 20 and 1000 donums. The farmers in general use no fertilizer, very few of them use organic fertilizer (manure), and a small number are using chemical fertilizer in very recent years.

The program will be implemented in three locations, one in the northern part of the country, another in the middle and the third will be in the south.

The cultivators in Iraq want to:
1. Increase the yield for more cash value
2. Choose the crops which will bring high cash value
3. Keep their soil in good condition

The general attitude of the cultivators toward the government policy, program planning, implementation and evaluation is not favorable. The extension agency in order to make the program acceptable and gain the participation of the local leaders, should create a change in the attitude
of the farmers so that they are more likely to cooperate with the extension agency. Also, the extension agency should start at an early date to assess the requirements of supplies, finance, training, guidance (demonstration), publicity and evaluation. All of this, of course, should be determined in consultation with the local people. It would be very helpful if the farmers of the area were contacted individually by the extension workers.

The main purpose of contacting each farmer individually is not primarily to familiarize the farmer with all kinds of techniques, but more especially to change his attitude towards farming, and open up new horizons for him. In other words, the extension worker will help the farmer to have a new attitude toward agriculture and its opportunities.

The Plan of Work

The plan of work should provide in detail the necessary steps to be taken for program implementation. It should include only the projects that have been agreed upon with the people to be undertaken during the coming months. It usually deals with projects of immediate importance to the people. It should be designed to show the people how, when, with what help and by whom the various steps in the project will be undertaken.

The extension worker, with the help of an advisor
will assume the responsibility for teaching the farmers how to use the chemical fertilizer.

**Teaching Method**

The writer has suggested certain methods of teaching to be used for the Iraqi farmers. Through his work in the department of agricultural extension he has found that demonstration method is the most effective and convincing technique in extension work. Most of the Iraqi farmers do not understand a word picture readily. The method demonstration is usually used to teach the farmers how to perform a particular job.

**Procedure of Demonstration**

Two plots of land in each of the three areas will be selected in different locations. The size of each plot to be used for the demonstrations should not be more than one donum. The plot should be in a convenient place for all farmers to see or visit. The farmers must learn the important steps in using the chemical fertilizer. They should know first of all the time of land preparation and then the time the first and second application of the fertilizer. The application of the chemical fertilizer for the demonstration purpose should be preceded by a short introduction, preferably by a local leader or by the extension worker or a specialist.
All the equipment, the material and the facilities needed for the demonstration must be made available and secured at the time the demonstration is to be performed. The equipment, the materials and the facilities that are to be used in the demonstration must be available at the local markets.

The success of the proposed program depends to a large extent on the cooperation of other organizations. The aid and the technical advice of: Farm Machinery, Soil Conservation, Plant Protection and Irrigation departments are essential for the success of the whole program.

During the performance of the demonstration each farmer whose plot was selected for the demonstration will share and participate in the demonstration process. The equipment, the material, and the fertilizer will be supplied by the department of agricultural extension without charge. The extension agent in each area will help in advising the farmers in their areas as to how to use the chemical fertilizer and the method of fertilization. Each farmer will apply the chemical fertilizer in the presence of his neighbor farmers. Besides an attempt must be made to encourage as large a number of people as possible to come to witness the demonstration. The presence of the local leaders will be very necessary, especially the sheik of the local area.

The village leaders must be provided with all available
information about the progress of the demonstration to ensure their cooperation.

**Record Keeping**

Each demonstration is expected to indicate superiority over the local practices. Such superiority of the demonstrated practice depends to a large extent on various local factors. Some of which are: climate, soil, available water, economic condition of the area, and type of farm practices. The demonstration should be carried out under controlled conditions, otherwise, the result would be misleading. Knowing the conditions under which the demonstration was carried out will help the extension agency to justify different results in different areas or in the same area under different conditions. Keeping a record for the successor of the first extension worker, when he is transferred is an essential phase of the operation.

Results of all demonstrations that have been conducted in Iraq are not recorded in the department of agricultural extension.

The success of the demonstration is only the beginning. It is essential to repeat demonstrations each season. Without repeated demonstrations and "follow-up" discussions with the farmer the money spent, the time and the commitment of the people would be wasted.
The following are essential post-demonstration steps which must be followed.\(^9\)

1. Communicating the results of the demonstration to a large number of persons.

2. Inspiring key leaders in the community to adopt the new idea and teach others to do so too.

3. Reminding the farmers in the area and in other areas at the appropriate time to use or to try the new practice or idea. More emphasis should be given to those people who live in areas other than that where the demonstrations were conducted.

4. Continuous evaluation of the program is very necessary for an adjustment or change.

The result of the demonstration must be conveyed to as large a number of persons as possible. This could be done mainly through a radio program, group meeting, farm visit, office visit or discussion method.

The extension agents should carry the responsibility in communicating the results. They should utilize the potentialities of the local leaders to act as communicators. Local leaders would have more effect on their fellow members to adopt the new idea than the extension workers. The farmers in general listen more attentively to and believe and

place more confidence in their local leaders than any other person. The extension worker through his meeting with the farmers should encourage the leaders of the farmers to start the discussion on the new ideas. This will relieve the extension worker from persuading the farmers and at the same time the leaders will continue to carry on the idea more effectively.

**Evaluation**

Evaluation as a process is as important as any process in program planning and implementation. Evaluation may take place at any stage in the extension process. Evaluation is an essential for the program planner to know the worth of any activity or program. Unless we know the educational and organizational objectives of the program, it is not so easy to evaluate adequately without a clear picture of the program that was followed in helping the people to reach the specified objectives, or of contemplated program that will be followed. The extent to which one achieves his objectives, that is the number of farmers who have learned the value of the chemical fertilizer, how to apply it, and being convinced of its value, is the basis for determining how successful the program was.

To measure the progress that the extension agency

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has achieved is the only way to find out whether the program was successful.

There are three methods that the writer would suggest for use in the evaluation of this program.

The needed information for the evaluation would be collected a year after the demonstrations were conducted, preferably a month after the date of fertilization of next year.

The methods that the writer would use are:

1. Government records. The government records will show how many tons of chemical fertilizer have been permitted to the dealers to import.

2. Dealer's records; the dealer's records will indicate the number of tonnage of chemical fertilizer that they have imported and sold to the farmers.

3. Direct interview with the farmers. Each county agent would ask the farmers in his area about the number of tons of chemical fertilizer that they have purchased and used on their farms.

The above three methods must be analysed together, that is, each one should be used as a check against the other.

1. The number of permits and tons that the government has issued to the dealers to import the chemical fertilizer does not mean that the same amount was all used by the far-
mers. However, it may help to know whether the farmers have really contacted the dealers about the fertilizer and whether they have an interest in the new idea.

2. The number of tons that the dealers have sold to the farmers is a better indicator than the government's records. But it is still doubtful whether the farmers have used all the fertilizer that they have purchased. The tonnage of chemical fertilizer that the farmers have purchased will indicate a real interest of the farmers.

3. Direct interview with the farmers. The county agents in each area will conduct a short form of questionnaire regarding the use of chemical fertilizer. Through a direct interview the county agent can get all the facts regarding the number of tons of fertilizer that each farmer has used on his farm directly from them.

The evaluation of the program will enable us to answer the following questions.

1. How completely were the objectives achieved?
2. What objectives remain to be achieved?
3. Does the farmer appreciate and realize the value of these objectives?
4. What changes have occurred in the people's attitudes as a result of the program?
5. Were the teaching methods effective?
6. Are there new problems, needs, have arisen?
7. Is there any progress being made in training the local leaders?
The answer to each of the above questions will help us plan another program or to modify or change the original program. The analysis of various factors will show the strong and weak points, in the program.
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