THE AGRICULTURAL PHASE OF THE TECHNICAL ASSISTANCE PROGRAM OF THE UNITED STATES IN IRAQ, WITH SPECIAL REFERENCE TO THE ROLE OF UTAH STATE UNIVERSITY

by

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A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

Political Science

UTAH STATE UNIVERSITY
Logan, Utah
1958
PREFACE

My thesis, while examining the broad scope of American technical assistance in agriculture to Iran, emphasizes the work of scientists and technicians who went there under contract with Utah State University (USAC). I have tried to make this work as complete as available information makes possible.

There are several problems encountered. Some technicians were reluctant to make comments which might appear to be critical of either the American administration or the Iranian government-cultural climate; some did not receive my letter probably because of a change of address. Reference materials were scarce. In most cases it was almost impossible to separate and distinguish the work of those technicians who worked under a Utah State University contract from the work done by other technicians who worked in the agricultural phase of the assistance program.

I have tried to explain accomplishments according to a date sequence. Similarly I have tried to select examples for each subject from the work of one technician. It soon became evident, too, that most technicians were involved in several projects.

I sincerely appreciate the cooperation of those scientists and technicians who furnished me with information and comments based upon their service in Iran; Mr. James M. Blume, Assistant and Chief, NESA Branch Office of Food and Agriculture of ICA, who responded by letter to various questions; Dean Rudger H. Walker, who furnished me with much information and gave me free access to reports in his files;
Professor Wendell B. Anderson, who gave much needed guidance;
Dean Milton R. Merrill, Dr. M. Judd Harmon, and Professor Milton C. Abrams whose comments were invaluable.

Malek Mansour Esfandiary
August 20, 1958
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I. BACKGROUND

1. General information

Iran or Persia is known to the world as one of the ancient centers of civilization with a significant past history. The name of the country, Persia, was changed to Iran in 1935 by decree of the late Reza Shah the Great. In English the country is still widely known as Persia.

Location and area

On the globe, Iran lies between longitudes 44° and 63° east; and latitudes 25° and 40° north. It covers an area of 628,060 square miles. Iran is bordered on the north by the USSR, on the west by Turkey and Iraq, on the south by the Persian Gulf and the Gulf of Oman, and on the east by West Pakistan and Afghanistan. (See exhibit 1.)

National color and emblem

The national colors, which appear horizontally on the national flag, are green, white, and red. The national emblem is a lion holding a sword with the rising sun in the background.

Language

The language for official, literary, and general purposes is Farsi, or Persian. The old Persian is an Aryan language derived from the Indo-European group. It has become mixed with Arabic to form the present Farsi. It is written in Arabic-type characters.

Monetary unit

The principal unit of Iranian currency is the rial. The present
The official rate of exchange is: $1.00 = 76\frac{1}{2}$ rials.

**Calendar**

The calendar of Iran starts with Hegirs, which occurred in 622 A.D., thus if 621 is added to the Iranian year, the Christian calendar year will be obtained. The Iranian year starts with the first day of the spring season.

**Time**

Standard Iranian time is $3\frac{1}{2}$ hours ahead of Greenwich Mean Time.

**Population and race**

According to the last census (1956) the population of Iran is about 12,000,000. Most of the people are of Indo-European stock (Persian group of the Aryan race); but the original stock has received admixtures of Greek, Arab, Mongol, Turkish and Afghan as successive invasions have left their impacts on the country.

**People**

The average city Iranian is an individualist and a Moslem. He is mentally quick, imaginative, and intelligent, though he may be illiterate. Some 85 per cent of the people of Iran can neither read nor write, yet they are acquainted with the past political, literary and religious histories of their country. There is a very small elite upper class, and a small middle class. The great poverty-stricken lower class of Iranian society.

Dr. R. W. Roskelley, who has served as the Chief of the Agricultural Division in Iran (1951-1954), wrote:

The Iranians have proved to be honest, trustful, frank, fair-minded individuals. The quality of human relationships have been better than one could have hoped for.

---

Never in my life have I met a people who have greater capacity to be kind and considerate than those Iranians whom I have met and worked with...\(^1\)

More than eighty per cent of the people of Iran live in about 45,000 villages or are the members of migratory tribes. The Iranian village is without a counterpart in the United States. It is so different from place to place, from big to small, from rich to poor, that it is hard to classify even in Iran. The majority of the people in the villages are tenant farmers and sheep owners; also there are a number of craftsmen, oxen owners and small businessmen in most of the villages.

The family institution is strong. It is patriarchal in form with the father assuming the full responsibility and authority. The members of the family adhere with great tenacity to their family traditions and practices. Blood ties are very close. The head of the family arbitrates and keeps family affairs in harmony.

In addition to the family, there exists in the villages some temporary and permanent organizations, including pressure groups (political), working groups, and religious groups (the latter are the most permanent).

The leadership in an ordinary village tends to be autocratic. The main leaders are the religious leader, the landlord, and the government agent. Over a period of time the leadership power has tended to shift from the religious leader to the landowner, to the government agent following the control of the central power, which follows the political changes in the very highly centralized governmental system of Iran.

Village activities are regulated and controlled by laws, norms and mores. Probably more than forty per cent of the villages or lands and/or the water in the villages is the property of a shrine (as the Third Imam in Karbela or Eighth Imam in Meshed), a government agency, or the Shah. Religious doctrines are often the most important factor in controlling change. The influence of religious groups, during the centuries, has been so deep that about 90% of the people, until quite recently, believed that the cause of almost any disease, natural or man created disaster, hunger or even any change in the level of living was the will of God. There are many superstitions connected with birth, marriage and most social activities. The spirit of nationalism exists among most villagers. They love their home, their village, their city, their province and their country.

It is worth mentioning that in the villages of Iran, life is relatively well ordered. It may be short and difficult, and of a grey monotony, but things are done as they have been done and people live together as they have learned to live together for six thousand years.

Dr. Roskelley wrote about the peasants that "We have found them to be plain, sincere, hardworking, honest folks. As we become acquainted with them they have become friendly. They have proved to be God-fearing. . . ."\footnote{Ibid., p. 4.}

Government

Iran is a constitutional monarchy. The government is strongly centralized. The regime is based on three bodies: (1) Legislative, (2) Executive, and (3) Judicial.

The Legislative body consists of the Majlis (House of
The Majlis is an elected body which represents the various classes of community and religious minorities. The duration of each Majlis was two years but has been changed recently to four years and the members can be re-elected. According to Article Four of the Constitution the number of deputies was 162 but could be raised to two hundred. The duties of the Majlis are to approve the budget, taxes and concessions, to supervise the actions of the Government, to pass laws in conjunction with the Senate, and to insure enforcement of these laws.

According to Articles 42 and 45 of the Constitution, the Senate is composed of sixty Senators, half of whom are elected by the people and the other half appointed by the Shah. The duties of the Senate consist of passing laws in conjunction with the Majlis, reviewing treaties and agreements, supervising the actions of Ministers, and in general all matters which must be approved by both houses, except taxation which is the prerogative of the Majlis.

The Executive body consists of a cabinet, the head of which is a prime minister who is usually nominated or rather appointed, by the Shah who is a none responsible King and not a member of the executive body.

The duty of the prime minister is to select his ministers and introduce them to the Shah and to the Houses.

The council of Ministers and their program requires a vote of confidence from the Majlis.

The Judicial branch is composed of a Supreme Court, Ostan Courts, Shahrestan Courts, Bakhah Courts, and special Military Courts.

The geographical, political, and administrative units of the country on the national level consist of: The Ministry of Interior,
which is headed by the Minister of Interior (Secretary of Interior); ten Ostans (provinces or states) each of which has an appointed Governor General or Ostander; about one hundred and twenty Shahrestans (about 12 per Ostan) (See exhibits 1 and 2 for Ostans and Shahrestans) with an appointed Governor or Farmondar for each Shahrestan; approximately three hundred and twenty five (about 32 per Ostan) Bakhshes or counties in which a Bakhshdar is the chief county civil official;⁰ Dehestan which consists of a few villages, (a Dehdar is in titular charge of groups of villages and he is normally a landlord or the landlord's representative); approximately forty five thousand villages with a Kadkhoda as the village head man, (in some cases he is chosen by the villagers and in other cases he is the landlord's representative).²

The above mentioned paragraph is shown on page seven in a chart form.

Climate

All Iran is a plateau except areas as the Mesopotamian Belt including the low lands around the Caspian Sea, the plain of Khuzistan at the head of the Persian Gulf, and the valleys of the Hari Rud and Helmand River on the Afghan border.

The climate of Iran may be explained as continental in character. The summer is dry and hot in most regions, (some exceptions: on parts of the Caspian Coast and at certain high altitudes), while the winter is cold and severe, (some exceptions: The Persian Gulf, Khuzistan, and the lower Caspian region). Iran is not a country consisting wholly of rocky

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¹The Ostanders, Farmondars, and Bakhshdars are paid by the Ministry of Interior.

²The Dehdars and Kadkhodas are usually paid by the landlords and their appointment requires the approval of the Farmondar.
Ministry of Interior

10 Ostans (States or Provinces)
Each one has an Ostandar (Governor General)

Approximately 120 Shahrestans
(About 12 per Ostan)
Each one has a Farmondar (Governor)
(Eighteen Shahrestans are independent of Ostan connections)

Approximately 325 Bakhshes
(Counties) (About 32 per Ostan)
Each one has a Bakshdar who is the chief county civil official

Dehestans
(A group of villages)
Each one has a Dehdar who is normally a landlord
or landlord’s representative

Approximately 45,000 villages
Each one has a Kadkhoda who is landlord’s representative
or chosen by the villagers
mountains that are covered with snow in winter and are forbidding and bare in summer enclosing a vast desert, nor is it a region entirely like the valleys of middle Eastern Switzerland. In fact, both the above mentioned descriptions are characteristic of some part of the country; it should be added that almost every other kind of physical feature will be found from sandy desert to permanent snow beds, from humid jungle to salt marshes. Temperature differs during the summer and winter according to the place, humidity, elevation, rainfall and other factors.

Rainfall

Rainfall varies from an annual average of less than five inches in the southern deserts to above sixty inches around the Caspian Sea. The greater part of that precipitation occurs between November and April and virtually none occurs from May to September. (See exhibit 3.)

Vegetation

The flora is conditioned naturally by the climate, and more particularly by the water supply and the low organic content of the soil. Generally speaking the vegetation of Iran is less extensive than it should be. The trees and even the bushes are cut for charcoal and fire wood and the pastures have been destroyed because of over grazing. Cereal grains, cotton, and sugar beets are grown more than other crops. The flowers are loved, and gardening is a definite art. Practically all varieties of Western European plants are found there.

Animals

Iran is inhabited by a wide variety of animals: lions (practically extinct), tigers, panther, wolves, jackals, several types of foxes, bears, badgers, jerboas, wild goats, wild sheep and gazelle. Nearly all the ordinary types of domestic animals are found in Iran. Birds are found in a great variety too. Among the reptiles the lizard is the most
common, but many varieties of snakes are found there also.

2. The Agricultural situation of Iran before 1950

About thirty years ago the government and the people of Iran commenced seeking methods to improve their economic and social conditions. Part of the progress made was due to efforts undertaken by Reza Shah during the years between 1922 and 1940. Sugar refineries, textile mills, meat and fruit canneries were erected. Railway lines crossing the country were built. Electric light and power plants were built in towns and cities. Most of these developments were undertaken as government monopolies. World War II halted the program of the government, but not the Iranian people's desire for advancement. Post-war days brought a demand for renewal of the program; and in 1949 the Seven Year Development Plan Act was enacted by the Majlis (The House of Representatives). The objective, as a whole, was to use the oil revenues and other funds (the income from government owned factories) to raise the standard of living. The Plan Organization developed many projects in the first two years; but then its projects were halted or greatly retarded by the loss of oil revenues.

In spite of the desires of the people and the program of the government, the agricultural methods remained semi-primitive. Modern farm machinery was in little use, and large areas which could be used to produce useful crops were idle. The land areas worked by individual peasants and their families, almost always as tenants of absentee landowners, were small. Farm yields were low and the peasants scale of living was not far above a bare subsistence level.

The annual loss of livestock because of parasites and disease, poor management practices, and inadequate feed, was large. Lack of control of plant diseases and pests resulted in great damage to field
and horticultural crops. Much of the soil had been depleted of its fertility and had become unproductive as a result of centuries of continuous cropping. By over-grazing and wasteful forestry methods, the value of a large part of the land had been impaired. The irrigation system was insufficient to maintain maximum yields, and water was and still is the lifeblood of the country. Poor cultural methods and the lack of knowledge about fertilizer needs and uses were factors which limited agricultural production.

Generally speaking the condition of the Iranian peasant was deplorable. The typical peasant family lived in a one or two room earthen hut without windows and with only one door. The earthen floor was used as sleeping space for the entire family. The cooking was done over a small fire in one corner of the room. Practically no fuel was available for heating. Toilet facilities were almost nonexistent. Drinking water was often taken from streams which also served as the place in which to wash the clothes and the dishes.

In most rural areas facilities for education were woefully lacking.

Farming in Iran had changed little in several thousand years. The average family farmed a very small area of land using little more than a wooden plow and a spade, with oxen, donkeys and small mules furnishing the power.

Bread, the chief item of diet, was supplemented by some dairy products and a little meat. Vegetables were used to some extent only during the summer months. The consumption of livestock products was small. Since cash operating expenses for farming were practically nil, the blacksmith, the carpenter and the barber were paid largely in produce.
Many factors contributed to the low level of living, but none was more important than the meager supply of agricultural resources. In most areas, rainfall is much below requirements for crop production and about one-third of the country is desert. Additional difficulties arise because much of the non-desert portion of the country is covered with mountains. Much of the agricultural production comes from irrigated land. In this connection, it should be noted that there were important water supplies which could be developed by the proper input of capital.

The agriculture of Iran was organized around villages. These villages and, for all practical purposes, the peasants were the property of landlords who did not live on the farms. Many of them seldom see their properties.

Improper cultural methods, ineffective control of crop enemies, large harvest losses, failure to use fertilizers, improper management of the soils, and inefficient use of water were responsible for low crop yields. Very little information was available concerning the effects of fertilizers or the profitableness of various livestock practices, and there were few trained men in the country.

The lack of mechanical equipment, and the resulting high input of labor made for low production per farm worker.

Livestock management methods were both primitive and inefficient. Since very little feed for livestock was produced animals often died of starvation. Livestock diseases destroyed thousands more each year.

The forest and range plant cover of Iran were badly damaged by charcoal burners and fuel gatherers. Over-grazing was universally common.

The agricultural problem of the country prior to 1950 was not attributable to insufficient arable land. The following was the
estimated land utilization in the year 1327 (1948):

<table>
<thead>
<tr>
<th>LAND IN FARMS</th>
<th>AREA (in hectares)</th>
<th>PERCENT OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cropland</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grains</td>
<td>3,305,000</td>
<td>2.02</td>
</tr>
<tr>
<td>Other field crops</td>
<td>615,000</td>
<td>.36</td>
</tr>
<tr>
<td>Fruits and nuts</td>
<td>680,000</td>
<td>.42</td>
</tr>
<tr>
<td>Fallow</td>
<td>12,000,000</td>
<td>7.33</td>
</tr>
<tr>
<td><strong>Total cropland</strong></td>
<td><strong>16,660,000</strong></td>
<td><strong>10.15</strong></td>
</tr>
<tr>
<td>Pasture in farms</td>
<td>160,000</td>
<td>.10</td>
</tr>
<tr>
<td>Farm woodland</td>
<td>1,000,000</td>
<td>.61</td>
</tr>
<tr>
<td>Villages, village roads, wasteland and other land in farms</td>
<td>1,240,000</td>
<td>.76</td>
</tr>
<tr>
<td><strong>Total land in farms</strong></td>
<td><strong>19,000,000</strong></td>
<td><strong>11.62</strong></td>
</tr>
<tr>
<td><strong>LAND NOT IN FARMS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Forests and Ranges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forests</td>
<td>18,000,000</td>
<td>11.00</td>
</tr>
<tr>
<td>Grazing land outside forests</td>
<td>10,000,000</td>
<td>6.11</td>
</tr>
<tr>
<td><strong>Total forests and ranges</strong></td>
<td><strong>28,000,000</strong></td>
<td><strong>17.11</strong></td>
</tr>
<tr>
<td>Cities, roads and railroads</td>
<td>2,000,000</td>
<td>1.22</td>
</tr>
<tr>
<td><strong>WASTELAND</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potentially cultivable</td>
<td>33,000,000</td>
<td>20.17</td>
</tr>
<tr>
<td>Desert and other wasteland</td>
<td>81,600,000</td>
<td>52.88</td>
</tr>
<tr>
<td><strong>Total wasteland</strong></td>
<td><strong>114,600,000</strong></td>
<td><strong>73.05</strong></td>
</tr>
<tr>
<td><strong>Total land not in farms</strong></td>
<td><strong>114,600,000</strong></td>
<td><strong>88.38</strong></td>
</tr>
</tbody>
</table>
The basic industry of Iran was and still is agriculture. The country derives a major portion of its wealth from that source and about eighty percent of its people are directly engaged in it. The only agricultural college - The Agricultural College of Karadj - was nothing but an institution to provide officials and employees for the Ministry of Agriculture. Worst of all, there were no educational qualifications for the Dean and Professors of the College; they were merely appointees of the Ministry of Agriculture.

Iran's agricultural methods, in short, once of the most advanced, but because of ancient wars, climate changes and other factors it was unable to keep pace with technical advance. With more than eighty percent of the people engaged in agricultural production, the welfare of Iran is dependent basically on developing a successful and prosperous agricultural economy.2


2For further details see the first part of each specific section, such as Irrigation, Forestry, The College of Agriculture of the University of Tehran and so on.
II. THE AGRICULTURAL PHASE OF THE UNITED STATES

TECHNICAL ASSISTANCE PROGRAM IN IRAN

1. United States - Iran relations

Nearly fifty years ago the government of Iran sought out and used the services of top-flight U. S. advisors to help the Iranians with their problems. In 1911 W. Morgan Shuster, an American, served as financial advisor to the Iranian Government. From 1922 to 1926, at the request of the Shah of Iran, Arthur G. Millspaugh headed a mission to Iran to put the Government's financial and economic house in order. In 1942 Colonel Schwartzkopf was engaged to train an Iranian Gendarmeri. In 1943 again A. G. Millspaugh was called, for a short period, to reorganize the Iranian Government finances.

During World War II, through the strategic deserts of Iran, the "Bridge of Victory" had been erected over which the Allies sent arms to defeat the Nazis. At the close of the Tehran Conference in 1943, the Big Three promised to help Iran once the war was over. After World War II United States military aid was extended to Iran in the form of grants and sales. In recent years the military grants have been made annually. In general the Iranian attitude with regard to the United States has been cordial.

2. Point IV

At the conclusion of World War II many people throughout the world hoped that a new era of cooperation had arisen through the groundwork
laid in the operation of the United Nations. It was an era of conflict and distrust. Into such a world the United States injected a new ray of hope for millions of threatened nations in Turkey and Greece during the trying years of readjustment following the conflict. The Marshall Plan, similarly, gave an impetus to the stabilization of many European nations. While this is a part of another story the success of these programs did much to inspire as did the inaugural address of President H. S. Truman on January 20, 1949; he pointed the way to a greater era of world cooperation through cooperative technical assistance to those nations which were willing to help themselves to a better way of life. His address emphasized the support of the United Nations as a basic cornerstone. The fourth point of his statement, now known as "Point Four", aroused the hopes of men who believe in human freedom and are working for a just and lasting peace on earth. The following paragraphs from the address convey the substance and the spirit of his declaration.

Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas.

More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas.

For the first time in history, humanity possesses the knowledge and the skill to relieve the suffering of these people.

The United States is pre-eminent among nations in the development of industrial and scientific techniques. The material resources which we can afford to use for the assistance of these people are limited. But our imponderable resources in technical knowledge are constantly growing and are inexhaustible.

I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life. And, in cooperation with other nations, we should foster capital investment in areas needing development.
Our aim should be to help the free peoples of the world, through their own efforts, to produce more food, more clothing, more materials for housing, and more mechanical power to lighten their burdens.

We invite other countries to pool their technological resources in this undertaking. Their contributions will be warmly welcomed. This should be a cooperative enterprise in which all nations work together through the United Nations and its specialized agencies wherever practicable. It must be a worldwide effort for the achievement of peace, plenty and freedom.

With the cooperation of business, private capital, agriculture, and labor in this country, this program can greatly increase the industrial activity in other nations and can raise substantially their standards of living.

Such new economic developments must be devised and controlled to benefit the peoples of the areas in which they are established. Guarantees to the investor must be balanced by guarantees in the interest of the people whose resources and whose labor go into these developments.

The old imperialism-exploitation for foreign profit - has no place in our plans. What we envisage is a program of development based on the concepts of democratic fair-dealing.

All countries, including our own, will greatly benefit from a constructive program for the better use of the world's human and natural resources. Experience shows that our commerce with other countries expands as they progress industrially and economically.

Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge.

Only by helping the less fortunate of its members to help themselves can the human family achieve the decent, satisfying life that is the right of all people.

Democracy alone can supply the vitalizing force to stir the peoples of the world into triumphant action, not only against their human oppressors, but also against their ancient enemies - hunger, misery, and despair.1

An Act of Congress was passed on January 5, 1950; Public Law 535

"An Act for International Development" was signed by President Truman

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and the legal machinery was provided for the commencement of the program
mentioned in the speech quoted above. Responsibility for the enactment
of the administrative machinery was placed by President Truman Executive
Order 10159, dated September 6, 1950, in the hands of the State Depart-
ment. The operation of the program was thus placed in the hands of an
administrator in charge of the program with an International Development
Advisory Board consisting of not more than thirteen citizens. In the
country of operation a Technical Cooperation Officer or Chief of Point
IV Mission is attached to each Embassy or Legation. The American tech-
nicians appointed to Point IV program were to be chosen not only for
technical competence, but also for character, personality, and ability
to work with the people of other countries.

Officially the agency that has administered the Point IV program
first was known as the Technical Cooperation Administration (TCA), and
it was a bureau in the Department of State. In the summer of 1953 the
Foreign Operations Administration (FOA) was set up independently of the
State Department, and the Point IV program was transferred to it. On
June 30, 1955, the FOA died and on July 1, 1955, the Point IV program
was back in the State Department, this time in a new semi-autonomous
agency known as the International Cooperation Administration (ICA).

When the FOA was organized the field office in Iran lost its identity
as Technical Cooperation for Iran (TCI) and became USOM/I or CI/I (U.S.
Operations Mission in Iran). The mentioned changes affected the people
and the programs in the field less than might have been expected. As the
Iranians say, "It is the same donkey, but the saddle has been changed".
Point IV is the popular but unofficial term for the continuing technical
cooperation program of the United States and is so understood everywhere.
3. The over-all problems and the technical assistance agreement

It is not necessary to give a detailed history of Iran, but it should be noted that during the past fifty years, because of her oil reserves and strategic location, Iran has been a focal point in the power struggle between Russia and the West. Iran possesses about 13% of the world's oil reserves. This is of great importance to the budget and to the economy of the country. During World War II the USSR, England, and the USA occupied Iran to facilitate the sending of lend-lease supplies to the USSR. After the war the USSR remained in Iran. Later, however, with the admonitions of the United States and the UN the Government of Iran sent Russia back behind her own borders. Although the Soviets were thoroughly routed in their attempt to establish a satellite state in the north western provinces, they did leave behind a Communist Party - Tudeh - in Iran and, through the years, have used it to pursue the divisive, slogan-shouting, riot-provoking measures which have become their trade mark.

The location, resources, and the financial condition of the people of Iran make this country one of the most important critical areas in matters affecting world peace and security. The low living standard of the people, based mostly on primitive agricultural methods, was a choice target for Communism. To raise the standard of living requires the increased production of foodstuffs for the population. Advancement could be made from that low level providing only that the essential elements of success were provided in the foundation of such a plan. No new industry is likely to flourish under conditions of ill-trained labor supplied by people indifferent to the success of such industry; these people were ill-housed, ill-nourished, and in any case,
without the purchasing power necessary to buy life's necessities. The raw material for domestic industry was needed and should have been produced. The export of agricultural products needed to be increased. The agricultural production which results from the combined use of land, labor, and capital (including water) and management, should have been used more efficiently. Diseases such as malaria were a great threat to the population. Illiteracy was a problem. As a whole, generally speaking, the situation was not good and the need for help was tremendous.

It was at this point in Iran's history that the United States undertook its first technical assistance program under the promulgated Point IV concept. The formal basis of the program was a document entitled Memorandum of Understanding for Technical Co-operation on Rural Improvement, signed by the United States Ambassador, H. F. Grady, and the Iranian Prime Minister, General A. Razmara, on October 19, 1950.

Dr. F. S. Harris, the former president of Utah State Agricultural College wrote:

A large number of officials of both countries witnessed the signatures and everyone present had the feeling that this historic occasion presaged a new era of co-operation and inaugurated a period of active collaboration that would be of tremendous benefit to each country.¹

The agreement provided for the start of a rural development program aimed at helping the population of the various villages initiate better farming methods, schools for primary and vocational education, and better water supplies and insect control methods. Of course the primary objectives of this first program was to improve the living

conditions and productivity of the residents of rural areas. A series of demonstrations and training centers were to be established gradually at points near the principal centers of the population throughout the country. (See exhibits 3 and 4.)

The agreement committed the United States Government to provide:

(a) the services of technicians in the field of education, agriculture, and health to supply technical and administrative direction of the work of the individual demonstration centers, and (b) equipment and apparatus not produced or manufactured in Iran.

As a matter of United States policy, a technical assistance grant is made only on condition that the host country requests it and agrees to pay a fair share of its cost. In addition the program must be related to efforts being made by the host countries themselves. As initially conceived, it is clear that the rural improvement program in Iran met these conditions.

In essence the program represented one element in Iran's own 7-year development plan. The cost of foreign experts and supplies was now, however, to be funded by a grant from the United States.¹

Regardless of the interest of Iran, which was and still is tremendous, the interest of the United States in adopting the project of helping the people of the underdeveloped countries is expressed plainly in the following statement by J. B. Bingham² before the Committee on Foreign Affairs of the House of Representatives:

The Point IV program is a program to help the people of the underdeveloped areas to help themselves. In part our interest in carrying on such a program is humanitarian.

Activities of this kind, to help people who are hungry and sick and poor, are in the best American tradition. But if the reasons for this program were purely humanitarian, some might say that it should be deferred in this time of emergency, when the resources


²Jonathan Brewster Bingham was Chief-Alien Enemy Control Section of Department of State, 1915-16, Assistant Director Office International Security Affairs, 1951 and Department Administration Technical Cooperation (Point Four) 1951-53.
of the nation are strained to help provide the necessary military defense against the threat of Communist aggression. For that reason, I would like to concentrate on the very practical reasons why this program is in the self-interest of the United States, why it is a good investment, why it is as much a matter of common sense as paying an insurance premium.

We can start with three fundamental propositions, as follows:

(1) The United States cannot afford to let the free countries of Asia and the Middle East, to say nothing of Latin America, fall under Communist domination. The rest of the free world would then be fatally deficient in raw materials and in manpower.

(2) The Communist powers will exert every effort to see that they do acquire effective control of these areas. Where military aggression is not practical, they will work through subversion and propaganda, cleverly picturing a rosy economic and social future under Communist leadership.

(3) The people of the underdeveloped areas are more restless and discontented than ever before, partly because conditions actually are deteriorating in some areas, but more importantly because these peoples now for the first time are aware of what the modern world might bring them. They are going to find it increasingly difficult to resist the promises of Communism in an atmosphere of continued stagnation or deterioration. They will move one way or the other.

In this situation, it seems clear what is needed: The peoples of these areas must be given hope that improvement in their living standards lies ahead if they stay on the side of freedom. Such hope is not a purchaseable commodity. These peoples do not want charity. They want to do the job themselves, and they are the only ones who can do it. But they need help, both to be shown and to get started.

In addition Iran has significant political, economic, and military importance to the United States and the free world. It occupies a strategic position in the Middle East, sharing a 1,200 mile border with the USSR, and possessing substantial oil reserves. Thus, the reason Iran was one of the first acceptors of the Point IV program is revealed to a degree by the physical and cultural make-up of the country and its proximity to the USSR.

4. A General review

The agreement between the United States and Iran provided that the
cooperative projects should be directed by a seven-man commission. It was designated as "The Iranian-United States Joint Commission for Rural Improvement." The members of the Commission were to consist of four Iranians and three Americans, with the Chairman being the Minister of Agriculture, I. Mahdavi. The first meeting of the Commission was the day that the agreement was signed. At the first meeting Dr. F. S. Harris was elected Technical Director of the Commission.

The Technical Assistance Program in Iran reflects the joint efforts of the Technical Cooperation Mission of the United States and of responsible ministries and agencies of the Government of Iran to further the economic development of the latter by technical training and demonstration of economically and technically sound activities in the fields of education, transportation, agriculture, industry, health, natural resources development, communications, housing and labor. But, the program was not an economic development program in itself. Rather, it was a major effort to help Iran to help itself. To reach this aim the United States Technical Cooperation Mission to Iran, Technical Missions of the United Nations, and the officials and technicians of Iran, together with the people of Iran, should start working hand-in-hand in the Ostans and in the villages.

The policy of the Joint Commission was announced. It was a policy working on the village level rather than confining efforts to advising higher officials in the various Ministries. This decision was made because Iran had, for a period of time, used the services of numerous foreign technical experts in many government departments. As a matter of fact, quite often these specialists had confined their contacts to ones with higher officials of the various departments. Consequently the specialists seldom went into the field where the real problems were
found and where the solutions ultimately must be made. The foreign
experts gave advice to the government on every phase of government
activity, and the files of the various Ministries were full of learned
reports by these technicians, but usually nothing was done to put the
recommendations into operation. This was due mostly to the lack of
money needed to make practical use of the suggestions that had been
made. The fund had been found to make a survey and to pay for the
report, but nothing was available for actual operations. Sometimes no
action was taken because of the frequency of change in the administration.
New administrates, rather than give their predecessors credit for doing
something, would hire experts to prepare recommendations which they
could embody in their own programs and this cycle continued.

With these facts in mind, it is not difficult to understand why
the Joint Commission, made up of four Iranian officials of high rank,
and three Americans, established a policy of using the available funds
to aid people who were directly in need of money.

The Technical Director and the Field Supervisor were both in­
structed to select a limited number of villages that could serve as
demonstration centers for larger surrounding areas. It was not possible
to start in all of the villages of Iran. It was thought that from
certain strategically located key centers the demonstrations could
radiate to surrounding villages.¹

¹The first village to be selected as a demonstration center was
Isfahanak. This village is irrigated by Zayandeh Rud. It is a few
miles from Isfahan, the greatest artistic and industrial center of Iran.
The soil is derived largely from the disintegration of lime stone and is
fertile. The neighboring highlands support abundant grazing. Generally
speaking the climate is adapted to the raising of a wide variety of
field crops and many fruits and vegetables. For further information see
the "Economic Reviews, The Beginning of Point IV in Iran" by Dr. F. S.
Early in the year 1951 the Prime Minister of Iran, General Ali Razmara who had signed the first historic Point IV agreement, was assassinated. Then Dr. Mohammad Mossadegh came to power on a tide of nationalism. His platform was built on the desire to force the British out of the area in which they had oil concessions (in southern Iran), and to nationalize, or expropriate, the Anglo-Iranian Oil Company's Abadan refinery, (the largest in the world). He nationalized the oil and the English experts left Iran.

The Plan Organization, which was set up for the development of the country and was using the oil income, suffered more than any other department in Iran.

Late in 1951 Dr. Mossadegh arrived in the United States hoping to obtain help for Iran. Iran was in a bad economic position, the oil had stopped flowing because there was no way to market it. In November 1951, six months after the nationalization of oil, the United States offered $23,000,000 for technical assistance. Dr. Mossadegh accepted it and in January 1952, an agreement was reached. In essence the chief function served by the expanded technical assistance program was to help keep Iran going during a period of insolvency brought on by the nationalization of the oil industry.¹

During the time Dr. Mossadegh was in complete power, and especially after the withdrawal of the English, Point IV was selected as the key target of the anti-American attack. Under that regime, for unexplainable reasons, the security forces were restrained. At such times

¹Six project agreements were made in June 1952, with the appropriation of approximately ten million dollars covering a cotton mill, a municipal power station, two cement plants, a slaughterhouse, and a sugar refinery.
there is always the danger of agitators gaining the upper hand and directing the energies of mobs against whatever objective they have in mind. Once in Shiraz the Point IV offices and one compound were wrecked and American families were driven from their homes. Of course, order was soon restored. It was a period of strain and tension for the Americans. The shouts of "Yankee Go Home" were heard all over.

William E. Warne wrote that: "A Tudeh newspaper called Baba Adam (Mr. Man) led off: The TCI (Point IV) lady typists will make friends with several Iranian men, and not just one, to improve 'stock breeding'."

On September 25, 1952 Besuye Ayandeh, a Communist-influenced newspaper, reported a press conference of Mr. Warne as follows:

On Monday, Mr. Warne held a press conference at his office. The purpose of the conference was to show that Point IV was helping Iran, but Mr. Warne did not say that they have come for imperialistic and military purposes. He did not say that giving aid was only an excuse for carrying out other mischievous aims.

Generally speaking, such tensions affected many people. There is an absolute correlation between the rise of tension and a flurry of personal problems. Tempers grow short; reactions are not always objectively taken in periods of strain; weaknesses which might not otherwise have been revealed, come to the surface. Physical illnesses increase in number. But with all that, it is significant that the field work of the program had not even been disrupted.

During the summer of 1953 the Shah left for Ramsar on the Caspian

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1Mr. William E. Warne, former Assistant Secretary of the United States Department of Interior, with extensive administrative experience, became the country Director of the Point IV work in Iran.


3Ibid., p. 96.
shore, and then fled to Baghdad. His departure was announced in Iran when he arrived there. Before he left he issued a royal decree designating General F. Zahedi to replace Dr. Mossadeq as Prime Minister. During the night of August 14, 1953, General Zahedi's supporters made a comparatively peaceful attempt to enforce the Shah's order. By August 15, General Zahedi and his associates were in complete control of Tehran and had asked the king to return, and he returned to Tehran.

On August 26, 1953, Prime Minister Zahedi wrote a letter to President Eisenhower. The letter, as printed in the Persian Press, expressed gratitude for the contributions that the American programs had made and for the assistance already given to raising the standard of technical knowledge in Iran and continued:

The United States aid being now contributed to Iran, although useful, is unfortunately inadequate in amount and nature to relieve Iran of financial and economic crises facing us. The treasury is empty, there is no foreign exchange available, and the national economy is deteriorated. In order to save Iran from such economic and financial chaos, we need urgent aids.¹

The Prime Minister promised that Iran would endeavor to use her wealth and resources to strengthen her economic position and would also strive to improve Iran's international position. He said that Iran wished to contribute her share in the maintenance of world peace and furtherance of good will in international relations. General Zahedi's letter brought quick action and high consideration. The President of the United States announced on September 4, 1953, that in response to the request for urgent aid $45,000,000 had been made available on an emergency basis for immediate economic assistance to Iran. It was announced that the above mentioned allotment was in addition to the

¹Tbid., p. 257.
regular technical assistance and military aid programs.

The President's message said:

There is great need of immediate assistance to restore a measure of stability and establish a foundation for greater economic development and improvement in the living standards of all the people of Iran which will allow the development of a healthy economy to which an early effective use of Iran's rich resources will contribute.¹

General Zahedi, on the same day, expressed his thanks for "much-needed quick action in helping to overcome the financial and economic crisis."

He continued:

My government will make every effort to alleviate the existing financial crisis of the country and will be enabled for a limited period of time to take urgent steps to put into effect programs designed to improve the living standards of the Iranian people. In the near future, if we carefully apply ourselves to these programs, we should also be able to make maximum use of our national resources.²

In addition the United States helped with five million dollars per month to make up deficits in the Iranian Government budget.

As time went on, most of the problems were being solved or at least considered and Iran was definitely turning toward the West. The oil dispute was solved in October 1954, and Iran joined the Bagdad Pact in 1955.

The technical assistance to Iran, started in 1951 with $1.6 million³ for the planning period of the same year, continued as follows:

¹Ibid., p. 258.
²Ibid., p. 258.
³Iran received $258,000,000 from the start of the assistance program to June 30, 1955, which was only 1.2 percent of the total United States foreign aid expenditure and even less than that amount since 1955. The above mentioned fund included the technical assistance, emergency aid, budgetary assistance and the like.
<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Amount</th>
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<tr>
<td>1952</td>
<td>$23,182,488</td>
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<td>1953</td>
<td>$22,088,219</td>
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<tr>
<td>1954</td>
<td>$23,717,914</td>
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<td>1955</td>
<td>$22,693,332</td>
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<td>1956</td>
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These and the other funds as emergency aid and budgetary assistance and loans represented a huge expenditure in the limited economy of Iran. The possibilities for waste and loss were enormous and therefore, the Iranian government and the United States officials should have recognized the need for special diligence in exercising prudent management over the uses made of this money. The report of the Committee on Government Operations to the House of Representatives reads as follows:

(1) U.S. aid and technical assistance programs in Iran which, between 1951 and 1956, totaled a quarter billion dollars, were administered in a loose, slipshod, and unbusiness-like manner.

(2) The expenditure of technical assistance funds during these years was undertaken without regard to such basic requirements of prudent management as adequate controls and procedures, with the inevitable consequences that it is now impossible - with any accuracy - to tell what became of the funds. The resulting opportunities for waste and loss of funds were considerable, but the extent to which loss and waste occurred cannot be determined since management practices and control procedures were so poor that records of the operations, especially in the early years, are not reliable.

(3) Amounts requested for the U.S. aid to Iran seem to have been picked out of the air. There is no evidence that they were based on advance study of what the Iranian economy needed, the amount it absorbs, or programs which could be intelligently administered by the U.S. personnel available at the time to expend the funds.

(4) The conduct of the U.S. operations mission's affairs would appear to have been based on the assumption that as long as U.S. aid funds were spent promptly it

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1U.S. Aid Operation in Iran, op. cit., p. 15.
was not a matter of great consequence as to what they were spent for. Members of the mission who openly objected to the uncontrolled nature of the operation were either disciplined or labeled as incompetent. To those familiar with the involved and time-consuming processes for financing public works in the U. S., in whole or in part with Federal funds, the cavalier, free-wheeling casual fashion in which huge sums of U. S. funds were committed in Iran must necessarily be shocking.1

The program did not yield the results that might have been obtained by more prudent utilization of the funds, but the program has been of great help in the completion of the Karadj Dam, in the exchange of Iranian students in the USA, in the teaching of Iranians by American technicians and the like. The report to the House of Representatives must not be used as grounds for cutting aid but must bring more attention to a better program and management.

Generally speaking, the technical assistance to Iran improved the economic, social and political situation of the country, provided a stable government, and raised the standard of living. On the whole, this program provided grounds for the people of Iran to be voluntarily on the side of the free world. In Hossein Ala's2 words, "This has been creative work of a new and higher order, namely, the raising of the standards of life of the Iranian people thereby contributing to the peace and security of the world."3

1Ibid., pp. 3-4.
2H. Ala is one of the oldest politicians of Iran who served several times in the Council of Ministers, as Prime Minister, and also ambassador to foreign countries. He is at the present time the Minister of Royal Court.
3Wardz, pp. cit., p. 31l.
In 1939 the Shah of Iran sought out and wanted to use the services of United States advisors to help Iran with her problems. The Departments of State and Agriculture of the United States came to an agreement on Dr. F. S. Harris. In July 1939 Dr. Harris went to Iran as the advisor of the Iranian Government in Agriculture and Commerce. As a direct result of his study the Government of Iran asked for two technicians. Professor L. M. Winsor, an irrigationist, and Professor D. W. Pittman, a specialist in soils and agronomy were sent to Iran to serve throughout the country as well as teaching in Karadj Agricultural College.\(^2\)

In 1950 Dr. Harris\(^3\) retired from the Utah State Agricultural

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\(^1\) The name of the institution has changed from Utah Agricultural College to Utah State Agricultural College to Utah State University of Agriculture and Applied Science.

\(^2\) The Utah State University participation program to Iran actually dates back to the year 1916 when Dr. J. A. Wadsworth, the president of the college at the time, attended an International Dry Farm Conference held at Lethbridge, Alberta, Canada. One of the principals at the conference was Mirza Ali Gholi Khan, the counselor of the Legation of Iran and the Council General of the Shah, who was invited by the president of the college to make a speech. When Ali Gholi Khan went back to Iran Iranian students were urged and became interested in attending the college and started to come.

\(^3\) In 1946, Dr. Harris headed a committee to tour the Middle Eastern countries and to make recommendations. Iran was included. Dr. Harris served afterwards as advisor to the Iranian delegation headed by M. Shayesteh, the Iranian Minister to the United States. For further details about Dr. Harris see Appendix A.
staff. He was appointed, just after his retirement, by the State Department as the Chief of Technical Collaboration between Iran and the United States. In 1951, he became the Technical Advisor to the Ambassador on Point IV Activities. He was in Iran when Utah State University was invited to participate in the assistance program.¹

When the agreement between Iran and the United States was signed for the Technical Assistance three Utah institutions were invited to participate. (1) Brigham Young University, in Education; (2) University of Utah, in Public Health; and (3) Utah State University, in Agriculture.²

One aspect of the technical assistance program in Iran is that scientists throughout the United States, Iranian nations, United Nations personnel and foundations like the Near East Foundation and Ford Foundation have been brought to work together as a team in helping promote agricultural development of the country. Therefore, because of a teamwork situation, it is impossible to separate completely the contribution of those who worked under a Utah State University contract. It is also, in most cases, impossible or difficult to organize the work

¹For further information about the above mentioned technicians and others which will come later refer to Appendix A.

²A letter was written by the author to the International Cooperation Administration to find out if any other institutions besides Utah State University was assisting Iran in the agricultural phase of the Technical Assistance Program and the answer was as follows: International Cooperation Administration, Washington 25, D. C., August 11, 1958, . . . Utah State University is the only U. S. University which has assisted in the agricultural phase of the Technical Assistance Program. . . . [signed] James W. Blume, Assistant Chief, NESA Branch, Office of Food and Agriculture.

³United States Department of Agriculture cooperates with the State Department through its Office of the Agricultural Relations (OFAR), which recently was renamed the Foreign Agricultural Service (FAS).
of technicians according to a special pattern.  

Thus, in showing the contribution of the Utah State University contractors, the author chose the way of explaining the part of the performed program concerning the Iran - USA-USU contracts and trying to insert a part or highlights of the work of those men and/or their fitness to the program as much as possible.

1. The contracts

The first contract was signed under the title of the "Agreement between the United States of America and the Utah State Agricultural College" on June 21, 1951 (No. Sec. 14,072). This original contract called for technicians to work throughout Iran with the Ministry of Agriculture establishing projects suitable to the nature of the country. This contract was to last for three years. It was replaced by a second contract signed on June 30, 1954, which had to last, as did the former, for three years from the effective date but was extended to four years. In May 1954 it was proposed that the activities under the current contract should be determined by December 31, 1956, in preparation for

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1The following is a good example: James H. Wood who went to Iran under a USAC contract as an agronomist and served there from June 1954 until July 1956, explained his activities and responsibilities in his terminal report. In 1954-55 he was working as an agronomist on the Tehran team which his specific responsibilities included work under the following projects: Project 57 - Farm Machinery; Project 75 - Plant Science (except fruit and nuts); Project 67 - Farm Machinery Cooperative (machinery demonstration and maintenance phase only); Project 39 - Agricultural Extension (advisory in agronomic phases only); Project 55 - Irrigation and Drainage. From September 1954 to July 1955 Acting Chief of Agriculture and Co-manager of Tehran. In 1955-56 he was the Head of Agriculture and Co-manager of Ahwaz. He explains his activities as: "In Ahwaz I have had activities in the following projects which required administrative and advisory assistance: Livestock and Veterinary Science, Project 32; Extension Service, Project 39; Forestry, Project 43; Irrigation and Drainage, Project 59; Farm Machinery Cooperative, Project 67; Plant Science, Project 75."
a new program. At about that time there were twenty-four technicians from Utah State University carrying out the planning of the programs. Most of their tours of service were to end that year. It was proposed that two new contracts should be drafted expressing a new approach to the Technical Assistance Program. American personnel should concentrate their efforts towards advising a fully staffed Iranian Ministry of Agriculture. The College of Agriculture of the University of Tehran at Karadj would initiate and administer their own programs. This new program was formulated in the last contract signed in the year 1958, and is calculated to remain in effect until April 1960.

2. The Iranian - TNI agricultural program

The first agricultural technicians from the United States arrived in Iran in May 1951 to help develop a joint agricultural program with their counterparts in the Ministry of Agriculture. This team had to establish relationship with the Ministry of Agriculture, to order supplies, to develop a program, to build an organization and the like.

Among the early members who arrived in Iran were Dr. George Stewart, Harry Versluis and Jay Hall on contract with USAC. On November 4, 1951 another team of United States technicians arrived in Iran. Among these men were Cleve K. Milligan, Bruce Anderson and Dr. R. W. Roskelley, all of whom were under contract to Utah State Agricultural College. A

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1Dr. G. Stewart, the Supervisor of USAC contract, explained the objectives of 1951 contract in the "USAC Contract for Technical Service," "Project Proposal and Approval Summary, July 1, 1951 - June 30, 1957" as: "(1) to train a cadre of competent Iranian technicians and scientists in the various agricultural fields; (2) to develop sound agricultural technical programs of work and related services; and (3) to aid in the effective end-use of commodities and financial aid provided under the "USC/IRAN" program for Agriculture."

2For further details on contracts see Appendix B.

3In 1951 J. Hall and H. Versluis, on their way to Iran, made a newsreel in Washington for propaganda purposes in Iran.
number of the members of the United States teams were soon pulled away from agricultural work for administrative assignments.

The first significant agricultural program of OMI in Iran was the seed distribution program initiated by Dr. George Stewart in the fall of 1951. This involved a seed exchange program of approximately 60 tons of Shahpasand seed wheat which was exchanged for the same amount of seed wheat with the peasants.¹

An agricultural organization in the Mission had been established by late fall of 1951, as follows: R. W. Roskelley,² Chief of Agriculture Division; Harry Versluis, Head of Veterinarian Section; George Stewart, Chief of Plant Science Branch; J. C. Ballard, Head of Horticulture Section; C. H. Milligan, Chief of Agricultural Engineering Branch.³

In January 1952 the Division proposed a staff of 150 American agricultural technicians, but this was cut to 71 by the Mission Director.⁴

In February 1952 an Iranian - U. S. Agricultural Committee was

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¹During the year 1952 more than 640 tons of seed wheat were distributed. In 1953 the distribution of seed wheat was left to A. Wahlquist.

²Dr. R. W. Roskelley assumed the responsibility of the Extension Branch in addition to his responsibility as Chief of the Agricultural Division until the arrival of Mr. Crosby in February 1953.

³Other members of the organization were: C. S. Stephanides, Chief of Animal Science Branch; J. R. Dawson, Head of Livestock Section; and P. Herman, Head of Forestry Section. This information obtained from Nichols, op. cit., p. 10.

⁴The estimate of the staff members of the technicians was based on the following needs: There was a large rural population, a small agricultural college, no extension service, need of more research although a little had been done by the Karadj College or the Ministry of Agriculture, need for the training of the Ministry personnel, and the reorganization or strengthening of some department organizations.
formed to develop a joint agricultural program. Dr. Roskelley, Dr. Stewart and Mr. Killigan were the members of that committee.\footnote{The members of the 1952 Iranian - U. S. Agricultural Committee were: Engineer M. Zahedi, Behravesh, Dibayan, Mojtehed,\footnote{Roskelley, op. cit., p. 6.} (Ministry's representatives); Dr. Roskelley, Dr. Stephanides, Dr. Stewart, and C. H. Killigan, (Mission's representatives).}

Dr. Roskelley explained the situation at the beginning as follows:

"We found as a result of our preliminary exploration that the Ministry had no research data or publications on which we could base program developments. As American technicians we did not understand the approach of Iranians to the agricultural problems, and they did not understand our approach or procedures. The bond that cemented us together was a sincere desire of friendliness and helpfulness on the part of each member of the committee. Each had a firm conviction that to learn to work together was a real challenge. In all, friendly attitudes prevailed and each felt assured that is we could spend time discussing and exploring we could work out some pattern that would improve the agricultural conditions in Iran."

The year 1951 and the early months of 1952 were devoted largely to getting established and developing a joint program. By July 1, 1952,\footnote{Approximately $5,000,000 was available for agricultural work in 1952.} program activities had begun in seven of the ten Ostans.

The basic objectives of the cooperative program were: (a) To facilitate the development of agriculture and related fields through cooperative action. (b) To stimulate and increase the interchange between the two countries of knowledge, skills and techniques. (c) To further otherwise the over-all development of Iran.

3. \textit{1952 Khosroshah community fair}

On October 8, 1952 Khosroshah held a community fair with the help of the United States technicians. The Khosroshah community fair was a part of the training program for the Department of Agriculture personnel.
being assigned to Extension work in Azerbaijan. The trainees were taught, among other things, that permanent changes come about in people because change is desired and not forced. Quoting the expressed opinion of an outstanding agriculture scientist, "Planting quality seed is the cheapest and fastest means to increase yields." The problem of teaching farm people to recognize and want quality seed was considered. A situation for discussing quality seed was needed where the attention of the farm people could be kindled and their desire awakened for quality seed that would result in satisfactory increases in yields.

The fair was planned as a means of demonstrating the technique of conducting community fairs and teaching the trainees the value of competitive exhibits.

The village fair officials visited neighboring villages and trained a commodity chairman for each entry class. The extension trainees were assigned to contact 20 village farmers and teach them to select quality exhibits. First the officials were to work with the commodity chairman and show him what was involved in selecting an exhibit and then encourage him to teach others.

The record of the entry clerks show that 611 exhibitors brought in 1265 different exhibits. The record contains details of classes exhibited and the number of entries in each class. In the wheat division there were 350 exhibits and 30 blue ribbons. In the barley division there were 230 entries, 32 blue ribbons. In the almond division there were 297 exhibits, 49 blue ribbons. The dried apricot division attracted 67 exhibits, 17 blue ribbons. The Persian date division attracted 196 exhibits, 67 blue ribbons and 129 red ribbons.

Two divisions of livestock were exhibited. Because this was the first activity of its kind held in the area careful classification of
breeds and types was not attempted. The cows were judged according to the general level of quality in the area on the basis of condition and general appearance. The sheep were judged on the same basis. There was no separation into age, type of breed; all animals were considered on their individual merits. Of the sheep exhibited, eight were placed in the blue ribbon group, ten were placed in the red ribbon group.

In the art and handiwork division there were 62 exhibits, mostly needle work. Some outstanding art was exhibited.

In the cotton division there were 25 exhibits of raw cotton. The judges placed the exhibits according to size, uniformity and quality.

Exhibitors who were awarded blue ribbons were given a premium of 2½ kilos of certified Idaho Blue Tag Pinto Beans. Those awarded red ribbons were given a premium of 2 kilos of certified Kansas Sorghum and those awarded white ribbons were given 1 kilo of check peas or lentils from local supply. There were 301 blue ribbons awarded. There were 541 red ribbon winners, 423 white ribbon winners. A sweepstakes award was made for the exhibitor placing the most exhibits in the highest awards group.

Various estimates were made of the number of people who attended during some part of the day. It is conservatively estimated that more than 2,500 people saw the exhibits.

Time will determine the value of the organization techniques and cooperative spirit that was encouraged. These elements will be measured in the ability of the people to provide for themselves a happier, more abundant community life.¹

¹Bert E. Despain, "Papers from the Desk of B. E. Despain - Tabriz Region Extensionist for Azerbaidjan, Iran and Agriculturalist, Rasht, Iran" (unpublished, 1952-1954), passim.
1. The extension service

The writer will attempt to cover the development of the agricultural extension program more fully than some of the other branches because it is a program that started to bring change to the life and the economic situation of the Iranian people, especially the peasant-farmer life, and because almost all other agricultural improvement programs were so related or bound to it that in most cases it is impossible to separate them.

Progress in advancing the economic and social development of Iran required action in many fields, but basic to all was the need initially to improve rural standards of living. The propensity and well-being of the villager and the peasant were fundamental to a sound national economy, and any economic development program must be concerned with, and attack the problems of hunger, disease and education of the people.

It is commonly agreed that a knowledge of the culture and social structure of a people is a basic prerequisite to launching an effective extension program. Therefore it was appropriate that technicians get acquainted with the Iranian people. An orientation period was assigned for American technicians. The main experience during this orientation period was to get acquainted with a new civilization where customs, language, religion and livelihood were so different to the technicians from the familiar scenes in America. It became necessary to shelve many modern, progressive ways of doing things in order to gear the advice and assistance to a level which would be understandable and acceptable to the Iranian villagers who were living in a state of extreme simplicity.

The rapid development of an agricultural extension service meant the development of a new institutional pattern as part of an old structure. This would not be easy. One of the first requests made by the
representatives of the Ministry of Agriculture to the Joint Committee was that the Americans assist the Ministry to establish an Agriculture Extension Service. Dr. Roskelley stated that "Dr. Zahed, Deputy Minister of Agriculture and chairman of the committee said on frequent occasions, 'We have the name Extension Service as one of the sections in our Ministry but we really do not know what the words mean and we do not have an organization to operate a program.'\(^1\)

Dr. Roskelley and staff suggested an Extension Seminar. The Joint Committee agreed to follow this course of action. The seminar was to teach the meaning of agricultural extension, its philosophy, principles and procedures. During July and August 1952 a program was set up for two hours a week for eight weeks. Twelve Ministry officials came together with representatives of TGI, Food and Agriculture Organization of the United Nations and Near East Foundation to learn more about the meaning of extension.

It is worth mentioning that the Food and Agriculture Organization of the United Nations (FAO) Agreement with the Government of Iran (May 11, 1951 and July 14, 1952) was one of the factors in the genesis of the Iranian agricultural extension service. This organization provided for the assignment of an extension specialist from the Food and Agriculture Organization to the Government of Iran to act as an advisor and to assist in planning the organization and operation of an effective extension service in the Extension Department of the Ministry of Agriculture.

On the Ostân level, Bert Despain, stationed at Tabriz, and Melvin Peterson, stationed at Babolsar, did more than any of the other

\(^1\)Roskelley, op. cit., p. 15.
OMI individuals in the first year. On September 3, 1952, B. Despain began the training of eight agricultural technicians in extension work, and about the same time M. Peterson began the training of six. Despain, Peterson and the others began to prepare detailed plans for launching a substantial extension effort at the Ostan level.

It should be mentioned that a Near East Regional Extension Development Center was held under the auspices of the Food and Agricultural Organization of the United Nations at the invitation of the Lebanese Government in Beirut from January 6 through 16, 1953. Ten Near East countries and territories participated in the Center and four other countries were represented by government and private agencies supplying technical assistance in the development of agricultural extension services. The delegation from Iran participating in the Center were: B. Despain, the Extension Advisor with TCI; Dr. R. W. Roskelley from the Tehran TCI Office; Mr. and Mrs. Kurt Spalding from the Near East Foundation; T. V. Anderson from Food and Agriculture Organization and Ministry Officials including Engineers M. Zahedi, H. G. Khadivi, and Z. Behravesh.

The general objective of the center was to provide for exchange of experience and opinion on problems of agricultural extension work and to formulate procedures for the development of agricultural extension services in the Near East. It was to help determine the needs that have to be met and the problems and difficulties to be overcome in the development of such services. Moreover, it was to plan cooperatively and to coordinate extension development projects on a regional basis.¹

In December 1952 the decision to launch a country wide extension service was made by the Ministry of Agriculture and TCI. The Beirut conference turned out to be a great stimulus for the Iranian

agricultural extension movement. Following this conference a recommendation was made that the extension development in Iran be conducted on a national scale.

Upon the return of the Iranian-American delegation from the Beirut conference the Joint Agricultural Committee went into session to spell out in more precise manner an agricultural extension development plan. A plan was formed, Washington was advised, and the extension teams began to arrive from the United States to Iran on February 7, 1953. Bert Despain was assigned on temporary detail to Tehran to assist in the orientation of the United States Department of Agriculture (U.S.D.A.) training team and help with planning the program.

In developing the extension service, the Near East Foundation and the Ford Foundation carried a program to the villages through multi-purpose extension (village level) workers and through village teachers. It was important to the farmers that in January of 1951 His Imperial Majesty, The Shah, issued a Firman (decree) ordering that his lands be sold to the peasants who till the land on the basis of ten times the annual rent, minus twenty per cent. These lands were to be paid for over a period of twenty five years and no interest was to be paid on the unpaid balance. The Near East Foundation, TCI and other operators provided money and help to peasants who were accustomed to being directed and not making decisions themselves. It is worth mentioning that Dr. Mossadegh helped the rural development plans by signing "The Bill Relating to the Increase of the Farmers Share" on October 6, 1952, (amended December 24, 1952), and the Legal Bill Relating to State Development and Reclamation Bongah, dated July 29, 1953, which set up the frame work of the Joint Fund for Agrarian Development and the Village Council Program. The Village Council Program has been described
as a promising approach to community development on a broad basis with extensive coverages.

A. The project agreement for an agricultural extension service, project agreement No. 39

On February 22, 1953, the Minister of Agriculture (K. Taleghani) and the Director of Technical Cooperation for Iran (W. E. Warne) signed "Project Agreement for Agricultural Extension Service" (No. 39) which set the framework of what was to take place. The project set forth the objectives of the extension effort, the obligation and responsibilities of the Ministry of Agriculture and the TCI, and represented the final plans of each to launch an agricultural extension service.¹

The following are some of the suggestions to facilitate the Agricultural Extension Organization:

Attention should be given details to insure that there is a healthy situation or climate that will attract capable technicians.

1. The salary should be realistically set. The need for selling services twice should be eliminated.

2. Dishonesty in reports, or mishandling funds or abusing privileges must be properly handled and sanctions applied promptly with equality.

3. Suitable quarters should be available where family, educational and medical needs can be obtained. A school and health clinic should be set up where the agent is located in Sharakstan.

4. On a national level the policy must be set so that individuals can direct the activities of the agent through proper channels.

¹For the complete project agreement No. 39, look under Program Agreement in Agriculture between the Ministry of Agriculture of Iran and the Technical Cooperation Administration of the United States of American, February 23, 1953.
No one should be able to by-pass proper channels with directives or verbal requests.

5. Transportation, office space and equipment have been under discussion in terms that should be readily workable; but the agent needs a current operating budget available to him in advance, on a monthly budget basis.

6. A plan must be set up in each ostan to place responsibility on one man. Information and suggestions can be given by anyone; but budget arrangements and program of work must be worked out through one administrator who has control over operating procedure.

7. All department and Bongah activities in an ostan need to be re-examined to see that adequate personnel and budget are available; re-assignments should be made immediately to see what manpower and budget is available to those projects which give best promise of helping people help themselves.

8. Opportunity should be provided for technicians to work long enough in their job to become proficient.

9. Technicians need encouragement to wear suitable clothing. Dress suits are not suitable clothing for field work.¹

The Extension Administration courses were given for three weeks and the Extension Specialist courses for approximately ten days. The National Extension Orientation Program for the key members of the Ministry of Agriculture in Tehran and the top two to three Ministry personnel from each ostan began on March 3, 1953, and continued through March 9. About 150 Ministry personnel took part. Dr. R. W. Roskelley and Mr. J. E. Crosby, the Assistant Director of the Extension

¹Despain, op. cit., passim.
Service of the University of Missouri gave speeches entitled "Organization to Support the Local Extension Agent". Also the top officials of the Ministry and TCI gave speeches on about fifteen different topics.\(^1\)

Dr. Roskelley felt strongly that there should be ninety days of planned group training to be followed by immediate assignment to the field. FAO, TCI and the Ministry agreed, after considerable discussion, to the following plan:

**Basic outline of agents training course**

**Approximate starting date:** Monday May 4, 1953  
**Length of training course:** Approximately 90 days  
**Location of training:**  
- Tehran  
- Babolsoor  
- Kermanshah  
- Shirez  
- Tabriz  
- Mashad  
- Isfahan  
- Herza

**Number of trainees:**  
Approximately 200, to be assigned as nearly as possible so as to have 25 trainees in each center.\(^2\)

In addition the TCI and the Ministry of Agriculture worked together to establish an agricultural extension service. Many problems such as working in a cross-cultural situation with a lack of full understanding of the Iranian culture on the one hand, and the American culture on the other, made the matter of developing joint TCI-Ministry plans difficult. As time progressed the difficulties were slowly overcome and a pattern of organization began to emerge.

On November 1, 1953, the Ministry of Agriculture informed their field staffs that the Iranian Agricultural Extension Service had been

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\(^1\)Michels, *op. cit.*, pp. 41-42 *passim.*

\(^2\)Ibid., p. 45. Among the available extension instructors Bert Despain and Kelvin Peterson should be mentioned.
established.

The Government of Iran and the United States entered into an agreement to extend Project Agreement No. 39 on December 2, 1953. This extension called for a continuation of the agricultural extension effort along the lines set forth in the original project, namely specialist training, procurement of facilities, agricultural agent training, inservice training, orientation program and Ministry reorganization.

It is unnecessary to go into detail on the training programs in the United States and other countries. It is necessary to mention that Food and Agriculture Organization of the United Nations (FAO) offered fellowships for the extension training of Iranians in the United States and in European countries. In addition to the FAO extension fellowships, many Iranians have come to the United States to study agricultural extension as a part of the Iranian-American technical cooperation program.¹

B. Extension at the ostan level

The original orientation session for regional Ministry personnel and landlords began on April 4, 1953, and continued for four days. The ninety day agent training courses began in early May in six regions.²

The selection of the printed material as a base of instruction was hard to find. Approximately 60 United States Extension Service leaflets had been reviewed, modified and translated into Farsi. A total of 15 men, all members of the Ministry of Agriculture, were selected for this

¹Almost all the technicians contributed to the extension service in the provincial programs or at the national level or both.

²The six regions were: Ray I - Tabriz, Mashad, Isfahan, and Kermanshah; Ray II - Babolsar and Tehran. Shiraz agent training course began in July 27, 1953. In the assignments of TCI extension personnel Le Roy Dunnell was included.
training period. A few were graduates of Karadj Agricultural College, but the dominant number were men with from six to eight years education. The training varied from one training center to another depending upon the interest, imagination and ingenuity of the Iranians and the American instructors. In addition to the representations of various fields of subject matter the students were assigned subjects and problems to study and report on; field trips, laboratory exercises, movies, slides and film strips were used very freely. At the close of the session certificates were awarded.

The training course for ostan directors of agriculture and ostan extension supervisors was held in Tehran July 18 to August 4, 1953.

Field staffs were informed on November 1, 1953 of the establishment of the Iranian Agricultural Extension Service. Director Warne in his memorandum stated:

This memorandum is to advise you that the agricultural extension service in Iran is now established and ready for immediate operation, within the limits of the regulation and budget hereto enclosed. You will note that you and your agricultural staff in cooperation with the Ministry personnell are given authority to assign agents and establish rates of subsistence within the region.

It is only with the fullest co-operation that you can make this service of greatest importance in your Ostan. Working as a team, I know you can put this agricultural extension service to the highest possible use for the villagers, farmers, landlords alike.1

By March 1954 this new extension service had about 120 agricultural extension agents in the field, 10 ostan extension supervisors, and 35 extension specialists at the ostan level. As time went on, this new organization grew and many agreed on its usefulness. The development

1Nichols, op. cit., p. 65.
of the extension service may be summarized in the following words:

Starting November 1, 1953, as an infant division of the Ministry of Agriculture, this young organization gradually convinced many landlords that the Ministry of Agriculture had something very worthwhile to offer to the farmers of Iran. . . . The farmers began to realize that their Ministry of Agriculture was helping them to learn the new improved practices of agriculture production.

The extension service organized within the Ministry of Agriculture was as follows: The Division of Supervision and Training, The Division of Business and Finance, The Division of Extension Information, and The Division of Program Planning and Coordination.

To assist the extension movement in the estans, among others, TCI had the following USAC extension men on its rolls: Tehran, L. Bunnell; Kerman, V. Oberhansly; and Rasht, B. Despain.

(a) Azerbaijan

Azerbaijan is one of the most heavily populated areas of Iran. The peasant-farmer situation was very bad. Opportunity for formal training was available to only a few. Most villages had no schools. Many villages had no people who could read or write. Political stability in the village was maintained by a system of government, as in the whole country, that placed responsibility for discipline on an appointed village leader - Kadkhoda - who had considerable power by authority of Government officials. The agricultural method was primitive.

From the beginning of the Technical Assistance to Iran a few of the most able technicians were sent, namely Mr. Bert Despain, an Extension Specialist; and Odeal Kirk, the Chief Azerbaijan TCI Agricultural Section, both USAC (USU) staff members, to Azerbaijan.

During the spring and summer of 1952 Tehran TCI officials continued

\(^{2}\text{Ibid.}, \text{p. 93.}\)
their work with Ministry officials. The TCI officials helped the
Ministry officials see the value of an extension service. On Sept. 3,
1952, permission was granted to Azarbaijan region to start eight agri-
culture technicians in training as extension agents. In preparation
for initiating the training course, assistance was obtained from
Horace Bolster, Extension Advisor to the Near East. Mr. Bolster sent
some information from Washington and had some excellent source material
sent from Pakistan. The material used most was that prepared by
Karl Knous; but all of the material was useful in forming the basis
for presenting extension work. The usual extension methods were
explained, discussed and demonstrated. This was the beginning of an
ostan wide extension program which was started in this part of the
country by Bert Despain. He, under the RIP sub-project No. TJC-I-A5,
Azarbaijan supplement for the description of the project, proposed that
immediate steps be set in motion to organize an Agriculture Extension
Service in Azarbaijan. The service would be directed by an advisory
board made up of Director of Azarbaijan RIP-JC, Director of Azarbaijan
Department of Agriculture and any other officers necessary. At no
time would that board have more than five members. The Director would
automatically be the chairman of the board.

The agriculture extension agent was free to use any materials or
equipment available to him. He was to keep himself free from organi-
izations other than farm organizations and the church of his choice.

He was directed to assist cooperatives and further agriculture
education and information to the limit of his ability.

It was anticipated that general principles would be given the
agent and he would be responsible for the methods he employed. The
agent could be relieved of his duties for cause and reassigned according
to action taken by his supervisors.

Bert Despain explained the objective, i.e., that the project was designed as a pilot project to show how agriculture extension procedures help people make a living from agriculture. Information from various sources throughout the world was to be used by the farmers of Azarbaijan. Any activity or procedure that would aid farmers to increase production, care for their soil, till their crops, market their production and plan for more efficient operation was desirable. Improved care and breeding practices for livestock as well as control of parasites and diseases were recognized as being very desirable and thus an integral part of that objective.¹

As was mentioned before, a Project Agreement (No. 39) was signed between the Technical Cooperation for Iran (TCI) and the Ministry of Agriculture for an agricultural extension service (February 22, 1953). Mr. Despain described the agricultural development program under that project for Azarbaijan. The activity consisted of training Ministry of Agriculture personnel. The program was educational in nature and directed specifically toward encouraging local action to meet common problems of village farmers. Activities would be directed towards encouraging increased production and improving the quality of the land. The aim of the service was to help people help themselves by adopting more efficient and productive practices of production and marketing.

There was a need for an organic working relationship with Karadj Agricultural College and the secondary educational school in the ostan. Every opportunity to encourage a closely integrated and complimentary program would be welcomed.

¹Despain, op. cit., passim.
Bert Despain mentioned that the needs for project and objectives of the project were that the ostan agriculture department was interested in establishing a workable agriculture advisory service for village farmers and landlords. Ineffective programs kept the village farmer from enjoying the degree of security from hunger, want and disease that he might have if that proposed service became effective. Because village people were without modern transportation and had a slow communication system, improved agriculture practices were not known or widely used by most village farmers. An effective agriculture advisory service should stimulate village people to increase the production from the land and to use effective marketing methods of an improved quality produce. Every attempt would be made to train and appoint men of as high technical training as possible.

He mentioned the objectives as follows: to set up an organization consisting of administrators, specialists and shahrestan agents within the department of agriculture; to train personnel to give educational service to village farmers and landlords, without direct charge to the recipient; to locate and encourage the interest and assistance of unpaid local leaders; to encourage common understanding that worthwhile information can come from the village to the technician as well as from the research technician to the village farmer; to teach technicians of the Ministry to apply approved techniques to stimulate the adoption of improved practices on a voluntary basis; and to make full use of all educational methods and facilities with a view towards helping people help themselves.¹

Between the thirteenth and the sixteenth of April 1953, an

¹Ibid., passim.
The plan of operation of Project No. 30 for the ostan of Azerbaidjan was explained by B. Despain as follows: (1) Conduct an orientation course of approximately one week for as many of the department of agriculture personnel as possible. (2) Make full use of Department of Agriculture personnel and TCI technicians to plan, prepare and conduct this course. (3) Select with the Ministry officials potential Extension personnel during the orientation to make training for work in the proposed advisory service. (4) Conduct a planned program with the landlords to invite their interest and support. (5) As part of the general operation and public relation activity will be developed for and by the Ministry of Agriculture. (6) The necessary administrators and administrative officers will be trained to handle this phase of the work. (7) Potential Shahrestan agents will be put in training in a group for 90 days after which they will be assigned to an area for individual work. Training will be continuous on an inservice basis. (8) Certain personnel will be selected from those trained as agents to serve as commodity specialists to service the agents in their assigned areas. (9) The training will be on methods of solving village agriculture problems. The philosophy and objectives of the advisory service will be taught as well as program making and subject matter information and simultaneously the Extension methods of getting village farmers to adopt the improved practices. (10) Among other things the Shahrestan agent will be taught to: (a) develop a plan of work (b) follow that plan of work (c) get results in terms of changes in the working habits of village people (d) the above will be achieved by working cooperatively with subject matter specialists on commodity improvement programs. Following a planned program the agent will: (A) Make village visits to farmers. (B) Select commodity demonstrators. (C) Set up and conduct demonstrations to tell why and show how to do improved agriculture practices. (E) Locate sources of seed, equipment and facilities. (F) Use visual aids to develop interest in and show why, how and suggest where improved practices might
The Azarbaijan agricultural extension agents' training program started May 5 and continued through August 5, 1953. In this teaching course B. Despain played an important role. The training course continued on schedule with interest among the trainees running on a high level. The students were sent to villages for individual work. They spent two nights and three days contacting village leaders and explaining their plan of self help for village people. On Oct. 12, 1953 the field training phase of the Azarbaijan Agriculture Extension Service began.

As time went on the program continued. Mr. Despain reported that the trainees looked promising in their early attempts at field work. They were able to get some good results. As the agents and specialists began their work they found points of mutual interest. There was

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apply. (G) Apply insecticides on a demonstrational basis with village farmers and encourage the use of insecticides to prevent loss from insects and improve the quality of the produce. (H) Organize tours to see experimental work in progress and help village people to establish and maintain in experimental work done by both public funds and private operations. (I) Make reports and evaluate the results of his work. (J) Assist village farmers to organize for commodity improvement activities including procurement of seed facilities and equipments, etc. (K) Work for common understanding on village production and marketing problems with a view towards solutions of those problems by village people.

Objectives for 1953: (1) Train personnel in the three divisions of the activity and start them to work on their assignments. (2) Assign personnel to his duties. (3) Circumscribe the activities of the agents to those problems important in their assigned area and upon which the Ministry of Agriculture is now working. (4) Teach the technicians to state frankly when they don't know the answer to a production problem; but be cooperative and try to get the answer to the inquirer at a later date. (5) Encourage technicians to work cooperatively and apply sincere effort in their work. (6) Teach the dignity of loyal, humble effort on a planned basis.

The Ostan Director of Agriculture and Ostan Chief of TCI Agriculture Section are hereby given authority to use the facilities available and allocated money in any manner jointly agreed as being for the best long time interest of the service.
evidence of some understanding on the part of Ministry officials of problems of rural people. Commercial support for the products of agriculture was growing. Educational opportunities were increasing. The work of the Health Cooperative was awakening interest in general improvement. No opposition had developed in any organized form. The indication was that the new service would not meet any serious challenge from the outside until the trainees had had time to practice their performances and strengthen their procedures.  

Although it was too early to forecast a positive future, indications were showing that the extension program was meeting with some success and that the Azarbaijan agriculture department would have an important tool to help it make a very real contribution to the lives of the Iranian people. The door had been opened on agriculture extension work in Azarbaijan, but the future was not well marked. No person was competent enough to forecast the future of this young service. It had been launched with all the care and grooming in the power of Mr. Despain. The contribution of men like Mr. Kirk was also helpful. The hope of the people of the ostan for the future had been another definite asset.  

(b) Fars  

Extension work in the Ostan of Fars began on November 1, 1953 with ten agents assigned to the field. They were stationed in areas of agricultural importance throughout the ostan. For the first three or four months the major activities of the agents were to make plans and arrangements for the spring demonstrations, to get acquainted with the villagers, and to distribute brood flocks shahpasand wheat; to assist in the exchange of roosters; to conduct furrow irrigation demonstrations

\[1\] Ibid., passim.
of sugar beets and cotton; to demonstrate orchard smudge pots to prevent tree damage; to demonstrate almond spraying for Aphid control; and grape spraying for powdery mildew control; and others. There were many problems: lack of confidence of the villagers, lack of quick transportation, lack of tools, need for more technical and organizational back-stopping and guidance, continuous attention to landlords, and the like. These should be overcome as the program continued.

In late March 1954, Mr. Renshaw, the Acting Chief Agriculturist for Shiraz spent eight days in visiting agents stationed at Darab, Fassa, and Estahbanat to help them gain confidence in themselves. The trip was made to discover the importance and extent of need for thorough guidance and help of new agents. He pointed out some of the conditions he found there in the report on his trip to the Provincial Director, Shiraz, on March 25, 1954.

He noted that the agents, in general, were not working enough with the villagers. The agents visited were not giving demonstrations, they were not using their offices; the office equipment and supplies at Fassa were not being utilized for work. The agent at Darab had no transportation, and they all had some excuse. All the agents had given or promised their demonstrational materials to landlords, not villagers. None of the agents were working full time. The agents had not formed the habit of planning, publicizing, and checking details prior to holding meetings. They often took the word of landlords and villagers concerning details. On the other hand, it was proved to Renshaw’s satisfaction that the program was not only feasible but had great possibilities. The agents were in a position to make the Ministry of Agriculture a symbol of service. The ability of all the agents were unquestioned. Each did an excellent job in conducting the demonstrations.
The key to the success of the program from then on was close supervision, encouragement and assistance to the agents. Supplying agents with jeeps, telephones, higher salaries etc., were not going to correct poor selection of villages, out-of-balance relationships between landlords and villagers, poor planning and half-time work.¹

A demonstration farm was set up by the Government of Iran in Shiraz. It was owned and operated by the Government. Melvin M. Peterson, during his tour of duty in Fars, supervised that farm. He explains the management and the problems of the farm one of which is, in Iran most farms are managed by a landowner who is seldom present on the farm. This necessitates delegating authority to others. A modern mechanized farm, demonstrating improved practices and equipment cannot operate in the manner stated above. If the Shiraz demonstration farm was to be successful, the farm manager must spend a "farmer's day on the farm" and not a 35 hour work week on the farm. When his laborers start working, he must be there to tell the worker what to do and how to do it. Since the manager must know how to do each process as good or better than his worker, he is forced to spend a good portion of his time in actually doing the job.²

There were several problems connected with the Shiraz demonstration farm that needed solving,

(1) The Ministry administration of the farm needs overhauling so that the farm manager can spend more time on the farm and less time in the office in Shiraz. (2) Sufficient facilities should be established at the farm to permit the manager and certain workers to reside at the farm. (3) The relationship of the cooperating bongabs and departments must be worked out so that a

¹Nichols, Footnote pp. 79-80 passim.

a more favorable situation is created for the demonstration farm.¹

Melvin Peterson also pointed out that "a government owned and operated demonstration farm presents special and peculiar bookkeeping and farm accounting problems to the manager of such a farm."²

Other ostans

It is unnecessary to go into detail on the progress of extension work in the other ostans. The progress and problems observed in Azerbaijan and Fars were fairly typical. The organizations, the personnel, and the programs were new. Therefore it was natural that the new undertaking should be faced with many problems. Three things stood out at this point of development of the new service: (1) most of the extension personnel were in the field and attempting to do a good job, (2) there was considerable lack of uniformity in the program of the work in the ostans, and (3) there was a dire need for more and better supervision of all extension personnel. Without going into detail, some of the other ostans' developments, not covered before, are worth mentioning.

(c) Babolsar

In Babolsar Melvin Peterson began the training of six agricultural technicians in extension work in 1952. The American technicians who were assigned to the Caspian Sea area in the early days of technical cooperation work were to withdraw because of Russian objections. It is interesting to note that almost all the progress and work in this


²Melvin M. Peterson, "Farm Record Book for the Demonstration Farm, Shiraz" (unpublished, 1957), p. 3.

Dr. J. M. Hall was one of the technicians who supervised the establishment and operation of the Shiraz Demonstration Farm.
area had been conducted solely by Iranians. For a considerable period of time all members of the TCI staff in Babolsar were Iranians. This is the only ostan with such a characteristic.

Eleven Iranian extension agents began work on October 23, 1953 and the task was not completed until February 15, 1954. Some of the problems of these agents were lack of technical knowledge, absence from family, not enough food, no cooking facilities in most villages and the like.

(d) Rasht

In Rasht a combined extension and veterinary program was developed. The extension program was making a favorable appeal to both landlords and village people. A vegetable garden program was developed. The agents located interested farmers who planted a hundred square meter garden. A small demonstration garden was prepared near the agriculture office for the garden project leader to practice and demonstrate on. Seed was separated into small packages for the convenience of the agent in doing his work.

Bert Despain, Rasht Regional Agriculturalist OMT, in his special extension report noted that:

The agents were instructed to visit from three to ten farmers in each village who are considered by the village leaders to be leaders in their commodity fields. They are to encourage the farmers to tell and show the agent how they carry on their production practices in the manner that they are recognized by the leaders of the village to be commodity leaders. Each village farmer considers himself a specialist in his field and usually welcomes an opportunity to show an interested agriculture official how he does his work. The activity is planned as an introduction for the agent and allows him to meet the farmer and landlord as an interested learner and cooperator. The agents went to their fields assignments on January 21, 1954. The first day of the Iranian month.1

Glenn Morrill explained that in Khorasan the difficulty was that one could see so many problems that it sometimes became difficult to distinguish between cause and effect. He continued as follows: "On the brighter side I would like to point out that, considering his lack of full scientific information and considering his lack of implements, the farmer in Iran is doing a remarkably good job."

Glenn Morrill made the following recommendations for the improvement of the extension program:

1. The present group of Extension agents should possibly be screened on the basis of attitudes and the amount and quality of work produced.
2. Additional men should be trained and hired as replacements and also to increase the total number of agents working throughout the Ostan.
3. Consideration should be given to the possibility of relocating some of the agents so as to give better distribution and coverage of the agricultural areas.
4. Consideration should be given to the possibility of hiring future agents from those who have actually had practical farming work experience. If this cannot be done courses should be offered at Karadj or elsewhere in Iran for the purpose of giving practical farm work experience for prospective future extension agents.
5. Each extension agent should be charged with responsibility for conducting at least two or three small demonstrations each year on row crops culture and furrow irrigation. These demonstrations should be carried out by the landlords and peasants under the instruction and supervision of the Agricultural Extension Agent.
6. The present program should be intensified, speeded up, increased in scope, and brought to focus more directly on the agricultural problems of the peasant-farmer and villager.

The following are some of the recommendations for Torogh Agricultural Center in Khorasan:

(a) Original plans for a close-working Agricultural Center,


should be pushed to completion. It should be remembered that Torogh Vocational Agricultural School became a first rate Agricultural College.

(b) Soil at Torogh are low in organic matter and need to be built up by application of animal manures, and plowing under of clover and other crops. Also timely applications of the correct amounts and kinds of commercial fertilizers should be made.

(c) A permanent and reliable source of irrigation water should be developed. It is considered that the rental or purchase of an old sidfunt ghanat opening just above the farm would be the most satisfactory means of doing this. Providing this ghanat could be secured, development work could be done which would provide a source of permanent and adequate water for the farm.

(d) Present wells should be used only to take care of culinary needs and for supplemental or emergency irrigation.

(e) Managers should be vigilant to see that operations are carried on according to modern methods. Care should be taken to make sure that labor costs are not excessive and that operations are economically sound.¹

(f) Kerman

Through the extension agents two training schools were held in each of the following towns: Kerman, Rafsenian, Bam, Sirjan, Jiroft, Zahedan, Khash and Zabol to acquaint the farmers and gardeners with the use of hand tools and equipment and the China clippers plow.

Charles Hymas made the following recommendations for improvement of extension work in Kerman:

(1) That extension agents do extension work only.
(2) That agents be placed in the Ostan on the basis

¹Ibid., pp. 17-18 passim.
of qualifications and not for the convenience of agent.
(3) That more agents be sent to this area.
(4) That supervisory personnel be strengthened.
(5) That more specialists be sent to the Ostan.

(g) Ahwaz

In Ahwaz the extension organization consisted of ten agents, one supervisor and four specialists to give aid to the agents in livestock, agronomy, horticulture and range and forage.

Two conferences and training schools were held for the extension agents. One at Burujerd in September of 1955 gave the agents field practice in seed bed preparation, planting cereals, and row crops, orchard culture, seed treatment and pest control. Ten extension agents attended that two week conference in which David Sharp extended considerable help.

The second conference, held at Ahwaz in February, was attended by nine agents. Emphasis was on livestock improvement, poultry, vegetable production, irrigation and drainage, pest control and forage crop production.

(h) Isfahan

A pilot project was initiated for the development of home economics extension work in Isfahan. Miss Lucy Adams, Deputy Director of TCI programs, had been an early promoter of home economics extension work in Iran. She was one of the major influences in getting the project established. The arrangement called for Mrs. V. C. Hendrickson, wife of TCI extension man in Isfahan and a former home demonstration agent in the United States, to give informal technical advice and support for the home economics extension effort. In 1954 two Iranian women were hired

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to start home economics extension work in selected villages near Isfahan. The progress of this project in that area had been encouraging and a plan was being made for expansion of that phase of the extension work.

C. Visual aid and printed material

Visual aid material ordered from the USA in 1953 was received in 1954 and distributed in the ostans. The extension organization of each ostan had movie projectors, a mobile cinema unit, slide projectors, tape recorders, a portable public address system, cameras, films, and slides. The extension agents and specialists were well equipped with demonstration materials and tools. In ostans jeeps and projectors with slides were available. They were used jointly by educators, agricultural specialists and agents. The villagers came by the hundreds to see the films, many of them just out of curiosity; but many good demonstrations had been put over this way.

To gather and distribute the information about the extension service was of a vital importance. The Ministry of Agriculture should furnish all information available on experimental work in progress at the Experiment Stations. The other Departments of the Government should make available all data in their files which will help the agents accomplish the objectives of their assignment. Tehran started making translations of publications from other languages in order to make them available to the agents for use in the districts. Agents were required to make frequent visits to the villages and go onto the farms and help the farmers apply progressive practices to their farm operations and village life. They also distributed publications. Many leaflets and publications were translated and distributed. Mimeographs were prepared and distributed. In almost all the ostans specialists started
some kind of publication. The following is an example of the start in Rasht:

Under the direction of Engineer Sagadain, Co-supervisor of the Ostan Extension Service, plans are developing to publish a monthly mimeographed report to technicians and landlords. It is planned to make this the official monthly publication of the Ostan activity. Technicians have been invited to prepare news stories and report their official work.

Engineer Kurdahali Extension Agronomy specialist gave a 15 minute radio talk over Radio Rasht on the Agriculture Program of Guilan. The Agriculture office is going to give a 5 minute program each week.  

In Azarbajian Engineer Khatai started to prepare leaflets as an Extension Insect and Pest Control Specialist. He prepared a leaflet on mouse control and worked out a demonstration method. He assisted agent Jamshidabadi to develop control programs in 4 villages where the need was very great.

Engineers Sadeghyani and Sadeghinia worked with Engineer Nahshinsh in preparing and publishing in mimeographed form two leaflets on insect control. "Cotton Tick and Its Control" and "Control of Grapes Parasites" were the titles of the leaflets.

Engineer Sadeghinia continued his preparation and publishing of the Azerbaijain Agriculture Extension Service Review. This publication became a monthly mimeographed publication telling the story of the Ostan Ministry of Agriculture and furnishing a report to all Ostan technicians of program operations.

Some of these regular or semi-regular publications are under the name of the Ostan in which they are published; an example: The Publication of the Extension Service of Khorasan which started in 1333, of

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Iranian calendar. A summary was written in English at the end.

The Ministry of Agriculture started in Tir 1333 (Summer of 1954), a series of publications under the title of Agricultural Extension Service of Iran and sub-titles to indicate the contents of the publication; examples: "Controlling the Melon Fruit Fly", "Controlling the Grape Vine Powdery Mildew" and the like. On the cover of almost all the Agricultural Extension Service publications is its emblem.¹ (See exhibit 7.)

5. Irrigation

With irrigation water as limited as it is in Iran everything possible must be done to make efficient use of the water. The past rulers and kings of Iran built dams to provide irrigation water. In the past, as well as the present, need of water for survival was great. Some of the oldest dams in Iran were built near Shushtar on the Karun River i.e., three of these dams date from the time of Shahpour the First, more than 1,700 years ago. During the reign of this king, the Roman Emperor Valerean invaded Iran from Iraq. He conquered some parts of Khuzistan, destroying many bridges and dams before he was captured. In payment of reparations he had to rebuild all the bridges he had destroyed and also these three dams. In those days the Romans were well advanced in construction, so Valerian brought neutral cement from Rome for these works. Two of the three dams are still in good condition; the first, i.e., the Meazan dam, is mainly for control of the quantity of water going to Gargar Dam. The second is Gargar Dam, and the third is called Shahdervan. The next dam of any consequence is Band-i-Amir which was built about 700 years ago. Also Band-i-faze Abad is worth mentioning.

¹Most of the Ministry of Agriculture publications are published with the cooperation of TCI or FAO specialists as Mr. Najjar.
Probably the greatest advance made in construction of dams, bridges and other works was during the reign of Shah Abbass the Great, from 1617 to 1659. This period is known as the beginning of Modern Iran. Bandi Shah Abbass Dam is one of the best examples of the construction of that period, as are the dam type bridges and low diversion weirs at Isfahan. Many projects have been drawn or put to work during recent years; examples: Shabankareh Dam, which was completed in 1319 (1940) to divert water from Shahpour River and built to provide water for the irrigation of an area of approximately 25,000 acres (10,000 hectares).

Much of Iran’s supply of irrigation water is wasted. The causes are: (1) poorly leveled land caused by the lack of proper equipment for measuring the slope or fall of land and for moving soil, lack of understanding the relationship between adequate uniform water penetration and crop yields; (2) inadequate control of water caused by the bad construction of the field and ditches and the like; (3) improper methods of culture of some crops; (4) unwise irrigation schedules; (5) poorly balanced cropping system, not choosing the crops which will make the best use of the available water; (6) methods of applying water not adapted to soil type; (7) inadequate tillage equipment; and (8) waste of winter and spring flood water.

Some of the technical assistance irrigation development agreements in addition to Project No. 39, may be mentioned and summarized as follows:

The three major irrigation developments, on which construction

1The Shabankareh project, located on the Persian Gulf coastal plain, 80 KM north of Busher, is under the management of the Irrigation Bongah. With full development, the project should cover about 10,000 hectares. The area presently supplied with water is 3,600 hectares. The project was put into operation in 1941.
had been started by the Irrigation Bongah, were made cooperative projects by the TCI and the Government of Iran. These are: Golpayegan Dam Construction, Project Agreement No. 11; Kuhrang Tunnel and Sheikh Ali Khan Dam, Project Agreement No. 21, and Karkheh Dam, Project Agreement No. 25.

The Karadj Dam project was a multi-purpose dam designed to supply irrigation water for the Karadj Valley, supply water for Tehran, and provide hydroelectric power. American technicians made a general survey in 1946 and 1949, but the construction of the dam was given to a French firm. Project Agreement No. 73 was signed in November 1953 for the completion of the construction and the United States agreed to pay $1,400,000 for the machinery, equipment and services. A total of seventeen million dollars was the estimate for the completion of the dam.¹

Project Agreement No. 22 for the development of Land and Water Use Plans, entered into on June 20, 1952, and extended and amended on November 11, 1953, called for the organization and development of plans for full utilization of the water and land resources of Iran. In addition to its emphasis upon the necessity for investigations for land and water utilization, this agreement also provided for the training of a cadre of Iranian technicians in the principles of land classification, drainage requirement and irrigation practices.

Project Agreement No. 71, entered into on July 9, 1953, called for organization of a soil mechanics and testing materials laboratory at Tehran University, its services to be available to the public in all phases of soil research, hydraulics, mineral ore testing, etc. In

¹The Karadj Dam was relocated and a road was built around the proposed site which cost about three million dollars.
addition to these services, the laboratory was to provide facilities for University students to carry on research work concerning these subjects.

On December 7, 1951, a contract was signed with Louis J. Richards, an American, for the drilling of 20 deep wells. This contract was amended April 1, 1952, increasing the number to 30 for which $350,000 was made available through Project Agreement No. 27.

Project Agreement No. 29 was signed for the demonstration of ghanat construction.¹

For the improvement of farm irrigation systems and practices Project Agreement No. 59 was signed. The primary object of this project agreement was to give technical assistance to Iranian Government officials, to students and farmers in research and educational and demonstration activities to improve the farm irrigation application efficiency.

¹Substantial progress has been made in Iran in the development and use of underground water for irrigation by the construction of hundreds of ghanats. The large majority of farm land, villages and gardens receive their water from this source. Shanat is an underground water canal which has been designed and built to bring the water from the underground resources to the surface. It is still widely built in Iran and in the same way as thousands of years ago. The design is as follows:

(1) pickers (2) workers who remove the soil from ghanat (3) workers who hoist soil to the surface (4) water collecting pit (5) pumping device to send air down
Dr. Roskelley summarized the objectives of Project No. 59 as follows:

The project for the development of improved irrigation system and irrigation practices (No. 59) was designed to introduce research and demonstration activities to improve irrigation efficiency through the following procedures: 1) Improved cultural practices and irrigation methods, 2) Develop more efficient control and conveyance of water, 3) Improved land preparation, cultivation and tillage in order to make more efficient use of water, 4) Revise irrigation schedules, 5) Introduce activities designed to determine water and soil moisture, 6) Help develop balanced cropping system, 7) Made more effective use of flood water, 8) Introduce more uniform distribution of water over the land irrigated, 9) Reduce erosion and leaching processes.1

Almost all the irrigation improvement system of ostan were put through under this project No. 59.2 For example Jay Hall reported the following:

During the two years of Mr. Bruce Anderson's stay in Shiraz this project was developed very extensively. Experimental work was started in connection with the Plant Science projects to establish some practical information of the use of irrigation water.

The work Mr. Anderson started has been continued by the Iranian personnel trained under him.3

Mr. Wood noted the following:

Improved methods of irrigation were instructed on the fields in the Ahwas bongah. Eight hectares of cereals, wheat and barley were grown successfully on land which was prepared for corregation irrigation.

One hectare of vetch and grass and 3 hectares of alfalfa are being grown under the corregation system of irrigation. Lack of irrigation skill of the local laborers is a serious problem in any kind of irrigation improvement. No irrigation improvement can be made at

1Roskelley, op. cit., pp. 28-29.

2This project now is a part of the Farm Machinery Cooperative Project No. 67.

the Ahwaz bongah until adequate drainage is installed.

Some very successful irrigation work has been done with the extension agents in farm demonstrations and at the Khorramabed bongah. Improved methods of irrigation in cotton, corn, potatoes, sugar beets, and wheat are a result of extension agents work in the Barugerd and Khorramabed areas. Locally manufactured corregators and levelers have been demonstrated there also.

It is worth mentioning that during the week of November 6-13, 1954 the irrigation and practices of nine countries of the Near East were jointly considered by 45 representatives of International Bodies in conference in Tehran, Iran. The world-wide problem given special attention was the deterioration of irrigation land as a result of water logging or salinity, or both together. In this conference the irrigation and drainage progress and problems of Iran and eight other countries were presented and discussed. Seven out of nine countries (exceptions: Egypt and Pakistan) made little progress in land drainage and reclamation, even though the need was very evident in nearly all of the countries.

The objectives for such a cooperation from the point of view of U.S. officials were explained as follows:

One of the main objectives of our general cooperation with other agencies and groups within and outside of the United States is the improvement of our investigation techniques, and the development of new procedure and practices which will enable us to accomplish a better job of project planning and to solve soil and drainage problems on irrigation lands. Several cooperative research activities between the Bureau of Reclamation and other agencies are underway at present. One investigation is concerned with treatments on saline-alkaline soils to determine whether reclamation is possible and economically feasible. Another study has to do with the improvement of land drainage and reclaiming lands on which conventional methods of drainage have been unsuccessful. A third problem on which

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2The other countries attending the conference were Egypt, Cyprus, Ethiopia, Iraq, Pakistan, Sudan, Syria and Turkey.
considerable thought has been given to the controlled use of irrigation water on slowly permeable soils so that only a relatively small amount needs to move through the substrate. Only through such experimentation and the use of experience gained in developing and operating older irrigation projects can we hope to develop and maintain a sustained and successful irrigated agriculture.\(^1\)

Some of the older projects and several of the larger modern irrigation projects of Iran were confronted with the problems of soil waterlogging and resulting salinity and alkali and sterility of the root-zone soils. Very few, if any, of the managers of projects had given serious attention to the control of the sources of excess water from canal seepage losses or from over-irrigation of the root-zone soils.

There are some new irrigation projects on which the interrelationship of irrigation and drainage is of real importance. Crop losses in the root-zone soils have, in recent years, been very large. Perplexing conditions have developed in the Shabankarah project area.\(^2\)

Some other areas of which efficient irrigation practices and drainage and land reclamation were essential are listed herewith:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Ostan (Province)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Garmasr</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gezel-Hessar</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Korkheh</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ahoudasht</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tehran</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tehran</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Khuzistan</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Khuzistan</td>
<td></td>
</tr>
</tbody>
</table>


Dr. O. W. Israelsen explained that training young Iranian in the methods of development of water resources and of irrigation and drainage was very urgent. The country could not afford to delay the building of dams, reservoirs, diversion weirs, modern canals, pipe lines, tube wells, pumping plants, and irrigation and drainage systems.

In Iran more complete water control is essential to the well being of every man.²

The technicians who worked in Iran made many recommendations.³

The following was made by Mr. Morrill who worked in the Khorasan Ostan.

(1) The farmer should be shown how to use the moisture probe as well as other simple methods of testing penetration. These methods should be taught to the farmer by irrigation engineers and extension agents.

(2) Present practices governing use of irrigation water should be adjusted to permit division of water into smaller streams and its use for longer periods of time. This would permit better and more efficient use of irrigation water.

(3) Measurement of water and establishment of charges according to amount of water used should be encouraged.

And the following by Hyman for Kerman:

(1) That a competent irrigation engineer be assigned to this Ostan.

(2) Make measurements of water and soil requirements.

(3) Teach the farmers and gardeners row irrigations and cultivation to make more economical use of irrigation water.

(4) Stop denuding of the water sheds so that water may

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1Ibid., p. 10-230.


3The following persons contributed their efforts to irrigation improvements: Israelsen, Bowman, Griffin, Milligan, Morrill, Whalquist, Wood and Gardner.

be held in the mountain for later use.

(5) Adjust crops rotation to better utilization of present irrigation water.¹

6. Plant science

The Iranian farmer generally had totally ineffective equipment for growing crops by modern methods. Except for the steel-tipped, wooden plow drawn by one or two oxen, donkeys, or small mules, and perhaps a small wooden drag or clod-crusher, most farmers had only hand tools for land preparation and cultivation. Almost nothing but the human hand was available for seeding and planting operations.

Total crop production was low for a number of reasons. Scientific knowledge about soil was lacking; much soil had been depleted of its fertility and had become unproductive as a result of centuries of continuous cropping and failure to use fertilizers; unnecessary harvest losses existed i.e., delay because of labor shortage; there was ineffective control of crop enemies; there were improper methods of culture; and there had been unwise choice of agronomic and horticultural crops.

Dr. George Stewart prepared statistics on farming in Iran. He used the best information he could obtain. The cultivated area equalled twelve per cent of the total land area. Of the cultivated portion a little more than one-third (not quite five per cent of the total acreage) was cropped annually. Eighty-eight per cent was uncultivated. Of that sixty-eight per cent was used for grazing. Two per cent of the total area was in woodlot. Of the cultivated lands cropped each year two thirds grew winter wheat. Cereals were the only crops grown in every ostan. Most cereals were consumed directly by the people; thus very little of it was fed to stock. Iran usually had enough grain for

¹Hymas, op. cit., p. 6.
her own use, but seldom had much for export. An increase in the wheat yield would be of transcendent importance to everybody in Iran.\(^1\)

It was estimated that 80% of the tillable land was devoted to dry land cereals with 20% of the land used to grow irrigated crops including: cereals, cotton, sugar beets, tobacco, vegetables and fruit. Very few other field or forage crops were grown. Every tillable piece of land had been cultivated at one time or another.

Project Agreement No. 75 was signed for Plant Science improvement.

(a) Wheat and barley

Because of the importance of wheat to Iran, the major experimentation at Karadj College had been with this crop. Dean Ataii had developed a new variety called Shahpasand. Trials had demonstrated that about forty per cent more grain per acre could be produced with no more effort or, more important, no more water. Having completed this much research, the College turned to other studies. Shahpasand wheat had never been grown more than forty kilometers from Karadj College.

The first significant agricultural program of TCI was the seed distribution program initiated by Dr. G. Stewart in the fall of 1951. The gradual change and exchange of the local cereal seeds of ostans started with shahpasand seed wheat and California barley grains.

The following was the program and plan for changing and exchanging cereal seeds in shahrestans of the Ostans of Azarbaijan:

One hundred tons of shahpasand wheat seed and 50 tons of California barley were imported from Karadj during the first year (1331-32 Iranian calendar). This seed was distributed among the land owners and farmers. During the second year (32-33) half of all the wheat and barley produced

\(^{1}\)Warne, op. cit., p. 226 passim.
was purchased from the land owners and farmers at a rate which would be 20% higher than the market price. The amount purchased was to be at least 500 tons of wheat and 375 tons of barley. Five hundred tons of wheat and 375 tons of barley were distributed among the land owners and farmers of the villages.

In the first year the seeds were distributed exclusively near the centers of the shahrestans and in districts where it was possible for agriculture functionaries of Point Four experts to inspect. The seeds were delivered only to landowners interested in changing their seed and those that obligated themselves to sell half the production of the first year. During the second year seeds were distributed among villagers in districts located far from the center of the shahrestans.¹

James Wood, in his report relating to the distribution of the cereal seed, indicated:

In the fall of 1951, an extensive cereals seed distribution program was carried forward. We sold 121 tons of seed wheat and 18 tons of barley. This seed was supplied by the Karadj College at a national price based on the commercial price plus 25%. The project was useful in supplying fairly good seed to a large number of farmers.²

In Ahwaz the cereal program consisted of seed distribution in which two tons of wheat were distributed as elite seed stock. Recipients should return seed plus 10% to the agent after harvest so that the program could continue.³

¹Despain, "Papers from the Desk of B. E. Despain-Tabriz Region Extensionist for Azerbaijan, Iran and Agriculturist for Rasht, Iran," op. cit., passim.
²Wood, op. cit. p. 3.
³Would board plows were introduced to the farmers (except in a few areas where farmers used them regularly). Working with them was generally disappointing. The main obstacle in the introduction of these plows was the difficulty agents had in transporting the plows from village to village.
(b) Corn

The corn crop in Iran had been very low and in poor production. When TOI started its program in the ostan of the following was recommended in Azerbaijan for sifting of corn seed.

The seeds being sown in the Borough of Azerbaijan were not clean. They were most often mixed with seeds of weeds and other corns of inferior quality which caused the increase of weeds consequently weakening farming lands. Sifting machines were used in cleaning the available seeds to prevent mixing with weeds. Usually farmers were told the correct way of farming and the desirability of having clean seed. There was no quick progress in the early years. But after one or two years farmers who learned the good use of clean seed endeavored personally to use clean seeds.

In the first two years small and big seed cleaning machines were used for cleaning and treating ten corn producing sections of Azerbaijan. It was necessary that each of the above sections have ten small treating machines. All actions and operations were carried out freely in the first years and small seed cleaning machines were available without charge. It was recommended that one hundred small seed cleaning machines for corn-producing sections be divided among two hundred villagers. All must be supervised by responsible personnel. The ten engined cleaning machines must be worked by 10 mechanics and 10 assistant mechanics. Work-time in the two seasons of spring and autumn should not be more than 90 days. Considering travel time the whole time would be no more than 100 days. The time estimated for the procedure of this program was two years.\(^1\)

(c) Sugar industry

The sugar industry had been started in Iran in 1932. The late

\(^1\)Despain "Papers from the Desk of Despain," op. cit., passim.
King, His Majesty Reza Shah, had six factories ordered similar to the Karadj factory which had been completed in 1933. This contract was given to a Czechoslovakian firm.

Construction of the Fassa Sugar Refinery (Project Agreement No. 4) was signed June 21, 1952 and called for a contribution by TCA of $635,000; and the project for construction of two other sugar refineries (Project Agreement No. 65) was signed June 28, 1953 and called for a contribution by TCA of $931,355.65. Both agreements were between the Seven Year Plan Organization and the Technical Cooperation Administration. The Technical Cooperation Administration furnished the money through the Joint Fund for Economic Development.

The Fassa Sugar Factory (Project Agreement No. 4) is located near Fassa, approximately 100 miles southeast of Shiraz. Apparently the reason for this location was to provide a replacement crop for opium poppies which were grown in large quantities in this area.1

At the time that the Project Agreement No. 65 was signed no definite decision had been made as to locations for the sugar factories. The locations finally decided on were as follows: (1) Vashiz, in the Bardsir district 45 miles southwest of Kerman. (Sugar beets were a new crop in this area. Development would be slow), and (2) Chenaran, which is about 36 miles north of Meshed.

The following is a list of the sugar factories of Iran with dates of completion and capacity until 1955:

<table>
<thead>
<tr>
<th>Factory</th>
<th>Year completed</th>
<th>Daily cap. of beets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kahrizak</td>
<td>1893</td>
<td>150 tons</td>
</tr>
<tr>
<td>Karadj</td>
<td>1933</td>
<td>400 tons</td>
</tr>
</tbody>
</table>

1Utilization and marketing of beet pulp and molasses had made little progress. Beet growing methods need improvement. Technical assistance is still needed.
Varamin (shut down for several years. Opened in 1954 as cane sugar refinery.)
Shahi (Later transferred to Shazand.)
Marvdasht
Abkuh
Miandoab
Rezaieh
Torbat Heiderieh
Fassa

<table>
<thead>
<tr>
<th>Year</th>
<th>Refined Sugar (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1934</td>
<td>80</td>
</tr>
<tr>
<td>1934</td>
<td>450</td>
</tr>
<tr>
<td>1935</td>
<td>450</td>
</tr>
<tr>
<td>1935</td>
<td>650</td>
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<td>1936</td>
<td>650</td>
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<tr>
<td>1936</td>
<td>650</td>
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<tr>
<td>1950</td>
<td>700</td>
</tr>
<tr>
<td>1951</td>
<td>700</td>
</tr>
<tr>
<td>1954</td>
<td>350</td>
</tr>
</tbody>
</table>

The seed improvement program and increasing sugar beet production in ostans was carried out successfully. The purpose of such a program in the cities of Rezaieh and Miandoab, i.e., was demonstrating the best methods of sugar beet cultivation; increasing production; by using chemical and natural manures; proper activities performances and utilization of the best methods of sowing seeds. Establishing two model farms in 3 hectares of land was recommended in each city for the year 1952-53. Sowing methods were taught to the farmers by farm agents. Chemical and natural manures, number of irrigation weeding, thinning spaces of the lands, dates of cultivation and harvesting were considered. The results were given farmers in order to help them improve their productions. Both Ministry of Agriculture and Point IV technicians cooperated to carry on that program.

Wilford Cannon explained the future program for improvement and explanation of the sugar industry and noted that on May 1, 1956 the Director of Plan Organization selected a committee of Plan Organization and sugar company officials to draw up a comprehensive program for improvement and expansion of the sugar industry. Cannon was advisor to

1Wilford Y. Cannon, "Report on Sugar Industry in Iran" (unpublished, 1955), pp. 3-4. Mashiz Refinery is completed and now is in operation.
that committee with power to vote. Many sub-committee meetings were held to consider various phases of the program.

The final report outlined a seven year program divided into three parts: (1) increasing sugar beet yields per hectare. (This included modernization); (2) enlarging four of the sugar factories. (Installing three molasses desugarizing plants.) Building several pulp drying plants; and (3) building one cane sugar refinery, one cane sugar and four beet sugar factories.

There is better planning in both the sugar company and Plan Organization than when Cannon arrived in the Mission. Further improvement can be made with the new centralization of authority.¹

Many recommendations were made by TCI technicians working in ostans, the following is an example:

(1) That land be properly prepared and fertilized in the fall for the next years planting.
(2) That beets be planted just as early as possible in the spring.
(3) That field men encourage row planting, irrigation and cultivation.
(4) That farmers grow beets in a well planned and regular rotation.
(5) Farmers be informed of the value of sugar beets by-products as livestock feed.²

Cane sugar had been raised in Iran from about five hundred years B.C. to approximately 800 years A.D. when the Arab invasion destroyed the Karun River Dams. Until about fifteen to twenty years ago sugar cane was raised in Khuzistan in very small quantities and mostly for local use. During the last two decades the sugar cane work in Ostan 6, Khuzistan, started and during the years increased. Plan Organization

¹Wilford Y. Cannon, "Completion of Tour Report" (unpublished, 1951-56), pp. 6-7 passim.
²Hymas, op. cit., p. 11.
and TCI technicians cooperated with the object of finding a suitable crop for Kuzistan.

(d) Cotton Seed Production

One of the first cotton seed improvement projects was the Garmeser cotton seed project. Garmeser is a district of public domain lands of some forty three villages. The objective of the project was a large local supply of pure cocler pedigree cotton. By working in the public domain owned villages the advantage of greater cooperation could be assumed. James Wood was one of the very first TCI technicians who supervised this project. He explained in his terminal report that the land was plowed free for all of the farmers who would use the seed. The prepared cotton seed became the sole property of the public domain and other native agencies; thus Point IV could not effect any type of reasonable distribution. An attempt was made to proceed on a cooperative self supported program. The pressure to proceed as before was tremendous and a compromise was negotiated. The cotton was hauled to the gin free, a rate of 600 rials per hectare on the plowing was set, 200 to be paid by the farmer, 200 by the public domain and 200 absorbed by Point IV. Some 1200 hectare of public domain lands were plowed. The project was a success. The cocler pedigree variety seed did get into use by various means throughout Iran. The result was improvement.¹

In most ostan's the variety tests were well managed and reliable data was secured. After a few years the cotton investigation was discontinued by the TCI and the project was turned over to Plan Organization or the Ministry of Agriculture.

In 1952 a Project Agreement was made with the United States for a

¹Wood, op. cit., pp. 3-4 passim.
(e) Other crops

The rice improvement program was going on along with other improvements under Project No. 75. Despain reported: "The experimental work for rice has been prepared with the assistance of Glenn Walquist. . . ."\(^1\)

Vegetable work at the Ahwaz Bongah was fair. Peas, tomatoes, cabbage and greens were grown successfully. Potatoes failed in the heavy saline soil but could be produced in certain sandy soils. Seed for lettuce, peas, melons, and sweet corn were being produced for distribution. The vegetable demonstrations at Khorramabad were very good. Organized field days were planned to demonstrate these plots.

Citrus introduction and improvement was going on at the Ahwaz Bongah. Seven thousand new seedlings were set out for the spring and were ready for grafting for the fall. The start might form the nucleus of a good citrus culture in Khuzistan.

Some new varieties of apples, cherries and strawberries were introduced to the Khorramabad Bongah.

In improvement work, (project 750) some 1.00 buds of pistachio were grafted in the Behbehan area in cooperation with the extension agent there.

Several varieties of jute were introduced and grew in a variety test at the Ahwaz Bongah.\(^2\)

The work in forage demonstration at the Ahwaz Bongah consisted of planting of vetch, alfalfa, sweet clover, corn, sudangrass, millet,

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\(^2\)Wood, op. cit., p. 13 passim.
and sorghum. Production of these crops was carried on under conditions of salty soil, irregular water schedules and no drainage. Those conditions at Bongah were poor. Some feed was produced and a good stand of alfalfa too.

Forage work at Khorramabad and the parts in the north of that area were promising. Twelve pastures were planted and although only four of them were good, the agents were enthusiastic and continued their work with more planting.

The USOM aid to agriculture in Ostan 6 was centralized around three main G.O.I. institutions, the Ahwaz Bongah, the Khorramabad Bongah and the Behbehan Bongah. The Ahwaz Bongah, an agricultural garden with 200 hectares of available land, was improved by Point IV aid. Fields were leveled, pumps and pump intakes were improved, diversion ditches were built, a seed house and machinery storage space were constructed and many tractor hours and labor, seed, fertilizer and equipment were supplied by Point IV. That help was of little real benefit because the soil was high in salt, and was poorly drained.

The Khorramabad Bongah, a 16 hectare tract in the north of the ostan along with 14 hectares at Zagheh, was a small agricultural station. The soil and water was good and some improvements were made at little expense. That Bongah is presently operating as a well organized backstopping demonstration area and headquarters.

The Behbehan Bongah, in the southeast, was an old government garden which Point IV had supplied with water and financial assistance. It was developed as a demonstration area. To date some demonstrations in vegetables and a few trees have been produced there. 1

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1Ibid., p. 9, passim.
The following is a typical recommendation for the plant science
(Khorassan area):

1. Consideration should be given to the problem of providing the farmers of the Khorassan Region with pure or certified seeds including Shahpasand wheat, California Barley, Alfalfa, vegetable seeds, etc. Such seeds should preferably be supplied from some reliable commercial source within Khorassan which would continue to provide them from year to year.

2. In addition to the work conducted at Torogh numerous other demonstrations on all important crops should be conducted throughout the Khorassan to teach furrow irrigation and better methods of farming. It is believed that this work should be conducted on the farms of the landlords and supervised largely by the extension agents.

3. Experimental work, started this year at Torogh to study the influence of different levels of water application on sugar beets, should be extended to study relationships of fertility to different levels of water applications.

4. Extensive comparative studies on yields, total labor costs and water consumption for sugar beets under the cart and row systems of culture should be undertaken in 1955.

5. More effort needs to be made to find and establish reliable commercial supply sources of fertilizers and insecticides needed by farmers and peasants in the Khorassan Region.

6. Establishment of Pure Seed Cotton Communities, as sources of pure seed of adapted cotton varieties, is essential for improving and maintaining satisfactory yields of cotton in the Khorassan Region.

7. Reforestation should be undertaken on some specific area of the Khorassan Region after which other eroded and denuded areas should be reforested in the order of their importance.

(f) Insect and pest control

Insect pests and plant diseases present a serious threat to the security of the farmer in Iran. The following shows the result of a spray on pistachio nut trees in the vicinity of Dameghan:

A Point IV technician studied the problem and found that two insect pests, plus a pollination problem, had caused the crop loss. A spray plan was worked out that also solved the pollination problem. American and Iranian technicians went into the area and convinced most of the growers that if the tree owners did the work the problem could be overcome at a cost of about three cents a tree.

1Morrill, op. cit., p. 23.
for chemicals, and they got back an average return per
tree of more than $10.00, or a total crop valued at
more than $400,000. Those tree owners who did not join
in the plan had another crop failure, and one of them
brought a handful of his wormy nuts to the Point IV
technicians and said, 'Look at them. I feel just like
they look.'

Charles Hymas reported:

In Kerman eight power sprayers were purchased from
project funds and each area where the agents were working
was furnished a sprayer with an experienced man to operate
it. DDT was furnished for the demonstration and most out-
standing results have been accomplished.

Mr. Gardenshire from the national office has done a
very outstanding piece of work spraying pistachios from
airplane at Rafsanjan. Leaf hoppers were controlled,
Passila spray was not quite so successful. The agents
reported that farmers are ready to purchase their own
plane for next year spraying.

The project and program of fighting against plant pests of the
Ostans of Azarbaijan started in the year 1952. The program incorpo-
rated the following: (1) guidance and technical help was given land-
lords and farmers concerning the pests of fruit trees. Technical and
educated personnel were used for supervising the activity of fighting.
(2) direct fighting was done against locust, mouse, vine quarantine.
The program covered many agricultural pests. Aid was given to fight
off 85,000 hectares from native and Moroccan locust, including the
fighting off of 130,000 hectares mice and pests of vine quarantine,
800 hectares. The purchase of poison and other fighting materials was

1William E. Warner, "Presentation of USOM/Iran Program" (unpublished,
no date given), p. 6.

2Hymas, op. cit., p. 16.

3The terminal reports of Dr. Stewart, Dr. Ballard, Professor
Milligan and Glenn Whalquist outline, in some detail, the programs that
have been developed in plant science. Among others, the following tech-
nicians contributed their efforts to the plant science: Cannon, Kirk,
and Bembower (his terminal report was published in the American Journal
by ICA).
to be prepared by the Ministry of Agriculture, landlords and farmers.\(^1\)

7. Forestry and range

Iran has approximately twenty million hectares of forest. This amount represents almost twelve per cent of the total area of the country. Pasture land is about fifteen to sixteen million hectares.

"Out of the total area of 400,000,000 acres, about 265,000,000 are uncultivatable mountains and deserts, 50,000,000 forest, 35,000,000 pasture land and 50,000,000 cultivatable."\(^2\)

Five original types of forests may be distinguished in Iran. They are as follows: (See exhibit 6.)

<table>
<thead>
<tr>
<th>Forest Type</th>
<th>Hectares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oak-beech (Quercus-Fagus) forest of the Caspian region</td>
<td>3,600,000</td>
</tr>
<tr>
<td>Scrub-oak forest of the Northwest.</td>
<td>11,300,000</td>
</tr>
<tr>
<td>Pastacia forest.</td>
<td>2,800,000</td>
</tr>
<tr>
<td>Forest of the Mountaineous limestone region of the Northwest.</td>
<td>1,300,000</td>
</tr>
<tr>
<td>Forest of the dry subtropical region of the South and Southeast.</td>
<td>500,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,500,000</strong></td>
</tr>
</tbody>
</table>

Iran's forests constitute a very large potential source of wealth, but uncontrolled grazing, indiscriminate felling and the lack of an alternative to charcoal as fuel (as in many other countries) have destroyed or damaged many forest areas. The most valuable forests of Iran are to be found on the northern slopes of the Alborz range, where in many places dense virgin forests cover wide areas. "The forest is relatively fire proof because of the high precipitation and high humidity."

\(^1\)Despain "Papers from the Desk of B. E. Despain-Tabriz Region Extensionist for Azarbaijan, Iran and Agriculturist for Haamt, Iran," op. cit., passim.


The greatest drain on the forest is charcoal. It has been fortunate that mountain road building machinery and other elements of highly mechanized forest harvesting have not reached any of these forest areas.

Until 1943 the exploitation of forests in Iran was almost entirely uncontrolled, but in January of that year a law, set up the Forest Organization (now under the general administrative control of the Ministry of Agriculture), gave autonomy with regard to legal and commercial matters.

The restoration of the forest was and still is of vital importance to the economy and wealth of Iran. The following is an example of what has been started: Namak Abrood which is over 96 hectares was reserved in the year 1951 (1330), and in the year 1956 (1335) in a strip 50 meters wide and 800 meters long (4 hectares) the crooked, useless trees were taken out and 7500 maple trees and some oak seeds were planted. The result, so far, seems promising. From the crooked trees and the cut bushes 14 tons of charcoal were produced.

Project Agreement No. 43 was made for forest improvement and the related matters.

Kiln specialists recommend the replacement of the old type kilns—production 15-18 per cent which could make charcoal only from the green wood—to two type kilns, (1) Brick fixed Connecticut kilns with a production of 28-30 per cent. These kilns require 36 hours to produce two tons of charcoal and thick logs and dry wood may be used, and (2) movable French type-Tranchant—with a production of 25 per cent requires

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2 The first one was built at Kia Kola.
20-22 hours to produce 200-240 kilograms charcoal and its volume is about 1/3 that of Connecticut kilns.

For the improvement of forest conditions many programs were introduced and put to work. The following was set up for the Rezaieh, Mahabad, and Arasbaran areas and is probably the best example:

The objectives were as follows: Establishing of a guard for the protection of the forest. Change of fuel from charcoal of kerosene. Propagating of metal furnace. Planting of seeds in deserted forests. Period of performing program, two years (53-54). Due consideration were made to balance the production of charcoal. The permission for charcoal exploitation was given only through forestal outposts. Effective measures were taken to substitute kerosene for charcoal and fire-wood. Attempts were made to provide the kerosene for use by governmental offices and barracks. It would cover all the third and fourth shahrestans areas. The felling of trees was prohibited in the forests of Jermi, Badkar and Arasbaran, for a few years. Arboriculture was made in every area of the forest in which the necessity arose; that program also covered setting trees.1

The establishment of village woodlots in the suburbs of villages has been another part of the TCI achievement. The objectives of such an undertaking for Otans 3 and 4-Azarbaijan—are mentioned below:

The purpose of achieving this program is to prepare fuel for farmers who are inhabitants of buroughs, and the result of the achievement of this program will be the prevention of burning manure, and it will also be a great help in the prevention of the annilation of woods in the forest regions. Attempt will be made in the selection of various artificial coppice trees, in which trees which are

1Despain, "Papers from the Desk of B. E. Despain-Tabriz Region Extensionist for Azerbaijan, Iran and Agriculturist for Rasht, Iran," op. cit., passim.
drought resisting will be selected and planted. In this selection should be considered that the standard rainfall in ordinary years in the Ostans of Azerbaijan, is between 300-350 millimeters (with the exception of one or two regions), therefore any measures that are taken will be upon this score and the mentioned rainfall numbers.¹

Jay Hall explained the application of project No. 43 for the vicinity of Shiraz and noted that under the Shiraz forestry project woodlots have been planted near villages. These woodlots provided the villagers with fuel and building materials. Wherever possible the woodlots were planted on land which could be irrigated. Many woodlots were planted on dry land where irrigation water was not available. Good results were obtained from many of them.

A forestry nursery was established at Bajgah. Demonstration dry woodlot was planted at Bajgah. The trees were planted in contour ditches just inside the north boundary of the station. These plantings were made on land too high and rocky for irrigation. In that woodlot there were 300 almond trees, 1500 ash trees, 3000 trees of heaven and 1000 locust trees. Another 1000 trees of heaven were planted around the water spreading terraces up in the eastern end of the Bajgah valley.

Two windbreaks were planted 630 meters apart. In these windbreaks the following trees were planted: 1000 pine trees, 200 almond trees, 100 pomegranate trees, 1400 locust trees, 1400 ash trees and 200 Salzalak trees.

During 1954 and 55, 40,000 and 30,000 trees respectively were planted in village woodlots.²

Forestry work for Ostans six-Khuzistan-has not been extensive but has

¹Ibid. Ministry of Agriculture and the Forest Bongah with the co-operation of Point IV were responsible for this program.

²Hall, op. cit., p. 11 passim.
been successful. A woodlot part area of 20 hectares has been planted near Ahwaz and grew satisfactorily. Planting was made in long contour ditches to facilitate irrigation and roads and picnic areas were built to increase utility.

Motion pictures of tree planting have been produced by technicians and shown to thousands of peasants across the country.

The range seeding work was fairly extensive and some of the plantings show some favorable results. For example, at Khorraramabad 30 hectares of foothill land was seeded by broadcasting in December 1955. Some of that was tilled and some was untilled land. Inspection indicated a very poor stand.

At Dezful 15 hectares of good tilled soil were broadcast with range grass seeds. The results were not good.

In January 1955, near Shushtar 30 hectares of range grasses were broadcast on tilled soil which crusted and that crusting retarded the growth. About 25% grew in spite of the existing conditions.

At Mollasani a four hectare field drilled November of 1955 was a failure due to dry weather. A few love grass plants appeared but not in sufficient numbers to warrant retention.

On the sandy soil near Karkheh twenty hectares of range grasses were drilled on disced ground between November 14 and 17, 1955. Some of the wheat grasses and the weeping love grass became well established and upon an inspection a very good stand was evident. This range reseeding was very important to the whole area of Iran.¹

Typical recommendations for forestry (for Kerman area):

(1) That plantings of trees, such as allanthus, elm, ash, Russian Olive, or tamarach, be made near the villages to

¹Wood, op. cit., p. 12. passim.
use the overflow water and to be used for fuel.
(2) That sufficient technical help and financial aid be given to stabilize the sand dunes concentrated south of Kerman, as this is where the worst sand storms originate. Lay down windrows of brush to prevent moving until vegetation starts. Cuttings of tamarac and seeding haloxylon would probably be most successful.
(3) A large program of protected reforestation should be started which would concentrate, to begin with, upon the highest slopes of the mountains, the logical place to start holding the water in the soil, so that it can seep gradually into the ghanate and wells in the mountains where the water first hits the soil.
(4) The cost of coal and oil should be reduced to the point where it would be more economical than brush or charcoal for fuel.1

Recommendations for range:

1. That plot No. 4 be moved up into the Baft area.
2. That additional demonstration plots be established in all of the higher areas.
3. That the government regulate grazing by establishing rotation grazing.
4. Encourage semi-nomad tribes to plant range grasses on part of their property each year, where grazing could be restricted.
5. Obtain native grass seed for planting wherever possible.
6. Develop water holes so animals would not have to travel so far for water.2

Recommendations for forage:

1. Five or six ranges study and observation plots in different areas of the Khorassan should be designated and fenced. These plots should be established in the fall and winter of 1954 and the fencing should be of wire construction and according to plans and specifications set up by Ministry and USM/Iran range technicians in Tehran.
2. Additional small acreages of the wheatgrasses should be reseeded during the fall and winter of 1954 providing guarantees of protected grazing for two years and restricted and controlled grazing thereafter can be given. Lands to be reseeded should be located in the higher rainfall areas of the Khorassan and every other precaution should be taken to secure good stands and establishment of grass.
3. Irrigated pasture and forage demonstrations should be extensively established throughout the

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1Hymas, op. cit., p. 13.

2Ibid.
Khorassan under the supervision of the agricultural extension agents.

4. Work and studies at the Torogh Grassland Experimental area should definitely be continued. This work has been expensive, has been shown to make an important contribution toward the solution of range problems in the Khorassan and should, therefore, not be abandoned. Terraces should be kept in a good state of repair and should possible to opened on the ends as an insurance against overtopping during the rainy season.1

8. Agricultural engineering

The production of Iranian farms was too low to provide an adequate income for the farmer. The tools and methods in common use were the same as those employed for several thousand years. The farms required a tremendous number of man-hours per hectare which resulted in a very small area farmed per worker.2

The introduction of Mechanical power and equipment into Iranian agriculture would be accompanied by the following problems, some of which would be difficult to solve: (1) Introduction of machinery into a village economy would be complicated; (2) the demand for machinery would exceed the supply of both machinery and foreign exchange; (3) both dealers and farmers would need credit for machinery purchases; (4) there would be inadequate service facilities and a shortage of trained machinery operators; and (5) efficient types of machinery and their uses would be demonstrated to farmers.

For agricultural engineering improvements three projects were

1Morrill, op. cit., p. 12.

Among others, the following technicians contributed their share to the forestry and range problems: Dr. Turner, Floyd, and James Stewart.

2Income = (Price received for a unit of product - Cost of producing a unit of product) Number of units produced or I = (P-C)N.
agreed upon (TCA and Iran): (1) Project Agreement No. 59 for the improvement of farm irrigation systems and irrigation practices including drainage (discussed previously); (2) Project Agreement No. 57 made for Farm Machinery Repair Shops and Agricultural Machinery Demonstration and Training Centers; and (3) Project Agreement No. 67 made for Experimental Farm Machinery Cooperatives.

An agricultural engineering training course was designed to give one year training in farm machinery and irrigation to Iranians. At the beginning of the second course, many of the responsibilities for conducting the training were given to Iranians.

The establishment of demonstration center repair shops for Tabriz, Rezaieh and Ardebil is a good example of the start of Project 57:

Farm machinery should be purchased and distributed among farmers. Teachers of technicians for the machinery should be trained. To attain these goals, adequate and suitable machinery should be purchased and agricultural training institutes should be formed through the Ministry of Agriculture and TCI.

In the past it has been proposed that farm cooperatives be established among farmers so as to encourage the importation of farming machinery. Due to the farmers' ignorance of modern farming methods and the attitudes of landlords those plans failed. It was recommended that the following be purchased from the United States of America:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Flow tractor</td>
<td>200</td>
</tr>
<tr>
<td>Manual weeder</td>
<td>100</td>
</tr>
<tr>
<td>Seed sprayer carried by animal</td>
<td>50</td>
</tr>
<tr>
<td>Manual seed sifting machine</td>
<td>100</td>
</tr>
<tr>
<td>Trowel for cutting the oppsets</td>
<td>200</td>
</tr>
<tr>
<td>Light tractor</td>
<td>20</td>
</tr>
<tr>
<td>Barat</td>
<td>25</td>
</tr>
<tr>
<td>Cream beater-machine</td>
<td>100</td>
</tr>
<tr>
<td>Borat</td>
<td>25</td>
</tr>
</tbody>
</table>
Sprayers (carried on back and on vehicles) 500
Sprayers (poroder) 500
Repairing Tools (as much as is needed on parts.) 500

The above mentioned items should be put on sale. The landlords should purchase one each. The farmer who cannot pay cash could purchase on down payments.

In Tabriz, Rezaieh, and Ardebil training centers should be established to train technicians.

The Ministry of Agriculture and the Azerbajan Agricultural Department have tried to encourage the change over to modern equipment. Unfortunately this scheme has not succeeded as expected. To avoid a similar failure by TCI on the fulfillments of the project the reason of the previous failures are explained. In the past the main difficulty in the change over has been the lack of means for repair and spare parts. It is suggested that there be mobile workshops (three units) comprised of mobile cranes, spare parts and means for minor repairs. These should be mounted on trucks. This would facilitate the changing of broken machinery parts on site.1

The project started and J. Wood in his report noted that the field demonstrations were held in seed bed preparation, row crop planting, machine threshing, separation of cereals, and hay bailing. Time was spent investigating the merits and adaptability of local manufactured plows suitable for oxen power.

Threshing machine demonstrations using the George White 26" separator were held in 1954 at Aminabad, Noorabad and Robat Karim.

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1Despain, "Papers from the Desk of B. E. Despain-Tabriz Region Extensionist for Azerbajan, Iran and Agriculturist for Rasht, Iran," op. cit., passim.
General grain harvest conditions were not conducive to economically successful threshing with large machines. The loose grain which was not tied could not be fed into the machines fast enough to get capacity operation. Any practical threshing machine operation by use of a little inventiveness could have improved that fault. Drawing of proposed alterations and attachments were given to Dr. James Elliott in 1954. It was difficult to hold a crew of farmers together to do the threshing. They only wanted to work on their own crop. This was not conducive to a well organized operation.

The use of grain binders was very successful in some fields. Local farmers objected to the use of binders because they do not cut the straw close to the ground. The result was a loss because straw is valuable for feed and building material.

The grain crop, low yield, small size of the fields, high cost of binder twine and method of irrigation were factors which made grain binders an impractical tool for Iran. Grain combines proved practical on some of the better dry farms and large irrigated farms. The same economic factors which favored use of combines over binder in America applied in Iran. The use of combines was confined to a few farms. These were almost always landlord operated farms.

Many demonstrations were designed to teach the use of small plows, harrows, discs, levelers and drills. Those demonstrations were successful. The farmers admitted the superiority of the tool introduced and achieved some skill in its operation. However, on some farms the farmer was still plowing with the primitive iron shod stick plow and leveling with a pole attached to the same implement. There was reason for that resistance to change. It was easier to plow with the native plow because it required less effort to hold and less mental concentration and local draft
animals were poorly fed and very weak. Those factors not only made the use of mould board plows and row crop cultivators difficult but also, from the farmer's point of view, they were impracticable even though he knew they do a better job than he could do with his primitive tools.¹

When starting Project No. 67 for rural cooperative the following were taken into consideration:

(1) Problems in the field of activity: Most village farmers did not have the necessary capital to make a down payment on farm machinery. They are not accustomed to marketing their produce cooperatively. Farmers lack the training and the knowledge to make good use of the machinery they do have. Land uses must change to allow the soil to produce more efficiently. No repair facilities were available nor were parts for machinery.

(2) There were no existing programs.

(3) Resolution: Make farm machinery available for organized groups of farmers in selected areas. Village farmers should be given encouragement in changing their farming practices to profitably employ machinery. This machinery should be amortized over a period of years so that the cost of overhead operation, depreciation and replacement can all be included. Farmers in some areas would then be willing to make the necessary changes. This would take some of the drudgery out of farm work and thus allow farmers time to do home improvement and vegetable production activities. Point IV should make the machinery available for purchase and give direction to setting up the business end of the program. The local farmers and government should provide all other needs.

¹Wood, op. cit., pp. 1-3 passim.
(4) Objectives for Point Four action: These could be started with care exercised to see that each piece of equipment carried its own financial weight at proper time during the season.

(5) Resources required for this program: Farm equipment must be made available in the area. Technicians should be assigned to develop the program. Repair parts and facilities for repair should be made available.

(6) Projection by phases of work: Pilot projects should be set up where interest and financial integrity is favorable.¹

The farm machinery cooperative project was started in the Shiraz area to encourage the use of modern farm machinery and to teach the advantages of working cooperatively.

Bruce H. Anderson laid the foundation for the first cooperative. The first general meeting of this cooperative (located at Zaraghan 20 miles North of Shiraz) was held in August 1953. By October the cooperative was in operation. The work was started with two tractors.

The people of Zaraghan worked together to build a hospital, a school, and an electric power station. Obviously that cooperative spirit started in the community with the organization of the Farm Machinery Cooperative.

After that cooperative was successfully operating, others started asking for cooperatives in their areas. A careful study was made and Kavar and Shiraz were selected as possible sites for new cooperatives.²

¹Despain, "Papers from the Desk of B. E. Despain-Tabriz Region Extensionist for Azarbaijan, Iran and Agriculturist for Rasht, Iran," op. cit., passim.

²Hall, op. cit., p. 12 passim.
Richard Griffin reported in 1957 that:

The cooperatives are in various stages of development and progress. Of the seven which are under direct supervision of Project 67, two are well in their way toward success. These are located at Tehran and Shiraz. The cooperatives at Ahwaz, Neishabour, and Rezaieh are in their infancy, but are making good progress. The cooperative at Isfahan is on its way up after overcoming many difficulties. The cooperative at Kiarola is still having trouble.¹

For the Kerman region C. A. Hymas made these recommendations:

1. That two men be sent to each of these ostanas who have been well trained. One in the organizing and the operation of farm machinery cooperatives and one trained in farm machinery repair and operation.  
2. That farm machinery, now in the custody of the ministry of agriculture, be put in the farm machinery co-ops, to be sold to them and to individual farmers. And financed either through the co-operatives, private individuals, or the agricultural bank.  
3. That the ministry who now has custody of machinery and equipment, send men to training schools to prepare them to repair, service, and operate the said machinery and equipment.  
4. Authorization be given to sell the machinery to individual farmers to be financed through the agricultural bank. Before title is given there should be a definite agreement between ICA and the ministry that the machinery and equipment must go out to the farmers and be used and not set around in compounds to rust and deteriorate.  

This Ostan has poor distribution of scant rainfall and a very high rate of evaporation.²

In Shiraz, through the facilities of Project No. 57, the Agricultural Teacher Training School has been supplied with farm machinery for educational purposes.³

¹Hall, op. cit., p. 12 passim.  
³Professor Milligan helped the establishment of farm machinery repair shops and demonstration training centers. He also worked through the Karadj College on experimental projects for the improvement of hand and animal drawn equipment. Griffin advised the Department of Agricultural Engineering. Young contributed to the Ag. Eng. program too.
9. Livestock

Livestock is of vital importance in the industry of Iran, furnishing food, milk, clothing, and motive power for the agricultural as well as urban people. Some type of grazing control was and still is needed, especially in the foothills and mountain country. In addition to protection and restoration of the natural cover on range lands, supplementary feed must be provided directly and indirectly from the cultivated land. The production of more food and fiber per animal unit was of utmost importance. Effort should be directed toward producing livestock products of higher quality and more suitable for the use to which each particular product is put.

The native breeds of livestock in Iran show remarkable adaptation to their environment and in some regions types of animals have been developed which are quite outstanding as compared with those in other areas of the country. Therefore, to introduce foreign breeds for the production of higher quality, selection of native livestock was and still is, the first approach to the problem of higher performance and should receive first attention among the improved practices.

The standing of an Iranian livestock producer in his village or tribe is determined largely by the size of his flocks. With the limited feed supplies available, livestock numbers fluctuate with weather conditions. Production and marketing plans must take into consideration the time of breeding as influenced by weather conditions and available shelter, and the form in which the product is to be sold. Marketing and transportation facilities should be studied and the problems overcome.

The control of losses of livestock from diseases and parasites was an important problem. The annual loss was estimated at 1,500,000 sheep
and goats (approximate total population 20,000,000), and about 200,000 cattle (approximate total population, 2,000,000 head). This loss of livestock, supposedly from disease, was no doubt due in some degree to the poor condition of the livestock resulting from the lack of feed and care. In some areas numbers must be reduced, for there was not enough feed to nourish the heavy livestock production population properly. The disease control program should be concentrated in those areas where there was sufficient feed, for it was here that the best livestock could be raised. A heavy concentration of livestock, particularly where the land was swampy, resulted in infestations of internal parasites. It was important to control these parasites along with the infectious diseases. The proper coordination of the science and practice of animal husbandry with the veterinary service would play a most important part in the renovation and the improvement of the livestock industry in Iran.

For the improvement of livestock, Project Agreement No. 32 was made. This project included livestock production and veterinary science. At the time of the above mentioned agreement the livestock Bongah as an organization was relatively new. It was organized in the spring of 1950.

Jay M. Hall noted that the newly appointed livestock Bongah representative in Shiraz was given the authority to locate land on which a livestock station could be built. This station was to provide for improved breeding stock, a place where feed could be grown, and where crop production and livestock management could be demonstrated.

A study was made of available land, and 200 hectares (500 acres) was selected in Bajgah Valley (about 15 kilometers north of Shiraz).

With money from Project 32 a deep well was drilled to provide
water for irrigation and drinking water for the animals. The well was completed early in March of 1953 and farming work started immediately. The work was stopped on the building for over 10 months. Of the four buildings started all were completed except the dairy unit. The buildings have been in use since November 1954.¹

The Ministry of Agriculture had a very well organized veterinary section in Fars but had no one to work on livestock production problems. To fill this need a branch of the Livestock Bongah was organized there in April of 1952.²

To initiate the program a livestock committee was organized in January of 1952. The committee was made up of two leading landlords from the landlords committee, three veterinary men and a TCI member. This group met once a week for about three months. The first things to consider were the distribution of eggs and baby chicks coming from America; and combating intestinal parasites in the animals of Fars. There was not an exact count of the number of animals in that Ostan. The animals, for the most part, were of poor quality and infested with many diseases and parasites. Very little forage was grown for livestock feed. The animals depended almost entirely on the feed that grew on the hills around the villages in the summer and on straw in the winter.³

Bert Despain, speaking for the livestock and veterinary training program in Azarbaijan, explained that during the time he was assigned to work with the livestock and veterinary program one school was held

¹Hall, op. cit., pp. 6-8 passim.
²Dr. Nadjai was the Bongah representative.
³Hall, op. cit., p. 2 passim.
for artificial breeding inseminators. Engineer F. Adl went to Tabriz and conducted a 10-day training course (June 28 through July 6, 1952) for eight technicians of the Veterinary Service. Three of the technicians trained in that school have continued to work with the service since the time of the school.

Bert Despain recommended that binding administrative procedures be held at a minimum and that more local initiative be given the regional specialist during the early training period.

Livestock improvement was not successful in all provinces. The following is a good example of the situation in Khorasan, "In the field of livestock improvement we must admit a near failure in Khorasan..."

Breeding cows and sheep was going on successfully. Visual aids and demonstrations were given. The following are good examples: "Agent Himafar of Rasht East showed the film 'Artificial Breeding' to an audience of from 3 to 4 hundred in the village of Laleh Dasht. Considerable interest was manifest in the proposed activity."

For the Kerman area "the agents report 5000 cows have been artificially inseminated with semen from the four Red Sindhi bulls at Bam..."4

The veterinary cooperative project for the Rasht region started March 6, 1954. Veterinary technicians were sent to the agent's

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2Wood, op. cit., p. 11.
4Hymas, op. cit., p. 15.
district to teach village people how to diagnose and treat their livestock. A program of both internal and external parasite control was conducted. This also included some disease control work.

Part of all of the following program was done.

New Castle Worms

Vaccine for poultry, 20,000 doses
Phenothizine for poultry
Hexachlorathane
Bentonite
Vitan

Lice

DDT Nicotine sulphate

Anthrax, Blackleg, Posterous

The veterinary program, right from the beginning, has been one of the most popular programs in the Shiraz agricultural section. With the cooperation of the local veterinary department Dr. Veraluis demonstrated how to use phenothiazine. The first demonstrations were made by treating animals in villages close around Shiraz.

Dr. Fakhrzai was appointed as livestock and Veterinary specialist to the Azarbaijan and began to work out details of timely projects for the agents in his field. He developed a program of demonstrating the use of "Gammazen" for the control of lice and tick on livestock. Sources of supply were located for these products in the market, and prepared copies of the demonstration were circulated to all agents.

Locust control was initiated in 1952 and extended into 1953-1954.

In the Khuzistan region the work of veterinary science teams has been satisfactory in combating disease of sheep and cattle.

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1Despain, "Papers from the Desk of B. E. Despain-Tabriz Regional Extensionist for Azarbaijan, Iran and Agriculturist for Rasht, Iran," op. cit., passim.
The sheep production of Shiraz was made plain in the following paragraphs:

There were more sheep in this area than any other kind of animal. These sheep were divided into four main groups:

1. Turki - which were bred mainly for meat production. They were bred by the Lori and Ghashghai tribesmen.

2. Lori - bred for wool and meat. Their wool was long but coarse. These sheep were bred by the Lori and Ghashgai tribesmen.

3. Zandi - these were small white sheep bred for wool. They were found mainly in the northern part of this Ostan around Abadeh and Bavanat.

4. Karakul - these were the sheep that produced the Persian lamb skins. The majority of the sheep in this Ostan were of this breed. The Basri tribesmen were known for breeding the best lamb skin sheep in the area.

The villagers and tribesmen of this area were breeding sheep for thousands of years. Persian lamb skins were famous the world over. Actually there was no organized breeding program. There was need in this area to develop good fine-wool sheep to help provide the fine-wool needed for factories. To fill this need American rambouillet rams were brought from Tehran. These rams were being bred to native sheep to develop a fine-wool strain. Care was taken not to cross these onto the Karakul type of sheep. The breeding to date has been done naturally. There were no facilities to breed sheep artificially. A small flock of fine-wool ewes were established at the Bajgah station in January of 1955.1

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1Hall, op. cit., pp. 5-6 passim.
The following recommendations are made for the sheep and goats of Kerman:

**Sheep:**

1. That one or not more than two cooperators be secured who have a good flock of large, fat tailed sheep. Have these sheep crossed with good rambouillet rams. This program to be carried out for 8 to 10 years, with the idea of producing more and a better grade of fine wool.

**Goats:**

1. That breeders castrate all male animals.
2. Practice supplemental and improved feeding methods.
3. Use only the white Ryan Billies for breeding purposes.
4. Introduce a good strain of milk goats into this area.
5. Improve quality of goat fleece by selection and breeding.1

Attention has been paid to the dairy industry too. For example, in the Fars area the dairy cows were very small, of poor quality, and produced very little milk. One herd has been very closely selected and crossed with the American Brown Swiss bulls. Introduction of Brown Swiss bulls into this area has met with many difficulties. These bulls were subject to tick fever which in some cases left the bull completely sterile. And even if the bull remained fertile it was put out of service for from six months to a year. During a time that Bajgah received seven American Brown Swiss bulls in Shiraz three were at the Bajgah station in excellent condition, two were returned to Tehran and two died.

A class in the techniques of artificial breeding was given in Shiraz. The class was conducted from August 5 to August 14, 1952.

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1Hymas, op. cit., p. 9.
This class was given to members of the Veterinary Department. The work has moved very slowly in Fars for several reasons: bulls could not be used for regular breeding; cows were kept in very small herds; villages were scattered and the roads were poor; there were no telephone communications; and breeding work was confined mainly to the early spring.

In the past it has been the practice to send an inseminator from village to village to breed cows that he found in heat. This has proved to be very ineffective and expensive. A course was given in artificial breeding and three breeding stations were established.1

Recommendations for the dairy production of Kerman are made as follows:

1. That Brown Swiss Bulls be imported into the Kerman, Sirjan and Zahedan areas.
2. That the Red Sindhis,2 now in use, be put to much heavier use.
3. Employ and train part time inseminators in each of the villages that can be reached by daily mail or bus service where semen could be delivered daily.
4. Encourage the use of sugar beet by-products as dairy feed.3

To improve the poultry situation Point IV in Tehran, working with the National Livestock Bongah, imported a large number of baby chicks and eggs from America (native chickens were of poor quality). These imported chickens were to be distributed to individual owners.

The livestock improvement and management on poultry in Ostans 3 and 4 was to improve the breeds of poultry in Azarbaijan by establishing flocks, distributing improved strains of poultry to individual feeding,

1Hall, op. cit., pp. 4-5 passim.

2The introduction of Swiss bull and Sindhi bull resulted in an increase in the traditional milk production from one thousand two hundred pounds per year to about five to six thousand pounds.

3Nymas, op. cit., p. 10.
care and management. Community groups were organized for encouraging poultry improvement practices and encouraging a better quality of egg on the commercial market. At least one TCI technician was needed to supervise the work and education programs, and Bonagh technicians were needed to care for the breeding flock and conduct demonstrations and organize educational activities and plans of action to achieve the objectives, for example: distribute chicks and eggs on a cost basis to the farmers and flock owners, set a few breeding flocks for a source of supply and demonstration and experimental center, conduct educational classes and organize community leaders in production and marketing, and encourage a poultry improvement plan.1

In the Fars area the chickens were of poor quality. They were small and produced very little meat or few eggs and were subjected to many poultry diseases. The first American chicks were received in Shiraz in April of 1952. Throughout that year Shiraz received about 7,000 American baby chicks. All these were distributed to village people except for 100 birds kept for a small laying flock. During the year 1953 Shiraz received about 4,000 baby chicks. From these a laying flock of 300 birds was selected and the rest distributed to villagers through the extension agents. In the spring of 1954, a puloram test showed that over 80% of the birds in the laying flock had to be killed off. When the poultry house at Bajgah was completed it received 2,000 New Hampshire baby chicks in the spring of 1955. From these birds 600 were kept for a foundation flock and were put in the laying house at 4 months of age and started laying at about 10 months of age. A flock of

1Despain, "Papers from the Desk of B. E. Despain-Tabriz Region Extensionist for Azerbaijan, Iran and Agriculturist for Rasht, Iran," op. cit., passim.
native birds were raised to demonstrate the value of cross breeding New Hampshire cockerels with native chickens. The distribution of the chicks and eggs in the Fars area has not been successful, due to disease and the poor care and management by the villagers. But the demonstration flock at Bajgah taught the flock owners that proper care will bring good results.

In the Kerman area it was reported that in addition to the distribution of baby chicks and eggs through agents, 24 incubators were placed in different areas and 300 New Hampshire roosters put out with the people under contract for cross breeding with native herds. The cross bred chickens were becoming very popular in the Kerman area.¹

The following was recommended for that region:

1. That an experienced poultry-man be sent to this Ostan.
2. That the poultry plant be put on a permanent basis of at least 1000 laying hens.
3. That hatching eggs and baby chicks be sold to villagers and farmers.
4. That buildings and plans be made to incubate and brood baby chicks for this Ostan.²

10. Agricultural economics

The first apparent obstacle in developing a program was the absolute lack of a body of reliable agricultural data and statistics upon which to build a program and policy. Data and statistics are of no value in themselves but become extremely valuable as they are properly used. They indicate conditions, trends, faults, failures, good points and provide a measure of program effectiveness and change. Therefore,

¹Hymas, op. cit., p. 15 passim.
²Ibid., p. 9.

The following technicians among others, contributed their effort to livestock improvement: Veraluis, Hall Oberhausley, Olson, Otley, and Sharp.
one of the urgent needs in Iran's agriculture program was to begin collecting that body of information, not as an end, but as a tool for developing a program and policy. This collection would be a long continuous process, but simple procedures must be started.

There was a tremendous amount of work needed in agricultural economic activities in Iran. The marketing system and structure was antiquated. The prices that farmers received for their products were extremely low compared to retail prices. Waste was tremendous and new markets needed to be developed. Agricultural cooperatives were almost non-existent. There was no real agricultural credit system or program. Farm management principles were unknown.

A training course in agricultural economics sponsored by the Ministry of Agriculture and USM commenced May 9, 1955. Sixteen Ministry of Agriculture employees and one Near East Foundation employee completed the course. The following topics were discussed: (1) marketing (2) rural sociology (3) agricultural credit (4) agricultural cooperatives (5) farm management, and (6) agricultural statistics.

The course was successful. It served as an introduction to the general field of agricultural economics. This course could not train qualified technicians in any phase of agricultural economics which would take intensive training.¹

The second annual Agricultural Economics training course commenced February 13, 1956 and continued for five weeks ending on March 18, 1956. Thirty-two government employees attended, nineteen from the Tehran Department of Agricultural Economics and two from other government offices. This course outlined in brief is as follows: (a) review of

¹Deon W. Hubbard, "Completion of Tour Report" (unpublished, 1956), pp. 3-4 passim.
agricultural economics principles and purposes; (b) agricultural economics program in Iran; (c) further development of agriculture commodity price reporting program; (d) development of crop and livestock reporting program; (e) market improvement; and (f) development of commodity cost and return studies.

This course was developed along a work plan basis for practical application.¹

The need was outlined and a proposed future program was given in some detail in the report of D. W. Hubbard including the following:

Price Reporting: Continuation and refining of the current program with expansion to include additional market centers.
Crop and Livestock Reporting: Using the same reporting agents to report crop and livestock estimates on a sample survey basis.
Improve Produce Markets: Reduce waste, promote better marketable produce, storage facilities and sanitary conditions.
Commodity Costs and Return Studies: Provide statistics and information as a basis for farm management and agricultural policy and planning decisions.
Standards and Grades: Promote the cooperative marketing of agricultural products.
Improve livestock Marketing: Encourage sale by weight and quality, improve quality of marketable products, and promote better marketing conditions.
Rural Credit Development: Promote more equitable and adequate rural credit.
Local and Foreign Market Development: Promote new sales for agricultural products and new markets.
Improve Cereals Marketing: Promote better storage handling and marketing of cereal grains.
Standard Weights and Measures: Encourage adoption of standard weights and measures.
Collect, Compile and Publish Agricultural Statistical Data: Make available in usable form present data and compile, collect and publish new data and information.²

The following is an example of providing agricultural and

¹Ibid. pp. 8-9 passim.
²Ibid., pp. 6-7.
livestock statistics throughout all the cities and districts in Azarbaijan.

The purpose of proper statistics was to provide an agricultural and livestock statistics for the cultivated and uncultivated lands and standard crops.

The program performance required that necessary instruction be given responsible personnel, supervisors and statisticians in villages. A three day training course was recommended in order to initiate the head man to their functions so that in time statisticians could give them proper information. Both the Ministry of Agriculture and Point IV technicians were to cooperate. It was proposed to operate eight teams for accomplishing this program, and ten statisticians would fulfill their functions under the supervision of agricultural personnel. The statisticians would be selected from the students of secondary school. The period of this program would be from the first of July to September 8, (a hundred days).

The Ministry of Interior would instruct the governors, mayors and chiefs statistic to cooperate with the Agricultural personnel.¹

Recommendations for agricultural economics:

Agricultural economics needs to be placed in a prominent position at the Karadj Agricultural College so that men can be trained in Iran to do this work in Iran. Much research in Agricultural economics should eventually be done through the college in a future graduate program in agricultural economics.

Agricultural economics needs to be placed in a prominent position by OMI in the economic development of agriculture in Iran and some consideration of agricultural economics programing in its staff and program. Every phase of agriculture is economic in nature, whether it is land preparation, farm machinery or irrigation

¹Despain, "Papers from the Desk of B. E. Despain-Tabriz Region Extensionist for Azarbaijan, Iran and Agriculturist for Rasht, Iran," op. cit., passim. (The year is not given for the hundred day program.)
projects, and planning any sound agricultural program must be based on input-output considerations in an economic way.\textsuperscript{1}

\section*{II. College of Agriculture of the University of Tehran at Karaj}

As has been pointed out, eighty per cent of the people of Iran are engaged in agriculture. The country derives a major portion of its wealth from agriculture and agricultural products. Therefore, a country as largely agricultural as Iran must have, for its future progress, a college of agriculture capable of rendering the service of a first-class institution to be used as an instrument of service to the rural people. Such a country must have a continuing supply of well trained technicians for the direction of and services to its agriculture. The past trainees were only a small portion to the technicians that have been needed. Students who were to receive advanced training have to go to foreign countries. Agricultural progress has been very slow. The progress of Iran in the future will depend to a great extent upon her ability to develop a high type agricultural college. Such a college, in addition to a teaching staff, must have an extension service and an experiment station. The college must be equipped to train personnel needed in all types of agricultural work: extension and research, teaching, governmental work and other services essential to agriculture. It should be noted that an agricultural college will not fulfill its obligation until, in addition to training technical personnel for government service, it trains personnel for business serving agriculture and also a substantial number who will engage in practical agricultural production.

The promotion of industrial development is another reason for the

\textsuperscript{1}Hubbard, \textit{op. cit.}, p. 10.
need of a first-class agricultural college. Almost no industry develops without an adequate supply of labor. The low efficiency, the need for a large labor force to be engaged in agriculture to supply the agricultural products is what the country requires. It will not be possible to draw from the agricultural population the labor needed for industrial development until the efficiency of those engaged in agriculture can be improved.

Other countries of the world that have industrialized have usually found it necessary first to improve the efficiency of their agriculture. The United States is a good example. Industrialization had progressed but little in the United States as late as 1870. Before this time one farm family could hardly produce its own food and food for one other family. The year 1870 was the year the landgrant colleges were established in the various states. With the leadership of these landgrant colleges and their experiment stations and extension services, the efficiency of food production increased at such a rapid rate that about the middle of the twentieth century, a farm family was able to produce his own food and food for about seven families. This was not accidental; the increased efficiency on American farms paralleled the growth and the development of the Agricultural colleges in the United States; these colleges provided the information upon which most of this increase in efficiency was based. To discover the ways to teach the people to produce food efficiently is the business of a good agricultural college and no other agency in Iran can do the job effectively. With a leadership of a high-class college of agriculture she could reach the present standards of modern countries such as the USA within twenty to thirty years and release five to seven million people for industry.

The college of agriculture of the University of Tehran, originally
a school of agriculture for boys, was located in Tehran. The late king, Reza Shah, considered wisely that the city of Tehran was not a suitable location for such a school and had it moved to a royal garden, the present location, in Karadj in 1927.

The University of Tehran, as such, had not yet come into existence. The operation of the agricultural school was turned from the Ministry of Finance over to the Ministry of Agriculture. The Dean and the professors of the college were appointees of the Ministry of Agriculture and thus were subject to frequent change by each new minister. They were not appointed necessarily because of their educational qualifications. Most of the faculty members were trained in France. Consequently French methods have continued to dominate the school. The Ministry of Agriculture used the college solely as a training ground for the Ministry employees and the graduates were guaranteed a position in the Ministry.

In discussing the training of the college faculty, Dr. Carroll wrote as follows:

The professors have all been trained in the European tradition and have had little, if any, opportunity to know anything else or even to keep abreast of changes that may have taken place in European institutions since they studied there up to 20 or more years ago. They have had no contact with education or experimentation and have been in no position to experiment on their own account. It is not surprising therefore, that many of the lectures are reported to be given year after year without change and to have little impact on the agricultural problems of the country. A few of the professors are reported to have struggled through these handicaps to the point of becoming excellent teachers.

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1In 1913 Dr. William E. Carroll was instructing a course in animal husbandry at the Utah Agricultural College. In 1941 he became the associated professor, professor and Head of Department of Animal Husbandry at USAC. He was the Dean of Agriculture of Utah State Agricultural College 1937-1939. In 1953 he served with a temporary appointment in USAC. For further details see Appendix A.

In 1946 an act of Parliament transferred the school to the University of Tehran to be its College of Agriculture. But the French pattern of education continued and few changes in organization and operation of the college were made. Since 1946, the educational qualifications have been required of the faculty. As in France, the professor, not the student was considered to be the center of the educational process. Instruction consisted of a series of lectures given by the various professors on subjects each considered important, or at least interesting to himself. No attempt was made to integrate the subject matter of one course to the genuine needs of other courses or to provide a progressive, developmental sequence of related courses that would give the student a well-rounded education in the characteristics and needs of the agriculture of Iran; in other words the offering of the college was not a "curriculum" in the true sense of the word.

The college offered only three years of instruction. The instruction was rigid and afforded no opportunity for specialization. Each student had to attend every course that was offered by the College. Each class of students (1st year, 2nd year, 3rd year) had its own room to which the professors came in turn to deliver their lectures. The professors were in reality only part-time employees of the college. Most of them lived in Tehran, about 25 miles from the college, and held jobs in Tehran in order to live on their notoriously low salaries. Almost every professor met his class only one day a week throughout the year, and if he considered his work important he held his students two consecutive hours. In most classes students took little part in the learning process except to memorize the professors' lectures and be able to reproduce them when called upon to do so.
In discussing the result of this situation Dr. Carroll wrote as follows:

As a result, the practice of agriculture in Iran has been left to uneducated peasants who have no exposure to new ideas and consequently continue to follow, without thought of change, agricultural practices that might well have walked out of the Old Testament.1

The importance of a high-rate agricultural college to the economy of Iran was recognized early by Point Four when plans were made to improve the College. Project Agreement No. 9 was made as early as June 16, 1952 for the technical assistance to Karadj Agriculture College providing for advisory service to the Dean. A contract was signed under an ICA-financed contract between Utah State Agricultural College and Karadj College dated June 30, 1954. (For further details see Appendix B.)

The first full-time advisor to the Dean was Dr. L. S. Horlacker who served from May 30, 1953, to March 11, 1954. He was followed, after a seven months interval, by W. E. Carroll who served from October 21, 1954, to March 26, 1957. At the present time Dr. E. A. Jacobsen, who arrived in Tehran October 10, 1957, is serving as the Advisor to the Dean. It should be added that some assistance was rendered by other Utah State University contractors and Point Four technicians as time was available and assistance needed.

The following was accomplished in the first two years after the first contract was signed:

1. A deep well with pump and diesel motor to produce safe water to the college.
2. A similar well in one of the college villages as a part of village improvement program.
3. A library-restaurant building constructed over the buildings of building whose completion had been

interrupted by the war.
4. A thousand or two scientific books for the library.
5. An irrigation laboratory building and some equipment.
6. A pest control laboratory building and some equipment.
7. A forest and wood technology laboratory building and good equipment with collaboration of FAO.
8. Facilities for the display of Zoological and Entomological specimens in the form of a very creditable museum.
9. Some scientific laboratory equipment and supplies for all laboratories.
10. Some agricultural machinery.
11. Electric power equipment.
12. A small poultry unit and good poultry stock.
13. A small herd of Brown Swiss cattle, an open shed in which to handle them, and two pit silos.¹

When Dr. Carroll was serving in the institution the water distribution system was completed. Many books were added to the library stock most of which were written in English.

Dr. Carroll wrote:

During this tour effort has been directed primarily toward:
1. Modernizing the organization and operation of the college.
2. Improving the competence of the faculty.
3. Modernizing and expanding the curriculum to four years.
4. Modernizing the subject matter of the courses.
5. Preparing for an early and considerable increase in enrollment.
6. Increasing the budget.
7. Developing a modest research program.
8. Directing the aim of the college toward service to Iranian agriculture and the rural people.²

The ideas listed below were part of the original plan. They were all discussed with college personnel, but should be followed up. They were: (a) study of course content and the relation of one course to another; (b) addition of cultural subjects to the curriculum; (c) a study of teaching methods, example: laboratory instruction and formal

¹Ibid., p. 4.
²Ibid., pp. 4-5.
class subject matter should be integrated; (d) a study of examination: how to conduct and how to use the results; (e) expand the library and encourage its greater use; (f) encourage extracurricular activities; (g) beginning a student health center; (h) attempt making and using a budget; (i) hold commencement exercises; (j) a careful study of building needs and campus expansion; and, (k) helpful criticism of building plans: larger buildings to house related work are more economical as well as more functional.¹

One other accomplishment was in the area of agricultural teachers for the high schools of the country. The Ministry of Education recognized the need and Point Four selected those seniors who were interested in teaching (1953).

Perhaps the most significant change that has come to the college since the start of technical assistance program is mental.

As a whole it might be said that the major attention during the early years was given to the improvement of the physical plant, to providing laboratory equipment and library books, to the purchase of livestock and farm machinery, and to the improvement of utilities; water, electricity and the like. When Dr. Carroll was serving, there was more attention given to the improvement of instruction and less to the improvement of physical facilities. Emphasis was placed upon instruction in improving the competence of the faculty of the College, English, Modernizing the curriculum and subject matter of courses, developing research and reorienting the objectives of the College toward service to Iranian agriculture and to rural people, and increasing the budget.

While the assistance given has been exceedingly helpful in

¹Ibid., pp. 7-8 passim.
improving all phases of the work of the College, it has been much less than was needed. Consequently plans have been made and negotiations entered into with Utah State University to greatly increase its assistance to the College. In 1958 a new contract was signed between the United States of America, Karadj College of the University of Tehran and Utah State University. (For details see Appendix B.)

Generally speaking, it seems that the positions set-up in the contract will provide the type of service most urgently needed. The buildings and grounds maintenance advisor may be justified as filling a temporary need during a period when extensive construction is in progress. Thought should be given to the phasing out of the work of some advisors especially that of the buildings and grounds maintenance advisor and the business office administration and registrar advisor and their replacements by advisors in other fields of specialization if the contract should be extended beyond the two years. Agricultural economics, home economics, and information are other fields which are in need of consideration.

The utmost care is needed in selecting advisors for Karadj. The instruction is unique in any respect. Personnel should be selected who have had the experience and who possess the personal qualifications that would enable them to work most effectively with the faculty. The following guides, among others, should be followed in selecting advisors. Dr. Carroll suggests that the minimum be an M. S. degree. The advisor must be personable and not be afraid of new and strange situations. He must be adaptable, versatile and patient. His family should support the work he is doing and cheerfully accept the conditions under which they live. Advisors in fields related to crops and most branches of livestock should be well acquainted with arid climate agriculture. Others
need not be. In most cases advisors should not be narrow specialists. 
The need of the college is for fundamentals. The advisors should be 
well trained in their respective fields, but should also be able to 
evaluate their own work fairly in relation to the other work of the 
college.¹

The following are recommendations made by L. E. Call, Dean of 
Agriculture of Kansas State College, Consultant on Karadj College:

1. Iran needs a first-class agricultural college. 
   Steps should be taken to develop such an institution although 
   many difficulties must be overcome to do so. . . .

2. Facilities should be provided for 1,000 students 
   and eventually for 3,500. A student body of this size is 
   needed to supply trained personnel in agriculture and home 
   economics.²

3. A study should be made of student fees and charges 
   to determine the desirability of a larger share of the cost 
   of education being paid by the student. . . .

4. More effective methods are needed to bring Iranian 
   agriculture problems to the attentions of the college. To 
   aid in the accomplishment of this objective it is recommended 
   that an Advisory Committee to the college be appointed. The 
   committee to consist of eight (8) members; five (5) to be 
   appointed by the Prime Minister, three of whom should be 
   practical farmers; the three others to be ex-officio-The 
   Minister of Agriculture, the Minister of Education, and the 
   Dean of the College. . . .

5. The faculty should be employed upon a full time 
   basis and a budget should be prepared to provide for their 
   full-time employment at salaries adequate to obtain competent 
   personnel, an effort made to secure appropriations needed to 
   support the budget. . . .

6. The new curriculum developed under the guidance of 
   Dr. Carroll should be put into full effectiveness promptly.
   This will require favorable action by the College Faculty and 
   the University Senate. . . .

7. Curriculums are needed to train teachers in voca­
   tional agriculture and home economics. Also specialized 
   training in agricultural economics is needed. . . .

8. The contract under negotiation with Utah State 
   University will supply the advisory service most urgently

¹Call, op. cit., p. 15 passim.

²The college have facilities for the enrollment of 100 students 
only. The number of applicants have been as follows: 1953-54=755, 
needed at this time. When other appointments can be made consideration should be given to the advisors in the following fields of specialization: agricultural economics, information and home economics.

9. The one hundred fifty two million rial fund to be made available for construction purposes from defense support and plan organization funds can be used most effectively as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Rials</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. To complete laboratory A and excavation for laboratory B</td>
<td>55,000,000</td>
</tr>
<tr>
<td>b. Dormitory for 250 students</td>
<td>25,000,000</td>
</tr>
<tr>
<td>c. To complete eight (8) Utah staff houses</td>
<td>2,000,000</td>
</tr>
<tr>
<td>d. To complete resurfacing roads</td>
<td>3,000,000</td>
</tr>
<tr>
<td>e. Repair of old dormitory</td>
<td>3,000,000</td>
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<tr>
<td>f. To complete infirmary</td>
<td>10,000,000</td>
</tr>
<tr>
<td>g. To repair and remodel buildings</td>
<td>10,000,000</td>
</tr>
<tr>
<td>h. Pest control laboratory and classrooms</td>
<td>3,000,000</td>
</tr>
<tr>
<td>i. Architectural services</td>
<td>6,000,000</td>
</tr>
<tr>
<td>j. Equipment and furniture</td>
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</tr>
<tr>
<td>k. Power-electric</td>
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</tr>
<tr>
<td>l. Unforeseen expenses</td>
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</tbody>
</table>

10. Except for dormitories, faculty housing and laboratories for agronomy and horticulture the funds available will provide with reasonable adequacy for 1,000 students. More than 600,000,000 rials additional will be required to provide adequately for a student body of 3,500.

11. More careful advanced planning is needed for construction projects. Firm contracts should cover the entire cost of the completed project as well as unit cost. Competent inspection should be provided.

12. Participant training is an effective way to improve the quality of the college teaching. It is recommended that consideration be given to sending to the United States four types of participants for training.
   a. Faculty members of the faculty who because of ability and leadership have great influence in shaping administration policy.
   b. Young faculty members with Ph. D. degree training, educated in European Universities, who may become department heads.
   c. Younger faculty members who show promise should be sent for Ph. D. degree training.
   d. Recent graduates who are to be employed as teachers or technicians. It is from this group that the institution must depend for the faculty of the future.

13. Farm land is necessary for agricultural instruction and research. Part of the college land now being used for farm purposes is needed for campus expansion. The college needs additional farm land. Most agricultural colleges over the world have been short sighted in not obtaining farm land when it was available. The college should not make this
14. A college cannot become a strong educational institution unless the teaching is supported by research. An Agricultural Experiment Station should be organized with a staff of full-time researchers...

15. Responsibility for agricultural research should be vested jointly with the Minister of Agriculture and the Agricultural Experiment Station of the College. In general the responsibility for the more basic research should rest with the college and applied research with the Ministry. A national program of agricultural research should be developed jointly by the two agencies working together...

16. A master plan for the future growth of the college should be developed. Such a plan should provide not only for the future expansion of the physical plant but for faculty and staff as well...

17. Steps should be taken promptly to develop the services of the college in the field of extension. The country needs the service and the college needs to develop concurrently the three functions of a high type Agricultural College - teaching, research and extension.

To change the old system of the college, a "group elective" system of teaching has been introduced, and a four year program which was commenced in 1955 will be completely established by the year 1959. The building projects which commenced should enable the enrollment of applicants to reach about six hundred students by 1959, and about a thousand students by 1961. In addition to that mentioned above, vocational agriculture commenced in 1955 and has been established since that year.

12. Karadj demonstration farm

Experience is a marvelous teacher. It has been proved that the establishment of training and demonstration centers for the agricultural organizations and institutions is one of the most important and useful steps. In such farms interested people will have an opportunity to learn and teach methods, perhaps the better term is "new methods". In agriculture, lessons may be taken from instructors with the use of books or any other publication, but training would not be complete until combined

\[\text{Call, op. cit., pp. 1-3.}\]
with practice in the field. Progress in the field of agriculture is impossible without trained and experienced specialists, even though millions of dollars are being spent. One of the greatest responsibilities of the managers in Iran was to train and educate technicians and extension agents who have not had an opportunity to live or to work on a farm.

A joint decision made by the Ministry of Agriculture and the Agricultural Division of USRA officials in Iran gave authorization for the development of a demonstration and training farm in the capitol area with the Utah State Agricultural Contract Office being designated as the advisor in the project. The irrigation and farm machinery division of Agricultural Engineering was given the responsibility of developing a project where the farmers, landlords, extensionists, students and generally speaking, any other interested people could attend courses of instruction and/or observe techniques and methods of operation.

To start and establish such a training and demonstration farm needed the procurement of suitable land from the standpoint of soil, accessibility and possible water supply, size of property to permit mechanized operation and the like. In the early spring of 1954 Le Roy Bumnel and Engineer A. H. Fardad, an Iranian, tried to locate available land in order to offer technicians and agents experience by working on such a farm. During the winter of 1954-55 Engineer Fardad negotiated with the Karadaj Agricultural College for the use of a piece of land without charge, and permission was given for the use of twenty-one hectares.

Le Roy Bumnel explained that the land at the Karadaj Agricultural College was chosen on the merits of the following:

1. There was no rental of the land requested.
2. It was near enough to the College to encourage the use of the College faculty as advisors.
3. The College experimental and demonstration work was available to technicians and agents for study and observation.

4. A limited amount of flood waters from the Karadj River were available for irrigation.\(^1\)

The "Extension Committee" of the Ostan Organization, consisting of the co-managers and the extension supervisors, and J. H. Wood, then agronomist working with the experiment farm staff, met and formulated objectives for the operation of the farm. These objectives were as follows:

1. The name of the farm should be "Training and Demonstration Farm."

2. All present extension agents should spend some time on the farm performing the activities essential to farm work.

3. An outlined course of study, and a specified training period on the farm, should be required of newly trained Extension Agents. Following this training period, an agent's ability to teach, to demonstrate, and to initiate improved farm practices should be the essential criteria in selection for assignment.

4. The farm should be utilized as a demonstration center by encouraging agents to bring key farmers to the farm for actual training in new farm practices.

5. To utilize the farm as an exhibition area to acquaint officials and visitors with the advantages of an "On-the-job Training Program."

6. To plan and organize the farm so as to include: (a) a long-time rotation system which includes the growing of a legume for the purpose of maintaining a desirable soil humus and soil fertility required for efficient plant growth; (b) a short-time rotation system,

particularly adapted to small farms; and (c) to make a study of farm machinery adaptable to farming conditions in this area.

7. To plant crops in a manner demonstrative of the advantages or disadvantages of oxen, horse or power-drawn equipment in doing farm work.

8. To teach improved irrigation practices, conserve soil, save moisture and economize on labor.

Work commenced officially in the development of the demonstration farm April 6, 1955. Three sources sponsored the project funds; The United States Government, The Government of Iran, and Joint funds.

Rain caused a postponement of plowing and naturally the late plowing and planting had negative influence on many crops planted especially on the cereal plantings.

Technicians responsible for the various crops prepared plans and participated in such activities as: preparing seed beds, weeding, planting, cultivating, irrigating, marketing, harvesting and the like. Extension agents came and worked during the summer for a week or more at a time with the technicians. Before any seed was planted, a good and firm seed bed was prepared.

Sugar beets were planted and the following studied: time of thinning, time of harvest, mixture of commercial fertilizers and use of commercial fertilizers with barnyard manure. A vegetable garden area of about 5,600 square meters was planted excluding the area used for potatoes. There were three varieties of potatoes planted on 2,941 square meters of land. On growing of legumes, two different types of rotations were planted - an eight-year rotation which included a legume half the time, and a four-year rotation where a green manure crop could be plowed under once every four years. There were 1750 square meters
of corn, 8,270 square meters of red clover; an area was devoted to sorghum, millet, sudan grass and soy beans. The demonstration of cotton was set up for three factors: cotton varieties, fertility trials and spacing of plants. The "Improved Golden Bentan Sweet Corn" was grown to produce seed. Over one hundred kilos of seed were produced, and each province received five kilos or more. An area was planted in a tree nursery to provide woodlot trees in areas of extension agents, and about 12,000 trees were made available for distribution. Also an area 7,000 square meters was devoted to yellow clover.¹

James Wood, who worked from the beginning with L. Bunnell on the demonstration farm at Karadj, wrote that the irrigated mixed pastures were successful in demonstrating what could be done in forage production with the right kind of irrigation. The corn, sorghum and soy beans and other forages grown were satisfactory. Row crop sugar beets were cultivated by means of a tractor mounted cultivator and created great interest among the local landlords, farmers and sugar company officials. Row crop furrow irrigated tomatoes, beans, potatoes, and melons were the only ones some of the visitors had ever seen and thus created much interest.

The rotation demonstrations were set out to demonstrate the many advantages of a basic rotation in irrigated agriculture. Unfortunately most of the natives could not understand the purpose of these rotation plots. Rotation plots are essential to demonstrate the best procedures for irrigated agriculture and to show the proper use of such crops as alfalfa and other legumes, and to illustrate numerous other advantages. Plots of this kind have been maintained in some areas for more than 100 years.

¹ibid., pp. 1-13 passim.
years. Because these plots have been abandoned along with the rest of the farm, further details about them will not be mentioned other than to say that the start was made, and could have reasonably made a worthwhile contribution to Iran's agriculture improvement.

Farehabad Forage Demonstration: The Farehabad irrigated forage demonstration was established on the royal hunting reservation in February and March of 1955. About three hectares of irrigated forage was planted in a variety of areas designed to show various methods of irrigating pasture on relatively steep land.

Hyderabad Forage and Irrigation Practice Demonstration: The livestock Bongah chief, Adle, asked if a permanent irrigated pasture could be established and also some corn grown in the row system. Glen Morrill and J. Wood worked jointly on this project. A grass and legume nursery was planted to see what species grew best. A field of 1.5 hectares was prepared and planted with a two row animal drawn planter adapted for use with a tractor. The corn was irrigated by the furrow method and a fair crop was grown. One hectare of permanent pasture and one hectare of sweet clover were planted and the irrigation system was set up.

Range and Forage Conference: During the two range and forage conferences held in Tehran, one for local personnel and one for all of the Near East countries, James Wood cooperated with the headquarters staff and the special teachers from Washington, D. C. in conducting a forage seeding and irrigation demonstration at the Karadj demonstration farm. He presented a lecture on "Forage Preservation" for the group at Tehran University.

Irrigation Practice: The whole program at the demonstration farm at Karadj was based upon more efficient use of irrigation water by
improved methods. The row crop vegetables were an outstanding example of easier irrigation and received much attention. The general ditch layout of laterals and field ditches and reuse of runoff water showed how small farms could generally make better use of water.

Land Leveling: Because level land is of such great importance in efficient irrigation, a leveling demonstration was carried out on four hectares of very rough land at Galli-Morghi, just south of Tehran. Modern equipment was used effectively in the leveling work. Most thought it was too expensive. This was true unless the machinery could be cooperated and used on a pro-rated basis.

Machinery Demonstration: Several land preparation demonstrations were held demonstrating the use of the disc harrow, drag harrow, and leveling float. Tractor mounted row crop planters and small animal drawn planters were also demonstrated.¹

Odeal Firk was called from Rasht to advise and help set up a demonstration farm at Karadj, and later be the advisor of the demonstration farm. He summarized the accomplishments until January of 1958 as follows:

1. Land and water have been acquired.
2. Foundation buildings of the farm compound are completed.
3. Equipment for most operations has been obtained.
4. 200 acres of land have been leveled and laid out with an irrigation system service in 12 fields of rather uniform size (15-20 acres each) . . .
5. Cooperative relations have been established with Extension Service, Plant organization and Karadj College.
6. 25 acres has been designated for use in demonstrating and checking various hand tools and animal drawn equipment.
7. The third annual Agricultural Engineering training courses is nearing completion. Eleven engineers are enrolled. More had anticipated the course but were needed and taken into the Extension Service.
8. Personnel assigned to the farm have been diligent and worked hard. Direction of the entire program has been done

¹Wood, op. cit., pp. 5-8 passim.
by the Iranians in responsible positions in the project and only advised by Americans.

9. The farm is getting established and is quite widely known. Successful demonstrations and field days have been held. Men have finished periods of training.¹

In addition to the above mentioned, 120 under-graduate Karadj Agricultural College students have spent their summer at the farm getting training in maintenance care and operation of farm machinery. Farm machinery has been made available to the Plan Organization Farm Machinery Training course. During these years many people visited the farm, and during the year 1957 about 1200 people formally visited the farm.

Le Roy Bunnell described the benefits derived from activities carried out on the Demonstration Farm at Karadj and noted that the machinery on the Karadj Farm was very beneficial. The operations with the machinery drawn by horse were especially efficient and satisfactory, practically proving that horses are better than oxen for farm operations. These animals can pull light machinery to cultivate farms, to drill seeds, to spread manure, and to harvest crops. This is quite important for countries like Iran.

The modern scientific system of furrow method irrigation was particularly interesting and beneficial. It is obvious that the old method of irrigation should be forgotten and the modern method used to soak the ground better without wasting water.

The modern power, horse, and hand drawn tools and machinery should be used so that maximum advantage can be obtained by farmers with minimum expenditure.

While working on the farm L. Bunnell observed farmers and workers

who had no information about modern tools learning the operations and who were quite willing to work with these tools. Although these farmers had no experience with the modern irrigation system, nevertheless, in a short while they learned to irrigate with the furrow method.

Most of the workers who had been working as coolies on the highways learned a lot by experience in such a way that they did the job themselves.

Another important advantage was that the agriculture technicians of Tehran Provincial Department of Agriculture and the extension agents could experiment with what they had learned and heard.

Landowners and farmers were invited to the farm and demonstrations were sponsored for them.1

13. Comments by Utah State University staff members

Since 1939, a total of forty-five Utah State University staff members or affiliates have worked in Iran or are still working under one of the Utah State University - Iran - United States of America contracts. Three of them went before 1951, without a contract from Utah State University, and the rest of them worked or started working under one of the contracts or were bound to it in one way or another. To find out what problems they encountered and to get their recommendations, a letter with a questionnaire was sent to twenty six of them. The reason the letter was not sent to all of them is because at the time the letter was sent fourteen were serving abroad (Iran or other countries), two were deceased, and three did not go to Iran under a Utah State University contract. Nineteen out of twenty six returned the questionnaire with some kind of answer.

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1Bunnell, op. cit., p. 14 passim.
The questionnaire was sent to the contractors for the purpose of obtaining commentary on problems encountered and recommendations for the modification and for the improvement of the program.

It should be kept in mind that no part of the program is set up permanently under the American Administration or technicians. Rather, its purpose is to train native Iranians to establish institutions and to adequately perform the tasks in hand. The American technicians should eventually be replaced by trained Iranian technicians; the program should cease to be a United States program but should become an Iranian program; and American technicians should fade out of the picture slowly.

It is realized that the answers vary from project to project, from time to time, and also according to the undertaking of the technicians. To avoid complication the author of this thesis has written the questions and underneath the essence of the answers to each particular question without mentioning the names of the writers:¹

Question No. 5. "In your opinion should the Technical Assistant Program in Iran be decreased, expanded, or maintained at the same level? Why?"

Most of the answers to this question agreed that assistance to Iran should be maintained at present levels. Emphasis in many answers was given to the needs of improving education and agricultural production of the country; in these areas the program should be redirected and justified; tests should be given to determine effectiveness; work already initiated should be brought to satisfactory completion; and though the country is unable to absorb more, less would be wasteful.

¹The first four questions were: (1) Name and address; (2) How long have you been in Iran? (3) Did you work under a contract with USAEC (USU) or directly under a Department of the United States Government? If both, how long with each? and (4) What was the nature of your employment? The answers to the above mentioned questions were used for the completion of the Appendix A.
because much of what already has been done was needed badly and obviously more help will be needed in the future. The following is a typical answer:

I believe the emphasis of the program could well be trained more and more on education. It is almost impossible for any people to elevate themselves until the population can read and write.

There were two answers which called for a partial decrease of the program and wanted the remainder of the assistance continued only to allow for the educational needs and other very special assistances.

The increase of the assistance was mentioned for the whole of the program or for certain levels. Expansion was asked for agricultural economics and education. The number of American Personnel should be raised because at present, numbers are inadequate to cope effectively with all problems, projects are not being completed properly. An increase would benefit more people and enable Iran to more quickly rehabilitate its resources and modernize its methods.

The following which asks for an increase, when personnel and means are available, is a typical answer:

... the advancement and progress of countries such as Iran are in direct proportion to the education of the people and to raise the production and welfare of a country technical know-how is necessary. Without a high degree of production and output per man no country can progress or even adequately take care of its people.¹

Question No. 6: "What political problems did you encounter in Iran?"

The technicians who were in Iran between 1951 and 1954 almost all explained that the Tudeh (Communist) party was too active, and that leadership was divided because of this Communist influence. In addition

¹Out of nineteen returned questionnaires eight wanted the program to stay at the present level, seven wanted an expansion, two called for a partial decrease, and two did not answer the question.
to this timely problem the answers commented on the frequent changes in
the Ministry of Agriculture officials; and the control of everything by
Aristocracy. The following is being quoted with no additional comments
by the writer of this thesis:

You may not agree, but I would list as a political
problem in Iran religious intolerance. This is one of
the deterrents to progress. Outlawing of the Bahai reli-
gion and preventing religious proselyting are examples.

It was also pointed out that the temperament of the Iranian people is
another political problem mainly because they can be too easily led and
swayed by emotional feelings.

Question No. 7: "What other problems did you encounter involving the
natives of Iran which deterred the effectiveness of the program?"

Among the problems which the technicians mentioned the followings
are to be noted: Lack of education by large percentage of the popu-
lation; lack of faith plus a certain dishonesty on the part of some
citizens and government officials; lack of sanitation; lack of trained
engineers; lack of sufficient income for the masses; insufficient
irrigation and drainage for soil and water conservation and land tenure;
insufficiency to converse freely with the people with whom the technicians
work; the skepticism of the Iranian people; the existence of an
Aristocracy which does not care whether the peasants are helped or not;
the fact that benefits intended for the masses usually do not get beyond
the landlords; the fear of theft of personal property which makes
persons ill at ease; unwillingness to accept change on the part of many
of the people (especially villagers) which makes the progress very slow;
and the general problem of procrastination.

Question No. 8: "What general or specific recommendations do you have
for improving the program?"
In answering the above mentioned question the technicians emphasized the following matters:

The American Mission: There is entirely too much internal politics within the American Administration for the Mission to function with maximum efficiency. There are too many old time professional bureaucrats in controlling posts who are more interested in their own selfish motives than in any program of the Mission. There is too much "red tape" on the part of the ICA Mission which slows down the progress of the work. In some areas such as labor fields and some mechanical applications the American technicians attempt to adopt American methods instead of taking into consideration the needs and conditions of Iran.

The Ministry of Agriculture: There have been many recommendations by the American technicians and advisors which have been accepted by the Ministry but nothing has been done to put them into practice; therefore, the American advisors and technicians should be empowered by the Ministry with sufficient authority so that the recommendations are carried out. Within the Ministry the traditionalism slows down the progress of the work. It is also noted that people who are not qualified either with technical training, with human understanding or integrity, had too many positions of responsibility and often refused to accept the counsel and advice of technicians who know their work and could get the job done.

Other recommendations are: (1) The program should include fewer outright gifts and give-aways; more rigid requirements should be made of Iranians before such help is made available; (2) The Iranian Government and ICA should streamline their programs to permit and facilitate expenditure of a larger percentage of appropriated funds for accomplishment of work in the field with the rural people; (3) The
extension approach and extension methods should be used on an increasingly larger scale. The objective should be to start with the people where they are helping them to solve their problems through educational programs. (Helping the people to help themselves.) Much of the program should be initiated by and with the people themselves; (4) Better planning on some projects; (5) Strive for better quality production in the better methods; (6) Introduce better machinery and equipment; (7) Extend educational work in irrigation, drainage, and soil and water conservation; (8) Try to get greater recognition of the importance of water control in the national economy and progress; (9) Continue and expand the Farm Demonstration work in the entire agricultural area of Iran; (10) Restoration of the millions of hectares of range and watershed lands; (11) Maintain good understanding between countries of the free world; (12) Develop and maintain good markets and trade relationship with these countries; (13) Develop better standards of living and education amongst the peasant class; (14) Remove the Feudalistic system of landlord and peasant; and (15) separate government and state and religion (each to be independent).
IV RECOMMENDATIONS AND CONCLUSION

Since the dawn of history and even before history was recorded or handed down from generation to generation by traditions and stories, Iran has been the crossroads between East and West (between the Mediterranean and India and China). Her location is strategic. The condition of the people was critical and a threat to the free world. It is said that an empty stomach has neither faith nor loyalty. After the start of the program, the American technicians has many problems to solve like those already mentioned. The people of Iran were anxious to do something to improve their country and make it a better place in which to live. Therefore, after recognizing the nature of the help, they welcomed the assistance.

Iran has been successful in obtaining substantial assistance from foreign sources to support its national plan for development. She has welcomed the national plan for development. She has welcomed co-operative endeavors by private organizations in the United States - mainly the Ford Foundation and the Near East Foundation - in basic programs aimed at agricultural and other improvements at the village level. United Nations' technical help has been largely applied to agriculture and related fields. Although the very first years were consumed largely with the problems of pioneering, as a whole, the program showed many constructive accomplishments. The authorized program covered various branches of agriculture, health, education, water development, industries, labor, transportation, communication, housing, mining, meteorology, business and other phases of the national economy. A fine technical
staff was assembled; vast quantities of equipment and supplies were made ready; and numerous projects throughout the country began to bear fruits that will mean much to the health, the education, the agriculture, and the standard of living of the entire nation.

It takes time and money to start and continue any such vast undertaking. Greatest assistance came from the United States International Cooperation Administration and predecessor agencies, totaling $275 million from 1951 through 1956. About one-fourth of that was used for agricultural and related activities. Most of the ICA-Iran agricultural program has been aimed at grassroot improvements. It emphasized training of personnel, extension work, community development, and demonstration.

In considering programs and projects activities it was difficult to say which should be first and which should be last or which is the most important and which is the least important. It is also difficult to say who has been responsible for which. Actually the program has been concerned with rural improvement. The fundamental problems were to increase production and to keep the people well enough to do their work and to train them in new methods. In other words, to work a program to reach the bottom, there were two methods. One was to hold everything upside down and shake, then search through the mess for the thing on the bottom; and the other was to remove the top layer and proceed in an orderly manner to reach the thing at the bottom. The second philosophy was followed in Iran. Managers took time to proceed with such a program and followed a pattern and philosophy of evolution not revolution. As problems such as transportation and marketing, means of handling, processing, storing, distribution, and sales and the like opened, these managers tried to solve them.

Each individual project, as was set up and designed, should go through a cycle for its completion. The cycle includes the starting period, the institutionalization period, the optimum efficiency reaching
period, the management-turnover-to-the-local-people period, and the advisory supervision period. The duration of each period is dependent upon the type of the projects, the operating stage and progress, and the accomplishments and the maturity of the project. Of course the project as it materialized at the beginning, would be ridiculous in the later stage of any constant advance toward ultimate goals. Projects need to be adjusted, modified and even changed in time. A point will be reached at which most of these projects will generate their own motive power.¹

Regardless of the problems which technicians faced at the launching point of the program, there were many problems which came up later, as in any new institution, which needed solving. With the growth of any program many new problems will rise and need changes. Recommendations are made by the author of this thesis and a few of the problems are mentioned below:

Professor C. H. Milligan wrote that "for the first two months in Iran I was unassigned." And, "finally I was assigned to the Division of Agriculture although the bulk of my experience and training had been in Civil and Mechanical engineering."² It is recommended that assignments be conducted according to the knowledge and experience of the technicians before their arrival in Iran. They should be assigned to special projects or departments of TCI which are related to their past work.

Richard E. Griffin reported, "U. S. technicians were leaving for home with no immediate replacements."³ It is recommended that these

¹The continuation of projects is gradually being transferred to the various Government of Iran Ministries.

³Griffin, op. cit., Summary.
intervals, because of the nature of the project and the necessary amounts of work, might be fulfilled by a new technician before the departure of the old.

Dr. Roskelley reported: "Some of the men experienced frustrations because they were asked to work in cities throughout Iran rather than in Tehran." Technicians should be told that they are going to Iran and not to Tehran.

Most technicians are involved in or rather assigned to many projects. It is recommended that each one be assigned according to his knowledge and his field of training. Specialists experienced in the production of a given crop should be brought to Iran to work on only that one crop. It is also recommended that reports be written according to the technician's practice. A good example of such reports is "Pistachios in Iran", by W. Bemhower. It is understood that such reports may be used for research and are useful for the people and the technicians in and outside of Iran.

It is recommended that a copy of terminal reports and any useful report such as "Suggestions for the Improvement of the College of Agriculture of Tehran University at Karadž" by L. E. Cal, be kept in one place so that technicians will be able to review the parts which are

1Roskelley, op. cit., p. 7.

2In most reports the reporter reported that he went to such and such cities or areas. Such reports are good only to cover time and are of no use to the new technicians who want to use them as a guide to follow the program. As the writer's point of view is better, such matters should be covered in monthly reports and not in terminal reports, and terminal reports should be devoted to technical materials.

3Most of the reports are lost or have been disposed of; a few may be found in personnel files. Some of the technicians sent a copy of their terminal reports to the office of the Director of the program of U.S.U. - Dr. Walker - after receiving a letter from the writer indicating that their reports were not in the files and were needed for review.
related to the nature of their jobs.

It is recommended that technical assistance be given to an applicable program to the situation and conditions of Iran, but not merely the American carrying out a strictly American program.

It is recommended that more American technicians be given full time technical work and less, preferably no, administrative jobs.

It is recommended that a much better public service be provided for the country.

It is recommended that Iran and the United States, which support the programs of improvement and development of Iran, put more emphasis on educational programs. This will provide technical training for outstanding young men and women. This is necessary because the power of any country is based upon capable leadership and citizens who are educated in all fields of education.

It is recommended that as many students as possible be sent abroad for higher education.

It is recommended that the present situation (local authorities must go to Ministry headquarters in Tehran for solution of each little problem) be improved by obtaining well qualified, interested, responsible personnel who can be given greater freedom of action.

Too often the Iranians who left the country and obtained excellent training at their own or government expense or were trained and educated in Iran could not contribute their maximum to their country's development because they were put beside a job which was not related to their background at all or were buried in some minor positions in one of the Ministries or joined the ranks of the unemployed and their training was lost to their country. Therefore it is recommended that the educated,
trained, or technically competent Iranians be put to their full use and their talents and training fully utilized.

It is recommended that a mature person who was born, raised, and educated in Iran and knows English be brought to Utah State University to teach a course about Iranian culture to those who are interested and especially to the technicians who are going to Iran for a tour of duty.

Educationally, socially and emotionally it is important for those who go to Iran to know at least a few hundred words of the Persian language. It is recommended that a Persian course be taught at Utah State University, especially to those who are going to Iran.

It is recommended that over a period of years, (approximately a century) an enlightened educated middle class be brought into existence comprising at least 50% of the total population of the country, and further that a situation be created in which these people will have an equitable part in running the country. This would develop in part from an energetic, sincere program of education of the masses. If the aristocracy won't go along with this, get them under control some way or other so that a program can proceed.

The progress of agriculture in Iran is based largely on the Agricultural College of the University of Tehran at Karadj; therefore, it is recommended that advisors be chosen largely from the technicians with a Ph. D. degree and experience.

As a matter of fact, it is a great challenge to the national ego.

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1In July 1958, a few weeks before the departure of Dr. Walker the writer met with him. Among many things Dr. Walker mentioned that he was trying to find something about Iran and the culture of the people, and he said he was not quite successful. Therefore, the above mentioned suggestion seems to be one of the most important necessities for those who go to Iran.
to admit that help is needed and even a greater task to accept help to solve the problems. In spite of all these difficulties the program was launched. As a result, the Technical Assistance and Economic Aid Programs in Iran - assisted by Utah State University especially in the agricultural phase of the program - have been influential in keeping Iran an independent nation oriented to the free world. A good start has been made toward raising the standard of living. Tudeh (Communist party) propaganda has been answered with deeds which could not have been done without the political cooperation and acceptance, especially in Government circles and rural areas.

Technical Assistance to Iran came at the most opportune time. It was at a time that consciousness was stirring and feudalism was beginning to crumble under the weight of a new nationalism. The assistance brought a change and something new in line with the common aspirations of men everywhere that their children have a better life than their parents had. It brought hope to the people because change had come after many thousand years. Many changes have taken place, and there is evidence of progress not only in agriculture but throughout the country. The stimulus which has been given to the village farmers through the assistance program will have far-reaching results which only historians can measure.
THE EMBLEM OF THE IRANIAN EXTENSION SERVICE PUBLICATIONS
APPENDIX A

Utah State University staff members' information

The enclosed appendix includes the names, the dates of arrival of contractors in Iran; the education, and nature of employment of those Utah State University staff members who served previously or who are now serving a term in Iran. The minimum duration of each term is usually two years unless some cause - as sickness - makes the continuation of work impossible, or that the contract specifies some other period of time be spent in Iran.

* * * * *

1. Anderson, Bruce H.

1951 - Utah State Agricultural College Contract USOM/ Iran

(Presently in Iran)

Education:
- BS from Utah State Agricultural College in 1950 (Agricultural Engineering)
- BS from Utah State Agricultural College in 1951 (Irrigation and Drainage Engineering)

Nature of employment:
Director, Agricultural Engineering
1951-irrigation specialist, Agricultural Engineering - Shiraz
1952-53-Chief Agriculture Branch - Shiraz
1953-54-Acting Provisional Director. Shiraz for 6 months
1954-55-Chief Agricultural Engineer Branch USOM/ Iran. Tehran in charge of activities in irrigation, farm machinery and farm machinery cooperatives. Member of four special committees.
(1) Khuzistan plain development, (2) Irrigation Council, (3) Central Committee for farm machinery cooperatives, (4) Cooperative Council.
1957-Senior Advisor of Agricultural Engineering Branch

2. Argyle, Bell F.

1954 - Utah State Agricultural College USOM/ Iran
3. Ballard, John Clark

1951 - Utah State Agricultural College Contract USCM/ Iran

Education:
BS from Utah State Agricultural College in 1940 (Agronomy and Agriculture)

Nature of employment:

4. Bembower, William

1951 - Utah State Agricultural College Contract USCM/ Iran

Education:
BS from University of Ohio in 1911 (Horticulture)
BS from University of California in 1916 (Sub-tropic Fruits)

Nature of employment:
1951-Head, Horticulture Section of the Mission

Note: Served from December 27, 1951 to July 1, 1956

5. Blanche, George T.

1958 - Utah State University Contract USCM/ Iran

(Presently in Iran)

Education:
BS from Utah State Agricultural College in 1932 (Agricultural Economics)
BS from Utah State Agricultural College in 1931 (Agricultural Economics)
Ph. D. from Cornell University in 1941 (Agricultural Economics, emphasis was given to Farm Management, land economics and marketing.)

Nature of employment:
Advisor in Agricultural Economics in the College of Agriculture of the University of Tehran in Faradj.

6. Bowman, Albert Elijah

1957 - Utah State University Contract USCM/ Iran
Education:
BS from Utah State Agricultural College (Agronomy)
MS from Utah State Agricultural College (Agronomy)
Ph. D. from University of Wyoming

Nature of employment:
Supervisor of Utah State University Contract

Note: Served from 1957 to June 1958

7. Dunnell, Le Roy

1952 - Utah State Agricultural College Contract USCH/ Iran

Education:
BS from Brigham Young University (Agriculture) (Until 1951, 96 graduate credit hours were taken during summer sessions)

Nature of employment:
Tehran Region
1952-Chief Agriculturist, Tehran Team, USCH/ Iran, Cooperated closely with county extension agent and soil conservation service also leader in (1) young farmer activities and (2) adult farmer activities.

Note: Served about two terms.

8. Cannon, Wilford Y.

1954 - Utah State Agricultural College Contract USCH/ Iran

Education:
BS from University of Utah in 1909 (Mechanical Engineering)

Nature of employment:
Advisor and technician on the sugar industry

Note: Served from October 16, 1954, to October 17, 1956

9. Carroll, William E.

1954 - Utah State Agricultural College contract USCH/ Iran

Education:
BS from Utah Agricultural College in 1922 (Animal Husbandry)
MS from University of Illinois in 1917
Ph. D. from University of Illinois in 1914 (Animal Nutrition)

Nature of employment:
Advisor and consultant to the Dean of the College of Agriculture of the University of Tehran in Waradj

Note: Served from October 1954 to April 1957
10. Chase, Daryl (present President of the Utah State University)

Education:
- BA from the University of Utah (History and School Administration.)
- MA from the University of Chicago (History)
- Ph. D. from the University of Chicago (History)

Nature of employment:
Invited by ICA officials to go to Iran to become acquainted with the Utah State University staff members, their program, and the needs of the nation, March 4 to March 19, 1958.

Note: In an interview with the author the president made the following comment: "My general impression is that Point IV program is very good for both Iran and the United States."

11. Coulam, Joseph

1951 - Utah State Agricultural College Contract USOM/Iran

Education:
- BS from Brigham Young University 1930

Nature of employment:
- Chief of Housing

Note: Served from November 1951 to June 24, 1954

12. Despain, Dert E.

February 1952 - Utah State Agricultural College Contract USOM/Iran

(Presently in Iran)

Education:
- A total of 218 units was taken at Utah State Agricultural College, Brigham Young University and the University of Wyoming. He also completed three courses in "Selling."

Nature of employment:
- Agriculture Extension specialist
- Agriculture Extension specialist - Tabriz
- Extension Agent - Tabriz
- Rasht Regional Agriculturist OMI

13. Floyd, James Whitney

1955 - Utah State Agricultural College Contract USOM/Iran

Education:
- BS from Utah State Agricultural College in 1935
- MS from the University of California in 1942 (Forestry)
Nature of employment:
Forestry Consultant
(Mr. Floyd's time was devoted to three projects: (1) Assistance in the establishment of the forest ranger school. This work involved studying locations for establishment, ordering equipment and supplies and making financial arrangements with the Minister of Agriculture for running the school. (2) Assistance in the tree nursery and dry-land tree planting project. (3) Assistance in the location of a sawmill in the Caspian area.)

Note: Served from April 15, 1955 to September 3, 1955

11. Gardner, Bertrand R.

1955 - Utah State Agricultural College Contract USM/Iran

Education:
B.S. from Utah State Agricultural College in 1925 (Agronomy, Farm Machinery and Animal Husbandry)

Nature of employment:
Farm machinery and Agronomy - Tabriz.

15. Griffin, Richard E.

1955 - Utah State Agricultural College Contract USM/Iran

Education:
B.S. from Utah State Agricultural College in 1951 (Agricultural Engineering. (Completed most requirements for M.A.)

Nature of employment:
Agricultural Engineer to act as an Advisor to the Iran Department of Agricultural Engineering. (The first year Mr. Griffin was in charge of a training program in which he gave some practical application-training in farm machinery and irrigation to Iranian agricultural engineers. The last year consisted of investigations and advisory work on irrigation and drainage problems throughout the country, with specific attention in the south and southwest areas, and he also was in charge of United States agricultural engineering program.)

Note: Served from March 1955 until February 1957.

16. Hall, Jay M.

1951 - Utah State Agricultural College Contract USM/Iran

Education:
B.S. from Utah State Agricultural College in 1947 (Animal husbandry)

Nature of employment:
First two years, livestock specialist and the rest of the time
Co-Manager of Agriculture projects in Fars Ostan.

Note: Served from September 1951 to May 1956

17. Harris, Franklin S.

Dr. F. S. Harris who held a Ph. D. degree in Chemistry, Plant Physiology and Soils and D. and DSC Honorary degrees, was the former President of Utah State Agricultural College and went to Iran twice. The first time in 1939-1940 as the Advisor of the Iranian Government in Agriculture and Commerce. The Deseret News of Salt Lake mentioned this on September 3, 1951; the News reported that he was the Agricultural Advisor to the Shah; and, the second time, just after he retired from the Utah State Agricultural College staff was appointed by the State Department as the Chief of Technical Collaboration between Iran and the United States of American in 1950-52. The first time he went on a contract with Iranian Government and the second time with a contract with the State Department. He is mentioned here because he was a staff member of Utah State Agricultural College but he was not on a contract with that College. He was the first Technical Director of the Commission for Rural Improvement in Iran and in 1951 became the Technical Advisor to the Ambassador on Point IV activities. In an interview with him he mentioned to the author that because of the great needs of Iran in education, agriculture, health, manufacturing, water supply and the like the assistance program should be expanded and should be made more thorough.

18. Hubbard, Dean W.

1951 - Utah State Agricultural College Contract USOM/ Iran

Education:
BS from Utah State Agricultural College in 1928 (Livestock Extension)
MS from Utah State Agricultural College in 1931 (Economics)

Nature of employment:
Agricultural program, Agricultural Economics and General Contract on Division of Agriculture Administration.

Note: Served from November 30, 1951 until September 8, 1956

19. Hynas, Charles A.

1951 - Utah State Agricultural College Contract USOM/ Iran

Education:
BS from Utah State Agricultural College in 1928 (Livestock Extension)

Nature of employment:
Chief Agriculturist - Kerman
20. Israelsen, Orson W.

Education:
BS, MS, and Ph. D. (An authority on Irrigation and Drainage)

Nature of employment:
Study of Irrigation and Drainage progress and problems.
(Consulting Engineer, Irrigation and Drainage, USM/ Iran)

Note: Served from January 10 to June 10, 1956

21. Jacobsen, Ernest Abiah

1957 - Utah State University Contract USM/ Iran
(Presently in Iran)

Education:
BA from Brigham Young University in 1920 (Education)
MA from Brigham Young University in 1923 (Education)
Ed. D. from University of Oregon in 1937

Nature of employment:
Advisor to the Dean of College of Agriculture of the University of Tehran in Faradj.

22. Kirk, Odeal

1952 - Utah State Agricultural College Contract USM/ Iran
1955 - Utah State Agricultural College Contract USM/ Iran
(Presently in Iran)

Education:
BS from Utah State Agricultural College (Horticulture)
MS from Utah State Agricultural College (Horticulture)

Nature of employment:
1952-Horticulturist - Tabriz Province
1953-Agriculturist - Tabriz Province
1955-Agriculture Advisor - Rasht
1956-Advisor who helped to set up a demonstration farm at Tehran
1957-Advisor of the Faradj Demonstration Farm.

Note: Dr. George Stewart mentioned Mr. Kirk in a report thusly: "One of the most successful technicians who has served a tour in Iran."

23. Kurtz, Florence H. (Mrs.)

(Husted, Florence before marriage)

1954 - Utah State Agricultural College Contract USM/ Iran
24. Milligan, Cleve E.

1951 - Utah State Agricultural College Contract USCM/ Iran

Education:
BS from Utah State Agricultural College in 1932 (Engineering)
MS from University of California in 1933 (Irrigation)

Nature of employment:
Advisor on Irrigation and Farm Machinery,
1951 - Chief Agriculture Engineering Branch of the Mission

25. Merrill, J. Glenn

1952 - Utah State Agricultural College Contract USCM/ Iran

Education:
BS from Brigham Young University in 1937 (Soil Geology)
MS from Utah State Agricultural College in 1952 (Soil)

Nature of employment:
His first assignment was as Chief of Agriculture for ICA in Meshed region. In this capacity he worked with and advised the Khorasan Chief of Agriculture in directing agricultural programs for this region. During the last two years he was the ICA Country or Headquarters Agronomist. His responsibilities were to work with and advise the Iranian Ministry of Agriculture on all Agronomic phases of the agricultural program on a country wide basis.

Note: Served from October 9, 1952 until September 1, 1956

26. Oberhausley, Vern

1952 - Utah State Agricultural College Contract USCM/ Iran

Education:
BS from the Brigham Young University

Nature of employment:
Agriculture Extension specialist
Extension Agent and livestock specialist - Kerman.
Teacher - Veterinary on farm programs

27. Olson, Farrell S.

1955 - Utah State Agricultural College Contract USCM/ Iran

(Deceased)
Education:
BS from Utah State Agricultural College in 1935 (Animal Husbandry and Agronomy and 1935-51. In-service training in Vocational Agriculture.)

Nature of employment:
- Livestock specialist
- Agriculture technician

28. Ottley, Rex A.

1951 - Utah State Agricultural College Contract USOM/ Iran

(Presently in Iran)

Education:
BS from the University of Idaho in 1947 (Animal Husbandry)

Nature of employment:
- Livestock Extension - Meshed
- Chief Agriculturist - Meshed

29. Peterson, Melvin M.

1952 - Utah State Agricultural College Contract USOM/ Iran

Education:
BS from Utah State Agricultural College in 1941 (Agricultural Economics)
MS from Utah State Agricultural College in 1946 (Agricultural Economics)

Nature of employment:
- Temporary - Duration of contract; Agricultural Extension work with Government.

Personnel:
- Farm Management

Assignments:
- March 11, 1952 - March 31, 1953 - Babolsar
- May 1, 1953 - November 15, 1955 - Isfahan
- November 15, 1955 to August 1, 1957 - Shiraz

Note: Served from February 23, 1952 to September 1, 1957

30. Pittman, D. W.

Mr. Pittman who had a degree in soils was a professor at the Utah State Agricultural College. He did not go to Iran under any of the contracts of Utah State Agricultural College (Utah State University) - Iran - United States of America, but went as an Advisor to the Ministry of Agriculture in 1940-43. He taught courses at Karadj Agricultural College too.
10. Pollard, Leonard Neber

1950 - Utah State University Contract USOM/ Iran

(Presently in Iran)

Education:
BS from Utah State Agricultural College in 1932
MS from Utah State Agricultural College in 1934
Ph. D. from University of California in 1939 (Vegetable Crops)

Nature of employment:
Advisor to the Horticulture Vegetable Crops Department in the College of Agriculture of the University of Tehran at Karadj.

32. Furrnell, Delbert C.

1955 - Utah State Agricultural College Contract USOM/ Iran

Education:
BS from the University of Alberta, Canada in 1916 (General Agriculture)
MS from the Utah State Agricultural College in 1953 (Soils and Irrigation Extension)

Nature of employment:
Chief, Agriculture Division - Isfahan

Note: Served from July 1955 to May 1956

33. Roskelley, Richard Welling

1951 - Utah State Agricultural College Contract USOM/ Iran

Education:
BS from Brigham Young College, Logan, Utah in 1932
MS from Utah State Agricultural College in 1933 (Soils and Agricultural Economics)
Ph. D. from University of Wisconsin in 1933 (Soils and Agricultural Economics)

Nature of employment:
1951 - Chief, Agriculture Division of the Mission (assumed the responsibility of the Extension Branch until February 1953 too)

Note: Dr. Roskelley worked for a short time under Utah State Agricultural College Contract. He served in Iran from November 1951 until August 1951.

34. Sharp, David Jr.

1953 - Utah State Agricultural College Contract USOM/ Iran

(Presently in Iran)
35. Stenquist, Lee B."n
1957 - Utah State Agricultural College Contract USOC/ Iran (Presently in Iran)

Education:
BS from Brigham Young University in 1917

Nature of employment:
Business Manager Utah State University Contract and Advisor in Business Administration and Registration of the College of Agriculture of the University of Tehran in Karadj - Acting Supervisor Utah State University contract.

36. Stewart, George

1951 - Utah State Agricultural College Contract USOC/ Iran (deceased)

Education:
BS from Utah State Agricultural College in 1913 (Agronomy)
MS from Cornell University in 1919 (Agronomy and Plant Breeding)
Ph. D. from the University of Minnesota in 1926 (Plant Breeding, Biochemistry and Agronomy)

Nature of employment:
1951 - Chief, Plant Science Branch of the Mission Supervisor of Utah State Agricultural College Contract

37. Stewart, James C.

1955 - Utah State Agricultural College Contract USOC/ Iran

Education:
BS from Oregon State College in 1922 (Botany and Ecology)
In-service training in Plant Ecology, water-shed management, and timber management.

Nature of employment:
Advisor to the Chief of the Range Division in the Ministry of Agriculture on Range and watershed Improvement

Note: Served from December 7, 1955 to October 9, 1957
38. Turner, Lewis M.

1954 - Utah State Agricultural College Contract USOM/ Iran

Education:
- BS from the University of Illinois 1923
- MS from the University of Illinois 1925
- Ph. D. from the University of Chicago in 1931

Nature of employment: Make plans for a national range (forestry school)

Note: Served from October 1954 to January 1955

39. Versluis, Hendrick

1951 - Utah State Agricultural College Contract USOM/ Iran

Education:
- DVM - Veterinary Medicine from Cornell University in 1935
- BA from Brigham Young University in 1950 (Bacteriology)
- DSc from Tohoku Imperial University, Japan, 1949

Nature of employment: 1951 - Head, Veterinarian Section of the Mission

40. Wahlquist, A. Glenn

1952 - Utah State Agricultural College Contract USOM/ Iran
1958 - Utah State University USOM/ Iran

(Presently in Iran)

Education:
- BS from Utah State Agricultural College in 1943 (Agronomy)
- MS from Utah State Agricultural College in 1951 (Agronomy)

Nature of employment:
- Agronomist working out of headquarters Tehran (Special projects:
  (1) Selected seed distribution, (2) Cotton, (3) Sugar beets,
  (4) Sugar cane and (5) Assistant to Karadj Agricultural College)
- 1958 - Soils and Botany Advisor to the College of Agriculture
  of the University of Tehran in Karadj

Note: Served first term from July 1952 to July 1954

41. Walker, Rudger Harper

1958 - Utah State University Contract USOM/ Iran

(Presently in Iran)

Education:
- BS from Brigham Young University in 1923 (Bacteriology)
MS from Iowa State College in 1924 (Bacteriology)
Ph. D. from Iowa State College in 1927 (Soils Bacteriology)

Nature of employment:
Contract Supervisor

Note: Dr. Walker went to Iran April and May of 1952, for Technical Assistance work for the United States Department of Agriculture, and July 1954 and 1955 and April 1956, two weeks each time for Technical Assistance work. In the tour of 1954, Mr. Thorpe B. Isaacson, Chairman of the Board of Trustees of Utah State Agricultural College accompanied Dr. Walker.

42. Walter, Orrin Stoddard

1958 - Utah State University Contract USOM/ Iran
(Presently in Iran)

Education:
He attended the Agricultural College of Logan, Utah, for a winter course in mechanics in 1916.

Nature of employment:
Farm machinery Advisor to the Ministry of Agriculture.

43. Winsor, I. W.

Mr. Winsor who held a degree in Irrigation Engineering and was a professor at Utah State Agricultural College, went to Iran, as did Mr. Pittman, about 1940-41. He was not under a contract with Utah State Agricultural College.

44. Wood, James H.

1954 - Utah State Agricultural College Contract USOM/ Iran
1958 - Utah State University Contract USOM/ Iran
(Presently in Iran)

Education:
BS from Utah State Agricultural College in 1947 (Agronomy)

Nature of employment:

45. Young, Herald A.

1955 - Utah State Agricultural College Contract USOM/ Iran

Education:
He took three courses in Auto-mechanics and Farm Machinery.

Nature of employment:
Farm machinery specialist - Babolsar (He also serviced threshing in Tehran and Meshed Provinces as well as in Babolsar)
APPENDIX B

Contractual Information

The first contract which brought the Utah State University men to direct action with relation to their institution was signed under the title of "Agreement Between the United States of America and the Utah State Agricultural College" on June 21, 1951 (No. 30114,072). This original contract called for technicians to work throughout Iran with the Ministry of Agriculture establishing projects suitable to the nature of the country. This contract was to last for three years. It was replaced by a second contract which was entitled the "Contract Between the United States of America and the Utah State Agricultural College" and was amended six times. The contract and its fifth amendment (only the parts are quoted that are related to the author’s study) are as follows:

Contract made this 30th day of June, 1954, between the Government of the United States of America, represented by the Foreign Operations Administration (referred to below as "FOA") and Utah State Agricultural College (referred to below as the "Contractor").

The FOA and the Contractor hereby agree as follows:

ARTICLE I. Scope of Services to be Performed by the Contractor

A. Contractor will carry out operations, as designated herein and as subsequently agreed to in written supplements or amendments to the Contract, in connection with FOA's program of technical assistance in the fields of plant science; agricultural engineering (including, but not limited to, farm machinery repair shops, farm irrigation systems and practices, experimental farm machine cooperatives); animal science, and agricultural extension in Iran. In addition, the Contractor will serve in an advisory capacity to Faradj Agricultural College to aid in its program of service to the diverse agriculture of Iran. All operations of the Contractor under this Contract shall be within the scope of, and shall be carried out in accordance with, the applicable
agreements on technical cooperation (referred to below as "Program and Project Agreements") between the Government of the United States and the Government of Iran which are in force or which shall enter into force during the term of this Contract. In carrying out operations under this Contract the Contractor will act on behalf of FOA to fulfill certain undertakings assumed by the Government of the United States under the applicable Program and Project Agreements in Agriculture, as amended from time to time, as specified in this Contract.

B. The operations of the Contractor under this Contract shall:

1. Furnish technical assistance to the Ministry of Agriculture of Iran for the purpose of carrying out a project for improvement of PLANT SCIENCE.

2. Furnish technical assistance to the Ministry of Agriculture of Iran for the purpose of carrying out project agreements covering various phases of AGRICULTURAL ENGINEERING, namely,
   a) To aid in establishing farm machinery repair shops and agricultural machinery demonstration and training centers.
   b) To aid in improving farm irrigation systems and irrigation practices.
   c) To furnish technical assistance to the Ministry of Agriculture of Iran, the Agricultural Bank of Iran, and the Seven Year Plan Organization of Iran to aid in establishing farm machinery cooperatives in Iran.

3. Furnish technical assistance to the Ministry of Agriculture of Iran for the purpose of carrying out a project for improvement of ANIMAL SCIENCE.

4. Furnish technical assistance and training services to the Ministry of Agriculture of Iran to aid in the development of an Iranian Agricultural EXTENSION SERVICE. The Contractor will place emphasis on the training of Iranian technicians in the actual conducting of Extension work.

5. Provide a Consulting Dean of KARADJ AGRICULTURAL COLLEGE and furnish such other assistance to the College as may be agreed upon by the Parties hereto.

6. Conduct such other activities in connection with the technical cooperation Programs in Iran as may be agreed upon by the parties hereto.

C. In carrying out such projects and activities, the Contractor shall:

1. Recruit, train, orient, and maintain in residence in Iran, a staff composed of a chief advisor who shall be responsible for the supervision of the performance of all duties undertaken by the
Contractor in Iran, such other staff members, not to exceed 12 in number, as are needed to carry out the activities specified above and such other activities as may be later agreed to be parties hereto. In addition, Contractor shall provide such short-term consultants as shall be mutually agreed to by the parties. It is understood that, unless otherwise agreed by the parties hereto, personnel currently carried on FOA rolls shall continue on FOA rolls although falling positions under project fields encompassed by this Contract. All personnel employed by the Contractor under the Contract No. SEC 14072, as amended, between the FOA and the Utah State Agricultural College, whose employment is to continue under this contract, shall be employed by the Contractor under this Contract upon termination of Contract Number SEC 14072.

2. Provide such personnel (not to exceed equivalent of two persons, to be approved by FOA, in the United States) as may be reasonably required to coordinate activities of the field staff with those of the institution at Logan, Utah.

3. Furnish supervision and direction of its personnel and activities under the Contract and supply additional services and materials to support operations hereunder as otherwise specified in the Contract.

4. Upon the request of FOA, Contractor may send to Iran such of its officers or executives as may be required to review the progress of the work. Such officers or executives, following such review, shall furnish in quadruplicate such reports as may be requested by FOA. No direct salary charges will be paid hereunder in respect to any such officers or executives, but in any case travel costs comprising transportation, baggage and travel allowances, will be provided in the same manner and measure as is provided for field staff members. (Article II Condition Governing Operations by Contractor, Article III Financial Provisions, and Article IV General Provision are omitted.)

ARTICLE V Duration and Termination

A. Period of Contract.

1. Effective Date. The Contract shall be effective upon execution by the parties hereto.

2. Term and Termination. The Contract shall remain in force for a period of three years from the effective date hereof unless previously terminated in accordance with the provisions set forth below.

(1) FOA may terminate the Contract on 90 days' written notice to the Contractor.

(2) The Contractor shall not be liable for any delay in performing its obligations hereunder if any such delay arises from causes beyond the control and without the fault of negligence of the Contractor, provided that the Contractor gives prompt notice thereof to FOA. If such causes shall prevent performance hereunder for a continuous three-month period after us notice, Contractor may terminate this Contract on 90 days' notice to FOA. Such causes included, but are not limited to, act of God or of the public empire, fires, floods,
epidemics, strikes, quarantine restrictions, acts of Government and unusually severe weather. (The rest is omitted.)

The fifth amendment to the above mentioned contract is signed under the title of the "Amendment No. 5 to the contract between the United States of America and the Utah State Agricultural College P10/T 65-11-121-3-70154" which reads as follows:

This agreement To Amend made this 5th day of April 1957, by and between the United States of America, represented by the International Cooperation Administration (hereinafter referred to as "ICA"), successor agency to the Foreign Operations Administration, and the Utah State Agricultural College, (hereinafter referred to as "Contractor").

WHEREAS, the parties hereto entered into a contract dated June 30, 1954, and amended said contract by a letter of amendment March 25, 1955; by Amendment No. 2 dated June 28, 1955; and further amended said contract by letters dated October 24, 1956 and January 30, 1957 which shall be hereby designated as Amendment No. 3 and Amendment No. 4, respectively and;

WHEREAS, the parties hereto now desire to further amend said contract:

NOW THEREFORE, the parties hereto mutually agree that said contract shall be and it is hereby further amended, as follows:

1. ARTICLE I-A is amended to read as follows:

"A. The Contractor shall provide the following advisors to the Ministry of Agriculture of Iran:

1. Senior advisor in Agricultural Engineering with major experience and technical knowledge in the field of either Farm Machinery Operation and Maintenance or on Farm Irrigation and Drainage, in the broad sense.

2. One Agricultural Engineer as an Advisor in the field of Farm Machinery Operation and Maintenance or in Farm Irrigation and Drainage in the broad sense, such advisor shall be in a field not covered by the Senior Advisor described in 1. above.

3. One Demonstration Farm Advisor in the field of Mechanized Farming who is qualified to advise and train in the operation and maintenance of farm machinery, and preparation, and farm irrigation and drainage. Such advisor will be assigned to the Agricultural Engineering Demonstration Farm at Shiraz.

4. One Demonstration Farm Advisor in the field of Mechanized Farming who is qualified to advise and train in the operation and maintenance of farm machinery, land preparation, and farm irrigation and drainage. Such advisor will be assigned to the Agricultural Engineering
5. One range and watershed Management Advisor.

2. ARTICLE I-B is amended to read as follows:

"B. The Contractor shall provide the following to Karaj College:

1. Advisor to the Dean who shall have experience and the academic background to advise the Dean in College administration, curricula organization, administrative policy, and campus organization and management.

2. An advisor for the College Business Office and Registrar's Office."

3. ARTICLE I-C is amended by deleting "projects end", appearing in the first line.

4. ARTICLE I-G-1 is amended to read as follows:

"1. Recruit, train, orient, and maintain in residence in Iran the staff specified in Article I-A and B, one member of said staff to be designated as a Chief Advisor who shall be responsible for the supervision of the performance of all duties undertaken by the Contractor in Iran. Whenever effecting field staff replacements in the positions authorized by Article I-A and B above, Contractor may permit necessary dual employment during the period not to exceed 30 days in any one case, within which overlapping assignments occur. This is intended to allow a replacement to travel to and arrive at the post of duty prior to departure of his predecessor and thus avoid disruption of the function being performed by such person." (Numbers 5 to 11 omitted.)

15. ARTICLE I-A-2 is amended by changing "three years" to read "four years". (Number 16 omitted.)

17. EFFECTIVE DATE - This agreement to Amend shall be effective upon the date of its execution by the last signatory who shall endorse such date in the first paragraph hereof and also below his signature.

Except as expressly hereby amended, said contract is in all respects ratified, confirmed, and continued in full force and effect in accordance with its terms.

IN WITNESS WHEREOF, the parties hereto have, by their representatives or officers hereunder duly authorized, executed this Agreement to Amend.

UTAH STATE AGRICULTURAL COLLEGE-INTERNATIONAL COOPERATION ADMINISTRATION

BY /s/ Dee A. Broadbent

DATE April 15, 1957

BY Edw. E. Kunze

DATE Relations March 6, 1927

Director, Office of Contract

President
Close to the termination of the above mentioned contract it was proposed that two new contracts replace the contract already mentioned. In 1953 two new contracts were signed as follows:

THIS CONTRACT is made and entered into between the Government of the United States of America, as represented by the International Co-operation Administration, Karaj College of the University of Tehran (the Institution), and Utah State University (the Contractor), an educational institution chartered by the State of Utah, with its principal office in Logan, Utah.

WHEREAS, ICU and Utah State University (formerly Utah State Agricultural College) entered into a contract dated June 30, 1950, and amended said contract, by a letter of amendment March 29, 1953; by Amendment No. 2 dated June 29, 1955; by letters dated October 21, 1956, and January 30, 1957, which were designated as Amendment No. 3 and Amendment No. 4, respectively; by Amendment No. 5 dated April 5, 1957; and by Amendment No. 6 dated September 19, 1957; and

WHEREAS, the parties hereto now desire to enter into a new contract to supersede the above mentioned Contract, and the Contractor is willing and able to render the technical advice and assistance requested by the Government of Iran (the Cooperating Country) under agreements between said Government and the Government of the United States of America;

NOW THEREFORE, the parties hereto mutually agree as follows:

I. SCOPE. The Contractor agrees to use its best efforts to render technical advice and assistance to the Cooperating Country for the purpose of assisting the Government of Iran to provide advisory assistance that will aid and assist (a) in modernizing the organization and operation of Karaj College and (b) in developing a curriculum that will provide a well rounded education in Iranian agriculture and assist in its improvement as more specifically provided for in Appendix B, "Operational Plan," attached hereto and made a part hereof. Contractor will develop in consultation with the Institution and USOC as soon as practicable or within 120 days after arrival in the Cooperating Country, a detailed work program to implement the project, which work program will be subject to review from time to time as considered necessary by USCM, the Institution or the Contractor.

II. CONDITIONS GOVERNING OPERATIONS.

A. It is understood that the services provided in the Cooperating Country are an integral part of the United States aid and will be performed under the general policy guidance of the USCM Director; the Contractor will be responsible for all professional and technical details of the Contract and shall keep the USCM Director currently informed of the progress of the project.

B. Activities under this contract shall be governed by the "Standard Provisions" set forth in Appendix A, the "Approved Budget" set forth in Appendix C, and the "Special Provisions" Contained
in Appendix D, all of which are attached hereto and made a part thereof.

III. FINANCING. The Contractor will be reimbursed for the costs incurred by it in performing services hereunder in accordance with the applicable provisions of Appendix A and Appendix B, subject to the following limitations made in respect thereto:

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<th>U. S. Dollars</th>
<th>Local Currency-Institution</th>
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<td>1,906,000</td>
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A. New commitments subject to limitations expressed in Appendix C.

B. Estimated Additional Financing and Carry-over

1. Estimated carry-over from Contract superseded by this Contract. (See Articles 1-4 of Appendix C).

2. Estimated Additional financing if funds are available.

TOTAL

$363,103 (See Appendix C)

C. Advance of Funds

$100,000

IV. TERM. The Contract shall be effective on the date of the last signature hereto and the services to be rendered and the right to incur obligations hereunder shall continue until April 1, 1968, hereinafter referred to as the expiration date, unless previously terminated in accordance with the provisions set forth in Appendix A.

IN WITNESS WHEREOF, the parties hereto have executed this contract on the day and year specified below.

KARAJ COLLEGE OF THE UNIVERSITY OF TIBERI

BY illegible

TITLE Chancellor of the University

DATE April 26, 1958

INTERNATIONAL COOPERATION ADMINISTRATION

BY Larry Drew

Director, Office of Contract Relations

DATE March 19, 1958
(Appendix A - Standard Provisions, Three Party Contract which includes: Definitions, Personnel, Home Campus Support, Reports, etc., is omitted.)

Appendix B

Contract No. ICA-X-6

CONTRACT BETWEEN THE UNITED STATES OF AMERICA,
KARAJ COLLEGE OF THE UNIVERSITY OF TIBRAN
AND UTAH STATE UNIVERSITY

Plan No. 1 Date of Plan: February 1958

Appendix B - Operational Plan

I. Objectives and Scope of Work:

Operations under this contract will continue technical assistance to Karaj College carried out since June 30, 1954, under ICA-financed contract between Utah State University and Karaj College.

The objective of the contract is to provide advisory services that will assist in:

1. modernizing the organization and operation of Karaj College (herein referred to as the "Institution" and also referred to herein as the "College")

2. developing a curriculum that will provide a well rounded education in Iranian agriculture and its improvements;

3. increasing the professional competence of the faculty;

4. developing improved teaching procedures which will emphasize application;

5. expanding laboratory teaching;

6. expanding the use of the library by professors as well as students;

7. modernizing methods of examination;

8. developing a research program that will support the teaching program, provide new information for extension specialists and for the use of farmers, and lead to a great increase in the efficiency of food production, so that masses of people can be freed from this job to man industrial development the country so much desires.
II. Operational Plan.

1. Teaching and Research

The Contractor will advise and aid in training the staff of the College in matters of organization, administration and procedures, in the English language, in methods of teaching, research, and extension, and in the development and use of demonstration programs. This will include:

a. **Teaching**: Aid in development of (1) surveys of educational needs in the field of agriculture, (2) curricula, courses and teaching methods for undergraduate, graduate and (where applicable) vocational school students and adult classes in the field of agriculture.

b. **Research**: Aid in the development of (1) surveys of research needs and effective methods of research, (2) improvement of research organization and administration, (3) research projects in major fields, (4) training of research workers, and (5) preparation and dissemination of research results.

c. **Extension Programs**: The Contractor will aid in the development of (1) undergraduate and graduate training for prospective extension workers, (2) in-service training for extension workers and special short courses, utilizing special demonstration projects to show effective practices and to test effective extension techniques that are mutually agreed upon by the College and Ministry of Agriculture of Iran.

d. **Demonstration Programs**: The Contractor will provide specialists to aid the College in development of plans and programs for demonstration projects as an essential technique in carrying out major programs. Such plans will include aid in (a) planning and conduct of economic and technical studies to determine feasibility of such projects, (b) counsel of effective practical plans, (c) development of research for such projects, and (d) operation of such projects, including vocational agricultural demonstration projects.

e. **Training Programs**: In addition to the above the Contractor will aid the College in providing mutually agreed upon training programs in agriculture in cooperation with governmental and other entities as may be provided for in the program of the College.

2. Consultative Services

The Contractor will aid in the development of technical consultative services which the College may provide to governmental authorities and to non-governmental groups.
3. **Training of College Faculty and Other Staff**

As necessary to strengthen the staff of the College the Contractor will aid in selecting faculty and other staff members of the College and graduate students or other participants for training in the United States or in a third country. With the prior written approval of ICA, persons so selected may be trained at the Contractor's institution in the United States or at other institutions in the United States selected by the Contractor, and mutually agreed upon by Contractor and College, in consultation with ICA and other agencies concerned. Unless otherwise stipulated, this training shall be for a maximum of one academic year.

4. **Expansion of Facilities**

The Contractor will advise, upon specific request, in the establishment, development and operation, where applicable, of technical training schools, laboratories, and special institutions in any part of Iran which may undertake research and extension services and provide consulting and reference services in specialized fields of Agriculture, as long as such programs are mutually agreed upon by the Minister of Agriculture and the College.

5. **Special Conference and Training Programs**

The Contractor will aid the College in establishing the kind of leadership required to plan and conduct special local or regional conferences and training programs, and in executing these plans for such conferences and training programs as may be held in Iran.

6. **Training Aids**

As part of the training programs, the Contractor will aid the College in training staff and developing facilities to (a) prepare and disseminate training and educational materials and aids, (b) instruct in the use of various types of training aids, and (c) cooperate with research and extension workers and teaching staff in effective use of demonstrations, special short courses, and services to volunteer leaders.

7. **Books, Materials and Supplies**

The Contractor will advise the College on the selection and use of necessary books, equipment and supplies for the activities covered in the contract.

8. **Duration of Assistance:**

Assistance at approximately the level described above will be needed for a minimum of approximately two years. Before 30 June 1959, a review of the project should be made to determine the earliest practicable date for termination and to lay plans for phasing out.
III. Contract Staff

1. Regular Staff Members

Beginning as soon as practicable after execution of the contract, the Contractor will send to Iran (or transfer from other contract operations in Iran) for two-year tours of duty a staff of 9 professional and technical advisors to be selected from the following positions on a basis of availability and provided that when technically feasible and otherwise appropriate and approved by USOM and the Institution, a staff member may perform the functions of two of the enumerated positions.

a. Contracts Supervisor
b. Advisor to the Dean
c. Business Office Administration and Registrar Advisor
d. Agricultural Engineering Advisor
e. Animal Science Advisor
f. Plant and Soil Science Advisor
g. Vocational Agricultural Education Advisor
h. Extension Methods Advisor
i. Building and Grounds Maintenance Advisor
j. Agricultural Economics Advisor

Changes in the staffing pattern may be made as needed when agreed upon by the Institution, USOM, and the Contractor.

2. Short Term Staff Members.

In addition, Contractor will furnish short term staff members as mutually agreed upon and within budget limitation.
Appendix C

Contract No. ICA-X-6

Appendix C - Approved Budget

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<table>
<thead>
<tr>
<th>Line Item No.</th>
<th>Item</th>
<th>Firm Budget From: 3-20-58 To: 3-20-59</th>
<th>Projected Budget From: 3-20-59 To: 3-20-60</th>
<th>Total Budget From: 3-20-59 To: 3-20-60</th>
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</thead>
<tbody>
<tr>
<td>1. Salaries</td>
<td></td>
<td>$96,100</td>
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<td>5. Overhead</td>
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<td>7. Participant Costs</td>
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<td>0</td>
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<td><strong>Grand Total</strong></td>
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<td><strong>$175,503</strong></td>
<td><strong>$393,103</strong></td>
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(The rest of Appendix C, Appendix D - Special Provisions which includes the Previous Contract, Transportation of Automobiles and Household Goods, Overheads and so on, and the ICA University Contractor's Guide including Standards on Salaries and Other Personnel Matters, Standards on Training Programs and so on, is omitted.)
CONTRACT BETWEEN THE UNITED STATES OF AMERICA,  
MINISTRY OF AGRICULTURE, AN AGENCY OF THE GOVERNMENT OF IRAN,  
AND UTAH STATE UNIVERSITY  

PIC/T 65-11-967-3-60518  

THIS CONTRACT is made and entered into between the Government of the United States of America, as represented by the International Cooperation Administration, Ministry of Agriculture (the Institution), an Agency of the Government of Iran, and Utah State University (the Contractor), an educational institution chartered by the State of Utah with its principal office in Logan, Utah.  

WHEREAS, the Contractor is willing and able to render technical advice and assistance requested by the Government of Iran (the Cooperating Country) under agreements between said Government and the Government of the United States Of America.  

NOW, THEREFORE, the parties hereto mutually agree as follows:  

I. SCOPE. The Contractor agrees to use its best efforts to render technical advice and assistance to the Cooperating Country for the purpose of developing trained personnel within the Ministry of Agriculture of Iran to make better use of land and water resources in Iran for more efficient production of food and fibre as more specifically provided for in Appendix B, "Operational Plan," attached hereto and made a part hereof. Contractor will develop in consultation with the Institution and USOM as soon as practicable or within 120 days after arrival in Cooperating Country, a detailed work program to implement the project, which work program will be subject to review from time to time as considered necessary by USOM, the Institution, or the Contractor.  

II. CONDITIONS GOVERNING OPERATIONS.  

A. It is understood that the services provided in the Cooperating Country are an integral part of the United States aid and will be performed under the general policy guidance of the USOM Director; the Contractor will be responsible for all professional and technical details of the Contract and shall keep the USOM Director currently informed of the progress of the project.  

B. Activities under this contract shall be governed by the "Standard Provisions" set forth in Appendix A, the "Approved Budget" set forth in Appendix C, and the "Special Provisions" contained in Appendix D, all of which are attached hereto and made a part hereof.  

III. FINANCING. The Contractor will be reimbursed for the costs incurred by it in performing services hereunder in accordance with the applicable provisions of Appendix A and Appendix D, subject to the following limitations made in respect thereto:
A. Total commitment subject to limitations expressed in Appendix C
   - U.S. Dollars: $160,000
   - Local Currency: Rials 5,500,000

B. Estimated additional financing which may be provided if funds are available
   - Total: $111,267
   - See Appendix C

C. Advance of funds
   - Total: $50,000
   - See Appendix C

IV. TERM. The Contract shall be effective on the date of the last signature hereto and the services to be rendered and the right to incur obligations hereunder shall continue until April 1, 1960, herein-after referred to as the expiration date, unless previously terminated in accordance with the provisions set forth in Appendix A.

IN WITNESS WHEREOF, the parties hereto have executed this contract on the day and year specified below.

MINISTRY OF AGRICULTURE, AN AGENCY
OF THE GOVERNMENT OF IRAN

By/ s/ Hasan Akhavi
TITLE Minister of Agriculture
DATE 3/19/58

MINISTRY OF AGRICULTURE, AN AGENCY
OF THE GOVERNMENT OF IRAN

By/ s/ Daryl Chase
TITLE President
DATE 3/19/58

INTERNATIONAL COOPERATION ADMINISTRATION

By/ s/ Harry A. Brenn
Director, Office of Contract Relations
DATE 3/19/58

(Appendix A-Standard Provisions, Three Party Contract which includes: Definitions, Personnel, Home Campus Support, Reports and so on is omitted.)
Appendix B

Contract No. ICA-X-7

CONTRACT BETWEEN THE UNITED STATES OF AMERICA,
MINISTRY OF AGRICULTURE, AN AGENCY OF THE GOVERNMENT OF IRAN
AND UTAH STATE UNIVERSITY

Plan No. 1

Date of Plan: February 1958

Appendix B - Operational Plan

I. Objective and Scope of Work

The Contractor and its staff members will aid and advise the Agricultural Engineering Department of the Ministry of Agriculture in strengthening its educational, demonstrational research, and consulting programs in irrigation and drainage and farm machinery operation, maintenance and repair, and farm machinery cooperatives as provided below.

II. Operational Plan

Subject to the availability of funds and subject to the terms of the agreed-upon general work plans, the Contractor and its staff members will:

1. Aid and advise the Agricultural Engineering Department of the Ministry of Agriculture in improving farm irrigation systems and irrigation practices for the more efficient use of irrigation water; to include:

   a. Demonstrating proper water distribution through land leveling, proper seed bed preparation and proper water application including water measurement and control.

   b. Aid in coordinating soil and water research programs developed by the Ministry and by Karaj College to avoid duplication of
effort.

c. Demonstrating and training Ministry technicians in techniques of proper soil and water conservation practices and the proper design of on-farm irrigation systems.

3. Aid in developing a program of farm drainage to reclaim lands affected by salt accumulations and to prevent such accumulations on irrigated lands; train technicians through field demonstrations how to design and install effective farm drains and to aid in determining the best types of drains for particular soil conditions.

3. Aid and advise in the selection, operation, maintenance and repair of agricultural machinery:

   a. In the farm machinery cooperatives;

   b. in areas where the Ministry, its agencies or Bongahs, are operating such machinery;

   c. on the demonstration farms set up by the Ministry of Agriculture and as agreed to by USOM.

4. Aid the Ministry in the warehousing, inventorying, assembly, repair, rebuilding and distribution to projects utilizing farm machinery.

5. Aid and advise farm machinery cooperatives in establishment and operation of farm machinery repair shops.

6. Aid and advise in the operation of a farm machinery demonstration farm, to include:

   a. demonstration and training in power machinery and animal-drawn machinery, and in creation and use of improved hand tools;

   b. preparation of seed beds and cultivation, irrigation harvesting and storage of crops;
c. establishing proper crop rotations, use of improved seed, and plowing under of green manure crops.
d. economic use of farm machinery in crop production, including determination of unit costs for operating machinery for plowing, diskimg, cultivating, harvesting, and so on.

III. Contract Staff.

1. Regular Staff Members

Beginning as soon as practicable after execution of the contract, the Contractor will send to Iran (or transfer from other contract operations in Iran) for two-year tours of duty a staff of 4 professional and technical advisors which will include, insofar as practicable, the following:

a. Senior Advisor in Agricultural Engineering (Irrigation and Drainage.)

b. Agricultural Engineering Advisor (Farm Machinery)

c. Agricultural Engineering Advisor (Farm Machinery Property Management)

d. Demonstration Farm Advisor (Tehran)

2. Short Term Staff Members

In addition Contractor will furnish Short Term Staff Members as mutually agreed upon and within budget limitations.
Appendix C

Contract No. ICA-X-7

CONTRACT BETWEEN THE UNITED STATES OF AMERICA
MINISTRY OF AGRICULTURE, AN AGENCY OF THE GOVERNMENT OF IRAN
AND UTAH STATE UNIVERSITY

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Appendix C - Approved Budget

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1. U.S. Dollar Costs Reimbursed by ICA

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Firm Budget</th>
<th>Projected Budget</th>
<th>Total Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
<td>From: 3-20-58 To: 3-20-59</td>
<td>From: 3-20-59 To: 3-20-60</td>
<td></td>
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<tr>
<td>1. Salaries</td>
<td>$16,250</td>
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<td>2. Allowances</td>
<td>10,338</td>
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<td>3. Travel and transportation</td>
<td>35,550</td>
<td>16,500</td>
<td>52,050</td>
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<tr>
<td>4. Other Direct Costs</td>
<td>6,915</td>
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<tr>
<td>5. Overhead</td>
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<tr>
<td>6. Equipment</td>
<td>5,000</td>
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<td>10,000</td>
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<tr>
<td>7. Participant Costs</td>
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<tr>
<td>Grand Total</td>
<td>$113,191</td>
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(The rest of Appendix C; Appendix D - Special Provisions which includes Previous Contract Service of Field Staff, Transportation of Automobiles and Household Goods, Overheads and so on; and the ICA University Contractor's Guide including Standards on Salaries and Personnel Matters, Standards on Training Programs and so on, is omitted.)
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