AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT IN SYRIA 1955-1968

Dissertation

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

By

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***********

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PLEASE NOTE:

Some pages have indistinct print. Filmed as received.

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FIELDS OF STUDY

MAJOR FIELD: Agricultural Extension


Studies in Extension Teaching Methods, Extension Administration, and Agricultural Vocational Training. Professor Ralph E. Bender.


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CHAPTER I

NATURE OF THE STUDY

In most developing countries, including Syria, agriculture is the way of life and the center of social and economic activities. Rural people in these countries are marching on the path of development, but the desired progress and development have been hazardous and uneven.

There are complicated social and economic problems due to the lack of balance and integration in the approaches followed to tackle the problems of agricultural and rural development.

Statement of The Problem

The development of agriculture in emerging countries has become a stated goal or objective in the last two decades as a major means for increasing per capita income and raising the living standard.

A great deal of emphasis has been put on capital formation in terms of physical plants, power stations, and factories. The rate of social and economic change is slow and the level of living standard continues to be low.

Agricultural development is a dynamic and long process as are social and economic change and improved living standard. All development cannot happen by capital formation.
alone...i.e. having a big petroleum revenue does not lead to total development.

Change requires that the right educational condition should first be created. Capital formation is important for development, but it is only a tool or an instrument to be used. What determines its usefulness is the degree to which people are able to understand its function and to make the best use of it.

On this basis it is believed that agricultural extension education lies at the heart of development, and that agricultural extension education releases the potentialities not of the few, but of the many.

Agricultural extension education opens the way for increasing productivity, a higher level of living standard, and social change.

"I would particularly mention the importance of rural education and training-an area in which we shall be working together with both UNESCO and ILO-as well as agrarian reform, the establishment of co-operatives and improved extension services. All these are well-known approaches, and will find their place in what I hope will be a dynamic attempt to improve the quality of rural life."

There is need for better understanding the role of agricultural extension education in development of rural areas in

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A. H. Boerma, Director-General of FAO "Food Requirement and Production Possibility" (Introductory Address Presented at the UNESCO intergovernmental Conference of Experts on the Scientific Basis for Rational use and Conservation of the Biosphere, Paris, 4 September 1968), P. 13.
emerging countries. Such a study will be carried out with respect to agriculture and the rural situation in Syria.

In summary the research problem is that agricultural extension educational programs are not emphasized as a major and decisive variable in the agricultural developmental projects and in the process of agricultural, social and economic development of rural people in the emerging countries.

The Need for the Study

Starting from the early stages of development in the highly industrialized countries of today, such as the U.S.A., agricultural extension education has been a major endeavor for providing rural people with technological, economic, educational and social guidance, to enable them to raise their productivity and improve their life. These efforts have been generally successful.

The questions of agricultural development in the agriculturally emerging countries, in the sense of new inputs such as seeds, breeds of animals, fertilizers, pesticides and equipment and the adoption of technical and economic innovations in agriculture, depend to a large extent upon alterations in human behavior patterns. Man is the primary catalyst in the productive process through his managerial

---

2. Joint USDA-MASU LGC Extension Study Committee; A People and a Spirit, (Fort Collins: Colorado State University, Nov. 1968), PP. 21-30.
ability and he is also a key factor of production through his physical labor.

Questions of development are still to be answered in terms of why do many agricultural economic projects fail to achieve their objectives and eventually go out of existence?

How can the energizing influence of creative management and thoughtful efforts be injected into a technologically stagnant agriculture?

What are the proper educational means and ways by which agricultural productivity can increase?

How can economic and social indigenous conditions be changed and living standards be improved?

The study is significant and useful to the international specialized agencies and to developed countries, especially those countries to which developing nations are looking for leadership so they can decide whether to put more emphasis on agricultural extension education and to include it as a major part of the agricultural projects extended to the needy countries.

Objectives

The overall objective of the study was to investigate the relationship between the agricultural extension educational programs and the agricultural development and to formulate

guidelines for a rapid agricultural and rural development in Syria. More specifically:

1. To determine from literature what relationships exist between agricultural extension education and agricultural development.

2. To describe and assess the effectiveness of agricultural extension programs in increasing agricultural production in Syria.

3. To describe and assess the effectiveness of agricultural extension programs in the development of economic, social and agricultural organizations such as the agricultural cooperatives in rural areas in Syria.

4. To propose an organizational pattern for the public agricultural sector as a base for more effective agricultural extension education and which may enhance the pace of agricultural development.

5. To examine the opportunities for better man-land relationship under the Syrian conditions.

Assumptions

1. A study of the role of agricultural extension in selected time periods of the last decade in Syria will indicate a point of departure for future extension education programs.

2. It is assumed that agrarian reform and land distribution on the basis of family cultivatorship provides basic
incentives to increase farmer's reciprocity and innovativeness and improves agricultural labor productivity to the extent that it promotes large scale operation of the land, allows capital investment, and is followed by a reduction of surplus labor on the land.

Definitions of Terms

Agricultural and Rural Development

Is the case where productivity of human and agricultural natural resources increase and attain a surplus that will steadily add to the gross national product (GNP) and create good conditions for social and economic change.

Syrian Lira (L.S.)

Is the Syrian basic monetary unit ($1.0=L.S. 3.5)

Hectare

Is a metric unit of area equal to about 2.47 acres.

Developing Countries

Those countries where a very high proportion of the population is in agriculture, usually some 70 to 90 percent, with low income per-capita, existence near the subsistence level, high illiteracy rate, poor housing and low yield per/hectare.

Agricultural Extension Organizations

The organizational entities of the ministries of agriculture and agrarian reform, governmental institution,
independent and semi-independent organizations cooperative unions, peasant's unions and other services which surrender and/or participate in the process of the agricultural extension educational activities, rural community development programs and other related services in rural areas.

**Agricultural Extension Education**

Out-of-school educational activities carried out by different extension organizations in the country and conducted under the leadership of agricultural cooperative extension engineers to bring about educational, social and economic changes aimed at increasing productivity of human and natural resources and improving the quality of living of rural people.

**Agricultural Cooperative Extension Program**

All of the agricultural cooperative extension activities, and work which have been done in the country, including the activities of all concerned organizations and all phases and types of agricultural extension services and extension educational work undertaken pertaining to rural communities and villages.

**Economic and Social Institutes**

Those agricultural, economic, and social organizations such as different types of cooperative societies and cooperative unions established in villages which constitute a fundamental base for bringing about technology, increased
productivity, and improved life through extension education.

**Community**

A group of people living in a common culture who have common problems or needs and who may or may not be located in a definable geographic area.

**Village**

A group of people located in a certain geographic area, living in a common culture and who have common problems, needs and interests.

**Tribe**

A group of people with a nomadic way of life

**Man-Land Relationship**

That relationship implied by the fundamental institution existing in the country (the agrarian reform) and control activities required for the possession of land.

**Methodology**

The overall methodology of the study has been to investigate the literature and to project based upon what is found in the literature.

1. Data were collected from several sources:
   a. The annual statistical reports of the Ministry of Planning in Syria.
   b. The annual statistical reports of the Ministry of Agriculture and Agrarian Reform in Syria.
c. The annual statistical reports of the Ministry of Social Affairs in Syria.
d. Reports and studies of the Food and Agriculture Organization of the United Nations (FAO).
e. Reports and studies of the Ford Foundation.
f. Studies available in the general literature.

2. Tables of data were prepared, and graphic representations were used to pinpoint and show the relationships between variables.

3. The presented relationships may explain whether or not a succeeding increased rate of development existed in the agricultural sector. This constituted a scientific evidence for the effectiveness of the agricultural extension efforts in the realm of agricultural development with reference to:
   a. Agricultural production. (plant and animal production).
   b. Agricultural organization. (economic and social institutes).
   c. The agrarian reform.

4. The establishment of agricultural cooperatives and the involvement of farmers in cooperative societies are immediate outcomes of the collective extension efforts.

5. A comparison was made between the steppe region including the tribal community and the rest of the agricultural rural sector.
6. On the basis of the findings, relevant guidelines and recommendations for rapid agricultural development and for future development of extension education, were formulated with emphasis on the needed organizational pattern for the agricultural public sector and the prospects of future man-land relations (agrarian reform).

7. Data collection and analysis were fostered for the period 1955-1968.

Selected Variables

Variables on Agricultural Extension Program
1. The number of agriculture college graduates.
2. The number of extension cooperative village workers.
3. The budgets of the ministry of agriculture and agrarian reform.
4. Agricultural extension work conducted in the time period of the study (description).

Variables on Agricultural Development
1. Rural population.
2. Rural-urban population.
3. Agricultural labor force.
4. Agriculture as percentage of GNP.
5. Productivity rate in agriculture
6. Agricultural production (main crops)
7. Productive animal population.
Variables on Economic Development
1. The agricultural development projects.
2. Agricultural budgets as per cent of government budgets.
3. The agricultural credits.
4. The agricultural educational projects.

Variables on Socio-Economic Development
1. Total population.
2. Illiteracy rate in the agricultural labor force.
3. Number of agricultural cooperatives.
4. Number of cooperative farmers.
5. The agrarian reform.

Variables on the Introduction of Technology
1. Quantities of chemical fertilizers.
2. Number of tractors.
3. Number of combined harvester threshers.
4. Quantities of pesticides used in agriculture.
5. The acreage of irrigated land.
CHAPTER II

RELATED RESEARCH, STUDIES AND EXPERIENCES

Technology, science and the application of the same to resources have been the major means for advancement in many countries. With regard to developing countries, the focal point was to answer the question what educational channels are most appropriate for agricultural development.

Education, Employment, and Development

The uneducated and illiterate majority of the labor force led to the backwardness of Russia in the 18th century.¹ An increase of labor productivity is the only way to tackle backwardness and the policy to achieve it is through education. This notion is consistent with the thesis of I. I. Yanzhul² who provides empirical data from the American experience to argue that the level of productivity of labor in various countries is positively correlated with per-capita expenditures on education.


2. Ibid., P. 5.
Harberger\textsuperscript{3} evaluates the economic rate of return to society as a whole of investment in physical capital on one hand and of investment in education on the other hand. The study deals with data from India measuring the rate of social return to physical capital in the private sector industry and the foregone earnings of secondary school and college students as compared with persons entering the labor force after completing primary schooling. Although the estimates for physical capital have been designed to be underestimated, the findings reveal that:

1. Economic productivity of investment in physical capital exceeds the economic productivity on investment in education.

2. The foregone earnings of those in secondary schools are likely to be higher than the average earnings of those who stop upon completion of primary school.

3. The foregone earnings of college and university students are likely to be higher than the average earnings of secondary school completers of the same age.

In examining factors that affect the demand and supply of all types of skills (the consequence of formal and informal

education) in developing countries, Leibenstein 4 confines his analysis to the problem within the scope of three questions:

1. What determines the distribution of skills in an economy?
2. What determines the demand for skills in an economy?
3. Does the market operate in such a way as to wipe out shortages and surpluses?

On the supply side, the acquiring of skills in the childhood life period is likely to be determined without regard to market mechanism. The acquisition of general education is partly looked upon as a consumption good and in part as a production good. Since long periods are required for the acquisition of different types of skills, educational investment in the short run cannot change the skill distribution of the population.

On the demand side, according to conventional economic theory, it is assumed that as long as anybody with a skill can conceivably do something that is productively useful in an economy there should be a positive price at which he would be employed if markets really function effectively. But in developing countries there are some existing factors which lead to the existence of surpluses and shortages as they refer to factor bottlenecks in what would appear to be otherwise a feasible achievement.

These factors are:

1. Market pathology that distorts actual wages and quantities from their equilibrium values.
2. Skill labeling and associated skill discontinuities.
3. Ignorance of production functions, especially of factor substitution potentials.
4. Deliberate exaggeration of skill requirements for certain jobs.

Agricultural production can be expected to increase in developing countries as a result of more intensive instruction in the agricultural sciences.\(^5\)

Education has a large role to play in the development of human resources and can be regarded as an essential investment item in a national economy, as it does a supply of skilled and trained manpower for agriculture and industry.

Like any other sector of the economy, education needs to be analyzed, planned and plotted. Therefore, if provision for training in developing countries is not included as an integral part of every project and not taken for granted as a part of every step forward, the ultimate goals can never be reached. The road to development is already littered with abandoned projects which failed because the people for

whom they were planned and initiated were not sufficiently trained to take them over, run them, and make the fullest possible use of the benefits they might have introduced.

It is increasingly evident as a result of research and studies in the last few years that there is a functional relationship between overall educational investment in human resources and the rate of economic development of a nation. The analysis of economic growth in several countries in terms of physical capital, man hours and natural resources alone does not account fully for gains in production which must also be linked to human factors, of which education is the most important. This aspect of education as an important factor in increasing productivity and economic growth rates, as well as a necessary means of meeting shortages of trained personnel, is of fundamental importance to developing countries, and has greatly reinforced the need for educational planning and development as an integrated part of economic development planning.

Thus, perhaps the most important common factor in the roster of problems facing developing countries is the acute shortage of educated and trained personnel at all levels of proficiency and in every field of enterprise.

To conclude the discussion about research, practice, and experience in the area of education, employment and socio-economic development, the following guidelines, findings and recommendations are relevant:


1. Schooling in particular technical skills does not in itself create the demands for those skills.

2. There are many things that people learn most efficiently when the learning or teaching is linked to work experience, and some that they can learn in no other way. It follows that ultimate opportunities associated with any given sort of schooling, or technical training depend upon opportunities for on-the-job training.

In brief, schooling, on-the-job learning, and other components of education are in large part complementary rather than substitutive.

3. Educators should take economic consideration into account when they develop their educational programs, not only in terms of general nature of investment, but also in terms of the way they spend or allocate this investment.

4. Formal education should be designed so as to minimize the time taken to learn specialized skills.

5. Economic development requires a high degree of mobility and education is a necessary condition for such mobility. This follows, in part, from the fact that mobility requires a high degree of communicability between different segments of the economy.

6. The education of potential mothers is an indirect investment in the most basic elements of the education of the future work force. This indirect element is more important than the output of direct investment.
7. Educational planning is a most useful tool for determining the nature and extent of the educational investment demanded by different economic sectors.

8. Educational planning enables concerned agencies in developing countries to adjust training of manpower to projected manpower demands, and helps them ensure that education contributes in the fullest way possible to social and economic development.

Agricultural Vocational Education

Since 70-90 percent of the people in developing nations are dependent upon agriculture, the essential need is the development of large scale technical and agricultural programs within the schools. Schooling systems must provide the nucleus of modern agriculture within the villages and play their role in the raising of general standards of living within the subsistence sector.

A specialized committee from the United Nations observed that one of the chief educational priorities in economically developing areas is the creation of a fully integrated system of agricultural education within the general framework of technical and vocational education. 


9. Ibid.
Foster points out the importance of agricultural development and the major role of vocational agriculture education in raising the bare subsistence basis upon which most developing countries' cultivators are obliged to exist, and gives credit to developing countries for their tendency to meet their educational needs through planning. At the same time he reminds those countries to keep in mind that educational needs are quite dependent on the structure of job opportunities.

As far as vocational agriculture education is concerned, Foster believes that agriculture is the most crucial area for development and that the most intractable problems of resistance to change exist in agriculture.

From the historical point of view, the role of vocational agriculture education in the development of agriculture is best shown in the growth process of the American educational experience.

Storr examines the growth process of American education and the relationship between this process and economic development.


1. American education stems from family life, much as the economy comes from household management. At the beginning of British settlement, the family was the dominant institution in education. The first Massachusetts statute on education specifically obligated parents to educate their children and enable town officers to find out the children of parents who failed to do their duty. The method of education during this era was indeed "learning by doing," a method practiced traditionally long before its theory became "progressive."

2. At the beginning of the nineteenth century, opportunities for acquiring knowledge became somewhat institutionalized, and libraries and other agencies of popular education were organized.

3. In the decades just after the revolution the positive interest of state in education was clear and the common school movement started to grow up. Later on, this movement brought a change not only in the pattern of education but also in the mechanism of its growth.

In conclusion, the most important research findings, practices and experiences concerning the role of vocational agriculture education in agricultural and rural development are the following:

1. Any attempt at vocational training in agriculture presupposes that a meaningful structure of incentives exist for the individual farmer to increase his output, improve
his techniques and expand his range of activities. Without such incentives and opportunities vocational agriculture education can have little impact.

2. Problems arise when developing countries invest considerable sums in the training of technicians before they can be utilized in the existing economy.

3. It has been noticed in developing countries that a real demand may exist for trained personnel, but at the same time scarce personnel are not effectively utilized and skilled workers are involved in tasks not directly relevant to their professional accomplishments.

4. American vocational agriculture education has evolved through two types of processes, an evolutionary process and a revolutionary one.

   Thus, parts of the apparatus of both the evolutionary and the revolutionary processes could be transplanted into present day developing areas on the basis of calculating

   a) The degree to which the fundamental institutions of other nations resemble those of the U.S.A.

   b) The degree to which conditions in other nations approximate those in which growth has occurred in the U.S.A.

5. Any sort of curriculum can be vocational to the extent it prepares men for the job opportunities that emerge.

6. Specific vocations require not only specific vocational skills but also certain related knowledge, skills, and
social capacities.

Agricultural Extension Education

Man is the primary catalyst in the productive process through his managerial ability, and he is also a key factor of production through his physical labor. Education, or the learning process, involves a change in human behavior, and is therefore crucial to economic growth, both from the individual and the aggregate standpoint. This is especially true in the case of agriculture.

The education of knowledge needed for agricultural development is that extension education which has special significance for the process of development. It provides farmers with technical skills, practices and guidance so they can raise their productivity and increase their production.

Wharton calls this "developmental education" and emphasizes the differences between developmental education, basic education (primary school level), and general education by stating the fact that developmental education can take place even though the recipients of the new knowledge are illiterates.

The core point of Thorton's philosophy is the economizing behavior of farmers. The crucial role of education in agricultural growth is the effect it ultimately has upon the economizing behavior of the farmer and upon the economizing setting in which he operates.

In other words, it is the economizing behavior of the large aggregate of farmers which, in the final analysis, makes for economic growth or stagnation of agriculture. And it is the economizing setting (institutional and cultural) in which they operate, that controls the limits of economizing behavior. The divergence or the discrepancy between the actual levels of economization and the optimum levels, as determined by economics, provides a crude measure of the exploitable gap for achieving more rapid rates of growth.

Agricultural extension education and community development programs should bear the brunt of transmitting new developmental knowledge to farmers in low-income countries. In this concern, farmers in the early stage of development require two major kinds of new developmental knowledge:

1. Knowledge about new inputs and new means of production (new seeds, machineries, capital, including food inputs and health measures)

2. Knowledge about how to economize in production and marketing.

One of the current difficulties faced by extension educational programs in low-income countries is that the
greatest attention has been given to the first area and the least to the second.

In discussing economic development and extension education Galbraith assumes that the world is divided between developed and developing countries. In the developed countries, economic progress is easily within the powers of the country itself if it follows an intelligent economic policy, but it is also possible in developing countries if an intelligent economic policy is pursued and certain missing components are supplied.

The missing elements, on which there is a good deal of agreement, are modern technical knowledge or know-how, capital, specially trained manpower, and a sound plan for using capital, manpower, and technical knowledge.

Extension educational programs occupy a prominent place among the requirements for agricultural and rural development. If extension educational programs are to be successful and effective in developing countries, measures have to be taken to eliminate the shortcomings of the social order such as monopoly of wealth and political power. "Even the most eloquent agricultural extension expert cannot explain the advantage of growing two grains of wheat where but one

flourished before, if the peasant knows that both will go inevitably to his landlord.  

It is well known that agriculture could never have developed in some countries as it has in the twentieth century without applying the results of scientific research. Biologists evolved new methods of plant breeding and seed selection; chemists produced new fertilizers to increase yields from poor soils; hydrologists improved the irrigation and drainage of land; new agricultural machinery was invented; and improved methods of working and farm management were introduced by economists. All these and many other single achievements have contributed to total progress.

However, agricultural research work in laboratories, experimental stations, universities, and factories is only significant when it has been accepted by the farmers.

Science and practice must always be in contact to insure that knowledge gained by research is passed on efficiently to those who will use it in the field. One way of insuring this is to organize agricultural vocational education in schools; another is to create an advisory service. Many countries now have agricultural advisory services and some have grown into large and efficient organizations.

14. Ibid., P. 43.

The importance of extension educational programs in the increase of agricultural production in developing countries and the need for more intensified extension programs and other sufficient conditions have been acknowledged and expressed by different researchers and writers.

As to the role of agricultural extension educational programs in the development of rural organizations, such as the agricultural cooperatives, Shumen has studied and analyzed the agricultural cooperative movement in the United States of America, the development of the agricultural cooperative movement in the State of Ohio, and the historical aspects of the agricultural cooperative movement in Syria. Problems encountered in the cooperative movement in Syria have been lack of information, lack of capital, lack of adequate management, lack of know-how, and lack of large scale operation. If these problems are to be positively confronted, the government must meet the need for training and guidance programs to assist cooperators and help them to develop better understanding and other required social


capabilities.

In a state like Syria in which people are not yet acquainted with the cooperative ideas, the first thing needed is to create an educational cooperative. (Pallerve started the Pallerve cooperative in 1899 as an educational and informational society in Helsingfors, Finland. The society issued a series of books and bulletins, and published the Pallerve Journal and trained personnel to be advisers of the cooperative societies in Finland). 18

Various writers emphasized the importance of coordination between supervised credits, extension programs, marketing and other ancillary services.

The effective supervisor furnishes advice to borrowers so as to help them to keep accurate records of income and expenses and assist the family in developing and following budgets both for the farm and home. Supervision also includes the furnishing of advice to borrower families in the adoption and following of farm improvement practices. 19

If credit is to be an effective tool for development it must be integrated with the agricultural extension educational programs.

18. Ibid., P. 176.

Change is normal to members of a group with a modern pattern of culture. They are usually willing to try something new if they think that can improve their present position.

Groups characterized by a traditional pattern of culture, however, are opposed to change. Their main concern is to preserve what has been done in the past and to defend themselves against intrusion. Even if a new idea is clearly of economic advantage to them, they may not accept it, simply because it is new. This is one reason why agricultural extension work, no matter how well organized, so often falls short of expected effectiveness. Certainly, this effectiveness has been greatly increased by the use of more carefully aimed methods of approach, but in many cases, still more can be done to increase the rate of adoption of innovations in developing countries.

Al-haj and Hammad evaluate the impact of the extension programs and various extension teaching methods on the rate of adoption of some agricultural practices in Abey area in Lebanon. They indicate that farmers having had regular


contacts with the government extension agents tended to be more receptive to the recommended practices than others. Likewise, farmers who were satisfied with the services rendered by the extension organization, constituted a significant percentage of the adopters of all the recommended practices. To further clarify factors that might have affected the rate of adoption, farmers were asked to state any needs they encountered in farming. The most frequently cited needs were:

- Provision of the physical facilities such as sprayers and pesticides for a mass spraying program of pests;
- Provision of credits for buying fertilizers; establishment of agricultural experiments and trials in the area;
- Provision for strong and intensive programs using various extension teaching methods for effective training of farmers; and establishment of agricultural cooperatives.  

Innovations have been studied by focusing attention on the individuals involved. There seems to be a place also for impersonal interpretations for the spread of innovation, especially when large populations are concerned.

In recent years innovation has been much studied by focusing attention on the individuals involved: "What are the attributes of "innovators," of "early adopters," "late adopters," and of "laggards"?" There seems to be a place also for more impersonal interpretations, especially when we are concerned with larger populations. With all respect for the complexities of human

22. Ibid., P. 10.
behavior, there are a number of external constraints, walls in our labyrinth of action which have to be brought into the picture.23

In terms of space time behavior of adoption, two questions might arise:

1. When and where does later adoption appear in relation to earlier ones within a series?
2. How do parent localities emerge when compared between series.

The main spatial similarity is, briefly, that the probability of a new adoption is highest in the vicinity of an earlier one and decreases with increasing distance. Later events seem to be dependent on earlier ones according to a principle for which the term "neighborhood effect" would be apt.

When an adoption occurs at some distance from the initial cluster, the neighborhood effect normally manifests itself in the new area and a secondary center arises. Even while adoptions become more scattered away from the parent locality, the density of adoptions continues to increase amidst the earlier ones.

It is noteworthy that the same general traits repeat themselves on different scales, ranging from the whole country down to a small rural locality in which one can distinguish separate farms.

It must remain an open question as to how the neighborhood effect may become useful for the introduction of innovations?

The concept of the neighborhood effect forms at least a basis for classifying possible practical measures into two broad groups, those referring to communication activities and those referring to resistance.

Hagerstrand believes that it is nearly impossible to influence the structure of private links in the system of social communication in the desired direction, even by making use of modern transportation and modern communication media.

As far as developing countries are concerned, a noteworthy conclusion has been made by Hagerstrand

There seem to exist two schools of action when it comes to tactics in the locating of information activities.

a) The first one tries to spread out demonstrations, lectures, group-discussion, and individual advice as evenly as possible over an area in order to reach as many people as possible.

b) The second school concentrates its effort on more or less well chosen centers, or gives advice upon request. 24

24. Ibid., P. 244.
Concentrated effort could be more effective than an even spread of effort, especially when expenditures are limited.

Economic rewards or incentives are given an important role in the diffusion process. The adoption process is generally recognized as involving five stages: awareness, interest, evaluation, trial, and adoption. However Holmberg (1960) utilized the concept of a seven-stage adoption process as follows:

1. availability of innovation; (2) awareness; (3) interest; (4) evaluation; (5) trial; (6) adoption; (7) integration of the innovation into the individual's routine;

The writer believes that the availability of the innovations in developing countries is absolutely associated with the extension educational programs and that the integration of the innovation into the farmer's routine is the sole result of these extension programs.

Extension Leadership

Due to many factors, the use of mass media and some other extension teaching methods is limited in most developing

Therefore, additional means of reaching people must be sought. At the same time, technological development and accelerated advancement create a rapid social change which require the understanding and leadership of extension workers as far as they are change agents.

One excellent way to reach more people is to gain the confidence and support of concerned people and local leaders who can spread the extension educational programs. Belief in the ability of the people to progress, on the part of extension workers, is very important for the development of the extension worker's own power of leadership.

Differences in the performance level of personnel (extension workers) with respect to presence or absence of the leader behavior dimensions of initiating structure and consideration have been studied by Cunningham.

The most effective performing extension agents were those who were above the median on both the initiating structure and consideration leader behavior dimensions.

The least effective extension agents were those who were below the median on both initiating structure and consideration leader behavior dimensions.28


CHAPTER III

BACKGROUND SITUATION OF SYRIA

The History of Agriculture

The Ancient History (B.C.)

Henry A. Atkison and others in their study Security and the Middle East referred to Syria as being "A granary of the Roman Empire". ¹

The Arabic Era (700-1300)

In his research paper "The Agricultural Extension Service and Extension Systems" Dr. Raymond E. Fort has said, that "Sciences in general and agricultural sciences, and extension methods in particular have been developed and promoted in the time span of the Arabic civilization."²

The Ottoman Colonization (1516-1914)

In this period, which extended to more than 400 years, development of feudalism, and monarchical systems, the lack

¹ Henry A. Atkison and others, Security and the Middle East. The Problem and its Solution (New York: Apr. 1954), p. 120.

of education, the authoritarian values and the impoverishment accruing to natural and human resources had created and resulted in a traditional kind of society and human personality which negatively affected future trends of social and economic development. 3

Independence (1945-)

In 1945 Syria regained its independence from France. Since then development has taken place very rapidly in all aspects of life.

The pioneers have done a magnificent job in promoting agriculture. In 1964 the Syrian government invited an official American agriculture mission to help survey and study the country's agricultural resources. As a result of this joint effort, a report about agricultural development in Syria was written and submitted to the concerned authorities. 4

In 1947 the ministry of agriculture was established. Many students were selected, recruited and sent abroad, mainly to the U.S.A., France, and Egypt, to study agricultural sciences and modern methods of development.


Several modern specialized agricultural secondary schools were instituted in addition to an acceptable agriculture and livestock experimental stations.

In 1958 the agrarian reform foundations was organized to deal with the problem of fuedalism in the country.

In the period of 1958-1963, two colleges of agriculture were founded.

The Cultural Environment

Population Traits

The total population of Syria is about 5,402,000 inhabitants, excluding the Palestinian refugees, whose number is about three hundred thousand people. The birth rate is about 29/1,000. Mortality rate is nearly 0.005 in 1958.

According to recent FAO reports, roughly 64 per cent of the Syrian population are living in the rural areas. The farm population living in the rural areas amounted to about 3,457,280 in 1968.

The urbanized Syrian population enjoys an up-to-date, contemporary western civilization. Rural people, in spite of the considerable variation between native provinces (Mouhafazat), counties (Mantika), villages, and above all, their actions and activities, have a common pattern of behavior and general sort of attitude. Rural people deal with metropolitans fearfully or anxious of being misled.
Thus the common standards, universal systems of measurement, desires, values, and the standards of living are not shared by rural and urban people.\(^5\)

Agrarian Communities

Village Communities

Village communities are integrated farmsteads. Cultivators are called "fellahin". They live in compact villages and go out to work in the surrounding fields. Villages are nucleated, and houses are built very close to one another. In most Syrian villages, there are sections (hara) which can be identified with blood affiliation. Within the village there is usually a Mosque or a Church, or both.

Tribal Communities

The Syrian tribes (Bedouins) exist in various stages of settlement, from pastoral nomadism to almost completely settled agriculture.

The tribe as a basic kinship group is the primary social unit, and has been viewed as framework of the extended family. Tribal communities have their own institutional traditions and whatever leaders say is the main reference for proper solutions to problems.

---

The Social System

It has been well known that any given society has its own social system which is the frame of reference for the adaptation, goal gratification, integration, and pattern maintenance of the system.

In the Syrian society, four major functional subsystems exist: (1) the economy; (2) the polity; (3) the community; and (4) religions. Other subsystems such as customs, traditions, socialism, democracy and individualism also exist.

Values Other Than Government

Value systems prevailing in Syria are mainly the following:

Land

This is the sound and basic foundation upon which rural way of life is built. Land plays a strong role both in traditions and emotional attachments.

The Family

The family life is the second principal value system in Syria's rural areas. The married couple, the nuclear family and the family of procreation are joined, face to face and hand to hand in one house, under the shelter of the extended family. The extended family has its own economic, social and educational functions.

Religion

The prevailing religions are Islam, Christianity and Judaism. Despite the ethnic and religious heterogeneities, Syrian people have been unified for thousands of years.
It is not strange to find parts of some kins as Christians and the other parts as Moslems under unified family titles.

Nationalism

Arabism is the most effective social value. Other existing value systems such as democracy, socialism, and individualism also have an effective role in modifying Syrian personalities.

The Feminine Role

There are broad lines of integration in general life between women and men. In spite of the traditional subordination of women to men and the kinship values, women are partners. They rationalize and possess.

Economic Mobility

Several types of economic movements exist in Syria, but the most important are:

1. The seasonal type which usually occurs from agricultural areas to cities during the winter and spring seasons. Adult males are apt to move to cities as laborers. In the harvest season they come back home.

2. During years of short rainfall adult males (18-35) migrate to places wherever they can find a job, usually in neighboring countries. This type of temporary migration to other countries in the region involves even the highly educated technical elite. Syrian traders
and investors are accustomed to search the world for better investment opportunities. According to the central bank of Syria transfer payments made by the Syrians who are working abroad amount to L.S 125,000,000 in 1968.6

3. Village-to-village mobility takes place from dry farming areas to irrigated areas.

4. Nomadic tribes move toward western regions to market their animal products and to feed their sheep. In the late fall they take the advantage of early rainfall in the steppe and move back again when the natural grass comes out.

Education in Syria

Education is intimately bound to the culture of society it serves. To educate is to develop a person morally and mentally so that he is sensitive to individual, social, economic opportunities and choices and able to act on them. Through education it is possible to influence people to make desirable changes in their behavior patterns, both external behavior patterns, such as physical actions, and

internal behavior patterns, such as cognition, reflection and other mental processes. These will lead to desirable action, performance, and accomplishment.

Education in Syria is a state undertaking with free public schools through high schools. Even the private school system is under control and strict supervision of the government. Medium or intermediate public schools (6-9th grades) accept only 45 per cent of the graduates of primary schools.

Public secondary schools accept only 50 per cent of the graduates of the medium schools. College education is nearly free. High averages and specific grades are required as a prerequisite for acceptance. Payments do not exceed more than $15 per year, but those students who fail are obliged to pay fees.

College Education

There are two universities in Syria. These include two colleges for agricultural science and education. Table one presents trends pertaining to university education.

---

TABLE 1
UNIVERSITY EDUCATION IN SYRIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Universities</th>
<th>Number of Colleges</th>
<th>Number of Students</th>
<th>Number of Males</th>
<th>Number of Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>1945</td>
<td>1</td>
<td>4</td>
<td>766</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>1955</td>
<td>1</td>
<td>7</td>
<td>4,056</td>
<td>930</td>
<td></td>
</tr>
<tr>
<td>1964</td>
<td>2</td>
<td>16</td>
<td>26,477</td>
<td>4,683</td>
<td></td>
</tr>
</tbody>
</table>


Secondary Education

Table two presents general developments and trends in secondary education.

TABLE 2
SECONDARY EDUCATION IN SYRIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Schools</th>
<th>Number of Students</th>
<th>Number of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>64</td>
<td>8,507</td>
<td>3,087</td>
</tr>
<tr>
<td>1960</td>
<td>313</td>
<td>53,710</td>
<td>15,859</td>
</tr>
<tr>
<td>1964</td>
<td>467</td>
<td>107,105</td>
<td>30,500</td>
</tr>
</tbody>
</table>


Vocational Education

The concept of vocational education prevailing in Syria includes higher vocational institutes, such as the institutes of industrial training; the vocational secondary
schools, such as the commercial secondary schools; and the primary teachers' colleges. These different educational areas belong to different governmental bodies. Table three and table four illustrate the general development and trends of vocational education in Syria.

**TABLE 3**

HIGHER VOCATIONAL INSTITUTES IN SYRIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Schools</th>
<th>Number of Students</th>
<th>Number of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>1945</td>
<td>9</td>
<td>923</td>
<td>322</td>
</tr>
<tr>
<td>1955</td>
<td>18</td>
<td>2,194</td>
<td>629</td>
</tr>
<tr>
<td>1964</td>
<td>44</td>
<td>8,672</td>
<td>1,860</td>
</tr>
</tbody>
</table>


In 1964 some of the higher institutes were reorganized and attached to the universities.

**TABLE 4**

TEACHERS' COLLEGES IN SYRIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Colleges</th>
<th>Number of Students</th>
<th>Number of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>1945</td>
<td>4</td>
<td>153</td>
<td>131</td>
</tr>
<tr>
<td>1955</td>
<td>8</td>
<td>672</td>
<td>599</td>
</tr>
<tr>
<td>1964</td>
<td>9</td>
<td>1,465</td>
<td>2,784</td>
</tr>
</tbody>
</table>

Primary Education

Primary education in Syria is the responsibility of the state. It is a compulsory education, and every child has to go to a primary school at the age of six years. Table five presents general developments and trends in primary education.

TABLE 5
PRIMAR Y EDUCATION IN SYRIA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Schools</th>
<th>Number of Students</th>
<th>Number of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
<td>No Data Available</td>
</tr>
<tr>
<td>1945</td>
<td>1,072</td>
<td>102,496</td>
<td>45,931</td>
</tr>
<tr>
<td>1955</td>
<td>2,636</td>
<td>236,350</td>
<td>109,871</td>
</tr>
<tr>
<td>1964</td>
<td>4,575</td>
<td>510,805</td>
<td>198,802</td>
</tr>
</tbody>
</table>


Agricultural Vocational Education

Syria has two universities. There are two agricul
tural colleges, both of which offer Bachelor degrees in agricultural sciences, with some sort of specialization during the fourth academic year.

Mostly students are provided with the necessary subject matter, skills, practices, and know-how to suffice general requirements of specialized occupations, including jobs offered by governmental agencies such as the ministry of agriculture and agrarian reform. Table six presents
recent developments in vocational agricultural education.

TABLE 6
DATA PERTAINING TO VOCATIONAL AGRICULTURAL EDUCATION 1967-1968

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Number of Schools</th>
<th>Number of Schooling Years</th>
<th>Number of Graduates Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Colleges</td>
<td>2</td>
<td>4</td>
<td>150</td>
</tr>
<tr>
<td>Agricultural Secondary School</td>
<td>7</td>
<td>3</td>
<td>350</td>
</tr>
<tr>
<td>Permanent Training Centers</td>
<td>3</td>
<td>0.4</td>
<td>300</td>
</tr>
<tr>
<td>Veterinary Secondary Schools</td>
<td>1</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>


Illiteracy

Illiterates who can not read and write constitute a high proportion in rural areas.

Illiteracy rate among the labor force decreased from 65 per cent to 37 per cent between 1955-1968. Table seven shows the number of illiterates and the decline in the illiteracy rate in the labor force.
TABLE 7
NUMBER OF ILLITERATES AND THE RATE OF ILLITERACY IN THE LABOR FORCE 1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Illiterates</th>
<th>Illiteracy Rate/per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>333,655</td>
<td>66</td>
</tr>
<tr>
<td>1956</td>
<td>564,673</td>
<td>61</td>
</tr>
<tr>
<td>1957</td>
<td>553,571</td>
<td>58</td>
</tr>
<tr>
<td>1958</td>
<td>560,823</td>
<td>57</td>
</tr>
<tr>
<td>1959</td>
<td>547,745</td>
<td>54</td>
</tr>
<tr>
<td>1960</td>
<td>555,481</td>
<td>53</td>
</tr>
<tr>
<td>1961</td>
<td>491,951</td>
<td>45</td>
</tr>
<tr>
<td>1962</td>
<td>506,303</td>
<td>45</td>
</tr>
<tr>
<td>1963</td>
<td>474,685</td>
<td>41</td>
</tr>
<tr>
<td>1964</td>
<td>476,574</td>
<td>40</td>
</tr>
<tr>
<td>1965</td>
<td>499,704</td>
<td>39</td>
</tr>
<tr>
<td>1966</td>
<td>497,776</td>
<td>38</td>
</tr>
<tr>
<td>1967</td>
<td>495,150</td>
<td>37</td>
</tr>
<tr>
<td>1968</td>
<td>505,180</td>
<td>37</td>
</tr>
</tbody>
</table>


People perform and accomplish on the basis of their behavior, attitudes, and value systems. How to change the behavior, attitudes and the value systems of indigenous illiterate workers is indeed a real challenge to education. In this respect, the writer believes that agricultural extension education is highly significant in motivating people to meet their needs, and in moving up their resources toward better life.
Health and Medical Services

According to the statistics provided by the Ministry of Social Affairs in 1967, the working medical doctors, dentists and nurses total 1,447, 336 and 1,379 respectively. Most of these are stationed or living in the governorates' capital cities, including the city of Damascus.

Syria has 1.0 physician per 4600 inhabitants and one hospital bed per 1100.

These data show acceptable existing health and medical services, but the fact is that medical, maternity, general hygiene, nutrition, and environmental sanitation care are practically limited in the great majority of Syrian villages.

Huge and decisive efforts will be necessary to organize and build-up strong rural health programs, both for the sake of these programs as such and as a basic supporting programs with regard to other rural development projects.

It is recognized that the most critical point is to staff rural health units and to do village level work, through health visitors, health education nurses, and sanitarians.

The physical and financial task of constructing health units, dispensaries, maternities and hospitals will, of course, have to be undertaken by the government at an early stage of the development schemes of rural life.
Physical Resources and Natural Ecology

Location

Syria lies on the eastern shore of the Mediterranean Sea and at the crossroads of three continents; Asia, Europe, and Africa. Syria extends between the latitudes 32-37 North and longitudes 32-40 East. Syria is bordered by the Mediterranean Sea, Palestine, and Lebanon on the West, by Jordan on the South, by Iraq on the East and by Turkey on the North. Its boundaries exceed a distance of 2,2784 kilometers.

Climate

Syria has a Mediterranean type of climate which is characterized by the following:
1. Cold rainy Winter with snow-capped mountain peaks.
3. Warm, dry, lengthy Summer.
4. Sunny, rainy, and windy Autumn. Autumn is an ecological transition period between Summer and Winter.

Humidity

Average humidity figures for the years 1955-1965 show that the minimum is 68 per cent.

Temperature

The average temperature figures for the years 1955-1965 show that the maximum temperature at Kamishli is 45° Centigrade and the minimum at Aleppo is 7° Centigrade.
Rainfall

The average annual rainfall figures for the years 1955–1965 show that maximum annual rainfall is 870 millimeters and minimum annual rainfall is 72.5 millimeters at Deir El-Zor.

The intensity of rainfall and its spread affect considerably the extent of non-irrigated areas. The rainfall season has been divided into two periods:

a. Preparatory and sowing period for cereals.
b. Growing period for cereals.

The amount of precipitation in the first period influences greatly the area sown under winter crops and the precipitation in the second period determines the matured area and their level of yield per unit of area.

Dry areas contribute to a pervasive degree in the national income of the agriculture sector through crop production and livestock products.

Areas under wheat and barley decrease with the low precipitation. Wheat and barley do substitute for each other in area to some extent with the variations in rainfall. If the rainfall in the preparatory and sowing periods is high, the wheat is substituted for barley on some lands, and on the other hand, if the rainfall is low in the aforesaid period, barley is substituted for wheat to some extent.

Low rainfall leads to less grazing and less production of feed grains and straw. More local supplies of sheep are
pushed to the markets for local consumption and ex-
ports, more unrecorded slaughtering and mortality take
place, prices of feed stuffs tend to rise and prices
of meat tend to lower.

**Altitude Above Sea Level**

Syria has certain significant characteristics:

1. Its plains are 250-600 meters above sea level, with
   the exception of Butaiha Plain and vicinity which are
   80-119 meters below sea level.

2. The utmost height of peaks is 2,814 meters above sea
   level.

**Agricultural Climatic Zones**

These are five primary climatic zones:

1. The Arid Zone: With a range of rainfall 150-200 milli-
   meters.

2. The Marginal Zone: With a range of rainfall 250-300
   millimeters.

3. The Semi-arid Zone: With a range of rainfall 350-500
   millimeters.

4. The Semi-humid Zone: With a range of rainfall 550-800
   millimeters.

5. The Humid Zone: With a range of rainfall 850-1200 mil-
   limeters. Table eight and map one present the agri-
   cultural climatic zones and the atmospheric phenomena.
### TABLE 8

**ATMOSPHERIC PHENOMENA IN THE PRINCIPAL SYRIAN METEOROLOGICAL STATIONS 1955-1968**

<table>
<thead>
<tr>
<th>Meteorological Stations</th>
<th>Latakia</th>
<th>Kamishli</th>
<th>Deir-EI-Zor</th>
<th>Hama</th>
<th>Aleppo</th>
<th>Damascus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Humidity (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1958</td>
<td>68.0</td>
<td>42.3</td>
<td>43.3</td>
<td>54.4</td>
<td>55.9</td>
<td>48.3</td>
</tr>
<tr>
<td>1959</td>
<td>41.9</td>
<td>41.9</td>
<td>43.4</td>
<td>55.4</td>
<td>54.4</td>
<td>48.3</td>
</tr>
<tr>
<td>1960</td>
<td>65.8</td>
<td>43.0</td>
<td>52.3</td>
<td>52.3</td>
<td>53.6</td>
<td>44.4</td>
</tr>
<tr>
<td>Highest Temperature (°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1958</td>
<td>37.0</td>
<td>44.8</td>
<td>44.2</td>
<td>43.0</td>
<td>43.0</td>
<td>41.7</td>
</tr>
<tr>
<td>1959</td>
<td>34.0</td>
<td>42.5</td>
<td>44.0</td>
<td>40.6</td>
<td>40.0</td>
<td>39.8</td>
</tr>
<tr>
<td>1960</td>
<td>33.0</td>
<td>45.0</td>
<td>44.4</td>
<td>44.0</td>
<td>42.7</td>
<td>40.6</td>
</tr>
<tr>
<td>Lowest Temperature (°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1958</td>
<td>-2.4</td>
<td>-3.3</td>
<td>-4.3</td>
<td>-3.7</td>
<td>-6.0</td>
<td>-2.5</td>
</tr>
<tr>
<td>1959</td>
<td>-1.4</td>
<td>-3.3</td>
<td>-4.5</td>
<td>-5.0</td>
<td>-7.7</td>
<td>-5.3</td>
</tr>
<tr>
<td>1960</td>
<td>-3.3</td>
<td>-1.8</td>
<td>-4.0</td>
<td>-3.1</td>
<td>-3.0</td>
<td>-3.3</td>
</tr>
<tr>
<td>Precipitation (mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1958</td>
<td>707.6</td>
<td>352.3</td>
<td>83.3</td>
<td>202.2</td>
<td>262.2</td>
<td>155.2</td>
</tr>
<tr>
<td>1959</td>
<td>612.5</td>
<td>409.9</td>
<td>82.0</td>
<td>264.9</td>
<td>184.7</td>
<td>261.7</td>
</tr>
<tr>
<td>1960</td>
<td>567.9</td>
<td>313.7</td>
<td>72.5</td>
<td>124.0</td>
<td>209.1</td>
<td>129.1</td>
</tr>
</tbody>
</table>

Map 1. The Agricultural Climatic Map of Syria.

Source: The Ministry of Agriculture and Agrarian Reform, Damascus: Syria.
Water Resources

The significance of water resources stems from the following possible development.

1. Vertical agricultural extension and conversion of dry farming land into irrigated land.

2. As a by product, electrical energy may be generated out of the constructed dam-reservoirs with an incidental potential activity that could be created in the industrial and services sector.

Syria has many rivers, water springs and natural lakes. The most important river basins relevant to development are, the Euphrates basin, Khaboor basin, Ifrine basin, Creantes basin, Barada basin, Elawaje basin, Yarmouk basin, and Banias and Butaiha water resources.

According to the development plans the mentioned surface rivers could supply Syria with 20 billion cubic meters of water annually for irrigation purposes, in addition to the estimated net quantity of rainfall which is 10 billion cubic meters of water annually.

The total of 30 billion cubic meters is primarily sufficient to irrigate 2.5 million hectares, which is approximately four times as much as the presently irrigated land. This indicates that an ample scope exists for new irrigation projects from which the country could immensely benefit.

Mineral Resources

The underground natural resources have not yet been adequately surveyed and studied in Syria. Several promising mineral resources supporting agricultural development have been discovered. According to the Ministry of Information the most important discoveries and accomplishments are:

1. The estimated discovered quantity of oil at different sites is about 1,000 million metric tons of which only 150 million metric tons are available for economic production in the present time.

2. The maximum capacity of the present pipelines is 7.5 million metric tons per year.

3. The discovered quantity of phosphate rocks is estimated at 155 million metric tons with 24.2-28.5 per cent of pure phosphate.

4. It was expected that Syria will produce 75,000 metric tons of triple phosphate fertilizer in 1970.

5. A nitrogen fertilizer plant was in the final stages of construction adjacent to the oil refinery with a maximum capacity of 150,000 metric tons per year.

Power, Transportation, and Communication

Economic development and social change require certain social overhead investments. These investments, while requiring heavy capital expenditures, are not productive by themselves. However, they are necessary to facilitate and encourage other investment ventures. Transportation is necessary to expand the internal market for agricultural and industrial products, to facilitate the mobility of productive factors, and to help increase the rate of internal and external social and economic integration.

Power

The significant role of electric power in development stems not only from being indispensable as a consumption service for light and heat, but also from its importance as an inexpensive inputs in manufacturing and processing. In the period 1955-1965, the increase in power consumption for domestic or household usage was 85 per cent. In the same period the increase of consumption for industrial purposes amounted 516 per cent. The per capita electric out put was 108 k.w.h. in 1965. 10

Transportation

Table nine shows recent development of roads and

transportation facilities.

TABLE 9
RECENT DATA ABOUT ROADS AND TRANSPORTATION FACILITIES IN SYRIA 1969-1970

<table>
<thead>
<tr>
<th>Kind</th>
<th>Unit</th>
<th>Base Year 1965</th>
<th>1969/1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalted Roads</td>
<td>Kilometer</td>
<td>5,920</td>
<td>2,700</td>
</tr>
<tr>
<td>Paved Roads</td>
<td>Kilometer</td>
<td>1,100</td>
<td>1,620</td>
</tr>
<tr>
<td>New Roads</td>
<td>Kilometer</td>
<td>2,160</td>
<td>3,165</td>
</tr>
<tr>
<td>Railroads</td>
<td>Kilometer</td>
<td>843</td>
<td>1,628</td>
</tr>
<tr>
<td>Airfields</td>
<td>Kilometer</td>
<td>11,307</td>
<td>18,407</td>
</tr>
<tr>
<td>Modern Bridges</td>
<td>Number</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Seaports</td>
<td>Number</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>


According to the same source, the length of each one of the mentioned bridges is about 200-500 meters, the productive capacity of the seaports was 2.8 million metric tons in 1965 and it will be 4.7 million metric tons in 1970.

Animals, animal carts, tractors, pick-ups, and motor trucks are utilized extensively as a means of transportation in Syria. Table ten shows communication media development.
TABLE 10
RECENT DATA ABOUT COMMUNICATION MEDIA
DEVELOPMENT IN SYRIA 1969-1970

<table>
<thead>
<tr>
<th>Kind</th>
<th>Unit</th>
<th>Base Year 1965</th>
<th>1969/1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic Telephone</td>
<td>Number</td>
<td>61,000</td>
<td>141,000</td>
</tr>
<tr>
<td>Semi Automatic Telephone</td>
<td>Number</td>
<td>2,200</td>
<td>2,200</td>
</tr>
<tr>
<td>Manual Telephone</td>
<td>Number</td>
<td>9,990</td>
<td>12,190</td>
</tr>
<tr>
<td>Telegraph</td>
<td>Unit</td>
<td>65</td>
<td>90</td>
</tr>
<tr>
<td>Postal Centers</td>
<td>Office</td>
<td>276</td>
<td>321</td>
</tr>
<tr>
<td>Radio Station</td>
<td>Unit</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>T.V. Station</td>
<td>Unit</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Radio and T.V. Post</td>
<td>Unit</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>


The Economic System

The economic system of Syria has been developed and adapted according to the country's need, position, internal and external political and social conditions. The economic system is a type of sectoral mixed economy, with a government monopolistic power over important economic decisive activities.

Sectoral National Income

In 1968, the national income was estimated at L.S. 4,199 million, on the basis of 1956's prices. Table 11 shows the contribution of different economic sectors in the national income.
TABLE 11
CONTRIBUTION OF ECONOMIC SECTORS IN THE NATIONAL INCOME IN SYRIA 1968

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Income</td>
<td>100</td>
</tr>
<tr>
<td>Agriculture</td>
<td>33</td>
</tr>
<tr>
<td>Industry</td>
<td>24.75</td>
</tr>
<tr>
<td>Construction</td>
<td>4.40</td>
</tr>
<tr>
<td>Transportation and Communication</td>
<td>9.24</td>
</tr>
<tr>
<td>Trade</td>
<td>15.31</td>
</tr>
<tr>
<td>Services</td>
<td>6.39</td>
</tr>
<tr>
<td>Banking</td>
<td>1.41</td>
</tr>
</tbody>
</table>

Source: The Central Bank of Syria, Periodic Bulletin, the Sixth Year No. 21; No. 22; No. 24; No. 24; (Damascus: Research and Documentation Department-Central Bank of Syria, 1968), P. 7.

The Economically Active Population

The total number of the economically active population is 3,025,120 inhabitants and nearly 1,936,076 of them work in agriculturally oriented activities.

According to the population census of 1960, the second five year plan (1965-1970) and the statistics of the United Nations, the total active population constitutes 54.65 percent of the total population. The total labor force constitutes 45 percent of the total economically active population.

The Marketing System

The Syrian marketing system varies according to the importance of different crops, goods, and activities in the
1. Internal and external trade of cereal is nationalized. The general agency for cereal and flour is responsible for the marketing, distribution, import and export of cereal and for flour manufacturing and distribution. The general agency for cereal and flour (GACP) covers all governorates and producing areas with purchase centers, assembly, storage and processing facilities, including silos, storage warehouses, and millflours.

2. The cotton marketing organization practices a monopolistic power in the marketing of cotton including, buying, assembly, storage, ginning, export, and distribution. CMO operates 34 cotton gins, of which 20 are in Aleppo, six in Hama, three in Idlib, one in Damascus, one in Homs and one in Deir El-Zor. A sufficient number of collection centers are set in different cotton producing area.

   Cotton is shipped either by the individuals or by the agricultural cooperatives to the gins, or collection centers.

3. The monopoly of tobacco sponsors tobacco production, manufacturing, marketing, distribution and export, and provides every possible means to save the product.

4. The sugarbeet factories get their needed raw product by contracts with farmers who deliver the beet product to the factories.
5. The marketing of fruit and vegetable commodities can be generally classified into three groups: (1) local markets are in the areas of production (2) transit markets are in the governorates' centers, where fruits and vegetables are assembled for local consumption, transit to other markets, and/or for export and (3) terminal markets which exist in such metropolitans as Damascus and Aleppo.

Organized wholesale markets exist only in the governorate's capital cities.

Domestic Prices

In the marketing of wheat, barley, cotton, tobacco, and sugarbeet, the significant prices are the wholesale prices in major producing areas. The official purchase prices are set by the government, cooperative unions, peasants' unions, and concerned processing plants.

In marketing of fruits and vegetables, prices depend on demand and supply.

Market Prospects

Syria has several outlets for the export of agricultural products. It has the comparative advantages of producing and harvesting cereal before Europe. Cotton is exported to more than 32 countries. France has been a major buyer. Fruits and vegetables are exported in the realm of the Arab common market, and sometimes on the basis of quotas granted.
Market Information

The previously mentioned marketing agencies are the main sources for marketing information. Agricultural cooperatives, commission agents, radio broadcasting station and local news papers play their role in providing market information.

Price Policy Affecting Agriculture

Two factors affect price policy, the international market prices, and the existing economic system. Since governmental marketing agencies are the main buyer and nearly the only exporter, they have a monopolistic power over prices. At the same time, the ministry of agriculture and agrarian reform, the cooperative union and the peasants' union have enough power to interfere, discuss, and argue any suggested price policy. Prices are suggested and discussed with all of these agencies, then the ministerial national committee for economic affairs decides on the matter.

Wages and Salaries

The fundamental code of the Syrian government civil servants number 135 dated in 1945 and its amendments states that, the monthly minimum salary level for elementary school graduates is L.S. 180, the minimum salary level for high school graduates is L.S. 259, the minimum salary for college graduates is L.S. 375, and the maximum salary level for civil servants is L.S. 1,500. Only college graduates can proceed toward the
maximum salary level.

According to the code of labor employment, labor wages are classified according to the task; however, no daily wages exist below L.S. four per day (agricultural labor). The maximum level of daily wages is about L.S. 12 (technical labor).

Technicians such as agricultural college graduates, medical doctors, veterinarians, civil engineers, mechanical engineers, and university professors receive technical allowances of 35-75 per cent of their basic salaries.

Laborers at any industrial unit have the right to receive 25 per cent of the unit's annual profit.

Social Security and Welfare Program

Relatively speaking, there are no hungry people in Syria. Social security arrangements in Syria are likely to be in favor of employees, laborers and workers.

Taxation

There are no taxes on lands. A seven per cent tax has been levied on agricultural products when exported. Yet this tax may be removed in case of low international market prices. All town properties pay seven percent tax on their values, as estimated by the ministry of finance.

Indirect taxes constitute the bulk of revenue. Syria is not an aid-receiving country, consequently, Syrian people are taxpayers.
CHAPTER IV

AGRICULTURAL DEVELOPMENT

Agriculture was in reality a total way of Syrian rural life, involving not only techniques of soil cultivation and livestock raising, but also the people who raise the crops and the livestock. Farmers live in villages with a clearly defined way of behavior.

First of all, this way of life was characterized by a high degree of integration, in which family, religion, recreation, traditional methods of doing things, the community structure are closely tied with agricultural activities. This made it imperative that agricultural development improved other aspects of community life in the light of the community social organization.

Economic Status Of Agriculture

With a total agricultural society, some sporadic international trade, and a growing amount of industry, Syria has been undergoing a transformation in its economic life. Agriculture has moved from almost total dependence on home market to involvement in the international market.

In 1955 the Syrian gross national product (GNP) was estimated to be L.S. 1,650 million of which L.S.669.560 million or 40.5 per cent were from agriculture.
In 1968 the gross national product (GNP) amounted to L.Ş. 4,684 million, the share of agriculture was L.Ş. 1,819.386 million or 38.8 per cent of the total GNP.

The contribution of different crops to the agricultural production during the last five years was estimated at 24.2 per cent for cereal; 23.4 per cent for animal production; 9.5 per cent for fruits; 9 per cent for vegetables; 3.8 per cent for pulses; 30.1 per cent for industrial crops such as cotton and sugar beet.¹

Agricultural export served as the main source to supply the country with foreign currencies and for the import of different kinds of new means of production for all sectors in the economy. In the years from 1960 to 1965 total export of all commodities from Syria totalled L.Ş. 3,351 million, and the export of agricultural products and by-products constituted about 85 per cent of the total export value. About 50 per cent of the agricultural export was from cotton and its by-products.²

The contribution of agriculture to the gross national product is presented in table 12.


TABLE 12


<table>
<thead>
<tr>
<th>Year</th>
<th>Total GNP L.S. Million</th>
<th>Agricultural GNP L.S. Million</th>
<th>Proportion of Agricultural GNP/Per cent</th>
<th>Index Number of Agricultural GNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>1,650</td>
<td>669.560</td>
<td>40.5</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>2,757</td>
<td>1,082.503</td>
<td>39.2</td>
<td>161</td>
</tr>
<tr>
<td>1957</td>
<td>2,927</td>
<td>1,230.580</td>
<td>42.0</td>
<td>183</td>
</tr>
<tr>
<td>1958</td>
<td>2,523</td>
<td>816.246</td>
<td>34.1</td>
<td>121</td>
</tr>
<tr>
<td>1959</td>
<td>2,618</td>
<td>857.323</td>
<td>32.7</td>
<td>128</td>
</tr>
<tr>
<td>1960</td>
<td>2,665</td>
<td>777.242</td>
<td>29.1</td>
<td>116</td>
</tr>
<tr>
<td>1961</td>
<td>2,886</td>
<td>958.531</td>
<td>33.2</td>
<td>143</td>
</tr>
<tr>
<td>1962</td>
<td>3,622</td>
<td>1,412.158</td>
<td>38.9</td>
<td>210</td>
</tr>
<tr>
<td>1963</td>
<td>3,721</td>
<td>1,355.858</td>
<td>36.2</td>
<td>202</td>
</tr>
<tr>
<td>1964</td>
<td>4,720</td>
<td>1,740.122</td>
<td>36.8</td>
<td>259</td>
</tr>
<tr>
<td>1965</td>
<td>4,141</td>
<td>1,517.251</td>
<td>36.6</td>
<td>226</td>
</tr>
<tr>
<td>1966</td>
<td>4,078</td>
<td>1,593.092</td>
<td>39.0</td>
<td>237</td>
</tr>
<tr>
<td>1967</td>
<td>4,365</td>
<td>1,702.484</td>
<td>39.0</td>
<td>257</td>
</tr>
<tr>
<td>1968</td>
<td>4,684</td>
<td>1,819.386</td>
<td>38.8</td>
<td>271</td>
</tr>
</tbody>
</table>

To establish a more meaningful picture of the status of agriculture in Syria's economy, it is relevant to state that 64 per cent of the population still live on agriculture and the agricultural sector employs the majority of the country's labor force as can be seen in table 13.

**TABLE 13**

**PROPORTION OF LABOR FORCE ENGAGED IN AGRICULTURE 1955-1968**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Labor Force in the Economy</th>
<th>Agricultural Labor Force</th>
<th>Per cent of Agricultural Labor Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>897,931</td>
<td>648,306</td>
<td>72</td>
</tr>
<tr>
<td>1956</td>
<td>925,695</td>
<td>662,797</td>
<td>71</td>
</tr>
<tr>
<td>1957</td>
<td>954,433</td>
<td>677,647</td>
<td>70</td>
</tr>
<tr>
<td>1958</td>
<td>903,901</td>
<td>718,320</td>
<td>73</td>
</tr>
<tr>
<td>1959</td>
<td>1,044,344</td>
<td>734,234</td>
<td>71</td>
</tr>
<tr>
<td>1960</td>
<td>1,048,344</td>
<td>749,985</td>
<td>71</td>
</tr>
<tr>
<td>1961</td>
<td>1,093,225</td>
<td>747,765</td>
<td>68</td>
</tr>
<tr>
<td>1962</td>
<td>1,126,118</td>
<td>762,780</td>
<td>67</td>
</tr>
<tr>
<td>1963</td>
<td>1,157,770</td>
<td>778,021</td>
<td>67</td>
</tr>
<tr>
<td>1964</td>
<td>1,191,435</td>
<td>793,495</td>
<td>66</td>
</tr>
<tr>
<td>1965</td>
<td>1,281,293</td>
<td>845,653</td>
<td>66</td>
</tr>
<tr>
<td>1966</td>
<td>1,309,938</td>
<td>856,340</td>
<td>65</td>
</tr>
<tr>
<td>1967</td>
<td>1,332,245</td>
<td>867,182</td>
<td>64</td>
</tr>
<tr>
<td>1968</td>
<td>1,367,354</td>
<td>875,106</td>
<td>63</td>
</tr>
</tbody>
</table>


To summarize, agriculture is the most important sector in the Syrian economy. It contributes about 40 per cent of
the gross national product, absorbs well over 60 per cent of the labor force, brings in most of the foreign exchange, and constitute the entire mode of life for the people.

The Agricultural Land

The total area of Syria is 18,448,000 hectares. Syria is relatively rich from the potential cultivable land point of view. In other words its agriculture provides considerable promises, and offers a wide scope for agricultural production.

The distribution and allocation of land resources among different major land use is present in table 14.

**TABLE 14**

<table>
<thead>
<tr>
<th>Potential Land Uses</th>
<th>Acreage of Land 1,000 Hectares</th>
<th>Per cent of Potential Land Use to Total Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area</td>
<td>18,448</td>
<td>100</td>
</tr>
<tr>
<td>Cultivated Land</td>
<td>5,961</td>
<td>32.4</td>
</tr>
<tr>
<td>Uncultivated Land</td>
<td>1,007</td>
<td>5.4</td>
</tr>
<tr>
<td>Grazing Land</td>
<td>6,322</td>
<td>34.3</td>
</tr>
<tr>
<td>Wood Land</td>
<td>448</td>
<td>2.4</td>
</tr>
<tr>
<td>Afforestation Areas</td>
<td>875</td>
<td>4.7</td>
</tr>
<tr>
<td>Rocky Land</td>
<td>3,524</td>
<td>19.1</td>
</tr>
<tr>
<td>Revers and Lakes</td>
<td>24</td>
<td>0.1</td>
</tr>
<tr>
<td>Urban Areas</td>
<td>287</td>
<td>1.6</td>
</tr>
</tbody>
</table>

The Cultivated Land

At present time and under prevailing bilateral dry farming agricultural rotation only 3.268 of the workable 5.961 million hectares are cropped annually. Slightly over one half a million hectares are under one or another form of irrigation.

As in the neighboring countries a large proportion of rainfed areas is devoted to cereal and grain production.

The variations in the amount and distribution of rainfall have a large and predominant effect on agricultural production which is largely carried under dry farming. Consequently, the problem of agricultural development in Syria is not only one of securing a higher growth rate in agriculture but also of ensuring a steady growth.

The area under irrigation is exclusively used for the production of cotton, vegetables, fruits, sugarbeet and oilseeds.

Irrigation plays an important role in Syrian agriculture as it provides an element of stability to agriculture so necessary in areas with a low and unreliable rainfall. The view is generally held that considerable attention should be given to the expansion of irrigation for which great scope appears to exist.3

The five year plan 1960/1965 aimed at the construction of irrigation networks to serve an additional area of 326,000

hectares, but only 30.05 per cent of this target was achieved. The second five year plan, planned to increase the irrigated land from 522,000 hectares in the base year of 1965 to 600,000 hectares in 1970, including the privately constructed irrigation projects. In other words the irrigated land was planned to be increased by 15 per cent.

The second five year plan achieved 69 per cent of this target by 1968. Table 15 shows the expansion of cultivated land.

**TABLE 15**

EXPANSION OF IRRIGATED AND RAINFED AREAS IN SYRIA 1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Irrigated Land/1000 Hectares</th>
<th>Index Numbers</th>
<th>Rainfed Land 1,000 Hectares</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>470</td>
<td>100</td>
<td>3,511</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>492</td>
<td>104</td>
<td>3,908</td>
<td>111</td>
</tr>
<tr>
<td>1957</td>
<td>509</td>
<td>108</td>
<td>4,367</td>
<td>124</td>
</tr>
<tr>
<td>1958</td>
<td>513</td>
<td>109</td>
<td>4,902</td>
<td>139</td>
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<tr>
<td>1959</td>
<td>476</td>
<td>101</td>
<td>5,015</td>
<td>142</td>
</tr>
<tr>
<td>1960</td>
<td>424</td>
<td>90</td>
<td>5,520</td>
<td>159</td>
</tr>
<tr>
<td>1961</td>
<td>455</td>
<td>96</td>
<td>5,926</td>
<td>168</td>
</tr>
<tr>
<td>1962</td>
<td>549</td>
<td>116</td>
<td>5,713</td>
<td>162</td>
</tr>
<tr>
<td>1963</td>
<td>475</td>
<td>101</td>
<td>6,000</td>
<td>170</td>
</tr>
<tr>
<td>1964</td>
<td>489</td>
<td>104</td>
<td>6,216</td>
<td>177</td>
</tr>
<tr>
<td>1965</td>
<td>522</td>
<td>111</td>
<td>5,819</td>
<td>165</td>
</tr>
<tr>
<td>1966</td>
<td>537</td>
<td>112</td>
<td>5,823</td>
<td>160</td>
</tr>
<tr>
<td>1967</td>
<td>538</td>
<td>114</td>
<td>5,557</td>
<td>158</td>
</tr>
<tr>
<td>1968</td>
<td>576</td>
<td>122</td>
<td>5,325</td>
<td>153</td>
</tr>
</tbody>
</table>

The Agricultural Population

The population of Syria is estimated to be 5,402,000 inhabitants including the 179,722 Nomads. Rural population is about 3,457,200 or 64 per cent of the total population. Table 16 indicates the proportions of rural-urban population.

**TABLE 16**

**RURAL-URBAN POPULATION OF SYRIA**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Population</th>
<th>Rural population</th>
<th>Per cent of Rural population to total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>3,687,000</td>
<td>2,662,000</td>
<td>72.2</td>
</tr>
<tr>
<td>1956</td>
<td>3,801,000</td>
<td>2,722,000</td>
<td>71.6</td>
</tr>
<tr>
<td>1957</td>
<td>3,909,000</td>
<td>2,782,000</td>
<td>71</td>
</tr>
<tr>
<td>1958</td>
<td>4,040,000</td>
<td>2,844,000</td>
<td>70.4</td>
</tr>
<tr>
<td>1959</td>
<td>4,165,000</td>
<td>2,907,000</td>
<td>69.2</td>
</tr>
<tr>
<td>1960</td>
<td>4,324,000</td>
<td>2,963,000</td>
<td>69</td>
</tr>
<tr>
<td>1961</td>
<td>4,319,000</td>
<td>2,954,000</td>
<td>68</td>
</tr>
<tr>
<td>1962</td>
<td>4,445,000</td>
<td>3,014,000</td>
<td>68</td>
</tr>
<tr>
<td>1963</td>
<td>4,707,000</td>
<td>3,074,000</td>
<td>67.2</td>
</tr>
<tr>
<td>1964</td>
<td>5,173,000</td>
<td>3,135,000</td>
<td>66.6</td>
</tr>
<tr>
<td>1965</td>
<td>5,062,000</td>
<td>3,341,000</td>
<td>66</td>
</tr>
<tr>
<td>1966</td>
<td>5,173,000</td>
<td>3,383,000</td>
<td>65.4</td>
</tr>
<tr>
<td>1967</td>
<td>5,287,000</td>
<td>3,427,000</td>
<td>64.8</td>
</tr>
<tr>
<td>1968</td>
<td>5,402,000</td>
<td>3,457,000</td>
<td>64</td>
</tr>
</tbody>
</table>


According to the population census of 1945, 1956, and 1960 the population growth is estimated at 31/1000 for the

years 1940-1960 and 29/1000 for the years 1960-1970.

"The central bureau of statistics decides that the natural rate of population growth is 31/1000 for the years 1940-1960 and 29/1000 for the years 1960-1967."\(^5\)

**Land-Man Ratio**

In table 17 it can be noted that cultivated land, agricultural worker ratio for Syria was 6.81:1 in 1968. Since only about 50 per cent of rainfed areas is cropped annually and the irrigated areas constitute 1.55 per cent of the nonirrigated land, it is relevant to state that the annual actively employed acreage per member of the agricultural labor force was about four hectares.

Land-man ratio for irrigated land was 0.65:1 in 1968. The above mentioned ratios vary from one governorate to another. It is assumed that land-man ratios are lower in the western and middle parts than in other parts. In other words the population is concentrated in the Humid, Semi-Humid and Semi-arid Zones. Table 17 indicates land-man ratio in Syria for the period 1955-1968.

---

# TABLE 17


<table>
<thead>
<tr>
<th>Year</th>
<th>Cultivated Land 1000 Hectares</th>
<th>Number of Agricultural Labor Force</th>
<th>Land-Man Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>3,981,000</td>
<td>643,306</td>
<td>6.14:1</td>
</tr>
<tr>
<td>1956</td>
<td>4,400,000</td>
<td>662,797</td>
<td>6.36:1</td>
</tr>
<tr>
<td>1957</td>
<td>4,876,000</td>
<td>677,647</td>
<td>7.19:1</td>
</tr>
<tr>
<td>1958</td>
<td>5,415,000</td>
<td>718,320</td>
<td>7.53:1</td>
</tr>
<tr>
<td>1959</td>
<td>5,491,000</td>
<td>734,234</td>
<td>7.47:1</td>
</tr>
<tr>
<td>1960</td>
<td>6,014,000</td>
<td>749,958</td>
<td>8.01:1</td>
</tr>
<tr>
<td>1961</td>
<td>6,014,000</td>
<td>749,958</td>
<td>8.01:1</td>
</tr>
<tr>
<td>1962</td>
<td>6,381,000</td>
<td>647,765</td>
<td>8.53:1</td>
</tr>
<tr>
<td>1963</td>
<td>6,475,000</td>
<td>778,012</td>
<td>8.32:1</td>
</tr>
<tr>
<td>1964</td>
<td>6,705,000</td>
<td>793,495</td>
<td>8.44:1</td>
</tr>
<tr>
<td>1965</td>
<td>6,341,000</td>
<td>845,653</td>
<td>7.49:1</td>
</tr>
<tr>
<td>1966</td>
<td>6,160,000</td>
<td>856,340</td>
<td>7.19:1</td>
</tr>
<tr>
<td>1967</td>
<td>6,995,000</td>
<td>867,182</td>
<td>7.02:1</td>
</tr>
<tr>
<td>1968</td>
<td>5,961,000</td>
<td>875,106</td>
<td>6.81:1</td>
</tr>
</tbody>
</table>


**Employment and Under Employment**

According to the surveys done by the ministry of planning, the number of unemployed agricultural workers was as it is shown in table 18.
Table 18 illustrates clearly that the percentage of unemployed agricultural labor force differs from one survey to another. The average percentage ranges between 1.3 percent and 20.3 percent, it is at minimum in months such as May and extremely at maximum in February. No doubt the peak and stagnant periods of agricultural activities play an important role in this variance. Another important factor, which leads to fluctuation in unemployment, is the cyclical fluctuations and variance in rainfall quantity and distribution during the season. Thus, most part of this unemployment is seasonally inherited in agriculture.
Taking into account the level of technology, and dry farming, it is possible to infer that Syrian agriculture suffers also from seasonal under employment.

To deal with economic and social problems of under employment and unemployment the following points are presented:

1. Reorganization of agricultural rotations and the adoption of intensive agriculture are indispensable if available job opportunities are to be distributed along the year period. Such a remedy to the problem requires concentrated extension educational programs.

2. The initiation of major public works and the application of the labor to intensive projects will decrease unemployment and/or under employment.

3. The development of agricultural processing plants and agriculturally oriented industries in different agricultural production areas will decrease unemployment and/or under employment.

Per-Capita Income

The 1955 per-capita income was estimated at L.S. 636 or $181.7 per annum ($1.0=L.S. 3.50) while agricultural per-capita income amounted to only L.S 231. In the period 1955-1968 national per-capita income and the agricultural per-capita income rose 156 per cent and 104 per cent respectively as it can be seen in table 19.
TABLE 19
NATIONAL INCOME (NI), AGRICULTURAL NATIONAL INCOME AND PER-CAPITA INCOME FOR THE PERIOD 1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Syria’s National Income L.5 Million</th>
<th>Agricultural National Income L.5 Million</th>
<th>Per-capita Agricultural Income L.5</th>
<th>Agricultural Per-capita Income L.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>1,568</td>
<td>425</td>
<td>636</td>
<td>231</td>
</tr>
<tr>
<td>1956</td>
<td>2,414</td>
<td>643</td>
<td>960</td>
<td>352</td>
</tr>
<tr>
<td>1957</td>
<td>2,595</td>
<td>662</td>
<td>1,091</td>
<td>260</td>
</tr>
<tr>
<td>1958</td>
<td>2,444</td>
<td>555</td>
<td>726</td>
<td>255</td>
</tr>
<tr>
<td>1959</td>
<td>2,275</td>
<td>564</td>
<td>745</td>
<td>256</td>
</tr>
<tr>
<td>1960</td>
<td>2,265</td>
<td>537</td>
<td>660</td>
<td>222</td>
</tr>
<tr>
<td>1961</td>
<td>2,496</td>
<td>577</td>
<td>892</td>
<td>280</td>
</tr>
<tr>
<td>1962</td>
<td>3,183</td>
<td>761</td>
<td>1,241</td>
<td>411</td>
</tr>
<tr>
<td>1963</td>
<td>3,311</td>
<td>723</td>
<td>1,200</td>
<td>390</td>
</tr>
<tr>
<td>1964</td>
<td>3,594</td>
<td>763</td>
<td>1,325</td>
<td>422</td>
</tr>
<tr>
<td>1965</td>
<td>3,589</td>
<td>709</td>
<td>1,315</td>
<td>393</td>
</tr>
<tr>
<td>1966</td>
<td>3,617</td>
<td>699</td>
<td>1,413</td>
<td>417</td>
</tr>
<tr>
<td>1967</td>
<td>3,892</td>
<td>736</td>
<td>1,518</td>
<td>443</td>
</tr>
<tr>
<td>1968</td>
<td>4,199</td>
<td>777</td>
<td>1,631</td>
<td>472</td>
</tr>
</tbody>
</table>

Source: The Central Bank of Syria, Periodic Bulletin, The Sixth Year No. 21; No. 22; No. 24; Damascus: Research and Documentation Department - Central Bank of Syria, 1968.
The 1955 national income (NI) was estimated at L.S. 1568 million while agricultural national income was amounted to L.S. 425 million. In the period 1955-1968 national income and the agricultural national income figures rose 167 per cent and 83 per cent respectively.

The disparity between the average national per-capita income and the agricultural per-capita income reflects the fact that agriculture is paying off for the welfare and development of other sectors of the Syrian economy.

Expansion of the nonagricultural sectors requires vast quantities of capital. Because agriculture initially commands most of the population, income and capital, it follows that the additional capital must be raised in large part from the agricultural sector. Thus, agriculture must provide major increase in agricultural production, but it must also make significant net contributions to the capital needs of other sectors of the economy.

Agricultural Production

The promotion of agricultural production is the cornerstone of agricultural development. It does not only bring about higher income and better living standard for those directly engaged in agricultural sector, but also contributes considerably to the overall progress of the

economy through its vital relationship with all other
economic sectors. The writer attempted in this section
to examine the growth of field crops, vegetables, fruits,
industrial crops and some aspects of animal production.

Field Crop Production

Wheat and barley are the most important food and feed
crops in Syria. According to the studies of the FAO, they
provided 55 per cent of calories intake and 48 per cent of
protein intake per-capita per day. Wheat and barley pro-
duction was affected by the quantity of rainfall as they
were predominantly grown on dry lands. Areas under these
two field crops, yields, and production decreased with low
precipitation and viceversa.

Wheat Production

The annual average cropped area during the period 1955-
1968 was estimated at 1,349 thousand hectares, with extreme
ranges of 855,000-1,559,000 hectares in 1966 and 1963 respec-
tively. In the same period production averaged 902 thousand
metric tons with extremes of 438-1,347 thousand metric tons
in 1955 and 1962 respectively. According to the second
five year plan, wheat consumption was estimated at 850,000
metric tons in 1964 and thus production continued to be
higher than consumption. Table 20 presents wheat production.

7. Sing-Min Yeh "A Brief Study of Production, Consumption,
Price, and Marketing of Wheat, Barley and Cotton in
TABLE 20
WHEAT PRODUCTION, AREA, YIELD, AND THE INDEX NUMBERS OF PRODUCTION
1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Yield/Ton Hectare</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>1,468</td>
<td>0.3</td>
<td>438</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>1,537</td>
<td>0.7</td>
<td>1,051</td>
<td>217</td>
</tr>
<tr>
<td>1957</td>
<td>1,495</td>
<td>0.9</td>
<td>1,354</td>
<td>230</td>
</tr>
<tr>
<td>1958</td>
<td>1,461</td>
<td>0.4</td>
<td>562</td>
<td>128</td>
</tr>
<tr>
<td>1959</td>
<td>1,422</td>
<td>0.4</td>
<td>632</td>
<td>144</td>
</tr>
<tr>
<td>1960</td>
<td>1,550</td>
<td>0.4</td>
<td>875</td>
<td>199</td>
</tr>
<tr>
<td>1961</td>
<td>1,315</td>
<td>0.6</td>
<td>757</td>
<td>172</td>
</tr>
<tr>
<td>1962</td>
<td>1,417</td>
<td>1.0</td>
<td>1,374</td>
<td>313</td>
</tr>
<tr>
<td>1963</td>
<td>1,559</td>
<td>0.3</td>
<td>1,190</td>
<td>271</td>
</tr>
<tr>
<td>1964</td>
<td>1,476</td>
<td>0.7</td>
<td>1,100</td>
<td>251</td>
</tr>
<tr>
<td>1965</td>
<td>1,214</td>
<td>0.3</td>
<td>1,100</td>
<td>251</td>
</tr>
<tr>
<td>1966</td>
<td>855</td>
<td>0.7</td>
<td>559</td>
<td>182</td>
</tr>
<tr>
<td>1967</td>
<td>1,201</td>
<td>0.9</td>
<td>1,049</td>
<td>239</td>
</tr>
<tr>
<td>1968</td>
<td>891</td>
<td>0.7</td>
<td>600</td>
<td>136</td>
</tr>
</tbody>
</table>


Barley Production

The average cropped area of barley during the period 1955-1968 was estimated at 636 thousand hectares with extreme ranges of 336,000 hectares in 1966 and 1957 respectively.

Average production amounted to 480,000 metric tons in the same period (1955-1963) while the range of production was 137,000-798,000 metric tons in 1955 and 1962 respectively. Table 21 presents barley production.
<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Yield/Ton Hectare</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>614</td>
<td>0.2</td>
<td>137</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>636</td>
<td>0.7</td>
<td>462</td>
<td>337</td>
</tr>
<tr>
<td>1957</td>
<td>813</td>
<td>1.3</td>
<td>736</td>
<td>537</td>
</tr>
<tr>
<td>1958</td>
<td>769</td>
<td>0.3</td>
<td>228</td>
<td>166</td>
</tr>
<tr>
<td>1959</td>
<td>727</td>
<td>0.3</td>
<td>218</td>
<td>159</td>
</tr>
<tr>
<td>1960</td>
<td>742</td>
<td>0.2</td>
<td>435</td>
<td>317</td>
</tr>
<tr>
<td>1961</td>
<td>727</td>
<td>0.5</td>
<td>334</td>
<td>243</td>
</tr>
<tr>
<td>1962</td>
<td>723</td>
<td>1.1</td>
<td>798</td>
<td>582</td>
</tr>
<tr>
<td>1963</td>
<td>804</td>
<td>1.0</td>
<td>784</td>
<td>572</td>
</tr>
<tr>
<td>1964</td>
<td>765</td>
<td>0.8</td>
<td>640</td>
<td>467</td>
</tr>
<tr>
<td>1965</td>
<td>682</td>
<td>1.1</td>
<td>650</td>
<td>474</td>
</tr>
<tr>
<td>1966</td>
<td>336</td>
<td>0.6</td>
<td>203</td>
<td>148</td>
</tr>
<tr>
<td>1967</td>
<td>645</td>
<td>0.9</td>
<td>590</td>
<td>430</td>
</tr>
<tr>
<td>1968</td>
<td>631</td>
<td>0.8</td>
<td>512</td>
<td>373</td>
</tr>
</tbody>
</table>


It was mentioned before that only 3.268 out of 5.961 million hectares were cultivated under prevailing bilateral dry farming and about 1.0 million hectares were left on retirement. Thus Syria has great potentials in producing wheat and barley because of this vast land resources, which might not be suitable for other crops rather than wheat and barley in addition to dry farming legumes. Furthermore Syrian wheat production has certain comparative advantage on world market since, it can be harvested and marketed two or three months earlier than most European countries; the hard Syrian wheat
has quality characteristics tending to maintain their prices on the world market above soft wheat varieties.

Production of Vegetables

The area under vegetables has been increased to a considerable degree during the last 15 years with an estimated contribution of four to nine per cent in the total agricultural exports. Although a small share, vegetables and their products play an important role in improving diets and sustain a substantial savings in foreign exchange. An increasing rate of vegetable production reflects the degree of agricultural intensification, the skills of farmers and the improvement of farming conditions.

The per-capita annual availability of vegetables was figured at 138 kilogram including watermelon and melon (cantaloupe) and 72 kilogram excluding these two items.9

Vegetables production was profitable and adopted to small scale family farms which were spreading in Syria.

Potato Production

Potatoes are considered one of the main food crops. In the period 1955-1968 the area under cultivation of potatoes increased from 2.1 to 4.4 thousand hectares or about

100 per cent, and the yield changed only from 11.2 to 11.3 metric tons per-hectare. Table 22 presents potatoes production, area, yield and index numbers of production for the period 1955-1968.

TABLE 22
POTATOES PRODUCTION, AREA, YIELD AND INDEX NUMBERS OF PRODUCTION 1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Yield/Ton Hectare</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>2.1</td>
<td>11.2</td>
<td>23.7</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>2.6</td>
<td>9.7</td>
<td>25.2</td>
<td>106</td>
</tr>
<tr>
<td>1957</td>
<td>3.1</td>
<td>10.5</td>
<td>32.4</td>
<td>136</td>
</tr>
<tr>
<td>1958</td>
<td>2.2</td>
<td>9.6</td>
<td>21.1</td>
<td>89</td>
</tr>
<tr>
<td>1959</td>
<td>1.6</td>
<td>8.9</td>
<td>14.3</td>
<td>60</td>
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<tr>
<td>1960</td>
<td>2.6</td>
<td>10.7</td>
<td>27.9</td>
<td>117</td>
</tr>
<tr>
<td>1961</td>
<td>2.5</td>
<td>11.8</td>
<td>30.1</td>
<td>127</td>
</tr>
<tr>
<td>1962</td>
<td>3.1</td>
<td>10.9</td>
<td>33.1</td>
<td>139</td>
</tr>
<tr>
<td>1963</td>
<td>3.5</td>
<td>9.0</td>
<td>31.8</td>
<td>134</td>
</tr>
<tr>
<td>1964</td>
<td>4.8</td>
<td>9.9</td>
<td>47.7</td>
<td>201</td>
</tr>
<tr>
<td>1965</td>
<td>4.4</td>
<td>11.1</td>
<td>48.9</td>
<td>206</td>
</tr>
<tr>
<td>1966</td>
<td>4.4</td>
<td>9.2</td>
<td>40.7</td>
<td>171</td>
</tr>
<tr>
<td>1967</td>
<td>3.5</td>
<td>11.3</td>
<td>39.7</td>
<td>167</td>
</tr>
<tr>
<td>1968</td>
<td>4.4</td>
<td>11.3</td>
<td>50.0</td>
<td>210</td>
</tr>
</tbody>
</table>


Onions Production

The area under production of onions increased from 3.6 to 6.0 thousand hectares during the period 1955-1968, or 60.9 per cent.

For the same period onion production increased from 25.0 to 50.0 thousand metric tons or 100 per cent, and yield
rose from 6.9 to 8.3 metric tons per hectare. Table 23 indicates areas, production, index numbers of production, and yield of onions in the period 1955-1968.

**TABLE 23**

**ONIONS PRODUCTION, AREA, YIELD, AND INDEX NUMBERS OF PRODUCTION 1955-1968**

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Yield/Ton Hectare</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>3.6</td>
<td>6.9</td>
<td>25.0</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>3.7</td>
<td>8.3</td>
<td>30.8</td>
<td>120</td>
</tr>
<tr>
<td>1957</td>
<td>3.3</td>
<td>10.0</td>
<td>33.6</td>
<td>132</td>
</tr>
<tr>
<td>1958</td>
<td>3.4</td>
<td>9.3</td>
<td>32.0</td>
<td>128</td>
</tr>
<tr>
<td>1959</td>
<td>3.7</td>
<td>7.7</td>
<td>28.4</td>
<td>112</td>
</tr>
<tr>
<td>1960</td>
<td>2.7</td>
<td>11.7</td>
<td>31.9</td>
<td>124</td>
</tr>
<tr>
<td>1961</td>
<td>3.2</td>
<td>11.3</td>
<td>36.1</td>
<td>144</td>
</tr>
<tr>
<td>1962</td>
<td>3.9</td>
<td>10.0</td>
<td>38.9</td>
<td>152</td>
</tr>
<tr>
<td>1963</td>
<td>4.9</td>
<td>7.4</td>
<td>36.1</td>
<td>144</td>
</tr>
<tr>
<td>1964</td>
<td>4.2</td>
<td>8.1</td>
<td>33.9</td>
<td>132</td>
</tr>
<tr>
<td>1965</td>
<td>4.3</td>
<td>7.9</td>
<td>32.0</td>
<td>128</td>
</tr>
<tr>
<td>1966</td>
<td>4.0</td>
<td>8.0</td>
<td>32.0</td>
<td>128</td>
</tr>
<tr>
<td>1967</td>
<td>4.6</td>
<td>9.5</td>
<td>44.0</td>
<td>176</td>
</tr>
<tr>
<td>1968</td>
<td>6.0</td>
<td>8.3</td>
<td>50.0</td>
<td>200</td>
</tr>
</tbody>
</table>


Onions are expected to be widely grown in the country due to the completion of some major irrigation projects such as the Ghab project and due to the inauguration of the dehydration factory for onions with an annual capacity of about 14,000 metric tons.
Tomato Production

Tomatoes area under cultivation increased from 8.9 thousand hectares in 1955 to 18.0 thousand hectares in 1968 or 110 per cent.

Production increased from 64.2 to 180.0 thousand metric tons or 181 per cent, and yield per-hectare rose from 7.2 to 10.0 metric tons in the same period.

Tomatoes cultivation suffers from the phenomena of production seasonality. The supplies commence in June and they continue till about November. The bulk of the crop is from August to November.

The problem with the perishable nature of tomatoes and the inability of processing plants to absorb enough products in the peak months of supply affected the rate of expansion of this commodity.

Planners, and processors bear the burden of locating processing plants in the principal tomato-producing areas, and having farmers successfully extend the production season by using improved production techniques. Table 24 shows tomatoes production, area, yield and the index numbers of production in the period 1955-1968.
TABLE 24
TOMATOES AREA, YIELD, PRODUCTION AND
INDEX NUMBERS OF PRODUCTION
1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Yield/Ton Hectare</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>8.9</td>
<td>7.2</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>10.3</td>
<td>7.9</td>
<td>81</td>
<td>126</td>
</tr>
<tr>
<td>1957</td>
<td>11.4</td>
<td>8.4</td>
<td>59</td>
<td>148</td>
</tr>
<tr>
<td>1958</td>
<td>10.3</td>
<td>6.9</td>
<td>71</td>
<td>110</td>
</tr>
<tr>
<td>1959</td>
<td>11.3</td>
<td>8.6</td>
<td>98</td>
<td>153</td>
</tr>
<tr>
<td>1960</td>
<td>8.5</td>
<td>8.8</td>
<td>74</td>
<td>115</td>
</tr>
<tr>
<td>1961</td>
<td>10.5</td>
<td>8.8</td>
<td>93</td>
<td>145</td>
</tr>
<tr>
<td>1962</td>
<td>13.6</td>
<td>8.5</td>
<td>115</td>
<td>179</td>
</tr>
<tr>
<td>1963</td>
<td>23.5</td>
<td>7.1</td>
<td>166</td>
<td>259</td>
</tr>
<tr>
<td>1964</td>
<td>18.7</td>
<td>8.2</td>
<td>153</td>
<td>239</td>
</tr>
<tr>
<td>1965</td>
<td>16.5</td>
<td>8.2</td>
<td>135</td>
<td>210</td>
</tr>
<tr>
<td>1966</td>
<td>14.7</td>
<td>8.5</td>
<td>125</td>
<td>195</td>
</tr>
<tr>
<td>1967</td>
<td>18.2</td>
<td>8.8</td>
<td>161</td>
<td>215</td>
</tr>
<tr>
<td>1968</td>
<td>18.0</td>
<td>10.0</td>
<td>180</td>
<td>281</td>
</tr>
</tbody>
</table>


Fruit Production

The Mediterranean climate dominating in Syria permits the production of wide varieties of fruits. Most fruit trees are planted in the rainfed areas of the Semi-arid and Semi-humid Zones.

Fruit production constituted about nine per cent of the agricultural production and the average annual export and import of fruits constituted six per cent in the total values of all exports and imports.

In the period 1955-1968 the indices of both production
and net availability of fruits exceeded the index of population to some extent.  

Apple Production

In the period 1955-1968 apple production increased from 8.0 to 25.0 thousand metric tons or 21 per cent. The area planted with apple trees expanded from four to seven thousand hectares or 75 per cent while the total number of fruit bearing trees rose from 938 to 1,533 thousand trees or an increase of 63 per cent.

Olive Production

Olive trees cover vast areas of the country since this tree is grown under dry farming conditions in the Arid Zone.

In the period 1955-1968 the area covered with olive trees expanded from 98 to 142.2 thousand hectares or about 45 per cent while production increased from 29 to 112 thousand metric tons or 286 per cent. The total number of trees increased from 12,359 to 18,630 thousand trees, and the number of bearing trees increased from 5,553 to 12,959 thousand trees or 140 per cent.

Syrian olive oil processing industry is suffering from fluctuation in international market prices and the decrease of local olive oil consumption. Therefore the second five

year plan aimed only at improving the quality of production, increasing the yield and keeping present area intact.

In addition to the world price variability factors, there is, among the principal factors that affect the local consumption of olive oil, the introduction to the market of several types of vegetable oils, for which the consumer has developed a taste and has started to use in his diet. Therefore, the plan does not aim at increasing the present area but keeping it intact by replacing the aging orchards and improving the quality of these orchards.

Syria produces large quantities of olive of good quality, of which the majority is destined for olive oil mills for oil extraction. The annual export of olive oil in last several years varied from 140 M.T. to 1,400 M.T. with the exception of 1963 which amounted to as much as 6,700 M.T.

Grape Production

Agriculturally speaking vines are considered ideal for regions depending on little and shallow groundwater. Fortunately this trend was accelerated in these regions and many vine orchards were planted or replanted with recommended varieties of grapes.


Agricultural extension efforts and the grapes farmer's endeavors concentrated on the improvement of production quality in the past 10-15 years to meet the increasing demand or local and foreign markets. "Among fruit exports, grape is the most outstanding." In the period 1955-1968 the area planted with vines shrank from 71,000 to 68,000 hectares, the total number of grape trees increased from 65,915 to 89,875 or 36 per cent, the number of fruit bearing trees increased from 56,780 to 82,982 thousand, or 46 per cent and grapes production rose 66 thousand metric tons or 32 per cent. Table 25, 26 and 27 present the numbers of trees, areas, products and the index numbers of products of apple, olives and grapes in Syria for the period 1955-1968.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Total Number of Trees/1000</th>
<th>Fruit Bearing Trees/1000</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>4</td>
<td>1,289</td>
<td>938</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>4</td>
<td>1,294</td>
<td>939</td>
<td>9</td>
<td>112</td>
</tr>
<tr>
<td>1957</td>
<td>4</td>
<td>1,367</td>
<td>967</td>
<td>10</td>
<td>125</td>
</tr>
<tr>
<td>1958</td>
<td>4</td>
<td>1,477</td>
<td>987</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>1959</td>
<td>5</td>
<td>1,413</td>
<td>877</td>
<td>7</td>
<td>87</td>
</tr>
<tr>
<td>1960</td>
<td>5</td>
<td>1,625</td>
<td>1,187</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>1961</td>
<td>5</td>
<td>1,825</td>
<td>1,319</td>
<td>10</td>
<td>125</td>
</tr>
<tr>
<td>1962</td>
<td>6</td>
<td>1,960</td>
<td>1,359</td>
<td>22</td>
<td>275</td>
</tr>
<tr>
<td>1963</td>
<td>7</td>
<td>2,017</td>
<td>1,408</td>
<td>23</td>
<td>350</td>
</tr>
<tr>
<td>1964</td>
<td>7</td>
<td>2,120</td>
<td>1,528</td>
<td>24</td>
<td>300</td>
</tr>
<tr>
<td>1965</td>
<td>7</td>
<td>2,180</td>
<td>1,568</td>
<td>21</td>
<td>262</td>
</tr>
<tr>
<td>1966</td>
<td>7</td>
<td>2,240</td>
<td>1,611</td>
<td>26</td>
<td>325</td>
</tr>
<tr>
<td>1967</td>
<td>7</td>
<td>2,121</td>
<td>1,518</td>
<td>27</td>
<td>337</td>
</tr>
<tr>
<td>1968</td>
<td>7</td>
<td>2,161</td>
<td>1,533</td>
<td>25</td>
<td>312</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Total Number of Trees/1000</th>
<th>Number of Bearing Fruit Trees/1000</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>98</td>
<td>12,359</td>
<td>5,353</td>
<td>29</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>105</td>
<td>13,107</td>
<td>7,674</td>
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<td>268</td>
</tr>
<tr>
<td>1957</td>
<td>109</td>
<td>13,512</td>
<td>8,250</td>
<td>38</td>
<td>131</td>
</tr>
<tr>
<td>1958</td>
<td>111</td>
<td>14,566</td>
<td>8,202</td>
<td>65</td>
<td>224</td>
</tr>
<tr>
<td>1959</td>
<td>111</td>
<td>16,945</td>
<td>8,712</td>
<td>28</td>
<td>96</td>
</tr>
<tr>
<td>1960</td>
<td>124</td>
<td>14,599</td>
<td>9,529</td>
<td>53</td>
<td>182</td>
</tr>
<tr>
<td>1961</td>
<td>134</td>
<td>15,145</td>
<td>10,469</td>
<td>83</td>
<td>286</td>
</tr>
<tr>
<td>1962</td>
<td>133</td>
<td>15,143</td>
<td>8,586</td>
<td>87</td>
<td>300</td>
</tr>
<tr>
<td>1963</td>
<td>111</td>
<td>15,255</td>
<td>9,312</td>
<td>68</td>
<td>234</td>
</tr>
<tr>
<td>1964</td>
<td>112</td>
<td>15,374</td>
<td>11,323</td>
<td>128</td>
<td>441</td>
</tr>
<tr>
<td>1965</td>
<td>116</td>
<td>15,912</td>
<td>11,945</td>
<td>65</td>
<td>224</td>
</tr>
<tr>
<td>1966</td>
<td>118</td>
<td>16,121</td>
<td>11,765</td>
<td>116</td>
<td>400</td>
</tr>
<tr>
<td>1967</td>
<td>142</td>
<td>18,618</td>
<td>13,876</td>
<td>113</td>
<td>389</td>
</tr>
<tr>
<td>1968</td>
<td>142.2</td>
<td>18,630</td>
<td>12,950</td>
<td>112</td>
<td>386</td>
</tr>
</tbody>
</table>


TABLE 27
GRAPES PRODUCTION, TREES, AREA, AND INDEX NUMBERS OF PRODUCTION
1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Total Number of Trees/1000</th>
<th>Fruit Bearing Trees/1000</th>
<th>Production 1000/Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>71</td>
<td>65,915</td>
<td>56,780</td>
<td>206</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>72</td>
<td>65,378</td>
<td>56,104</td>
<td>194</td>
<td>94</td>
</tr>
<tr>
<td>1957</td>
<td>69</td>
<td>65,989</td>
<td>57,329</td>
<td>241</td>
<td>116</td>
</tr>
<tr>
<td>1958</td>
<td>71</td>
<td>67,926</td>
<td>58,684</td>
<td>200</td>
<td>97</td>
</tr>
<tr>
<td>1959</td>
<td>68</td>
<td>53,790</td>
<td>46,893</td>
<td>218</td>
<td>105</td>
</tr>
<tr>
<td>1960</td>
<td>66</td>
<td>53,672</td>
<td>46,391</td>
<td>198</td>
<td>96</td>
</tr>
<tr>
<td>1961</td>
<td>69</td>
<td>55,531</td>
<td>45,834</td>
<td>243</td>
<td>117</td>
</tr>
<tr>
<td>1962</td>
<td>70</td>
<td>59,242</td>
<td>50,670</td>
<td>255</td>
<td>123</td>
</tr>
<tr>
<td>1963</td>
<td>70</td>
<td>59,481</td>
<td>51,986</td>
<td>259</td>
<td>125</td>
</tr>
<tr>
<td>1964</td>
<td>70</td>
<td>60,816</td>
<td>52,671</td>
<td>260</td>
<td>126</td>
</tr>
<tr>
<td>1965</td>
<td>70</td>
<td>59,836</td>
<td>52,132</td>
<td>265</td>
<td>128</td>
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<tr>
<td>1966</td>
<td>70</td>
<td>63,317</td>
<td>54,157</td>
<td>266</td>
<td>129</td>
</tr>
<tr>
<td>1967</td>
<td>69</td>
<td>67,661</td>
<td>54,586</td>
<td>256</td>
<td>124</td>
</tr>
<tr>
<td>1968</td>
<td>68</td>
<td>89,875</td>
<td>82,982</td>
<td>272</td>
<td>132</td>
</tr>
</tbody>
</table>

Citrus Production

The area planted with oranges, lemons, and other kinds of citrus trees expanded from 0.44 to 1.84 thousand hectares or 30 per cent, in the period 1955-1968. In the same period the number of total citrus trees increased from 805 thousand trees or 49 per cent, and all kinds of citrus fruit production rose from 7.0 to 8.0 thousand metric tons (1967).

Citrus fruit production scored low at 5.0 thousand metric tons in 1968 because hurricanes struck the citrus fruit producing areas. Table 28 indicates citrus fruit production, area, number of trees, and index numbers of production for the above mentioned period.

**TABLE 28**

**CITRUS FRUITS PRODUCTION, TREES, AREA AND INDEX NUMBERS OF PRODUCTION**

1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Number of Trees/1000</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>0.44</td>
<td>536</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>1.06</td>
<td>552</td>
<td>6</td>
<td>85</td>
</tr>
<tr>
<td>1957</td>
<td>1.06</td>
<td>565</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>1958</td>
<td>0.49</td>
<td>589</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>1959</td>
<td>1.16</td>
<td>602</td>
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<td>100</td>
</tr>
<tr>
<td>1960</td>
<td>0.40</td>
<td>372</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>1961</td>
<td>0.27</td>
<td>486</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>1962</td>
<td>0.65</td>
<td>544</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>1963</td>
<td>0.64</td>
<td>612</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>1964</td>
<td>1.63</td>
<td>649</td>
<td>4</td>
<td>57</td>
</tr>
<tr>
<td>1965</td>
<td>1.76</td>
<td>750</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>1966</td>
<td>1.83</td>
<td>789</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>1967</td>
<td>1.79</td>
<td>760</td>
<td>8</td>
<td>100</td>
</tr>
<tr>
<td>1968</td>
<td>1.84</td>
<td>805</td>
<td>5</td>
<td>71</td>
</tr>
</tbody>
</table>

Areas and production of fruits were steadily increasing, with minor fluctuation in certain fruit crops. Min-Yeh reported "Since Syria produces fruits in large quantities, Syrian people have apparently included a liberal amount of these protective foods in their diet." ¹⁴

It is believed that fruit production met the expectation of the agricultural extension in keeping pace with the population growth.

The writer believes that production alone is not enough; marketing, and processing are the prolongation of production. Normal economic incentives to induce farmers to raise productivity can operate only to the extent that marketing and processing systems enlarge the market for their products and bring them a reasonable price.

**Industrial Cash Crops**

Tobacco, sugarbeet, and cotton were the most important commodities in the Syrian agricultural economy. These crops have been under a close supervision by the agricultural extension personnel in different concerned agencies.

In describing the sugarbeet development the FAO studies indicates extension efforts paid in this respect.

"This crop has been given special consideration by the government in providing extension services, production

¹⁴. Ibid., p.1.
Sugarbeet Production

In the period 1955-1968 area cultivated with sugarbeet expanded from 3,000 to 7,500 hectares or 116 per cent.

Production increased from 3,4000 to 166,000 metric tons or 388 per cent and yield rose from 11.6 to 22.045 tons per hectare or 98 per cent. Table 29 presents the expansion of this industrial product in the period 1955-1968.

TABLE 29

SUGARBEET PRODUCTION, AREA, YIELD AND THE INDEX NUMBERS OF PRODUCTION
1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Yield Ton Hectare</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>3.0</td>
<td>11.6</td>
<td>34</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>3.0</td>
<td>15.1</td>
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<td>132</td>
</tr>
<tr>
<td>1957</td>
<td>3.4</td>
<td>18.1</td>
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<td>179</td>
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<tr>
<td>1958</td>
<td>2.2</td>
<td>14.2</td>
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<td>91</td>
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<td>1959</td>
<td>5.0</td>
<td>18.2</td>
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<td>1960</td>
<td>5.2</td>
<td>23.6</td>
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<td>1961</td>
<td>4.4</td>
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<td>1962</td>
<td>4.0</td>
<td>22.3</td>
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<tr>
<td>1963</td>
<td>4.0</td>
<td>21.5</td>
<td>86</td>
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<td>1964</td>
<td>7.0</td>
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<td>8.6</td>
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<td>502</td>
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<td>1966</td>
<td>8.5</td>
<td>22.25</td>
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<td>555</td>
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<tr>
<td>1967</td>
<td>6.6</td>
<td>23.3</td>
<td>154</td>
<td>452</td>
</tr>
<tr>
<td>1968</td>
<td>7.5</td>
<td>22.4</td>
<td>166</td>
<td>488</td>
</tr>
</tbody>
</table>


The present level of sugarbeet production makes up 24 per cent of the amount needed to produce the sugar necessary for consumption.

In order to meet the declared policy of self-sufficiency, sugarbeet production is expected to receive more extension efforts and more encouragement.

Tobacco Production

Tobacco plays a fairly important role in the agricultural economy as an industrial cash crop for local consumption and export.

Available statistical resources indicate that yield per hectare rose from 0.75 metric ton in 1955 to 0.80 metric ton in 1968.

The second five year plan refers to the educational extension efforts being made during the plan period (1965-1970) to improve the quality of the produced tobacco. "The plan aims mainly at the improvement of the quality of the produced tobacco, and partially at raising the yield." 16

Cotton Production

Cotton was the most outstanding cash crop and also the number one export commodity. 17


In the period 1955-1968 the area under cotton cultivation increased from 249,000 to 279,000 hectares or 12 per cent, production increased from 84,000 to 135,000 metric tons of ginned cotton or 60 per cent, and yield rose from 340 to 450 kilogram of ginned cotton per hectare or 32 per cent. Cotton in Syria was for the most part planted in irrigated areas therefore, the output of cotton was not affected by the lack of precipitation. Table 30 presents the features of cotton production.

**TABLE 30**

**COTTON LINT PRODUCTION, AREA, YIELD AND INDEX NUMBERS OF LINT PRODUCTION 1955-1968**

<table>
<thead>
<tr>
<th>Year</th>
<th>Area/1000 Hectares</th>
<th>Yield Ton Hectare</th>
<th>Production 1000 Metric Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>249</td>
<td>3.4</td>
<td>84</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
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<td>110</td>
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<tr>
<td>1957</td>
<td>258</td>
<td>4.2</td>
<td>107</td>
<td>127</td>
</tr>
<tr>
<td>1958</td>
<td>261</td>
<td>3.7</td>
<td>97</td>
<td>115</td>
</tr>
<tr>
<td>1959</td>
<td>227</td>
<td>4.3</td>
<td>98</td>
<td>116</td>
</tr>
<tr>
<td>1960</td>
<td>212</td>
<td>5.2</td>
<td>111</td>
<td>132</td>
</tr>
<tr>
<td>1961</td>
<td>249</td>
<td>5.1</td>
<td>124</td>
<td>147</td>
</tr>
<tr>
<td>1962</td>
<td>302</td>
<td>5.0</td>
<td>150</td>
<td>178</td>
</tr>
<tr>
<td>1963</td>
<td>292</td>
<td>5.2</td>
<td>153</td>
<td>182</td>
</tr>
<tr>
<td>1964</td>
<td>287</td>
<td>6.2</td>
<td>176</td>
<td>202</td>
</tr>
<tr>
<td>1965</td>
<td>286</td>
<td>6.2</td>
<td>178</td>
<td>211</td>
</tr>
<tr>
<td>1966</td>
<td>255</td>
<td>5.5</td>
<td>141</td>
<td>167</td>
</tr>
<tr>
<td>1967</td>
<td>239</td>
<td>5.3</td>
<td>127</td>
<td>151</td>
</tr>
<tr>
<td>1968</td>
<td>279</td>
<td>4.5</td>
<td>135</td>
<td>160</td>
</tr>
</tbody>
</table>


The production of cash crops in Syria increased during the last two decades to a respectable level.
such an increase was accompanied with the application of technology, such as irrigation, fertilization, plant protection and the use of more sophisticated insecticides, and improved varieties of seeds.

The writer believes that such an increase was attributed to the integrated technical, organizational, and economic efforts of the agricultural extension and the Syrian farmers.

Animal Production

It was mentioned before that the contribution of animal production to the overall agricultural product is about 23.4 per cent of total income.

In the period 1955-1968 sheep population increased 36 per cent and cattle population decreased ten per cent.

Since cattle is a source of power in addition to being a complementary source for meat and milk, the decrease in their population could be attributed to more dependence on other sources of power. Sheep supply from two thirds to three fourths of total meat consumption of the country. Table 31 presents the population of sheep and cattle in Syria for the period 1955-1968.
TABLE 31
SHEEP, AND CATTLE POPULATION
1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cattle/1000</th>
<th>Index Numbers of Cattle</th>
<th>Number of Sheep/1000</th>
<th>Index Numbers of Sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>551</td>
<td>100</td>
<td>4,340</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>578</td>
<td>105</td>
<td>4,700</td>
<td>103</td>
</tr>
<tr>
<td>1957</td>
<td>609</td>
<td>110</td>
<td>5,460</td>
<td>125</td>
</tr>
<tr>
<td>1958</td>
<td>587</td>
<td>106</td>
<td>5,910</td>
<td>136</td>
</tr>
<tr>
<td>1959</td>
<td>535</td>
<td>97</td>
<td>5,740</td>
<td>109</td>
</tr>
<tr>
<td>1960</td>
<td>455</td>
<td>82</td>
<td>3,640</td>
<td>84</td>
</tr>
<tr>
<td>1961</td>
<td>434</td>
<td>87</td>
<td>3,500</td>
<td>80</td>
</tr>
<tr>
<td>1962</td>
<td>435</td>
<td>78</td>
<td>3,820</td>
<td>88</td>
</tr>
<tr>
<td>1963</td>
<td>450</td>
<td>81</td>
<td>4,280</td>
<td>99</td>
</tr>
<tr>
<td>1964</td>
<td>464</td>
<td>84</td>
<td>4,520</td>
<td>104</td>
</tr>
<tr>
<td>1965</td>
<td>508</td>
<td>92</td>
<td>5,070</td>
<td>116</td>
</tr>
<tr>
<td>1966</td>
<td>525</td>
<td>95</td>
<td>5,420</td>
<td>124</td>
</tr>
<tr>
<td>1967</td>
<td>467</td>
<td>84</td>
<td>5,660</td>
<td>123</td>
</tr>
<tr>
<td>1968</td>
<td>499</td>
<td>90</td>
<td>5,930</td>
<td>136</td>
</tr>
</tbody>
</table>


Milk and Meat Production

During the period 1955-1968, milk increased from 431,000 to 547,000 metric tons or an increase of 60 per cent. In the same period meat production increased from 22,000 to 31,000 metric tons or an increase of 40 per cent.

The decrease of animal production (milk and meat) in some years indicates the association of sheep industry with the hazards of dry weather conditions and its dependence predominantly on natural grazing in the steppe. Table 32 summarize trends of milk and inspected meat production.
TABLE 32
PRODUCTIONS OF MILK AND MEAT AND THE INDEX NUMBERS OF PRODUCTION
1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Milk 1000 Tons</th>
<th>Index Numbers</th>
<th>Meat 1000 Tons</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>341</td>
<td>100</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>503</td>
<td>147</td>
<td>24</td>
<td>109</td>
</tr>
<tr>
<td>1957</td>
<td>500</td>
<td>146</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td>1958</td>
<td>255</td>
<td>74</td>
<td>25</td>
<td>113</td>
</tr>
<tr>
<td>1959</td>
<td>159</td>
<td>46</td>
<td>40</td>
<td>181</td>
</tr>
<tr>
<td>1960</td>
<td>133</td>
<td>36</td>
<td>29</td>
<td>131</td>
</tr>
<tr>
<td>1961</td>
<td>161</td>
<td>47</td>
<td>26</td>
<td>127</td>
</tr>
<tr>
<td>1962</td>
<td>265</td>
<td>77</td>
<td>28</td>
<td>131</td>
</tr>
<tr>
<td>1963</td>
<td>539</td>
<td>158</td>
<td>29</td>
<td>136</td>
</tr>
<tr>
<td>1964</td>
<td>538</td>
<td>157</td>
<td>30</td>
<td>140</td>
</tr>
<tr>
<td>1965</td>
<td>600</td>
<td>175</td>
<td>31</td>
<td>140</td>
</tr>
<tr>
<td>1966</td>
<td>604</td>
<td>177</td>
<td>31</td>
<td>140</td>
</tr>
<tr>
<td>1967</td>
<td>518</td>
<td>161</td>
<td>31</td>
<td>140</td>
</tr>
<tr>
<td>1968</td>
<td>547</td>
<td>160</td>
<td>31</td>
<td>140</td>
</tr>
</tbody>
</table>


Poultry Production

In the period 1955-1968 the total number of poultry including hens, turkeys, geese, ducks increased from 3.263 to 4.45 millions or 39 per cent. Eggs production also increased from 156.789 to 312.929 millions or nearly doubled in the same period. Table 33 indicates eggs production, poultry population and the index numbers of both of them.
## TABLE 33
POULTRY PRODUCTION, AND THEIR INDEX NUMBERS
1955-1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Poultry Population Million</th>
<th>Index Numbers</th>
<th>Eggs Production Million</th>
<th>Index Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>3.263</td>
<td>100</td>
<td>156.789</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>3.045</td>
<td>93</td>
<td>155.495</td>
<td>99</td>
</tr>
<tr>
<td>1957</td>
<td>3.392</td>
<td>102</td>
<td>146.348</td>
<td>93</td>
</tr>
<tr>
<td>1958</td>
<td>3.189</td>
<td>97</td>
<td>137.685</td>
<td>87</td>
</tr>
<tr>
<td>1959</td>
<td>3.505</td>
<td>107</td>
<td>104.655</td>
<td>66</td>
</tr>
<tr>
<td>1960</td>
<td>3.098</td>
<td>97</td>
<td>146.754</td>
<td>93</td>
</tr>
<tr>
<td>1961</td>
<td>3.619</td>
<td>110</td>
<td>146.352</td>
<td>93</td>
</tr>
<tr>
<td>1962</td>
<td>4.151</td>
<td>127</td>
<td>233.873</td>
<td>149</td>
</tr>
<tr>
<td>1963</td>
<td>4.052</td>
<td>124</td>
<td>286.011</td>
<td>183</td>
</tr>
<tr>
<td>1964</td>
<td>4.964</td>
<td>152</td>
<td>293.330</td>
<td>187</td>
</tr>
<tr>
<td>1965</td>
<td>4.909</td>
<td>150</td>
<td>306.439</td>
<td>196</td>
</tr>
<tr>
<td>1966</td>
<td>4.454</td>
<td>136</td>
<td>221.790</td>
<td>141</td>
</tr>
<tr>
<td>1967</td>
<td>4.037</td>
<td>123</td>
<td>212.006</td>
<td>135</td>
</tr>
<tr>
<td>1968</td>
<td>4.541</td>
<td>135</td>
<td>312.929</td>
<td>200</td>
</tr>
</tbody>
</table>


### Development of Agricultural Planning

The dynamic growth of Syrian agriculture did not occur just by chance. It was the result of coordinated comprehensive planning. This section is concerned with a review and analysis of this agricultural planning.

In 1946 the government contracted the British firm Alexander Jeep\(^{18}\) to study the natural resources and the

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potential possibilities of economic and social development in the country.

In 1954 the Syrian government brought a panel of experts from the International Bank for economic development to study the visibility of establishment a development plan. The experts suggested a five year development plan.

The Syrian government, in order to formulate a concrete economic policy issued the law number 115 dated August 29, 1955; according to which a higher national commission for economic and social development was established with full responsibility for the direction and management of all aspects of development in the country.

An autonomous authority was also established (the institute of economic development) to carry out the development projects. The first extraordinary budget in the history of Syria was established in 1955 and endorsed by the law number 116 dated 8,29,1955.

The creation of the higher national commission for economic and social development, the institute of economic development, and the endorsement of the developmental budget in 1955 created the grass root foundations for future trends of development in the country.

The main characteristics of development planning in this era were first; the realization of the importance of the role of government in economic and social development; second, the restriction of development projects to irrigation and drainage projects.

In 1958-1959 a ministry for planning was established with a full responsibility for overall economic development planning and control of development funds. The ministry of planning had the right to review, and coordinate ministerial plans and to allocate priorities.

Planning for agricultural development for the first five year plan 1960-1965 continued to be the responsibility of the ministry of agriculture, the agrarian reform foundation and other concerned agencies. Central local agricultural planning committees were constituted in these agencies to plan for agricultural development. They were to draft, prepare, and coordinate their ministries planning proposals in cooperation with the ministry of planning. More commonly, the proposals were prepared by the office of the minister or of the senior civil services. Usually after the tentative sector sub-plan for agriculture was completed, and before it was fitted into the total plan, the agricultural proposals were considered by some kind of sector advisory committee just to give an opportunity to all concerned agencies to present their views.
In some cases the advisory committee also included representatives of various interest groups such as chambers of agriculture, food processors, and merchants handling agricultural supplies or products. After the several sector parts of the overall plan have been revised and integrated into a whole, the total plan proposals go from the ministry of planning to the council of ministers, either directly or after approval by a planning committee of the ministers in charge of the most important ministries.

Since the nationalization of industry and foreign trade in 1964, the public sector became the main pillar in the economic development in the country, consequently, the legislative decree number 86 of 1969 rewrote previous planning statutes and created the state planning commission as a central planning agency, entrusted with all functions of centralized planning and coordination. The commission has acted as a technical secretariat to the high council of planning headed by the prime minister and composed of some ministers and the governor of the central bank.


According to this decree planning units are to be established in each ministry and public organization and the commission would practice technical control over these units.

Responsibilities assigned to the state planning commission and the high council of planning are:

First, the high council of planning prescribes the main direction of development according to the objectives in view, and approves the framework for annual, medium, and long term plans;

Second, the state planning commission is responsible for translating the set of objectives into quantified forms through conducting necessary studies, relevant guidelines for production, investment, foreign trade and other indicators could be derived;

Third, sectoral plans are to be prepared by the planning units in each ministry and public organizations according to guidelines drawn by the ministry of planning and in full cooperation with the corresponding departments in it.

Planning proposals are to be discussed and reconciled in the planning commission and to be approved by the high council and the cabinet.

The implementation of the projects and the programs approved in each plan becomes the responsibility of the respective ministries.

A central directorate for planning and agricultural
economics has been established in the ministry of agriculture and agrarian reform. This directorate coordinates and communicates various departments' planning endeavors. It prepares the planning proposal of the ministry of agriculture and agrarian reform after a mandatory consultation with concerned head departments at the ministry and concerned agencies.

The First Agricultural Five Year Plan

The first agricultural development plan 1960-1965 was made in 1960 by the ministry of agriculture and the ministry of planning as part of the first five year plan in the country.22

The targets of this plan were established with regard to the main characteristics of Syrian agriculture which were recognized as:
First, the high variability and fluctuation of rainfall; Second, the possibilities of increasing agricultural plant and animal production through new technology; Third, the new trends of land tenure, land ownership, labor entrepreneurship and partnership and the effects of these trends on the size of holdings, the number of holders, the

form of investment, the type of crops, the amount of credit, and the forms of rural institutional organizations.

Achievements of the agricultural first five year plan could be summarized in the following:

Production Targets

Production targets of the agricultural five year plan were to increase productivity such as the yield per hectare and the efficiency of milk and meat producing animals. This was to be done through strengthening extension educational programs, the application of new means of production, and the extension of credits.

Income Targets

The net national income originating in agriculture in the year of 1960 was estimated to be L.S. 960 millions. The plan aspired to raise it to L.S. 1,275 millions by 1965 realizing an increase of L.S. 310 millions or 32 per cent. The estimate of national income from agriculture for 1965 came to be L.S. 1,315 millions. This increase equals about 38 per cent of the net national income of the year 1960. Thus the achieved agricultural income targets exceeded what was planned.

Employment Targets

The size of the labor force in agriculture increased from 749,953 persons in 1960, to 845,653 persons in 1965
with a net increase of 95,695 persons over the base year.

Various projects were planned and foreseen to absorb only 75,000 or 78.4 per cent of the total increase in agricultural labor force. Shortcomings were realized in 1964 and some adjustments were made to counter them.

The first five year plan proposed certain development projects. From the fiscal point of view, government projects were financed by different concerned agencies. The private sector bore a major share in the financing of the agricultural development projects. The private sector's participation came to be in the form of supplying Syrian agriculture with tractors, improved seeds, improved animals, harvesting machines and private irrigation projects.

The Second Five Year Plan

The second five year plan was formulated in the light of three factors:
First, changes occurring in the agricultural sector;
Second, experiences gained from the first five year plan;
Third, stabilization of agricultural growth.23

Changes Occurring in the Agricultural Sector

The execution of the agrarian reform, the spread of agricultural cooperatives and the change in the marketing

23. Ibid.
system, all shifted the initiative and the decision making from land lords and intermediary persons to land tillers. Small land owners become responsible for the attainment of production objectives on the farm level. In view of the occurring changes in the agricultural structure, the second five year plan gave special attention to increase the capabilities and the reciprocities of new landowners through intensive agricultural extension programs, strengthening agricultural cooperatives, and enlarging the scope of practical training.

Experiences Gained From the First Five Year Plan

Experiences gained from the first five year plan showed that Syrian farmers expressed a respective degree of innovativeness and adopted new methods, practices, and means of cotton, vegetables and cereal production. Animal production received minor attention by both the government and farmers. Therefore the agricultural second five year plan emphasized the integration of animal and plant production on the farm level.

It was also realized during the execution of the agricultural first five year plan that no development project could fully achieve its objectives without stability in the policy making and marginal profitability to farmers.

Because of that, stability and profitability factors were regarded in the selection and determination of agricultural projects for the second five year plan.
Stabilization of Agricultural Growth

Agricultural planners and policy makers realized that fluctuation and recessive agricultural growth rate could also be attributed to the lack of sufficient number of extension workers, senior research workers and research or extension facilities.

Due to the fact that local agricultural research services lagged far behind the required level of extension work to achieve the objectives of the plan, conditions were made for agricultural extension agencies to make their best in adopting foreign technology and improved agricultural methods to the Syrian conditions.

The Structure of Demand for Food Production

It is realized that domestic demand for agricultural food products was increasing during the first five year plan and it was expected to increase more by the execution of the second five year plan. Thus, the increase in demand for food products, and the necessity of producing cash crops for export to supply the country with needed foreign currencies were considered.

Production Value and Income Goals of the Plan

The net agricultural national income was L.S. 1,235 million in 1964. In the light of the aforementioned objectives the second five year plan aimed to increase it to L.S. 1,776 million by 1970.
Thus the planned net agricultural national income to be achieved during the plan period represents an increase of 34 per cent of the total agricultural national income in the year of 1964. Accordingly the planned average rate of growth was about six to eight per cent per year of the plan period.

Employment Goals of the Plan

New employment opportunities to be created by the second five year plan (SFYP) projects were estimated to be 95,000 permanent jobs. The contribution of various sub-agricultural sectors in the creation of the new employment opportunities was as follows:

1. Irrigation and land reclamation projects, 60,000.
2. Vertical expansion projects, such as fruit trees plantations and animal husbandry, 30,000.
3. Direct government employment in such projects as agricultural extension and agricultural research, 5,000.

The Administrative Arrangements of the Agricultural Second Five Year Plan

From the financial and administrative point of views, the development projects were directed, managed and financed by three parties, the public sector (Government), the agricultural cooperative sector, and the private sector (noncooperative farmers).

24. Ibid.
The Public Sector

Several governmental agencies, namely, the ministry of agriculture, and agrarian reform, the major projects administration, the ministry of public work, and the tobacco monopoly directed, managed and financed projects within the amount of L.S. 141 million ($40.3 million).

Projects were classified and grouped into areas on the basis of the similarities of projects in nature and production function and the technical, managerial, and financial unity of the area projects.

The Cooperative Sector

In 1965 there were two kinds of agricultural cooperatives in the country. The agrarian reform cooperatives and those cooperatives established by the ministry of agriculture. Irrespective of differences in the procedural functioning of these two kinds of cooperatives, they carried various activities such as providing supplies for production, marketing activities, and/or credit extension. In accordance with the undertakings of cooperatives the second five year plan (SFYP) ascribed projects to the cooperative sector within the amount of L.S. 60 million investment.

Private Sector

The private sector in agriculture was composed of farmers not participating in the cooperatives and of the individual activities of farmers who were members of these
cooperatives. For example, purchasing and raising a milk cow by a farmer who is a member of marketing cooperative is regarded as an activity in the private sector.

Although the number of agricultural cooperatives increased to 677 cooperatives at the end of the first five year plan (FFYP) with about 43,940 cooperative families, the fulfillment of production goals continued to depend mainly on the efforts of the individual farmers. Private sector investment amount was estimated at L.S. 300 million.
CHAPTER V

RURAL INSTITUTIONS DEVELOPMENT

After the implementation of the agrarian reform a majority of families with the state own the greater part of Syrian lands.

Most farmers are landowners. Farms are operated mainly through self-employment, some kind of share cropping and cooperative farming.

Agrarian reform laws number 161 of 1958; number 88 of 1963; number 145 of 1967; and other relevant executive laws put an end to big ownership on the basis of just compensation, preserved the right for landlords to support themselves and their families without any kind of humiliation, and granted the possibility for any citizen of the country to benefit, own, and cultivate agricultural lands.¹

Agricultural Cooperatives

By the virtues of political, social, and institutional changes which occurred in Syria during the last two decades, two types of agricultural cooperative societies were formed

and developed.\textsuperscript{2}

The first were those agricultural cooperatives under the guidance of the ministry of agriculture which were solely initiated by farmers. The second type were those cooperatives initiated, financially supported, educationally guided and administratively controlled by the agrarian reform foundation.

By 1968 the agrarian reform had achieved its objectives in: (1) Land expropriation; (2) Land distribution; (3) The organization of agricultural cooperatives; (4) The establishment of cooperative unions, and (5) Procurement of solid agricultural cooperative extension educational programs.\textsuperscript{3}

As a result to these achievements and in order to induce more agricultural production and to eliminate the overlapping between the ministries, the ministry of agriculture, the ministry of agrarian reform and the foundation of agrarian reform were reorganized and unified into the ministry of agriculture and agrarian reform. The new born ministry and the national agricultural cooperatives' union revised previous laws governing the cooperatives formely

\textsuperscript{2} A. M. El-Zoobi "Co-ops Movement in Syria." Paper Presented at the 14th Session of the FAO, Rome, Italy, Nov. 1967

\textsuperscript{3} Dr. Mehdi El-Jam; Hassan El-Attar; Ahmad M. El-Zoobi; "The Question of the Agrarian Reform Through Legislations and Actions in the Syrian Arab Republic." (Damascus: The Syndicate of Agricultural Engineers, The Ministry of Agriculture and Agrarian Reform, March 1969), PP. 65-70
established under the auspice of the ministry of agriculture. Consequently these cooperatives were admitted to the cooperative unions with a full entitlement to privileges granted to the agrarian reform cooperatives.\textsuperscript{4}

The Development of Agricultural Cooperatives in the Ministry of Agriculture

The attempt toward the agricultural cooperative movement in Syria began in 1942 when inhabitants of some villages located in the Kalamoun mountains, started to think about how they could overcome the shortage of rainfall on their land. For example, the people of Deir Attieh village in the Kalamoun district cooperatively organized their efforts, dug wells and irrigated more lands:

These villagers began their first trials in the field of cooperative work, motivated by their feelings to do something in order to get out of the economic crisis in which they were involved. What they decided to do was not more than to coordinate their efforts within the framework of more lands. The way adopted by these innovators was characterized by its simplicity, it was nevertheless sufficient and efficient trial for them, to get acquainted with the principles of cooperation and its benefits.\textsuperscript{5}


\textsuperscript{5} A. M. El-Zoobi "Coops. Movement In Syria" (paper Presented at the 14th Session of the FAO, Rome, Italy, Nov. 4-23, 1967), P. 2.
In 1943 the people of Deir Attieh, tried to have their togetherness officially recognized as an agricultural cooperative society. But due to the lack of laws, statutes or officially manifested rules concerning agricultural cooperatives, they obtained a license ratifying their grouping under the title "Agricultural Cooperative Company", and the first cooperative in Syria was born.

In 1947 the ministry of agriculture was established. Subsequently extension work started to find its path to farmers. In 1950 the ministry of agriculture felt that the cooperative movement proved to be an important way to help farmers, to organize and to solve their problems. Accordingly it suggested the law number 65 dated February 28, 1950.

The president of the state.

Accordance with temporary constitutional provisions as approved by the constitutional general assembly at its session held on December 14, 1949 and in accordance with the proposal of the minister of agriculture and the council of ministers' decree No. 161 dated February 26, 1950.

Hereby decrees:
1. The attached "Cooperative societies law" shall come into force with effect from March 1st 1950.
2. This decree shall be published and communicated to all concerned for the application of its provisions.

The purposes of the law were to encourage the co-operative movement, help the existing cooperatives, and promote the establishment of more agricultural cooperatives. Articles number one and two define clearly these purposes.

**Article number 1**

Any society established in accordance with the present law, the purpose of which is to improve its members conditions from both the material and social viewpoints; shall be considered a cooperative society.

**Article number 2**

Cooperative societies may be established with the purpose of undertaking activities in connection with agricultural and industrial production - sale - consumption - or supply lending, contraction loans - irrigation, land reclamation, transport and medical assistance as well as any other activity which is in conformity with the present law, would be more useful than if undertaken by individuals.

The law put the agricultural cooperatives under the supervision of the ministry of agriculture and other kinds of cooperatives under the supervision of the ministry of economy. Agricultural cooperative services in the ministry of agriculture were assigned to the agricultural extension services which recruited and hired many specialists and extension field workers to facilitate developing the co-operative movement.

7. Ibid.
The cooperative affairs are carried on by the extension service in the ministry of agriculture. The ministry of agriculture employed two Palestinian refugees as field cooperative men to work under the supervision of the extension service in Damascus. Also during this period, an extension man, Mr. Halim Najar, a graduate from the American University of Beirut, was employed. The ministry of agriculture then employed Mr. Ali Suliak, a refugee from Yugoslavia, as an expert in cooperation.8

In Syria an agricultural cooperative society could be organized by seven or more persons interested in promoting mutual interest in a certain type of agricultural activity, such as agricultural production, marketing, extending credit, agricultural irrigation, and purchasing agricultural machineries. Financial support for agricultural cooperatives were provided by members through capital share subscription, payment of membership fees and from loans. Every member had only one vote. An agricultural cooperative society could be organized either on the principle of limited liability or unlimited liability.

The agricultural extension service in the ministry of agriculture followed every possible extension method to encourage farmers to uncover their needs and to organize themselves into agricultural cooperatives. The most effective method was the direct and face to face contact where

extension workers went to a village, contacted local leadership, gathered farmers in the sheriff's house (Mouktar or Shack), in the mosque or the church, and explained to them the meanings and the productive benefits of agricultural cooperatives. By 1955 about 47 different kinds of agricultural cooperatives had been organized by the agricultural extension service in the ministry of agriculture. Only 36 of them existed with 1,260 members in 1957. ⁹

In 1958 a directorate for cooperation was created in the ministry of social affairs, to supervise the cooperative movement in the country, including agricultural cooperatives which were under the auspice of the ministry of agriculture. ¹⁰

In 1961 the presidential order number 242, dated 1961, was promulgated. It determined and reassigned administrative responsibilities of cooperatives to different ministries on the basis of job technicalities. Accordingly the ministry of agriculture became again responsible for the development of agricultural cooperatives outside the agrarian reform sector. ¹¹ A directorate for agricultural cooperation was established in the ministry of agriculture. On the district and village levels extension field workers continued


¹⁰. Ibid.

¹¹. Ibid.
to be the spear head for the diffusion of agricultural cooperatives. Table 34 presents the development of agriculture and the ministry of social affairs, and the trend in farmers involvement in the period 1955-1967.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cooperatives</th>
<th>Number of Cooperative Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>35</td>
<td>1,214</td>
</tr>
<tr>
<td>1956</td>
<td>35</td>
<td>1,232</td>
</tr>
<tr>
<td>1957</td>
<td>36</td>
<td>1,260</td>
</tr>
<tr>
<td>1958</td>
<td>38</td>
<td>1,325</td>
</tr>
<tr>
<td>1959</td>
<td>175</td>
<td>16,450</td>
</tr>
<tr>
<td>1960</td>
<td>227</td>
<td>20,036</td>
</tr>
<tr>
<td>1961</td>
<td>254</td>
<td>22,336</td>
</tr>
<tr>
<td>1962</td>
<td>278</td>
<td>23,630</td>
</tr>
<tr>
<td>1963</td>
<td>287</td>
<td>24,108</td>
</tr>
<tr>
<td>1964</td>
<td>321</td>
<td>25,496</td>
</tr>
<tr>
<td>1965</td>
<td>385</td>
<td>26,996</td>
</tr>
<tr>
<td>1966</td>
<td>453</td>
<td>29,039</td>
</tr>
<tr>
<td>1967</td>
<td>534</td>
<td>30,921</td>
</tr>
</tbody>
</table>


The Development of Agricultural Co-operatives in the Agrarian Reform

The agrarian reform went beyond establishing maximum limits of land ownership, creating family type of farming, and regulating land possession. The agrarian reform was a dynamic agricultural, social and economic movement aimed at providing economic opportunities, increasing agricultural production, raising the living standard and accelerating the rate of development. Unsuspiciously there were other factors that backed feudalism, and allied with it such the lack of credit, guidance and the lack of knowledge and know-how. Agrarian reform laws were set-up to bring about sound economic, agricultural, and social change. They not only urged distribution of land and getting ride of feudalism, but also bound the government on behalf of the society to support new land owners, supplying them with the necessary means of higher production such as improved seeds, chemical fertilizers, equipment, and technology through cooperatives.

Before discussing the development of agricultural cooperatives in the agrarian reform sector, it is quite necessary to state the relevant articles of the agrarian reform law and its amendments.

Article number 28.

1. By virtue of the law an agricultural cooperative society shall be formed from among the farmers who acquired the requisitioned land in the same village and farmers who do not own more than the maximum limit prescribed by articles 13 of the agrarian
reform law. When permitted by a decision of the agrarian reform foundation, one society may, if necessary, be allowed to serve more than one village.

2. Agrarian reform foundation may guarantee cooperative societies or their members towards working banks or the cooperative agricultural bank or other firms to repay costs of constructions or agricultural tools necessary to invest in the land.

3. The cooperative society is subject to the provisions of the law which deals with cooperative societies and to the provisions of the following articles.

Article number 29.

Cooperative societies shall perform the functions:
1. Advancing agricultural loans of all kinds to members of the society according to the needs of their land.
2. Providing farmers with the necessary requisites for the cultivation of their land, such as seeds, fertilizers, livestock, agricultural machines and means of storage and transport of crops.
3. Organizing the cultivation and utilization of the land in the most efficient manner, including seed selection, pest control and the digging of canals, wells and drains.
4. Selling the principal crops on behalf of the members after deducting installment payments on the land, government taxes and other loans.
5. Rendering all other agricultural and social services required by members.

Article number 30.

Cooperative societies shall carry out their functions under the supervision of an agricultural cooperative extension worker chosen by the agrarian reform foundation.

The extension cooperative worker may supervise the activities of more than one cooperative society.
Article number 32.

The agrarian reform foundation shall issue the necessary regulations for the work of agricultural cooperatives within the limits of the above mentioned provisions. 12

The development of the agricultural cooperatives of the agrarian reform paralleled the development of agricultural services in the agrarian reform and passed into many stages:

1. In the early years of the agrarian reform implementation, agricultural cooperatives were initiated by law in the distributed villages.

   An agricultural secondary school graduate was to be appointed as supervisor with a complete membership in the board of directors of the cooperative and with the veto right. In this stage the major function of the cooperatives was credit extension. For all purposes it was the responsibility of the agrarian reform foundation, the cooperative supervisor and the governorate's agrarian reform office to estimate the required credits in kind and in cash.

   At the end of the year the local offices sold the cash crops, collected the debt, and turned the balance over to the peasants.

Other services such as marketing, maintenance of irrigation installations, and providing farm machinery were also provided by the agrarian reform. In this stage the idea of cooperative work was vague, most beneficiaries did not know the purpose of the new organization and farmers in the cooperatives were left with limited functions.  

2. In 1963, after the amendment of the agrarian reform law the agricultural cooperatives of the agrarian reform were evaluated. Cooperative accounts were separated from that of the agrarian reform foundation as a preliminary measure to give cooperatives more authority and more initiative in the process of decision-making. In this stage work continued, with releasing more functions to the board of directors of cooperatives.  

3. In 1965 the cooperatives belonging to the agrarian reform were evaluated against the roles of both the foundation and the cooperatives in the production. On the basis of the findings, the cooperatives were viewed as starting point for the establishment of an economic, social and agricultural overall

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plan in the agrarian reform sector. For the first time the plan of the agrarian reform became an integrated part of the country developmental plan. During this period the agrarian reform foundation more than doubled its extension staff. Cooperatives started to manage their irrigation installations, agricultural machineries and to deal directly with the cooperative agricultural bank.

4. By 1966 agricultural cooperatives' functions covered a wide variety of agricultural, economic, and social activities. With this development, the cooperatives and the agrarian reform foundation felt the need for other cooperative organizations, to control, manage and deal with cooperative business and activities on the governorates level. Accordingly the regional cooperative unions were established on the level of the governorates. The first regional cooperative union was established in the governorate of Hama. The by-law of this union was published in the official journal on the day of the 15th December 1966.\textsuperscript{15} By the end of 1966 regional cooperative unions had been established in most of the Syrian governorates.

Another distinguished characteristic of this period was the development of specialized animal production cooperatives in the marginal areas as a solid base for modernizing the sheep industry, cattle production and milk processing in the country.

5. In 1967 the regional cooperative unions and the agrarian reform foundation established the national general cooperative union with the responsibility of occupying and assuming gradually the role of the agrarian reform foundation in the agrarian reform agricultural cooperative sector. With the creation of this union, the agricultural cooperatives of the agrarian reform became a dynamic self-directed movement.

The agricultural cooperative sector developed in the country through conditions conducive to its growth.

The decree law number 65 of 1950 exempted all officially recognized cooperatives from all fees, income, municipality, advertisement, and judicial taxes and granted a maximum ten per cent discount on their purchases of seeds, and other agricultural commodities from the government agencies. Table 35 indicates the development of agricultural cooperatives and the number of participating farmers in the agrarian reform sector in the period 1955-1967.
### TABLE 35

**NUMBERS OF COOPERATIVES AND PARTICIPATING FARMERS IN THE AGRARIAN REFORM SECTOR 1955-1967**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cooperatives</th>
<th>Number of Cooperative Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>---</td>
<td>---</td>
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<tr>
<td>1956</td>
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<td>1957</td>
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<tr>
<td>1958</td>
<td>---</td>
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</tr>
<tr>
<td>1959</td>
<td>106</td>
<td>8,313</td>
</tr>
<tr>
<td>1960</td>
<td>108</td>
<td>8,913</td>
</tr>
<tr>
<td>1961</td>
<td>144</td>
<td>12,025</td>
</tr>
<tr>
<td>1962</td>
<td>193</td>
<td>13,394</td>
</tr>
<tr>
<td>1963</td>
<td>210</td>
<td>13,929</td>
</tr>
<tr>
<td>1964</td>
<td>251</td>
<td>15,142</td>
</tr>
<tr>
<td>1965</td>
<td>292</td>
<td>16,944</td>
</tr>
<tr>
<td>1966</td>
<td>341</td>
<td>20,246</td>
</tr>
<tr>
<td>1967</td>
<td>424</td>
<td>23,863</td>
</tr>
</tbody>
</table>


The legislative decree number 88 of 1963 also exempted the beneficiaries allotted expropriated lands from paying three fourths of the value of land. The remaining one-fourth is to be paid to the agricultural cooperative in which the beneficiary is a member, by instalments over 20 years. The decree was aimed at encouraging farmers to join the cooperatives and at strengthening the financial position of the agrarian reform cooperatives.

The total number of cooperatives both for agrarian reform lands and other lands was 1,004 at the end of 1968.
There were 924 agricultural cooperatives with multiple purposes, 39 sheep breeding cooperatives, 17 cow breeding cooperatives, one socialistic cooperative, five sheep fattening cooperatives, ten marketing cooperatives, six fishing cooperatives and two olive oil extracting and marketing cooperatives.

In addition there were 13 agricultural cooperative unions in the governorates and one national agricultural cooperative union in the capital city.¹⁶

These cooperatives covered about 1,283 villages or 25 per cent of the total Syrian villages. They included 53,065 members.

Table 36 indicates trends in the cooperative development and farmers participation in these cooperatives for the period 1955-1968.

### TABLE 36

**TRENDS IN THE COOPERATIVE DEVELOPMENT IN SYRIA 1955-1968**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cooperatives</th>
<th>Number of Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>35</td>
<td>1,214</td>
</tr>
<tr>
<td>1956</td>
<td>34</td>
<td>1,232</td>
</tr>
<tr>
<td>1957</td>
<td>36</td>
<td>1,206</td>
</tr>
<tr>
<td>1958</td>
<td>38</td>
<td>1,325</td>
</tr>
<tr>
<td>1959</td>
<td>281</td>
<td>25,263</td>
</tr>
<tr>
<td>1960</td>
<td>335</td>
<td>28,954</td>
</tr>
<tr>
<td>1961</td>
<td>328</td>
<td>34,861</td>
</tr>
<tr>
<td>1962</td>
<td>471</td>
<td>37,024</td>
</tr>
<tr>
<td>1963</td>
<td>487</td>
<td>38,037</td>
</tr>
<tr>
<td>1964</td>
<td>572</td>
<td>40,638</td>
</tr>
<tr>
<td>1965</td>
<td>677</td>
<td>43,940</td>
</tr>
<tr>
<td>1966</td>
<td>794</td>
<td>49,285</td>
</tr>
<tr>
<td>1967</td>
<td>958</td>
<td>54,794</td>
</tr>
<tr>
<td>1968</td>
<td>1,004</td>
<td>56,065</td>
</tr>
</tbody>
</table>


**Conclusion**

It was realized in Syria that the actual mobilization of rural people and their active participation in agricultural development measures could be obtained when it was possible to approach groups consisting of individuals united according to their needs.
The formation of agricultural cooperatives proved to be an effective way of involving rural people and enlisting their participation in the process of agricultural and rural development, since such cooperatives could help to define the needs of the people and to undertake projects to meet such needs.

An agricultural cooperative, being simultaneously an association of persons and an economic enterprise was an especially appropriate means to organize the mutual self-help of people and to bring about new means of production.

The agricultural cooperative sector developed from a small village togetherness in 1942 to an organized sector with very well defined educational and economic objectives and active participation in the agricultural second five year plan.

From our discussion to the cooperative movement, it is possible to infer that the innovation of the agricultural cooperative movement and Syria's achievements in the field of agricultural cooperation has been a sole results of extension work.

The constitution of the agricultural cooperative sector, and the economic, agricultural, and social activities demonstrated by this sector proved that the cooperative family type of farming will be the most idealistic farming in the country.
The main bases of the agrarian reform system can be summarized as:

1. Personal initiative released by ownership of the land.
2. Cooperation to secure the advantages of large scale operation.
3. Government interference to safeguard public interest, and to provide facilities beyond the abilities of both the individual farmer and his cooperative.\(^{17}\)

These bases could not be regarded as a new system unless they had become built into the social attitudes and the patterns of behavior of the people involved.

The agrarian reform in Syria had passed through the difficult process of becoming institutionalized.\(^{18}\) It was the process through which a peasant cooperative established by law became a real cooperative, and an owner cultivator fully supported by the government and highly controlled by administrative measures became a self-sustained manager of his farm.

Syria had a sectoral type of economy. Agriculture and industry were the main sectors. Agricultural development

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was a prerequisite for the development of other sectors and constituted the solid base for general economic and social growth.\textsuperscript{19}

The man-land relationship is the grass root value of citizenship and social belonging; that was why agrarian reform dealt with land-ownership, tenure relationship, and the mode of life in rural areas. Feudalism was a dangerous barrier to agricultural development. The danger of feudalism lay in the absenteeism of landlords, their attitudes and the assumption of their "sacred" right to exploit land tillers. So the agrarian reform in Syria was planned to abolish those social and economic obstacles confronting rural development.\textsuperscript{20}

In the opinion of the writer the reform laws were a consequential result of a struggle between two points of view that, of equity, justice and the rightness of maintaining a decent and productive life and that of feudalism, exploitation, serfdom and humiliation.

\textbf{Land Ownership Prior to the Agrarian Reform}

In 1859 the first Tupu or land right registration system was introduced and in 1874 Defter Khakani, or land


\textsuperscript{20} Helal Helal; Dr. Adel Akel, "The Social Effects of the Agrarian Reform in Syria." (Damascus: The University of Damascus, 1965-1966), PP. 40-55.
owners and were designated to issue ownership documents (deeds).

From this date onward, no one could acquire any utilization rights without a written permission from the land registrars.

The Ottoman land laws divide land into five categories:
(1) Mulk, or lands held in absolute ownership; (2) Emiri lands - the ownership of which basically belongs to the state and the right of utilizing may be given by the state to individuals; (3) Wakf or lands dedicated to certain educational or charity purposes; (4) Public lands which are left to be used by the state, such as roads, squares, parks public markets, etc; (5) Dead lands or empty lands which are not owned or used by anybody and are situated at a distance of 1½ miles from buildings and from which a man's loud voice would not be heard. However one must not be misled by the definition of this category of land which covers extended areas in Syria and a fair percentage of it may be well developed and easily utilized.21

Land held in absolute ownership are called Mulk lands, and to use the Arabic term - its Neck (or holding right), what is in it, and its utilization rights belong to its owner.

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In the Emiri lands the Neck, or holding right, belongs to the state and the utilization right belongs to its owner.  

As time went on, ownership of the land or of tenancy rights were fragmented, causing the multiplication of the number of shares of the land. The task of farming a small strip of land became very difficult. The insecurity which prevailed at that time forced villagers to farm village lands jointly. This practice of farming jointly brought into existence what is called Musha lands. Musha means undefined shares in a common property. Such a partnership was either optional, where a number of persons bought a land sharing its profits, or compulsory partnership gained by inheritance.

In the populated localities where the number of owners was high, it was not easy to split lands into economically farmable tracts. Consequently, a grouping of one family's shares of the land was adopted and thus the common family property came into being.

In 1930 the French high commissioner declared many decisions with respect to land ownership. The most important  

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was decision No. 3339 dated 13.11.1930.23 This decision amended to Ottoman land laws and the Tupu rules and considered the "Wakf" or the dedication of the land a temporary or casual measure having nothing to do with the definition and classification of the land.

The categories of land under the Ottoman laws as mentioned before have been changed by this declaration No. 3339 as follows: 24.

1. Property held in absolute ownership and situated within built-up areas or within administrative (municipal) boundaries.

2. Emiri lands, the Neck of which remained in the hands of state, but its use and exploitation rights owned by other persons.

3. Left-over (or empty) and unprotected properties - their areas and merits have been defined (and limited) in accordance with local practice and tradition. The ownership of such lands was acquired by those who occupy and farm them continuously without disput.

4. Left-over, but protected lands belong to the state or the municipalities and partly considered as state domains.

5. Empty (deserted) and dead lands are considered Emiri lands. They are unoccupied, their boundaries undefined,

23. Ibid.

24. Ibid.
but could be occupied and utilized by permission of the state, and the priority rights may be acquired in accord-ance with the state domain laws and regulations.

Land Ownership's Inheritance

The existing land ownership's inheritance in Syria is of two kinds:

1. Land held in absolute ownership (mulk) is inherited in accordance with the moslem inheritance rule, that is, the female inherits half the share of the male.

2. In Muri lands where the ownership (neck) belong to the state;
   a) Children of both sexes inherit equal shares.
   b) The wife gets one fourth of the property if she has children.
   c) In the absence of children the wife inherits one half of the property; the other half goes to the next of kin. The same applies to the husband when inheriting his wife's share.
   d) Grand children inherit their dead father's share.

Land Distribution Prior to The Agrarian Reform

The distribution of agricultural land in Syria was

The size of holdings ranges from about one hectare to 1,000 hectares. Large holdings constituted about 50 per cent of the agricultural land. According to the agrarian reform foundation, about 4,000 landowners possessed this portion of land and the majority of them were subjected to the agrarian reform measures. Table 37 presents the structure of land distribution as registered in 1952.

**TABLE 37**  
THE STRUCTURE OF LAND DISTRIBUTION UNTIL 1952

<table>
<thead>
<tr>
<th>Size of Holdings Hectare</th>
<th>Per Cent of Total Agricultural Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>2.5</td>
<td>5</td>
</tr>
<tr>
<td>5.10</td>
<td>7</td>
</tr>
<tr>
<td>10-23</td>
<td>17</td>
</tr>
<tr>
<td>23.50</td>
<td>11</td>
</tr>
<tr>
<td>50-100</td>
<td>10</td>
</tr>
<tr>
<td>100-500</td>
<td>24</td>
</tr>
<tr>
<td>500-1000</td>
<td>9</td>
</tr>
<tr>
<td>1000 or more</td>
<td>16</td>
</tr>
</tbody>
</table>


The Implementation of the Agrarian Reform

Reform law was enacted in 1958, by the decree number 161 of 1963 a major amendment to the previous law took place by the act number 88 of 1963. In 1966 the law number 145 of 1966 was issued to decentralize the implementation of the agrarian reform laws and to ensure the involvement and the participation of all concerned people.

The Agrarian Reform Foundation

An agrarian reform autonomous foundation was established by the law number 1191 dated 9, 30, 1958.

The foundation, in order to carry out its functions effectively and to implement the agrarian reform law, and its executive decree was given very important prerogatives to carry out the following responsibilities. 27

1. Expropriation and redistribution of land according to the agrarian reform law.

2. Establishment of agricultural cooperatives in the realm of the reform areas.

3. Supplement of guidance and technical supervision to the agricultural cooperatives.

4. Providing agricultural credits to cooperatives and individual beneficiaries.

5. Providing parallel agricultural services to new land owners through their cooperatives. This included distribution of imported high quality breeds of cattle and poultry, mechanical engineering services, protection of crops against insects and diseases, and supplying farmers with improved seeds. It also included agricultural extension work, establishment of educational facilities, and establishment of settlements and residential villages. In general the agrarian reform foundation was responsible for the development of agricultural and rural conditions within the limits of the agrarian reform areas. In addition to that the foundation was entrusted to dispose state domain lands and to allocate newly reclaimed areas.

The Agrarian Reform Laws

Law number 161, 1958. (1958-1961) designated the ceiling of maximum land ownership at 80 hectare in the irrigated or trees planted areas, and 300 hectare in the rainfed areas. No considerations were made to other economic and social factors such as land productivity, ecological ranges, patterns of productions, marketing facilities, and population densities. According to this law the maximum limits of distributed land was 30 hectare in rainfed areas and eight hectare in the irrigated areas. Beneficiaries were obliged to pay off for the received land on the basis of
market value. And within the limits of the amounts to be paid by the government to landlords, including the interest and all administrative expenses.

The implementation of the law number 161 of 1958 was characterized by the following:

1. In early stages of land expropriation the agrarian reform foundation was directly involved in land cultivation, management and marketing, with minimum efforts on the part of beneficiaries or land holders.

2. In many cases the rights of needy peasants were neglected.

3. Very often the foundation leased or allocated lots to farmers whose rights had been granted by previous landlords.

4. In many cases land was allocated without establishing agricultural cooperatives and supplying any kind of help to beneficiaries.

After the separation between Syria and Egypt several laws were issued dealing with the agrarian reform. The most significant ones were the laws number 193 and number 2 of 1962 which approximately annulled the question of the agrarian reform.

During the period between 1958-1963, the implementation of the agrarian reform was explicitly affected by political currents, without any significant agricultural social, and economic accomplishments. After the socialist
Bath party had taken over the political power, the agrarian reform law number 88 dated June 23, 1963 was issued.

The main concern of the law number 88 was to create a cooperative family type of farming, to mobilize agricultural resources and to emphasize agricultural and rural development in the agrarian reform areas.

The agrarian reform law determined the maximum limits of land ownership as follows:

Article number 1

Firstly, no person may possess more than:

1. In the irrigated areas:
   a) 15 Ha. in Ghouta (Damascus Loisis)
   b) 20 Ha. in the coastal area.
   c) 25 Ha. in the Btaiba area and its surroundings.
   d) 40 Ha. in the other areas-irrigated directly by gravity.
   e) 50 Ha. in areas irrigated by pumping from the rivers of Euphrates, Khabour and Tigres.
   f) 55 Ha. in areas irrigated by wells in the Mohafazat of Hassaks, Deir El-Zor and Rakka.
   g) 45 Ha. in other areas irrigated by pumping.

2. In rain-fed planted with olive and pistachio nut trees:
   a) 35 Ha. in Lattakia districts.
   b) 40 Ha. in other districts.
   Provided that trees are more than 10 years old and each donum contains at least 10 trees. If the number of trees

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is less than this ratio then the acreage of orchard land would be calculated by dividing the number of trees by ten. If the age of the trees is between 5-10 years, then the area would be 45 Ha. in Latakia districts and 50 Ha. in other districts.

3. In rain-fed land
   a) 80 Ha. in areas where average annual rainfall is more than 500 millimeters.
   b) 120 Ha. in areas where average annual rainfall is between 350-500 m.m.
   c) 200 Ha. in areas where average annual rainfall is less than 350 millimeters. This area is to be increased up to 300 Ha. in the Mouhafazat of Hasakah, Deir El-Zor and Rakka.

The agrarian reform law entitled previous landlords to receive compensation for their land.

Those whose land is expropriated in accordance with article (1) of this law, are entitled to compensation equals ten times of the average rent of such land for a period of not more than three years at most or ten times of the share of the proprietor from his share croppers.

"Compensation will be paid in the form of state bonds bearing annual interest of 1.5% redeemable in 40 years".

Land Expropriation

The executive decree number 1109 of 1963 determined the basic guidelines for land expropriation and distribution.


30. Ibid., P. 6

31. Ibid., P. 7
Any owner of farm land, wherever located and whatsoever the cause of ownership thereof, shall submit the declarations referred to in the Clause "Second" of this Article, when his ownership exceeds the highest limits provided for in the first Article of the Law of Agrarian Reform No. 161 for the year 1958, amended by the Decree Law No. 88 dated September 23, 1963.32

Landlords did declared the lots of lands which they want to keep for themselves and the lots which they wanted to assign for their dependents, and those lots for expropriation. Landlords had to declare the agricultural machines, agricultural installations and whether they owned these equipment or not. According to the aforementioned decree, subcommittees had to be established on the local level to expropriate lands. Land expropriation were started by the decisions of local committees unless the central executive committee or the Agrarian Reform Foundation turned them down. In case of any dispute with the Agrarian Reform, landlords had the right to raise the matter before specialized courts. In this concern it was sufficient to say, that the board of directors of the Foundation of Agrarian Reform had a legal right to accept or annul this sort of jurisdictions.

The executive decree number 1109 and the law number 88 of 1963 outlined arrangements covering land distribution as follows:

Article number 8 of the law number 1109 of 1963

Decisions concerning land distribution are to be issued by the minister of Agrarian Reform, published in the official journal, and announced in the distributed villages. Provided they must contain beneficiaries legal complete names and their respective shares of lands. The beneficiary will be given title to his lot of distributed land at the beginning of the successive agricultural rotation, that is pending the compliance of the following:
1. If land expropriation have been acquired its final condition.
2. If the certificate of land ownership have been given to beneficiaries.
3. If the ministerial decisions of land distribution have been issued and acquired their legal condition.

If these conditions are not available the beneficiary shall be considered as from the date of the delivery thereof to him. Any concerned party shall be entitled to make opposition to the decisions of distribution before the judiciary committee, within thirty days from the publication thereof in the official journal. And the proceeding provided for in the ninth chapter of this decree shall be followed accordingly.33

33. Ibid., P. 8
According to this law if lands were distributed to beneficiaries on a joint-ownership system and their shares were registered as joint-owned shares, the agrarian reform preserved the right to allocate to each beneficiary a determined piece of land instead of his joint-owned share, without needing to take the beneficiary's advice or agreement.

Article number 13 of the law 88 of 1963 as amended

Firstly, the land requisitioned in each village shall be distributed among the farmers, so that each one of them shall be holding of not more than 8 hectares of irrigated or orchard land and not more than 30 hectares of rain-fed land, whose average annual rainfall is more than 350 millimeters, and not more than 45 hectares of rain-fed land on which the average annual rainfall is less than 350 millimeters.

Secondly, persons to whom land shall thus be distributed must satisfy the following conditions:

1. They must be of Syrian Arab nationality and be of legal age.
2. They must be working in agriculture or have an agricultural certificate or belong to the Bedouins included in the settlement schemes.
3. In case they own other agricultural land their total ownership should not exceed the maximum ceiling of distribution provided for this article.34

The agrarian reform aimed at cooperative capital formation through land distribution and encouraged hard and

intensive work in land.

1. The value of distributed land shall be estimated. Only one fourth of the estimated value is to be paid by beneficiaries to the treasury of the cooperative to which they belong by equal annual installments within a period of 20 years, in order to utilize it in performance of agricultural economic programs which benefit the members of the cooperatives.\(^\text{35}\)

The proprietor of the land shall cultivate it himself with all due care and attention. If he fails to do so or to fulfill any other essential obligations provided for in the law or in the distribution decision, then the executive committee of the Agrarian Reform Foundation shall issue a decision annulling the distribution of land, ordering its surrender and cancelling its registration in the notary registers, that will be done, provided that committee formed by the minister of Agrarian Reform.\(^\text{36}\)

Land distribution was conditioned with the long run rural stability.

Firstly neither the person who acquired ownership of distributed land nor his heirs after him may dispose of the land or set up real rights on it (mortgage by the agricultural cooperative bank is exempt) before 20 years have passed since it has been registered under his name in the notary registers. In this case he has also to acquire the consent of the Agrarian Reform Foundation.\(^\text{37}\)

\(^{35}\) Ibid.

\(^{36}\) Ibid., P. 16.

\(^{37}\) Ibid., P. 19.
Land Distribution Techniques

The Agrarian Reform studied the living standard in villages available for distribution on the basis of present prices and evaluated land productivity, marketing opportunities and the cost of production in the area. Families eligible for land ownership were divided into socio-economic units on the basis of the age groups of the members of families. Each socio-economic unit received enough land expected to maintain a decent life on the village level. Table 38 indicates the standard of measurement of socio-economic units acquiring land ownership from the agrarian reform.

TABLE 38

STANDARD OF MEASUREMENT OF SOCIO-ECONOMIC UNITS FOR LAND DISTRIBUTION IN SYRIA

<table>
<thead>
<tr>
<th>Family Members</th>
<th>Age/Unit</th>
<th>Socio-Economic Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father</td>
<td>18 or more</td>
<td>1.25</td>
</tr>
<tr>
<td>Mother</td>
<td>18 or more</td>
<td>1.100</td>
</tr>
<tr>
<td>Sons</td>
<td>18 or more</td>
<td>1.0 X No. of sons</td>
</tr>
<tr>
<td>Daughter</td>
<td>18 or more</td>
<td>1.0 X No. of Daughters</td>
</tr>
<tr>
<td>Teenagers</td>
<td>12-17</td>
<td>0.75</td>
</tr>
<tr>
<td>Children</td>
<td>6-12</td>
<td>0.50</td>
</tr>
<tr>
<td>Babes</td>
<td>1-6</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Centralized procedures followed in the implementation of the Agrarian Reform led to the enactment of law number 145. The most immediate implications of the law number 145 dated March 12, 1966 were the decentralization of land expropriation and land distribution.

In accordance with article 4 of this law local expropriation and adaptation committees were to be formed and carry out land expropriation. Decisions made by these committees were final. In case of any mistaken expropriation, compensation in cash or in kind (land) was to be paid to previous owners.

Land distribution was also the responsibility of local committees with final prerogatives.

Peasants' local organizations were given a full legal memberships in all committees of land expropriation and land distribution. The board of directors of the agrarian reform was authorized to issue all necessary interpretations of the agrarian reform law and its amendments without the endorsement of the president.

Landlords who had not reported their land properties were given another opportunity to report the same, within two months from the date of publishing the law number 145 in the official journal. Failures to report subjected their whole land properties to be confiscated without any kind of compensation.
Accoring to this law any beneficiary of the agrarian reform land was obliged to conform with the government production policies and with the regulations of the cooperative to which he belonged. Failures to conform with these conditions was cause for losing their ownership rights to distributed land.

By the implementation of the law number 145 landlords were deprived the right to select their lands under the ownership ceiling limits.

Agricultural Extension Activities
In The Agrarian Reform

The ministry of agriculture was the specialized agency in charge of the agricultural extension. The agrarian reform foundation also took part in the field of this activity, as far as its sector was concerned. Among the staff employed by this foundation there was about 500 agricultural officers representing different specialities such as general agriculture, animal husbandry, veterinary, and farm management. The main function of these officers was to practice agricultural extension activities in collaboration with other administrations, especially the ministry of agriculture.

It can be said that the agricultural cooperative supervisors, who assist in the management of cooperative societies, within the agrarian reform areas were the corner stone in executing of agricultural extension
programs and production plans on the village level.

We hope that our extension staff would be able to carry a wide scope of extension work within the frame work of the following:

(1) To help rural people to discover and understand their problems, to acquaint them with possible solutions, and encourage their adoption; (2) To help farm people to understand how group actions may improve their situations; (3) To get knowledge of situations affecting the welfare of farm people and help them to find solutions to problems arising from these situations; 38

The agricultural extension staff in the agrarian reform were directed to provide extension leadership in the agrarian reform sector.

(1) Assemble, relate, analyze facts; (2) To help determine objectives; (3) To study wants and needs of people and determine basic problems affecting communities, other areas and special interests; (4) To participate in decision making toward practical solutions to problems or answers to wants and needs; (5) To develop working relationship with other agencies, (6) To study recommended procedures and determine with the advice of sponsoring organizations what committees are needed on the village level; (7) To teach and strive for large participation by the people; (8) To coordinate all efforts and resources of other agencies and groups; (9) Village agents study and visualize what local people can contribute. 39


39. Ibid.
Agricultural Cooperative Conferences

The agrarian reform, in order to strengthen the spirit of joint work among the beneficiaries, to increase their receptivities to new ideas, and to replace traditional leadership, sponsored the technique of holding annual agricultural cooperative conferences. Beneficiaries and staff members joined together in formal sessions to discuss agricultural, cooperative and economic prevailing problems.

The agrarian reform foundation took the initiative of holding planned meetings for the beneficiaries of the agrarian reform villages. They were shown selected motion pictures which were usually followed by discussions pertaining to local problems, explanation of the benefits of agricultural cooperatives, cooperative marketing, fighting illiteracy, community development projects, and agricultural rotations.

In the period 1965-1966 the agricultural services in the agrarian reform held extension seminars on different agricultural topics in 114 villages. These seminars were carried out by 20 agricultural specialists and 44 agricultural extension workers.

Selected films were used as extension teaching aids in these activities. Table 39 indicates these activities including the types of the seminars initiated by the agrarian reform in 1965-1966.
TABLE 39
VILLAGE SEMINARS HELD BY THE AGRARIAN REFORM IN SYRIA

<table>
<thead>
<tr>
<th>Government</th>
<th>Number of Villages</th>
<th>Number of Specialists</th>
<th>Number of Extension Workers</th>
<th>Kind of Seminars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hama</td>
<td>56</td>
<td>6</td>
<td>12</td>
<td>Meetings</td>
</tr>
<tr>
<td>Damascus</td>
<td>45</td>
<td>3</td>
<td>12</td>
<td>Meetings</td>
</tr>
<tr>
<td>Deirelzon</td>
<td>7</td>
<td>3</td>
<td>6</td>
<td>Films</td>
</tr>
<tr>
<td>Homs</td>
<td>19</td>
<td>2</td>
<td>2</td>
<td>Films</td>
</tr>
<tr>
<td>Ghab</td>
<td>17</td>
<td>6</td>
<td>12</td>
<td>Films</td>
</tr>
</tbody>
</table>


Industrial Training

In order to help the agricultural cooperatives assume their role in the management of agricultural machineries and irrigation installations directed by the agrarian reform, the agrarian reform foundation followed two types of training policies.

The agrarian reform devoted 30 per cent of the yearly subsidies extended to the cooperatives, for the establishment of temporary training centers. As can be seen in table 40, three training centers which were established in 1965, offered courses in agricultural machinery, and arboriculture and graduated 180 farmers.
TABLE 40

TEMPORARY TRAINING CENTERS ESTABLISHED BY THE AGRARIAN REFORM IN SYRIA

<table>
<thead>
<tr>
<th>Location</th>
<th>Training Activity</th>
<th>Program Schedule</th>
<th>Duration</th>
<th>Number Attending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damascus</td>
<td>Agricultural</td>
<td>Sep. 1965</td>
<td>80 days</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Machinery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alleppo</td>
<td>Agricultural</td>
<td>Oct. 1965</td>
<td>3 Months</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Machinery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghouta's Villages</td>
<td>Agricultural</td>
<td>Jun. 1965</td>
<td>10 days</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Arboriculture</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Regarding the second type of training policy, the agrarian reform established permanent training workshops for rural girls in the field of fine handicraft such as embroidery, sewing, carpets and rug making. The agrarian reform provided the necessary raw materials, and the facilities for marketing of products.

In the period 1958-1966, 138 agricultural cooperatives participated in this activity, and 2,000 trainees graduated from the permanent training workshops. Table 41 indicates the accomplishments of the permanent training centers.
TABLE 41
PERMANENT TRAINING CENTERS ESTABLISHED BY THE AGRARIAN REFORM IN SYRIA DURING THE PERIOD 1958-1966

<table>
<thead>
<tr>
<th>Location</th>
<th>Sewing and Embroidery</th>
<th>Carpet Making</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Coopera-</td>
<td>Number of Coopera-</td>
</tr>
<tr>
<td></td>
<td>tives</td>
<td>Trainees</td>
</tr>
<tr>
<td>Damascus</td>
<td>6</td>
<td>102</td>
</tr>
<tr>
<td>Homs</td>
<td>10</td>
<td>402</td>
</tr>
<tr>
<td>Hama</td>
<td>6</td>
<td>276</td>
</tr>
<tr>
<td>Aleppo</td>
<td>6</td>
<td>97</td>
</tr>
<tr>
<td>Idlib</td>
<td>14</td>
<td>142</td>
</tr>
<tr>
<td>Lattakia</td>
<td>7</td>
<td>112</td>
</tr>
<tr>
<td>Deirelzor</td>
<td>16</td>
<td>377</td>
</tr>
<tr>
<td>Rakka</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Hassakeh</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Kunaitra</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>


Control of Illiteracy

As illiteracy was one of the big problems facing agricultural development, the ministry of agrarian reform, jointly with the ministry of culture and national orientation, assumed the duty of illiteracy control in the agrarian reform sector. Agricultural cooperative extension workers organized, executed the illiteracy control programs and taught illiterates.

Role of cooperatives' supervisors: the supervisor shall assume the following role; (a) To teach in his cooperatives'
sessions organized by agrarian reform; (b) To supervise the regularity of members' attendance; (c) To supervise the preparation of courses according to the established programs; (d) To perform the necessary periodical tests and to register attendants' marks; (e) To register all facts happening during the performance of his teaching duties in a special register-book which shall help the supervising committee of the session of agrarian reform for the following the session progress and supervisor's activity. As compensation to such activities, the ministry of agrarian reform decided to grant assistants and cooperatives' supervisors working in these fields encouraging rewards. 40

Illiteracy control programs were initiated in most of the Syrian governorates and 105 agricultural cooperatives were involved in them; 2,441 cooperative members attended illiteracy control sessions, and 2,311 members graduated with a fair reading and writing abilities and with an elementary understanding to the extension activities undertaken by the agrarian reform. Table 42 displays illiteracy control activities done by the agrarian reform in the period 1958-1966.

### TABLE 42

**EXTENSION ACTIVITIES UNDERTAKEN BY THE AGRARIAN REFORM IN THE FIELD OF ILLITERACY CONTROL IN THE PERIOD 1958-1966**

<table>
<thead>
<tr>
<th>Sub-Center</th>
<th>Number of Benefiting Attendants</th>
<th>Number of Cooperatives</th>
<th>Number of Literates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>105</td>
<td>2,441</td>
<td>2,311</td>
</tr>
<tr>
<td>Damascus</td>
<td>13</td>
<td>254</td>
<td>254</td>
</tr>
<tr>
<td>Homs</td>
<td>14</td>
<td>229</td>
<td>299</td>
</tr>
<tr>
<td>Hamah</td>
<td>12</td>
<td>329</td>
<td>300</td>
</tr>
<tr>
<td>Aleppo</td>
<td>18</td>
<td>263</td>
<td>172</td>
</tr>
<tr>
<td>Idlib</td>
<td>19</td>
<td>693</td>
<td>693</td>
</tr>
<tr>
<td>Lattakia</td>
<td>10</td>
<td>236</td>
<td>236</td>
</tr>
<tr>
<td>Deirelzer</td>
<td>6</td>
<td>104</td>
<td>94</td>
</tr>
<tr>
<td>Rakka</td>
<td>1</td>
<td>94</td>
<td>94</td>
</tr>
<tr>
<td>Hassakeh</td>
<td>7</td>
<td>155</td>
<td>155</td>
</tr>
<tr>
<td>Kunaitra</td>
<td>5</td>
<td>84</td>
<td>84</td>
</tr>
</tbody>
</table>


### Specialized Technical Activities

The agrarian reform foundation maintained technical specialized departments to support field activities. Specialized activities undertaken by the agrarian reform were seed multiplication, afforestation, plant protection, plant diseases and insect control, soil and land improvement, and animal breed multiplication and distribution.
Having rapidly described the role played by the land reform organization in improving farming and promoting production, it appears that land reform in Syria is well aware of the great responsibility which the state must undertake towards the farmer who has moved from a position in which he had to listen to the instructions of the landlord and carry them out, to a new state in which he became land owner himself, with no orders to be given to him at all, because of this new condition of the farmers, that necessitates support to make him able to play his role, the ministry of land reform took full responsibility, as we manifested above.

Accordingly we can claim that land reform is a perfect scheme, aiming at giving country men possession of their land, as well as backing them to stand upright in the right path towards welfare;41

CHAPTER VI

AGRICULTURAL EXTENSION

The word extension or a literal Arabic translation of it "Irshad" means all possible things to all people. It means also to provide useful guidance, enlightenment, and leadership. "to direct; to guide".\(^1\)

The Development of Agricultural Extension

Agricultural extension work developed through logical evolutionary steps. The first agricultural extension activity to be known in Syria was the demonstration plots initiated by the vocational agricultural school established in Hama governorate - Salamia district in 1910.

In the 1930's the opening of other agricultural schools in Aleppo governorate "The Agricultural School of Maslema" and in Lattakia governorate "The Agricultural School of Bouka", provided Syrian farmers in the radius areas of the agricultural schools to get acquainted with modern agricultural techniques. They also supplied the country with an agriculturally educated extension elite

who occupied agricultural governmental positions.

From the administrative point of view, the directorate general of agriculture at the ministry of national economy and its branches in the governorates administered and supervised governmental services concerning agriculture in this era.²

In the 1940's the American University of Beirut initiated planned agricultural extension programs in Gouta area around Damascus, but the conditions of the second world war led to the nonexistence of those programs.

In 1946-1947, the Near East American Foundation promulgated intensive extension programs in a number of villages around Damascus.³

In 1947 the Syrian government invited an official American agricultural mission to assist in agricultural development. As a result of this joint effort a basic study in matters relating to agriculture was completed.⁴

In 1947 a ministry for agriculture was established in the country, an agricultural extension service was organized, and extension work started its path to reach Syrian farmers in their localities. In this period,

² Said Mougarbel, The Agricultural Extension. (Aleppo; The University of Aleppo, College of Agriculture 1967), P. 49.

³ Ibid.

although there was no systematic or sophisticated extension programs, educational work was carried on along with regulatory and curative programs. Several agricultural experimental stations, agricultural schools and other preparatory undertaking were started.

In 1958 the expansion of the ministry of agriculture constituted the basic extension legislation, and it has been the basis on which extension work of the ministry of agriculture has been conducted.

Accordingly, the ministry of agriculture was responsible for carrying out extension educational work, agricultural research, experimental performance, and studying the Syrian environment in connection with the land, soil classification and preservation, natural ecology, farm crops, horticulture and vegetable crops, animal husbandry, plant diseases, insect pests, animal diseases and parasites, farm machinery, statistics of agriculture, agricultural cooperation, forestry, and agricultural population.

An agricultural extension department was established among and was equal in rank to administrative and subject matter departments of the ministry of agriculture.

The extension department shared its educational role with other subject matter departments. Nearly all subject matter departments carried on educational activities in their respective fields. The extension department was equipped to act in a supporting and coordinating role,
Dr. Raymond E. Fort described extension activities in the ministry of agriculture:

Each subject matter department included in its regular field activities some educational features. The extension department is another subject matter department specialized in extension methods.  

In addition to the regular extension work and due to the lack of adequate man power resources, equipment and funds, the ministry of agriculture established about 50 agricultural extension mobile units to deal with acute agricultural problems. Each one of these units was composed of with two agricultural college graduates, three agricultural secondary school graduates, and three technical laborers.

The agricultural extension mobile units were provided with all needed equipment such as motion picture units, transportation, sprayers, dusters, fertilizers, and insecticides.

Chart one indicates the extension department organizational structure in the period 1958-1966.


Damascus Level

Director

Administration

Technical Branch

Cinema Section

Photo Section

Art Section

Publishing Section

Governorate Level

Chief of Agriculture

Extension Supervisor

Subject Matter Technicians

Administrative Section

Extension Agents

Field Agents

From the planning point of view, agricultural extension mobile units functioned according to programs projected by the committee of agricultural extension which included all heads of specialized departments in the ministry of agriculture and representatives from other concerned ministries and agencies.

Seasonality of extension work characterized the activities carried out by these units. For example, cotton, tobacco and sugar beet production have been fully supervised by mobile extension units, whose personnel worked with farmers side by side and face to face during production seasons.

Other concerned ministries and agencies such as the ministry of agrarian reform, the cotton marketing agency, the cooperative agricultural bank, the chambers of agriculture, and the agricultural cooperatives used to participate with the ministry of agriculture in building-up extension mobile units according to the decisions of the aforementioned extension committee approved by the minister of agriculture.

Administratively, the chiefs of agriculture (Directors of agriculture) in the governorates acted as liaison officers between various departments in the ministry of agriculture and the mobile extension units. Ministries and agencies other than the ministry of agriculture established some kind of agricultural extension services
suffice to meet their interests. To conclude; it is obvious that the ministry of agriculture was conclusively functioning as an agricultural extension organization.

"Syria's rapid agricultural development since world war II has been paralleled by an increase in the size and scope of the ministry of agriculture."  

Overlapping between the ministry of agriculture and the ministry of agrarian reform became a confusing phenomenon in the agricultural sector.

It will be more efficient and economical for Syria and less confusing to the farmers if one man, an extension agent, is the farmers educational friend. If one agent were to come to the village from the crops department to make recommendation 1-2-3-4 another from the plant protection department for recommendation number 5, another from the soil department to make fertilizer recommendations, and etc., not only would the farmer likely be confused but the problem of coordinating such specially trained men to reach the village at the proper time would be much greater.7

To enhance the effectiveness of agricultural extension efforts as a basic tool for agricultural development, the ministry of agriculture and the ministry of agrarian reform were unified in 1967-1968, into the ministry of agriculture and agrarian reform.

6. Ibid., P. 4.

Subsequent to this development, a central department for agricultural extension and agricultural vocational education was established. (the department of agricultural education and extension service).

This department inherited previous responsibilities of the agrarian reform and the ministry of agriculture in the field of agricultural extension and agricultural vocational education.

For the purpose of securing a unified approach to farmers through comprehensive extension programs, all agricultural field offices on the district and county levels (mantika and nahia), the agricultural field agents, the agricultural cooperative agents on the village level and the extension mobile units were attached to the department of agricultural education and extension service.

Other subject matters departments including agricultural research continued to provide extension with needed information, technical know-how, and specialists as planned by the ministry of agriculture and agrarian reform or as required by the agricultural education and extension service department.

The Agricultural Extension Organizations

Constitutionally speaking the Syrian Arab Republic follows the parliamentary system. In 1949 the first military coup in the world after the second world war
happened in Syria. After this major political incident many coups took place and political instability became an integral part of the daily life.

In 1963, the Bath Arab international party had taken over the government and continued to rule the country until now.

The Syrian Administration

Administratively, the Syrian Arab Republic was divided into eleven governorates, according to their geographical locations and other basic considerations, each one of these governorates constitutes a local authority. Activities which are defined as extension work were found in different ministries, and other institutions, such as the ministry of agriculture and agrarian reform, the ministry of education, the ministry of higher education, the ministry of supply, the ministry of economy and the ministry of social affairs.

Chart two indicates various central ministries and organizations engaged in the agricultural extension work and their position with regard to the national administration.
Chart 2.— Central Ministries and their organizations engaged in agricultural extension work in Syria

Citizens of the Syrian Arab Republic

The Legislative House (Parliament)

The President

The Counsel of Ministers

Prime Minister

The Ministry of Higher Education

Colleges of Agriculture

The Ministry of Agr. and Agrarian Reform

The Ministry of Social Affairs

The Agricultural Euphrates Project Authority

The Ministry of Education

The Ministry of Supply

The General Agency for Cereal and Flours

The Ministry of Industry

The Union of Sugar beet Companies

The Ministry of Economics

The Tobacco Monopoly

The Cotton Marketing Agency

The Agricultural Cooperative Bank

The Ministry of Agriculture and Agrarian Reform

In 1967-1968 the ministries of agriculture and agrarian reform were reorganized and united into the ministry of agriculture and agrarian reform. The emerging ministry inherited the objectives and the responsibilities of its parent ministries.

Law number 115, of 1959, law number 1,191 of 1958 and law number 83 of 1963 express the functions of the ministry of agriculture and agrarian reform as follows: 8

1. The ministry of agriculture is responsible for carrying out research, experimental testing, and studying the Syrian environment, natural ecology, farm crops, horticulture and vegetable crops, animal husbandry, plant disease, insect pests and bees, animal diseases and parasites, farm machinery, statistics of agriculture, agricultural cooperation, forestry and agricultural population.

2. The ministry of agriculture should guide the Syrian Arab farmers and diffuse among them useful and


practical services in subjects relating to agriculture.

3. Improvement and encouragement of rural handicrafts and the diffusion of modern technological practices are attributed to the ministry of agriculture.

4. The ministry of agriculture should control animal diseases, and coordinate work on pests and plant diseases.

5. To meet farmers' needs, the ministry of agriculture has to supply the country with all needed kinds of improved seedlings, seeds and improved productive animals.

6. The ministry of agriculture is responsible for the development of agriculture and improving the level of living for all rural individuals.

7. The ministry of agriculture establishes, administers and supervises the agricultural secondary schools. The ministry has the right to set up the over-all plans concerning the agricultural education on this level.

8. Expropriation and redistribution of land according to the agrarian reform law.

9. Establishment of agricultural cooperatives and the supplement of guidance, technical supervision, and parallel agricultural services to new land owners through their cooperatives. These include
distribution of imported high quality breeds of cattle, and poultry, mechanical engineering services, protection of crops against insects and diseases, development of grazing areas including distribution of sheep cattle, agricultural extension work, establishment of educational facilities, and establishment of settlements and residential villages.

10. The ministry of agriculture and agrarian reform is entrusted to manage state domain lands and to allocate newly reclaimed areas.

The ministry of agriculture and agrarian reform maintained several committees to coordinate different aspects of the ministry's work. The agricultural extension and vocational agricultural education committee, the agricultural production committee, the planning committee, and the governorates' committee, were the most dynamic figures in the internal activities of the ministry.

Chart three indicates the organization of the ministry of agriculture and agrarian reform.
Chart 3. Organization of the Ministry of Agriculture and Agrarian Reform in Syria

The Agrarian Reform Board of Directors

The Ministry of Agriculture and Agrarian Reform

First Minister's Assistant

Minister's Assistant

Minister's Assistant

Minister's Assistant

Department of Agr. Research

Department of Agr. Affairs

Department of the Cotton Bureau

Department of Agr. Education and Extension Service

Department of Agr. Economic and Statistics

Department of Agr. Operation

Department of Agr. Distribution

Department of Agr. Expropriation

Department of Agr. Economic and Statistics

Department of the Administration

Department of Finance

Department of Legislative Studies

Department of Animal Production

Department of Animal Health

Directorate of the Agriculture Services in (X) Governorate

Chairmanship of the Agr. Services in (X) District

Village

Village Extension Worker

Contribution of the Ministry of Education in the Agricultural Extension Work

The ministry of education embarked upon a program of agricultural education in village elementary schools. Village elementary schools were designed for teaching village boys the basic principles and techniques of agriculture, with practical training in the school gardens.

The teacher of agriculture in a village in Syria acts as a guide to villagers in matters related to cultivation and modern methods of farming, the combating of agricultural pests, grafting, apiary work; training in carpentry, which are especially useful in village life, will soon be introduced into the programs of rural schools in Syria.9

The Role of the Ministry of Economics in the Agricultural Extension

Three of the most important agricultural semi-autonomous organizations in the country belonged to this ministry and maintained agricultural extension apparatuses.

1. Tobacco monopoly

The Syrian governmental semi-autonomous administration of tobacco supervised the cultivation of tobacco and controlled its industrialization and selling under a regime of total monopoly. The point is that,

the tobacco monopoly and its main governorates' branches maintained their own experimental station and retained agricultural extension workers to disseminate and diffuse relevant agricultural information and practices among licensee farmers.

Extension work in the tobacco areas was also the responsibility of the ministry of agriculture (an area of overlapping).

2. The cotton marketing organization (CMO)

This organization was a governmental semi-autonomous agency. It had the monopolistic power in the marketing of cotton, including buying, assembly, storage, ginning, export and distribution. Consequently the CMO controlled the pricing policy of the cotton production. The ministry of agriculture and agrarian reform was responsible for the cotton affairs excluding the above mentioned functions. Cotton production was internally marketed either individually by farmers or by the agricultural cooperatives.

3. The agricultural cooperative bank

In the 1960's the bank became the major source of agricultural credits in the country. It had a pervasive effect on all kinds of agricultural development activities which might fall within the capacity of farmers or agricultural cooperatives. Furthermore all fertilizers, insecticides and some agricultural
machineries were imported, distributed and managed by this bank.

Consequently the agricultural cooperative bank affected the extension work and to certain degree constituted a decisive factor for the adoption of those practices and performances which were beyond the capacity of farmers or cooperatives from the financial point of views.

**The Contribution of the Ministry of Supply**

The semi-independent general agency for cereal and flour belonged to the ministry of supply. This organization was responsible for the marketing, distribution, import, and export, of cereal and flour. The pricing and marketing policies of wheat, barley, corn, and lentil were included in the functions of this profit organization and directly or indirectly affected agricultural extension programs.

**The Contribution of the Ministry of Industry**

The most outstanding agricultural industrial companies in Syria belonged to the ministry of industry including the union of sugarbeet industrial companies. The sugarbeet companies participated in the agricultural activities, they maintained agricultural departments for the import, multiplication, and distribution of beet seeds, research activities and extension work in connection with sugarbeet
production. The point is that, the ministry of agriculture and agrarian reform worked intensively on the same issues. 10

The Contribution of the Ministry of Higher Education

The ministry of higher education embarked upon programs of agricultural research and extension education in the colleges of agriculture. Both colleges of agriculture in Syria's two universities had worthwhile curriculums with more emphasis on the pure sciences of agriculture. In the opinion of the writer the colleges of agriculture look to the problematical world around them from their ivory towers without any significant contribution or involvement in agricultural extension educational programs.

Graduates of these colleges constituted the bulk of the extension workers and the junior research workers. Consequently the colleges of agriculture affected the grass root educational quality of all types of extension work and on all levels.

The Contribution of the Ministry of Social Affairs

The ministry of social affairs had two functional activities, which overlapped with the work of the ministry

of agriculture and agrarian reform:

1. The ministry of social affairs established eleven agricultural social extension centers, with permanent extension training handicrafts' workshops.

2. Although land tenure relationships could be managed as an integral part of the agrarian reform undertaking, agricultural labor laws, and land tenure arbitration committees were administered by the ministry of social affairs.

The overlapping in these two functional areas between the ministry of agriculture and agrarian reform, and the ministry of social affairs affected the rate of the process of adoption of new ideas, techniques and practices and constituted a weakness in the agrarian reform movement as it should have been administratively carried out.

The Agricultural Euphrates Project Authority

Syria has been embarked on a program for the building of its largest water reservoir, the Euphrates dam. Two

---


authorities have been in charge of the dam's affairs, the agricultural Euphrates authority for the agricultural affairs and the Euphrates project authority for the engineering affairs. The agricultural Euphrates project authority was established to administer, direct, manage and to take care of all agricultural activities required to cover lands expected to be irrigated from the dam, the estimated limits of which was about 500,000 to 600,000 hectares. Agricultural activities carried out by this organization were agricultural settlements, agricultural research, and agricultural extension work. The point is that, the agricultural Euphrates project authority operated without links, coordination, or benefiting from the experiences of the ministry of agriculture and agrarian reform, and was attached to the prime minister's office.

Agricultural Extension Activities

Syrian extension activities performed during the last 10 to 15 years have been aimed at teaching Syrian farmers what to want, and how to work to satisfy these wants. It provided extension service to the day-by-day routine of farming.

Extension Man-Power and Financial Source

In reality the work of the ministry of agriculture in the field of extension and the participation of other ministries and agencies, mainly the ministry of agrarian reform, made up the congregation of the agricultural extension activities in the country. After the creation of the ministry of agriculture and agrarian reform, this ministry became the radiant mother for all agricultural extension activities carried out in the country, and thus the main administrative source for extension man-power and financial support.

Extension Man-Power

The bulk of the agricultural extension man power in Syria, has been the agricultural extension assistants (Agricultural and Veterinary Secondary Schools' Graduates), the agricultural college's graduates (Agricultural Engineers), and the veterinary college's graduates. Disregard the fact that these people were of different training ideological backgrounds, they formed the dynamic task force for extension work in the country.

Even within the ministry of agriculture there are several interpretations of the function of extension and the way an extension organization works. These interpretations
reflect the training received in Egypt, France, the United States, Holland, England or other foreign countries, as well as extension concept developed here in Syria. 14

Extension Financial Sources

Agricultural extension activities in Syria were financially supported by different organizations participating in these activities. Since the ministry of agriculture and agrarian reform was the major organization responsible for the extension activities, the budgets of the ministry of agriculture, the ministry of agrarian reform and the ministry of agriculture and agrarian reform reveal the amounts of extension expenditures.

Tables 43 and 44 indicate the numbers of the agriculturists and veterinarians worked in the extension activities and agricultural extension expenditures for the period 1955-1968.

<table>
<thead>
<tr>
<th>Year</th>
<th>Agricultural College Graduates</th>
<th>Agricultural Assistants</th>
<th>Veterinary College Graduates</th>
<th>Veterinary Assistants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>53</td>
<td>193</td>
<td>10</td>
<td>55</td>
</tr>
<tr>
<td>1956</td>
<td>72</td>
<td>241</td>
<td>15</td>
<td>66</td>
</tr>
<tr>
<td>1957</td>
<td>93</td>
<td>290</td>
<td>15</td>
<td>84</td>
</tr>
<tr>
<td>1958</td>
<td>102</td>
<td>345</td>
<td>16</td>
<td>104</td>
</tr>
<tr>
<td>1959</td>
<td>113</td>
<td>406</td>
<td>20</td>
<td>127</td>
</tr>
<tr>
<td>1960</td>
<td>129</td>
<td>567</td>
<td>21</td>
<td>149</td>
</tr>
<tr>
<td>1961</td>
<td>146</td>
<td>733</td>
<td>21</td>
<td>200</td>
</tr>
<tr>
<td>1962</td>
<td>169</td>
<td>1,030</td>
<td>21</td>
<td>220</td>
</tr>
<tr>
<td>1963</td>
<td>243</td>
<td>1,235</td>
<td>21</td>
<td>238</td>
</tr>
<tr>
<td>1964</td>
<td>416</td>
<td>1,293</td>
<td>23</td>
<td>260</td>
</tr>
<tr>
<td>1965</td>
<td>532</td>
<td>1,446</td>
<td>25</td>
<td>279</td>
</tr>
<tr>
<td>1966</td>
<td>636</td>
<td>1,580</td>
<td>28</td>
<td>298</td>
</tr>
<tr>
<td>1967</td>
<td>715</td>
<td>1,610</td>
<td>36</td>
<td>317</td>
</tr>
<tr>
<td>1968</td>
<td>815</td>
<td>1,621</td>
<td>43</td>
<td>340</td>
</tr>
</tbody>
</table>


The Syndicate of Agricultural Engineers in Syria, Directory of Agricultural Engineers, Damascus: Dar Alfiker 1968.
## TABLE 44


<table>
<thead>
<tr>
<th>Year</th>
<th>Ministry of Agriculture, 1,000 L.S.</th>
<th>Ministry of Agrarian Reform, 1,000 L.S.</th>
<th>Ministry of Agriculture and Agrarian Reform, 1,000 L.S.</th>
<th>Total Extension Budgets, 1,000 L.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>7,775</td>
<td>---</td>
<td>---</td>
<td>7,775</td>
</tr>
<tr>
<td>1956</td>
<td>8,046</td>
<td>---</td>
<td>---</td>
<td>8,046</td>
</tr>
<tr>
<td>1957</td>
<td>6,545</td>
<td>---</td>
<td>---</td>
<td>6,545</td>
</tr>
<tr>
<td>1958</td>
<td>9,065</td>
<td>---</td>
<td>---</td>
<td>9,067</td>
</tr>
<tr>
<td>1959</td>
<td>10,963</td>
<td>1,138</td>
<td>---</td>
<td>12,101</td>
</tr>
<tr>
<td>1960</td>
<td>10,963</td>
<td>5,050</td>
<td>---</td>
<td>16,014</td>
</tr>
<tr>
<td>1961</td>
<td>10,452</td>
<td>13,306</td>
<td>---</td>
<td>23,761</td>
</tr>
<tr>
<td>1962</td>
<td>9,227</td>
<td>8,561</td>
<td>---</td>
<td>17,788</td>
</tr>
<tr>
<td>1963</td>
<td>9,227</td>
<td>10,872</td>
<td>---</td>
<td>20,099</td>
</tr>
<tr>
<td>1964</td>
<td>12,738</td>
<td>11,986</td>
<td>---</td>
<td>24,724</td>
</tr>
<tr>
<td>1965</td>
<td>16,740</td>
<td>19,601</td>
<td>---</td>
<td>36,341</td>
</tr>
<tr>
<td>1966</td>
<td>16,964</td>
<td>17,934</td>
<td>---</td>
<td>33,998</td>
</tr>
<tr>
<td>1967</td>
<td>16,542</td>
<td>18,047</td>
<td>---</td>
<td>34,589</td>
</tr>
<tr>
<td>1968</td>
<td>---</td>
<td>---</td>
<td>36,750</td>
<td>36,750</td>
</tr>
</tbody>
</table>


The increase of agricultural extension budgets paralleled the growth of other public governmental budgets. Table 45 presents this phenomenon.

**TABLE 45**

**EXTENSION BUDGETS AND GOVERNMENT'S BUDGETS AND THE PER CENT OF EXTENSION BUDGETS TO THE GOVERNMENT'S BUDGETS 1955-1968**

<table>
<thead>
<tr>
<th>Year</th>
<th>Extension Budgets L.S.1,000</th>
<th>Government's Budgets L.S.1,000</th>
<th>Per cent of Extension Budgets to government's Total Budgets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>7,775</td>
<td>260,570</td>
<td>2.9</td>
</tr>
<tr>
<td>1956</td>
<td>2,047</td>
<td>370,115</td>
<td>2.1</td>
</tr>
<tr>
<td>1957</td>
<td>6,545</td>
<td>364,800</td>
<td>1.7</td>
</tr>
<tr>
<td>1958</td>
<td>9,067</td>
<td>480,800</td>
<td>1.8</td>
</tr>
<tr>
<td>1959</td>
<td>12,101</td>
<td>490,800</td>
<td>2.4</td>
</tr>
<tr>
<td>1960</td>
<td>16,014</td>
<td>490,800</td>
<td>3.2</td>
</tr>
<tr>
<td>1961</td>
<td>23,761</td>
<td>490,800</td>
<td>4.8</td>
</tr>
<tr>
<td>1962</td>
<td>17,788</td>
<td>490,800</td>
<td>3.6</td>
</tr>
<tr>
<td>1963</td>
<td>20,699</td>
<td>490,800</td>
<td>4.0</td>
</tr>
<tr>
<td>1964</td>
<td>24,724</td>
<td>654,000</td>
<td>3.8</td>
</tr>
<tr>
<td>1965</td>
<td>36,341</td>
<td>710,000</td>
<td>5.1</td>
</tr>
<tr>
<td>1966</td>
<td>33,998</td>
<td>783,000</td>
<td>4.3</td>
</tr>
<tr>
<td>1967</td>
<td>34,588</td>
<td>864,000</td>
<td>4.0</td>
</tr>
<tr>
<td>1968</td>
<td>36,750</td>
<td>1,142,000</td>
<td>3.2</td>
</tr>
</tbody>
</table>


The Extension Activities in
the Ministry of Agriculture

The ministry of agriculture provided guidance for Syrian farmers and diffusing among them useful and practical instruction in subjects relating to agriculture, and other agricultural practices and skills.

Most subject matter departments carried on educational projects, and what has been realized as an extension activities, so they could meet the needs of Syrian agriculture.

The department of agricultural education and extension has been regularly carrying the following extension activities since the 1960's.

1. Extension magazine: This magazine was published bi-monthly with 7000 copies per issue. Articles were contributed by various members of the ministry of agriculture and agrarian reform, faculties of the agricultural schools and foreign experts. The magazine was sent to leading farmers, various ministries, governorates agriculture offices, agricultural schools, chambers of agriculture, foreign embassies, and all Arab countries.15

2. Films and pictures: The photo section was responsible for recording the various agricultural events, such as the cotton, sugar beet, apple and grape festivals on

15. Ibid., PP. 21-22.
film. It also took pictures of demonstrations, training courses and ministry field activities.

Movie films are made locally both to show to Syrian farmers and for export to other countries. Technically the work is good but sometimes suffers from lack of subject matter guidance. 16

3. Bulletins and pamphlets: Approximately 30 different kinds of bulletins and pamphlets were produced per year. Publications for general distribution were issued in the quantity of 7,000 and those for special districts had 3,000 prints. These were sent to leading farmers and were available upon request.

4. Radio programs: Two radio programs per week were broadcast on general agricultural topics. Tape recordings were made in the field and at agricultural events so that farmers themselves were often contributors to the radio programs. There was also an attempt to present timely topics for farmers which will help them in their seasonal work.

5. Personal letters: As a result to the radio programs and published materials, farmers often sent in personal letters asking for agricultural advice. The letters were answered by a member of the extension staff or were referred to a subject matter department.

6. Agricultural fairs (festivals): The extension service

16. Ibid., P. 21.
has a major responsibility to arrange for agricultural fairs, in cooperation with the governorates agriculture offices and the local chambers of agriculture. The annual agricultural festivals, fairs, and exhibits included such as the cotton festival in Aleppo, the sugar beet exhibit in Homs, the grape exhibit in Sewaida, the citrus fair in Latakia. They have proved to be an effective means for the promotion of agricultural production.

7. Audio-visual units: A number of equipped mobile units were assigned to field to show slides, movies, and to make demonstrations in pruning, grafting, spraying and dusting.

In commenting on the extension activities undertaken by the ministry of agriculture in this period Dr. Fort of the Ford Foundation States

At the present time there may seem to be some logic and justification in keeping extension education activities within subject matter departments: (1) It is easier to train young, inexperienced secondary school graduates in one field - such as horticulture; (2) The lack of trained people limits the amount of subject matter support a field agent can expect; (3) The nuclear village allows the specialist to contact more farmers than if the homesteads were isolated; (4) The subject matter specialist is more likely to support the field men he has under his direct support;
Such vital extension activities as training and demonstrations are now being carried on by subject matter departments with the extension service assigned a supporting role.17

The Adoption of Technological Inputs

Agricultural Extension program including the agricultural educational projects has been the principal substance for catalysis taking place in the Syrian agriculture. Further more in recent years the ministry of agriculture and agrarian reform has involved the cooperative agricultural bank which cover all rural areas with local credit facilities into many types of agricultural innovative banking activities, where improved seeds, fertilizers, insecticides and tractors are disposed and given to farmers as loans in kind.

Table 46 indicates values of disposed technological inputs in the period 1962-1968.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1962</td>
<td>3</td>
<td>3.5</td>
<td>0.3</td>
<td>0.2</td>
<td>7</td>
</tr>
<tr>
<td>1963</td>
<td>0.2</td>
<td>3.7</td>
<td>0.7</td>
<td>0.4</td>
<td>5</td>
</tr>
<tr>
<td>1964</td>
<td>4</td>
<td>4.3</td>
<td>0.4</td>
<td>0.2</td>
<td>8.9</td>
</tr>
<tr>
<td>1965</td>
<td>5</td>
<td>14.4</td>
<td>0.5</td>
<td>0.1</td>
<td>20</td>
</tr>
<tr>
<td>1966</td>
<td>12</td>
<td>10.8</td>
<td>0.2</td>
<td>---</td>
<td>23</td>
</tr>
<tr>
<td>1967</td>
<td>10</td>
<td>23.0</td>
<td>1.0</td>
<td>---</td>
<td>34</td>
</tr>
<tr>
<td>1968</td>
<td>8</td>
<td>16.0</td>
<td>2.5</td>
<td>2.5</td>
<td>27</td>
</tr>
</tbody>
</table>

In the period 1955-1968 consumed commercial fertilizer nutrients (N; P₂O₅; K₂O) increased from 5,000 to 23,000 metric tons or 460 per cent, the number of agricultural tractors increased from 1,785 to 8,115 or 454.3 per cent, the number of combined harvester threshers increased from 693 to 1,291 or 188 per cent, and the consumed quantity of different kinds of pesticides, insecticides, and herbicides increased from 246 to 1,619 metric tons or 658 per cent. Tables number 47 and 48 indicate the adoption of technological inputs and new means of production such as fertilizer nutrients, different kinds of insecticides, pesticides, and herbicides, agricultural tractors and combined harvester threshers in Syria during the above mentioned period.
TABLE 47

CONSUMED QUANTITIES OF FERTILIZERS, PESTICIDES, INSECTICIDES AND HERBICIDES IN SYRIA
1955-1968

| Year | Fertilizers Nutrients | Insecticides, Pesticides
<table>
<thead>
<tr>
<th></th>
<th>P₂O₅; K₂O; N/1000 Metric Tons</th>
<th>and Herbicides/1000 Metric Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>5</td>
<td>0.246</td>
</tr>
<tr>
<td>1956</td>
<td>5</td>
<td>0.141</td>
</tr>
<tr>
<td>1957</td>
<td>4</td>
<td>0.148</td>
</tr>
<tr>
<td>1958</td>
<td>5</td>
<td>0.265</td>
</tr>
<tr>
<td>1959</td>
<td>4</td>
<td>0.378</td>
</tr>
<tr>
<td>1960</td>
<td>5</td>
<td>1.033</td>
</tr>
<tr>
<td>1961</td>
<td>19</td>
<td>0.850</td>
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<tr>
<td>1962</td>
<td>22</td>
<td>1.117</td>
</tr>
<tr>
<td>1963</td>
<td>19</td>
<td>1.074</td>
</tr>
<tr>
<td>1964</td>
<td>15</td>
<td>1.875</td>
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<tr>
<td>1965</td>
<td>16</td>
<td>1.619</td>
</tr>
<tr>
<td>1966</td>
<td>17</td>
<td>1.700</td>
</tr>
<tr>
<td>1967</td>
<td>16</td>
<td>1.750</td>
</tr>
<tr>
<td>1968</td>
<td>23</td>
<td>1.900</td>
</tr>
</tbody>
</table>

### TABLE 48

**NUMBER OF TRACTORS AND HARVESTER-THRESHERS IN SYRIA**

**1955-1968**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Tractors</th>
<th>Number of Harvester-threshers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>1,786</td>
<td>693</td>
</tr>
<tr>
<td>1956</td>
<td>3,074</td>
<td>786</td>
</tr>
<tr>
<td>1957</td>
<td>2,790</td>
<td>718</td>
</tr>
<tr>
<td>1958</td>
<td>3,407</td>
<td>1,067</td>
</tr>
<tr>
<td>1959</td>
<td>3,772</td>
<td>1,010</td>
</tr>
<tr>
<td>1960</td>
<td>4,754</td>
<td>1,031</td>
</tr>
<tr>
<td>1961</td>
<td>4,314</td>
<td>1,078</td>
</tr>
<tr>
<td>1962</td>
<td>5,591</td>
<td>1,444</td>
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<tr>
<td>1963</td>
<td>6,693</td>
<td>1,660</td>
</tr>
<tr>
<td>1964</td>
<td>7,274</td>
<td>1,528</td>
</tr>
<tr>
<td>1965</td>
<td>7,675</td>
<td>1,324</td>
</tr>
<tr>
<td>1966</td>
<td>7,424</td>
<td>1,320</td>
</tr>
<tr>
<td>1967</td>
<td>7,204</td>
<td>1,261</td>
</tr>
<tr>
<td>1968</td>
<td>8,115</td>
<td>1,291</td>
</tr>
</tbody>
</table>


### Agricultural Research and Extension

Agricultural research was initiated by the ministry of agriculture. It has been developed as well as the other agricultural services.  

The central department of agricultural research at the ministry of agriculture and agrarian reform, attached to

Syria's regional experimental stations, performed an experimental type of research. Functions were concentrated on testing new techniques, devices, improved seed varieties, and improved animal breeds.

A vast number of adapted new technology such as modernized dry farming techniques from Australia, wheat varieties from Ireland, improved cattle from Holland, merino sheep from Germany, poultry from Holland and Denmark and cotton strains from the U.S.A. have been conveyed to farmers by different concerned subject matter departments in the ministry of agriculture and agrarian reform and other agricultural organizations. Thus Syrian farmers have obtained excellent results.

Conclusion

Schultz in his book Transforming Traditional Agriculture states that "The principal sources of the high productivity of modern agriculture are reproducible sources. They consist of particular material inputs and of skills and other capabilities required to use such inputs successfully.

Thus Syrian farmers have been exposed to a continuous agricultural extension educational activities and they are provided with all possible new means of productions, new practices and skills.
Agricultural Extension Education Projects

The ministry of agriculture, the ministry of agrarian reform, and later on the ministry of agriculture and agrarian reform have been the main source for agricultural extension education in the country. Most subject matter departments in the ministry of agriculture and agrarian reform including the department of agricultural education and extension service, carried on extension activities in accordance with their technical educational responsibilities. Consequently educational projects sponsored and promulgated by the ministry of agriculture and agrarian reform in the five year plans of the country were organized, planned, and executed on the basis of the technicality of their divisions.19

Cooperative Extension Projects

Since most of Syria's villages are located by time and distance far from governorate's centers and in order to provide all villagers with immediate extension educational opportunities and to extend the ministry of agriculture and agrarian reform to the villages, agricultural extension projects have been initiated.

Cooperative extension workers in addition to their primary extension educational work represent all central directorates of the ministry of agriculture and agrarian reform on the village level and handle all facets of required work such as data collection and reporting.20

Agricultural Extension Structure Project

The agricultural structure project provided for the establishment of 18 permanent cooperative extension districts (mantika), 54 cooperative extension units (nahia), and 120 cooperative extension centers (police station = makhfar).21 It also provided for setting up 300 agricultural credit cooperatives.

Cooperative Extension Development Project

The cooperative extension project aimed at the establishment of an institute for training extension workers, farmers, and carrying research work in the field of agricultural extension education and agricultural cooperation. The objectives of the project are:22


1. Training presently working personnel in the fields of cooperation, extension, and statistics.

2. Training personnel to be designated to the agricultural extension structure project.

3. Offering on the job-field training courses in subject matters related to various aspects of Syrian agriculture.

4. To undertake field investigation and conduct research on problems arising from various social and economic changes.

5. To undertake, assist and coordinate scientific and objective research on agricultural cooperation, agricultural extension and other subjects related to agricultural and rural development.

6. To advise different ministries, organizations and agencies with regard to their activities in the agricultural sector.

7. To create a scientific contact with academic institutes, farmers organizations, cooperative organizations, agricultural extension organizations, and other organizations working in the field of agricultural and rural development abroad, to acquaint Syrian concerned personnel with the latest techniques of rural and agricultural development, and to convey the Syrian experiences to other nations.
The training program of the institute was designed primarily for three general classes of personnel: 23
1. Professional workers in the cooperative movement, rural and agricultural social centers, (the ministry of social affairs) and other rural institutional organizations such as the agricultural bank.
2. Elected officers of agricultural cooperatives, peasant unions, cooperative unions, and agricultural chambers.
3. Ordinary members of agricultural cooperatives, peasant unions, cooperative unions and desirous individual farmers.

The research programs of the institute were focussed primarily on applied research in the realm of those methods employed to stimulate agricultural and rural development in Syria. 24

**Agricultural Economic Projects**

The functional scope of agricultural economics in the ministry of agriculture and agrarian reform grew up with the implementation of the agrarian reform and the establishment of governmental marketing agencies, and agricultural marketing cooperatives.

2. Ibid., PP. 3-4.
2. Ibid., P. 4.
The Agricultural Census Project

The agricultural census project aimed at conducting a general agricultural census in 1970. The census was planned and carried out in collaboration with the Food and Agriculture Organization of the United Nations. The census provided an opportunity for obtaining data, statistics, and information pertaining to the agricultural sector. In summary the agricultural census furnished a solid base for more realistic development projects and for more attainable agricultural extension educational objectives.25

Agricultural Economic Project

This project provided for the establishment of an agricultural economic laboratory in the department of agricultural economic at the ministry of agriculture and agrarian reform, and for the recruitment of needed agricultural economists to study economic problems facing the agricultural sector.

The most immediate problems were those relating to production costs, distribution, density, and the fluctuation in production, consumption, import, export, and

Agricultural Vocational Education Projects

The agricultural vocational education system played an important role in supplying the country with the required number of agricultural and veterinary assistants (agricultural and veterinary secondary schools graduates).

The ministry of agriculture and agrarian reform provided for the opening of three agricultural secondary schools.

Vocational agriculture's most indicated host agency is the one in charge of agricultural development, namely the ministry of agriculture. It is obviously this agency that can best safeguard the necessary close working relationship between research, extension and vocational agriculture.

The schools have been opened in Darra, Elraka and Hama governorates as a complementary parts to the Yarmouk, Ghab and Euphrates irrigation projects.

The ministry of agriculture and agrarian reform provided also for modernizing of other agricultural vocational schools, and for the adaptation of their curriculums to the needs of Syria's agricultural regions. The ministry


furnished enough fellowships to faculty members of the agricultural and veterinary secondary schools to go abroad for advanced training in agricultural education.

Vocational agricultural education is relatively well-established but needs more functional curricula and more adaptation to the possibility of attendance and needs of the farming youth.28

Agricultural Research Projects

Agricultural research projects were designed toward the construction of agricultural laboratories, experimental field stations, importing advanced research equipment, and at the finding and/or adaptation of new means of production to the Syrian agricultural environment.29

Cotton Breeding Research Project

Research work in the cotton research project started in 1958 with the objectives of finding new strains of cotton having desirable qualities such as early maturing, higher yield and lint production, improved spinning qualities, and resistance to fusarium disease. Although the cotton bureau of the ministry of agriculture introduced


and tested new cotton varieties such as Palmyra strains, 200 metric tons of registered cotton seeds (coker 100 wilt) were being imported annually from the U.S.A. and propagated locally to supply Syrian farmers with improved cotton seeds. 30

Wheat and Barley Breeding Project

The objectives of the wheat and barley breeding project was to find new varieties of wheat and barley possessing desirable qualities such as early maturing, higher yield, tolerance to drought, resistance to smuts and loosening, and suitability for good bread and pastry making.

According to the Food and Agriculture Organization of the United Nations, the project achieved promising results and introduced "Syrimax" wheat variety.

Seeds Multiplication Projects

The long-run objectives of the seeds multiplication projects were to supply Syrian agriculture with 150,000


metric tons of local and exotic improved wheat seeds, 25,000 metric tons of cotton seeds, 1100 metric tons of potato seeds and 200 metric tons of sugar beet seeds. 32

Until 1968-1969 multiplication projects annually supplied the country with 15,000 metric tons of cotton seeds, 300 metric tons of potato seeds and 15,000 metric tons of wheat seeds.

Agricultural Mechanization Research Project

The use of modern farm machineries and agricultural equipment became an integral part of some aspects of Syria's agriculture.

Big potentialities of mechanization in the coming years call for study of agricultural machinery, and call for the government of Syria to offer loans, without interest, for co-operatives of agricultural machinery. 33

Hence it was felt necessary to conduct, test and perform trial experiments to find out the proper and the most suitable equipment, machineries and devices to


different Syrian agricultural production phases, and
crops.

With this regard the ministry of agriculture took
advantage of the priority given to Syrian governmental
agencies to acquire and freely possess lands from the
agrarian reform.

The board of agrarian reform foundation
may decide to keep parts of the requisitioned land for the common interest of
the inhabitants on demand by government,
to carry out certain plans or to erect
public constructions.34

The ministry of agriculture established field crops
centers and equipped them with different kinds of agri-
cultural machineries.

Plant Protection Research Project

The objectives of this project were to establish
specialized laboratories to test different types of pes-
ticides and insecticides, to study prevailing plant diseases
and agricultural plagues, and to find the suitable methods
for combating these diseases and plagues.35

In the period 1958-1968 the ministry of agriculture
built two agricultural multipurpose laboratories' centers

34. The Ministry of Agrarian Reform, Law No. 161 of 1958
and its Amendments (Law No. 28 of 1963) (Damascus:
1963), P. 20.

35. The State Planning Commission, The Second Five Year
Plan for Economic and Social Development 1966-1970
(Damascus: Government Printing Press, 1967), PP. 354-
360.
in Aleppo and in Damascus.

Crops Water Requirements Research Project

Due to the limitation of water resources and the frequently striken draught in Syria, the ministry of agriculture and other agencies initiated the project to study rates of water requirements of different crops at different places in Syria.36

In order to avoid national loss due to imperfect utilization of irrigated areas, so a change should be carried out with regard the policy of utilizing these areas, so that productivity and yield could be increased.37

This was in addition to the studying of the salinity and alkalinity problems in the country.

Tobacco Research Project

The long run objectives of the tobacco research project were to carry out research work on tobacco production, to introduce improved tobacco varieties, and to bring about more efficient protection measures and better methods of


tobacco cultivation. It was estimated by the second five year plan that the project will be under full operation by 1970.

Horticulture Educational Projects

Fruit Trees Expansion Project

The objectives of the horticulture educational projects were to increase the area planted with fruit trees and the production of fruits. Accordingly it aimed at the production of two million saplings per year. These saplings were to be distributed to farmers in an extension educational package.

Honey Production Development Project

The objectives of the honey production development project were the establishment of four multiplication centers, the introduction of improved breeds of bees and the distribution of 1,000 modern beehives to farmers as long term loans in an extension educational package. The project has been a joint endeavor between the ministry of agriculture and agrarian reform and the


39. Ibid., P. 8.
cooperative agricultural bank as well as some other similar projects. 40

Silk Production Development Project

The long run objective of the silk production development project was to rebuild and develop the industry of natural silk production in the country. In order to reach this objective the horticulture department in the ministry of agriculture with the help of the cooperative agricultural bank and the agricultural cooperative union in Latakia governorate established a pilot plant for unwinding silk cocoons, the department imported 25,000 hybrid silkworm seeds boxes from Japan and Italy and distributed them to desirous farmers in an extension educational package. 41

Animal Production Development Projects

The objectives of the animal production development projects were mainly to promote the importance of animal production in the national agricultural economy and to develop the use of animal production resources available in the country. 41 For these purposes, the ministry of


41. Ibid.

agriculture, the ministry of agrarian reform, the chambers of agriculture and the ministry of agriculture and agrarian reform had jointly worked and initiated several educational projects such as: 

1) The construction of range management center at Wadi Alazib;

2) The establishment of a central poultry station with the capacity of production 2,000,000 chicks and the coverage of all governorates with pilot production stations;

3) The establishment of cattle breeding and propagation stations in the main agricultural regions;

4) The construction of six principal centers for animal health and artificial insemination;

5) The establishment of mobile veterinary extension units;

6) The establishment of revolving funds for the distribution of improved cattle, sheep and poultry breeds and balanced feed to farmers and specialized agricultural cooperatives.

Agriculturists in the previously mentioned organizations have been the dynamic elements in the establishment and functioning of these projects.

CHAPTER VII

RELATIONSHIPS BETWEEN AGRICULTURAL EXTENSION AND AGRICULTURAL DEVELOPMENT IN SYRIA

Syria has achieved an enviable position among developing countries as a country. For it was not only self-sufficient in food but an exporter of food as well.\(^1\)

Syria had a fairly well developed system of agricultural cooperatives capable of providing credits, services supplies, and markets. An agrarian reform movement which made it possible for farmers to benefit directly from their own productivity and a family farm system which provided additional incentives for sustained agricultural production was another stable feature of Syria.

An agricultural extension educational program, suited to the needs of the farmers, provided an effective mechanism for borrowing and transplanting new ideas of production from abroad.

Relationships Between Agricultural Extension and Agricultural Production

The ministry of agriculture and agrarian reform, and other agricultural organizations indulged themselves in

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the process of agricultural and rural development in Syria. The aggregation of the agricultural extension efforts spent by these organizations, their agricultural educational projects and consequently the agricultural cooperative extension programs, created the necessary educational environment, where Syrian farmers were disposed to learn practices and adopt knowledge, skills, and improved techniques pertaining to agricultural production.

A second way of learning is through on the job training. Such training may be provided by firms selling the new agricultural factors or by a public agency like an agricultural extension service, or by farmers themselves. Training of this kind is done through demonstrations and discussions organized by a private firm or by a public agency. Special short courses and vocational schools are sometimes used.  

It has been marked before that in the year 1968 wheat, barley, potatoes, onions, tomatoes, apple, olives, grapes, sugarbeet, and cotton production have shown an upward trends and increased 36 per cent, 273 per cent, 110 per cent, 100 per cent, 181 per cent, 212 per cent, 286 per cent, 32 per cent, 328 per cent, and 60 per cent respectively of their original level in the base year 1955.

The increase of agricultural production could be attributed to some factors such as the expansion of cultivable dry land and the intensive use of labor as well as to the alteration in farmers behavior and the effectiveness of agricultural extension.

The expansion of cultivable dry lands had taken place to a certain limited degree. The acreage of these lands increased 53 per cent of their original level in the base year 1955. Dry weather conditions subject the newly opened lands to severe draught from time to time and hinder any further expansion.³

The hazardous dry land expansion inspired the Syrian government to prohibit dry farming in the arid and the marginal zones (less than 250 millimeter of rain fall) and to refrain from extending credits for such purposes.⁴ Further more the index numbers of rainfed lands has shown a downward trend starting from 1964. Dry farming lands decreased 24 per cent in the period 1964-1968.

The proportion of rural population to the total population has shown a downward trend, it decreased eight


per cent in the period 1955-1968. Productivities of human and land resources in terms of yield per land unit have risen during the period 1955-1968 and more than doubled in certain cases as it has been indicated before.

The rise in the productivity of the Syrian agricultural resources, reflects an improvement in the performance's level of the Syrian agricultural labor force, an elevation in their knowledge and skills, and an increasing rate of using new means of production, consequently, the effectiveness of the agricultural extension program, the adoption of improved farming methods, and the change in the Syrian farmers' behavior are the sole explanation to the rise of agricultural productivity and the increase of agricultural production in Syria.\(^5\)

Research and extension are now gaining momentum in Syria. Extension, as the out-of-school educational system, is of particular importance in Syria where a large proportion of the rural population has not had and will not have the chance to attend technical schools.\(^6\)

Graphic Relationship Between Agricultural Extension Program and Agricultural Production

It was aforementioned, that agricultural Extension

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educational activities involved in the agricultural extension program, were planned and carried out under the leadership of agricultural engineers working in different agricultural organizations in the country. It is attempted in this section to picture the effectiveness of the agricultural extension program into graphic relationships between the numbers of agricultural engineers (agricultural college graduates) and different categories of agricultural production.

Relationship Between Agricultural Extension Program and Cereal Production

Cereal production increased from 575,000 metric tons to 1,112,000 metric tons in the period 1955-1968. The number of agricultural engineers increased from 53 to 815 agricultural college graduates in the same period. Precipitation constitutes a limiting variable in the Syrian agriculture and cereal production is linked with the rainfall and sharply fluctuates from year to year. Although graph one indicates a sharp fluctuations in cereal production because of the weather conditions and possibly other variables, it also shows that long-term trend in cereal production has been slightly upward.
Graph 1. — Trends of relationship between cereal production and agricultural extension program in terms of the agricultural engineers 1955-1968.
Relationships Between Agricultural Extension Program and Vegetables and Fruits Production

The production of different kinds of fruits and vegetables, the increasing rates of their per-capita availabilities, the export of them, and the higher level of their consumption in Syria indicate the presence of a dynamic and efficient mechanism behind the production of these commodities. The agricultural cooperative extension program and the providence of know-how and economic incentives to producers are the soul of this mechanism.

Vegetable production increased from 112,000 metric tons to 280,000 metric tons in the period 1955-1968. Graph two indicates that the trend in vegetable production was similar to that of the agricultural engineers and both of them were upward trends and moving in the same direction.

Fruit production rose from 250,000 metric tons in 1955 to 413,000 metric tons in 1968. A positive relationship existed between the quantity of fruit produced in the country and the intensity of the agricultural extension program reflected by the number of agricultural engineers. Graph three displays this relationship and shows upward trends in both fruits production and the number of agricultural engineers.
Graph 2.--- Trends of relationship between vegetables production and agricultural extension program in terms of the agricultural engineers 1955-1968.
Graph 3.---Trends of relationship between fruits production and agricultural extension program in terms of the agricultural engineers 1955-1968.
Relationship Between Agricultural Extension Program and Industrial Crops Production

As we have mentioned before, industrial crops such as sugar beet and cotton were the most important commodities in Syria.

Agricultural extension educational activities sponsored by different agricultural organizations introduced these cash crops on a commercial level. The existence and the upward development of these crops were related to the agricultural extension educational program. Graphs four and five show the relationship between sugar beet production, cotton production, and the agricultural extension program reflected by the numbers of agricultural engineers working in the country.
Graph 4.—Trends of relationship between sugarbeet production and agricultural extension program in terms of the agricultural engineers 1955-1968.
Graph 5.--- Trends of relationship between cotton production (lint) and agricultural extension program in terms of the agricultural engineers 1955-1968.
Relationships Between Agricultural Extension and the Development of Rural Institutions

Although traditional institutions in Syria were characterized by group solidarity and mutual aid, they form part of the traditional systems of social stratification and economic dependencies which are typical of most of the developing countries. Moreover, these institutions are built on various customs, traditions, beliefs and behavior patterns which often represent elements which retard development and the individual participation of people in agricultural extension educational activities.

Furthermore it is difficult to change traditional behavior patterns and to introduce modern techniques and new means of production without changing at the same time the institutions which originated in such traditions. 7

Relationship Between Agricultural Extension Program and Agricultural Cooperatives

Certainly, additional incentives may help explain the increased production. Agricultural cooperatives in Syria were above all a mechanism for crystalizing,

expressing, and implementing the interests of farmers. These cooperatives have been instrumental in agricultural development as being an institutional vehicle for the agricultural extension educational program.

Previous discussion to the development of the agricultural cooperative movement indicated that Syria's achievements in the field of agricultural cooperation have been a sole result of agricultural extension work. Subsequently agricultural cooperatives had served as a popular vehicle for the agricultural extension program. Graph six indicates an upward trend in the formation of agricultural cooperatives and the agricultural extension program in terms of its dynamic elements the agricultural engineers.

Relationship Between Agricultural Extension Program and the Agrarian Reform

Land ownerships in Syria were concentrated in relatively few families and the majority of people on the land were in a dependent status of tenants, indebted tenants or landless laborers. Although the majority of landlords were absentee owners they maintained the right not only to allocate the land, fix the quantity and quality of seeds supplied by them to the tenants, but also determine the time of cultivation. Tenants neither possessed an
Graph 6.---Trends of relationship between agricultural cooperatives and agricultural extension program in terms of the agricultural engineers 1955-1968.
expansive power as tillers of the soil nor had the incentive to do so. 8

From the agricultural extension program point of view, improved production processes and the adoption of innovations in agriculture were associated with the abilities and the capacities of actual cultivators and their motivations to adopt improved methods and to produce more.

As it has been shown before the agrarian reform in Syria was leading to the creation of an effective range of economic alternatives and occupational opportunities to the majority on the land. Subsequently it had served as an institutional vehicle for the agricultural extension program.

Relationships Between Agricultural Extension and the Introduction of Technology

From the foregoing chapters we can say that scientific farm information was brought, developed, and tested in Syria by interrelated specialized agricultural organizations. It was disseminated mainly through a dual extension system operated by the government and the farmers agricultural cooperatives. Farmers living in villages constitute the third or receiving system. It was here that most integration of new technologies into existing farming operations takes place.

Relationship Between Agricultural Irrigation and Agricultural Extension Program.

It has been realized by the ministry of agriculture and agrarian reform and other concerned organizations that, the continental semi-desert climatic conditions constituted a limiting and determinant variable to their extension educational activities. In other words agricultural organizations associated the availability of agricultural irrigation projects with their productivities, growth and their existence. Private agricultural irrigation projects initiated by individual farmers

constituted a major portion of the Syrian irrigated lands. "The available studies indicates that the private sector invests annually an average aggregate sum of L.S. 30 millions in irrigation and land reclamation in the form of fixed assets."  

In accordance with the decree number 320 dated May 26, 1926 concerning the use of public water resources, the Syrian government has directed the expansion of the private irrigation sub-sector according to a restrictive regime. According to this decree agricultural engineers working in respective areas have participated in the decision-making pertaining to every private irrigation project. Furthermore no farmer or agricultural cooperative can obtain institutional loans for the purpose of agricultural irrigation without a technical, agricultural, and economic endorsement from the ministry of agriculture and agrarian reform, its branches or from a licentiate agricultural engineer.

Consequently the agricultural extension program has been an effective tool for the promotion of agricultural irrigation and the increase of irrigated agricultural land. Graph seven indicates a slight upward trend in the acreage of irrigated land, while the numbers of agricultural engineers went up rapidly.

Graph 7.— Trends of relationship between agricultural irrigation and agricultural extension program in terms of the agricultural engineers 1955-1968.
Relationship Between Agricultural Extension Program and Chemical Fertilization

Integrated extension educational efforts involved in the agricultural extension program have induced the application of chemical fertilizers on a large scale. Table 47 in chapter six shows an increase of 460 percent in the consumed commercial fertilizer nutrients in the period 1955-1968. Graph eight indicates associated trends between consumed quantities of fertilizer and the agricultural extension program in terms of its major component the agricultural engineers.


Graph 8.—Trends of relationship between chemical fertilization and agricultural extension program in terms of the agricultural engineers 1955-1968.
Relationship Between Agricultural Extension Program and Plant Protection

Table 47 in chapter six shows an increase of 77 per cent in the consumption of pesticides, insecticides and herbicides for the period 1955-1968.

Plant protection constituted an important phase of the agricultural extension program in Syria. The application of sophisticated chemical substances such as D.D.T., benzene hexachloride, aldrin, dieldrin, clorodane, toxaphene, parathion, malathion, nicotine compounds, and fumigants\textsuperscript{12} by Syrian farmers, was an indication of the effectiveness of the agricultural extension program and the existing relationship between this program and plant protection measures performed in the country. Graph nine displays this relationship.

Graph 9.--- Trends of relationship between the consumption of pesticides and the agricultural extension program in terms of the agricultural engineers 1955-1968.
Different sources contend that agricultural mechanization was a symbol for the development of agriculture. The utilization of tractors and combined harvester threshers in Syria was an example of this notion.

In Syria, agricultural machineries cannot be imported without the authentication of the ministry of agriculture. The agricultural extension program was the only source for the estimation of the capacities of Syrian agriculture to utilize economically different kinds of agricultural machineries. Subsequently the relationship between agricultural extension program and the rate of agricultural mechanization was a fact. Graphs ten and eleven indicate upward trends in the utilization of tractors, combined harvester threshers, and shows positive relationship between the numbers of these agricultural machineries and the number of working agricultural engineers in Syria during the period 1955-1968.

Graph 11.—Trends of relationship between harvester-threshers utilization and agricultural extension program in terms of the agricultural engineers 1955-1968.
Relationships Between the Budgets of the Ministry of Agriculture and Agrarian Reform, the Agricultural Gross National Product and the Agricultural Extension Program

The budgets of the ministry of agriculture and agrarian reform have been the major financial source for the agricultural extension program, and the most crucial variable in the process of its implementation, execution, and intensification. These budgets coincided with the extension educational investments in the agricultural labor force in Syria during the period 1955-1968.

There are a number of activities that have the attributes of an investment in man. The following classification is useful in this respect. First, for adults who are committed to farming and who therefore cannot attend regular schools, short courses that come during off-seasons in farming, demonstration to teach new farm and home skills, and occasional meetings to instruct farm people can play an important role. Experience has shown that folk schools, community programs, and especially agricultural extension services can be successful in this adult education.14

Extension educators or agricultural engineers planned and managed these investments during the aforementioned period. The indicative and immediate outcome of their

planning, management, and their extension educational program was the agricultural gross national product achieved in the same period.

there are all manner of historical clues indicating that there has been a strong positive relationship between the level of skills and knowledge of farm people and their productivity at farming.15

The budgets of the ministry of agriculture and agrarian reform increased from L.S. 7.775 to L.S. million or an increase of 372 per cent in the period 1955-1968. In the same period agricultural gross national product rose from L.S. 669,560 to L.S. 1819.387 million or an increase of 171 per cent for the same period. As we have mentioned before the number of agricultural extension educators also increased from 53 to 815 agricultural engineers in the period 1955-1968. The upward trends in the extension investments and the outcomes indicate a solid positive relationships between the budgets of the ministry of agriculture, the extension program, and the agricultural gross national product. Graph 12 and Graph 13 indicate these relationships.

15. Ibid., P. 181.
Graph 12.— Trends of relationship between the budgets of the ministry of agriculture and the agricultural extension program in terms of the agricultural engineers 1955-1968.
Graph 13.—Trends of relationship between agricultural national product and the agricultural extension program in terms of the agricultural engineers 1955-1968.
Summary of Results

The ministry of agriculture and agrarian reform and other concerned agricultural organizations have provided an effective means for learning about agricultural innovations and implementing them as they proved adaptable in Syria. At the same time, close communication has been maintained with farmers. Rather than concentrating control and strength in one organization, different kinds of programs have aimed at building strength in agencies designed to support agriculture. A program of agrarian reform (1958-1967) had removed control and access to farm land from the hands of a few to the farmers who till the soil.

Agricultural cooperatives operated to purchase supplies, to market produce, to provide services and credit needed in farming operations, and to participate in the carried on agricultural extension educational activities. In addition, they served as an effective mediating influence between the farm constituency, on one hand, and government agencies, and ministries on the other.

Research of most immediate concern to farmers was conducted by all subject matter departments of the ministry of agriculture and agrarian reform including the department of agricultural research. Agricultural research stations were assinged both research and agricultural...
extension responsibilities. Their research was mostly concerned with field testing of new varieties and cultural practices for local adaptability. They were charged with providing specialty information to both extension village workers, extension mobile units, and farmers on a regular and special request basis.

Agricultural educational projects initiated by subject matter departments of the ministry of agriculture and agrarian reform were examined by appointed committees. Support and financing decisions were made on the basis of relevance of proposed projects to the development of agriculture, adequacy of the proposals, and compatibility with general national planning objectives.

Public corporations such as the union of sugar beet industry, the tobacco monopoly and the Euphrates authority conducted their own agricultural research and had their own extension activities.

Advisement of farmers on agricultural extension educational matters was mainly through a dual extension system: one, a line agency from the ministry of agriculture and agrarian reform in the capital city, operating through the governorates' directorates of agriculture and agrarian reform to village levels; the other was the agricultural cooperatives, and the chambers of agriculture which also operate at each of these levels. Both maintained direct
contacts with farmers and encourage them to adopt new farm practices. Extension radio programs, extension publications, farm discussion group, festivals, cooperative conferences, personal letters, extension visits, illiteracy control sessions, result demonstration, agricultural exhibits, motion pictures, method demonstrations and local tests of new practices provided opportunities for frequent interchange with farmers and thus for keeping them continually informed. Wishes and interests of farmers were communicated through annual cooperative meetings, periodic meetings in which farmers, extension workers, specialists, and governmental officials participate. This was in addition to exchanges that occurred between agencies and agricultural cooperatives, chambers of agriculture and public offices at all levels.

As a result of agricultural extension educational activities and the willingness of Syrian farmers to learn and adopt new means of production, Syria achieved an enviable position among developing nations as a country that was not only self-sufficient in food but an exporter of food as well. The adoption of agricultural innovation, the rise of agricultural production, and the spread out of agricultural cooperatives has been closely linked with the agricultural college graduates (agricultural engineers) who are responsible for the engineering of this program. The relationship between different facets of agricultural and rural
development and the number of agricultural engineers has been established and graphically presented. Accordingly it was possible to say that:

1. Agricultural extension education had special significance for the process of economic and social change and makes a vital and positive contribution to agricultural and rural development in Syria.

2. The greater the number of agricultural engineers the more intensive the agricultural extension program, the more adoption of agricultural innovations, and the higher the rate of agricultural and rural development in Syria.

3. Agricultural extension educational programs should be an integral part of all projects designed for agricultural and rural development in developing countries.
CHAPTER VIII

THE STEPPE REGION AS A COMPARISON SITUATION

The Nomads are those people who have no particular place which they consider as their home base and move over a wide area wherever the prospect of grazing for their flocks seems brightest.

The Syrian tribes (Bedouins) exist in various stages of settlement, from pastoral nomadism to almost completely settled agriculture.

The Steppe Region

The steppe region was considered the heart of the Arid Zone in Syria. The total area of this region was about 6,322,000 hectares. The semi-desert soil (white-grey soil) was prevailing in this region with a vegetation of perennial shrubs and annual grass. The bulk of the country sheep and goat population was raised on this land.

The Tribal Community

A tribe constitutes the main source of social belonging. The land of a tribe was available to every member according to the judgement of the tribe head (Shack).

Bedouins depended for help against the hazards and difficulties of life on a system of mutual self-help among members of the tribe. In the crucial drought years survival may well depend on the tribes' armed strength, and thus tribes have a reputation for turbulent aggressiveness against each other and against agricultural settlements in some cases.

Nomadism as a way of life was a question of degree. About 300,000 people in Syria counted in some sense Nomadic, their way of life extended on the Nomadic scale as follows: 1.

1. Some tribes had no particular place which they considered as their home base and moved over a wide area wherever they could find grass to graze their flocks.

2. Some tribes had their own places, usually at water holes, or wells, where they spent more time than any other and which they considered to be their home.


3. Some tribes moved on a more or less regular annual cycle from one grazing ground to another.

4. Some Bedouins were small-scale cultivators, planting at their home base winter crop of wheat or barley and coming back months later to harvest it.

5. In the groups which were more commonly called pastoralists than Nomads, the majority stayed in the tribe's base land and only a minority, the younger men, moved off for a season with the herds.

6. Some tribes' men received lands and houses from the agrarian reform and became agriculturally settled.

Grazing areas were held in common and also exploited in common. Grazing rights, however, were much less clearly defined for three reasons; first, because the areas involved were much larger and therefore difficult to define precisely; second, because the uncertainty of the rainfall in the steppe region, led to such variability in the quality of pasture, that even tribes with a relatively regular movement might not use the same grazing areas consistently every year; third, because when tribes used lands adjacent to each other, there was no dominant state power which could prescribe and enforce a boundary line agreements, and custom. In draught years when pasture was really scarce and the herds were starving, the custom was apt to break down, and only the relative balance of physical force which
tribes respectively commanded settled the problem.

In the typical traditional society there is no contractual arrangement and there is no legal code. Each case of discontent with regard to any kind of agreement is decided by the elders. Where the aggressiveness has become dominant we have an atomistic dog-eat-dog existence with no pretense of group solidarity. 3

Agricultural Extension and the Bedouins

From the social, economic and agricultural point of view the steppe region was nominally directed and supervised by the ministry of agriculture, the agrarian reform foundation (the ministry of agriculture and agrarian reform) the ministry of social affairs and the ministry of education.

The Agrarian Reform

Vast areas of tribal land registered on the names of tribes' heads were expropriated in accordance with the agrarian reform law number 161 of 1963 and its amendments by the law number 88 dated 1963.

When tribal lands located in the Semi-Arid Zone were ready for distribution, the Nomads were given an opportunity to benefit from the agrarian reform with the conditions of settlement and living in the settlement schemes carried out for these purposes. Article number 13 of the agrarian

reform law number 88 of 1963 articulated this opportunity.

Firstly, the land requisitioned in each village shall be distributed among the farmers, so each one of them shall have small holding of not more than eight hectares of irrigated or orchard land, and not more than 30 hectares of rain-fed land, whose average annual rainfall is more than 350 millimeters.

Secondly, persons to whom land shall thus be distributed must satisfy the following condition:
1) They must be of Syrian Arab nationality and be of legal age.
2) They must be working in agriculture, have an agricultural certificate or belong to Bedouins included in the settlement schemes.
3) In case they own any other agricultural land, their total ownership should not exceed the maximum ceiling of distribution provided for this article. 4

Although a settlement project was undertaken by the agrarian reform and several hundreds of rural families were transferred from densely populated areas, most of the participating Bedouins who settled down and received land from the agrarian reform regressed and returned back to their previous way of life. 5

The regression of Bedouins could be attributed to one of three reasons or to all of them:


1. Pressure inserted by tribes' heads on their followers to stand against and oppose the agrarian reform and its measurement, so far as the agrarian reform had deprived them from big land ownerships as a major mean of influence. ⁶

2. The impact of change, difficulties, and hardships of the new way of life which depended on personal achievements and hard work rather than on blood ties with the tribe. ⁷

3. The lack of tailored agricultural extension programs to deal with the Bedouins' problems. ⁸ Bedouins were dealt with as well as other beneficiaries.

The Ministry of Agriculture

There was no agricultural extension work specified for the steppe region and the Bedouins, except of sporadic responses to dramatic crises such as severe draught and


animal plagues, where the ministry of agriculture distributed feeds and furnished veterinary medical help. 9

The Ministry of Social Affairs

This ministry held the responsibility of dealing with Nomadism as a social phenomenon. Due to many reasons no single project was sponsored by this ministry. 10

The Ministry of Education

In order to develop the Bedouins and to raise their living standard, exceptional facilities have been ruled for them, such as the acceptance of their children in the public schools system without considerations to the age limits, and the free boarding schools.

As for improving the conditions of the Nomads' livelihood, boarding schools such as have been provided in Algeria, the Sudan and Syria, or mobile schools as are planned in Saudi Arabia, are costly but not impossible to organize. 11


Disregarding these educational facilities, Bedouins preserved their way of life, and their patterns of performance. Further more concerned authority in the FAO of the United Nations expressed this fact and suggested an integrated agricultural extension program and an administration for the development of Bedouins.

To be successful such a program needs closely coordinated action by all government services involved (including agriculturalists, livestock specialists and forsters), within an overall national land use plan which should be prepared by a permanent land commission.

The Socio Economic Status of the Bedouins

Nomadic land was normally the native home for the Nomadic people, where they wandered or temporarily settled themselves, and harvested the steppe with their flocks of sheep. Three categories of socio-economic status were distinguished and recognized in the Syrian steppe.

Sheep-Share Tenants

The vast majority of Bedouins were sheep-share tenants or shepherds. They tended, took care, and managed flocks


of sheep belonging to other people living in rural areas. Each year in April, most of the tribes used to move toward the western regions of the country where they could find ample feed resources and in order to charge their tenures for the next season.

**Sheep Owners**

Some Bedouins owned their own sheep herds and shepherded them by themselves. Sheep owners followed the same movement cycle to secure more facilities for their animals and to market their dairy products.

**Tribes' Heads (Shacka)**

Tribes' heads owned lands, thousands of sheep, and some times also fancy houses in the main cities. They were the most powerful figures in the steppe region and the ones who struggled to keep on the status quo of Nomadism.

> Since Nomad society is organized for military action, the power of tribal chiefs often tends to more despotic than elsewhere. Moreover, at a time when new economic opportunities are causing traditional tribal structures to disintegrate, the chief's sense of responsible paternalism may be more rapidly attenuated than his follower's submissiveness.14

The prevailing social structure of the Nomads, their economic activities, and their mobility grant them the status of "Shepherd and/or "Shepherdess."

To conclude, the absence of agricultural extension educational program in the steppe region, made it imperative for the Nomadism as a primitive way of life to exist with a low socio-economic status for the majority of the Bedouins.
CHAPTER IX

FUTURE DEVELOPMENT OF AGRICULTURAL EXTENSION EDUCATION

Agricultural development and social change in rural areas have become the main concern of society and a highly welcomed area of educational, scientific, and economic inquiries in Syria. The objective is to find out the suitable ways and means to utilize the large quantity of underutilized agricultural resources including the unskilled labor, the land, the capital, and the capital formation potential. The various institutions required for achieving this purpose are:

1. An agricultural extension educational program.
2. A research program.
3. An agrarian reform program.
4. A seed multiplication and distribution program.
5. Credit agencies.
6. Farmers' organizations.
7. Marketing agencies.

The literature and research in the field of agricultural development show that in order for these institutions to maintain an operationally effective function in the agricultural sector where illiteracy, traditions, and local cultural environments impede the process of the adoption of
technology, a specialized and highly designed extension educational program is an indispensable common denominator for these institutions and their parent agencies.

Suggested Organizational Pattern For The Public Agricultural Sector

Agricultural Extension Work

Most types of activity which are defined as extension work are found in different ministries, and other institutions, such as the ministry of agriculture and agrarian reform, the ministry of education, the ministry of higher education, the tobacco monopoly, the Syrian sugar beet industrial companies, and the ministry of social affairs. As an overview was taken of agricultural public administration activities, it became evident that there was space for more sufficient communication about current efforts, among those agencies who were involved in agricultural extension work. Sufficient coordination between these agencies also was needed. An evidence of this need for better communication and coordination was the chaotic situation which exist in connection with the overlapping agricultural extension educational activities carried out by different agricultural organizations. In various parts of the world, experiments have demonstrated that the greatest progress is made when there is unity and
and solidarity among the organizations on the whole range of needs for development.

Unity in making and implementing decisions is a well established principle of public administration. In case where responsibility for certain activities related to agricultural development is vested in ministries and agencies other than the ministry of agriculture, formal arrangements are needed for coordination and collaboration so that their policies will be in harmony with one another.¹

Present agricultural extension organizations do not permit the needed unity of command. The span of control through these organizations permits a great deal of centralization of decision making which decrease the effectiveness of each individual organization and blocks achievement of the common organizational goals.

A community development program (in its narrow meaning, i.e. to have multipurpose village level workers assisting the rural population in coordinating its efforts to improve the standard of living) cannot be successful without having at its easy reach, efficiently functioning technical and educational services, like general education, agriculture, health, etc. Furthermore such a program depends almost entirely on a rather perfect coordination and collaboration between ministries concerned with rural development, a condition always extremely difficult to achieve.²


Fundamental Considerations In The Agricultural Public Administration Development

At the root of a nation's system of public administration there are fundamental conditions which are deeply influencing and must be understood before changes of a basic nature can be successfully attempted. Thus the fundamental considerations in the agricultural public administration development are:

1. The process of modernization is extremely complex, involving fundamental value changes in the society, and the point at which modernization will be complete is impossible to identify.

2. The cultural characteristics of the concerned social system is extremely important and should be considered as a prerequisite for any agricultural development.

3. The third element which must be kept in mind while embarking on administrative change concerning the needs and wants of people is understanding of how citizens feel about their government, what they expect, what they are willing to contribute, in other words the values which they bring to governmental affairs.

General Characteristic Of The Syrian Rural Communities

1. The Syrian rural communities are highly integrated units and should be approached on this basis.
2. Agriculture is in reality a total way of Syrian rural life, involving not only techniques of soil cultivation and livestock raising, but also the people who raise the crops and the livestock.

3. The farmers live in compact settlements (villages) with a clearly defined way of life involving certain institutions, traditions, habits, and behavioral patterns; above all, this way of life is characterized by a high degree of integration in which family, religion, recreation, the social structure and organization are closely tied with agricultural activities.

The Proposed Agricultural Extension Administration Program

Skill in the arts of public administration is often regarded as a resource of economically developed countries such as the United States, and as an attribute which must be acquired by most countries currently going through the process of modernization.

Vice President Hubert Humphrey noted in 1965 that the great challenge for the United States in the years ahead would be in generating the capacity and skill to administer the many programs of the great society which Congress had recently approved. If this is true for the United States, the far more demanding tasks of development, such as the

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previously mentioned institutions, impose enormous burden on the Syrian government. Public administration is unavoidably involved since only the government can master the power and resources to affect major socio-economic change. In the absence of governmental initiative and leadership development is almost certain to be fragmentary and episodic.

The objective is to suggest an organizational structure for the agricultural sector, which may assist in accelerating the process of agricultural development in the country.

Future efforts to develop the system of agricultural public administration in Syria must be experimental and pragmatic. It is certain that substantial practical measures must be undertaken to deal with the problem. There are numerous problems to be met and interests to be served everywhere in the Syrian rural areas. It is hard to wait for research to clarify the wisest routes. The proposed organizational structure will be relevant to the present time needs.

In Syria there is a ripening condition for another step, and an ever deepening desire on the part of the Syrian top level administrators to accelerate evolutionary processes.

The main responsibility of agricultural extension is teaching science, providing guidance, and encouraging rural people to adopt more technology and more scientific methods.
The above functions comprise the common denominator for all developmental institutions; it is imperative that extension offer a better organized body of services, and information relative to concerned audience's needs. Thus, an effective organization is a prerequisite for developing better skills and techniques of teaching people or influencing them. On the other hand, it is a fact that the more adequate, efficient, unified, coordinated, flexible and responsive the organization is the more effective and efficient the administration will be.

In the general review of the Syrian agricultural developmental organizations, it became clear that the distribution of these organizations does permit the study of the farmers' needs. But there is no effective mechanism through which the desires of people are brought to bear upon the general functioning of various organizations. Problems presented by this situation are interrelated but they can be treated as four general problems. These are:

1. How can we develop an effective extension organization at the state and village levels?
2. How can we effectively link agricultural extension with agricultural research?
3. How can the opportunity be given to colleges of agriculture to participate in the extension program and to redirect their research efforts for the benefits of development?
4. How can we organize to achieve an effective seed multiplication program?

The Basic Approach to Agricultural Extension Work

The proposed basic approach to extension work will be through a line of responsibilities connecting the village with the experiment station. Syrian villages account for nearly 5,000 settlements. Each one of them is different with respect to number of inhabitants, total acreage, type of cultivation, and other agricultural characteristics. But most Syrian villages of today have undertaken some institutional activities. Thus, in order to achieve the desired result from extension work, we need to start where people are or from the village as the basic rural unit.

The Field Work Unit

Villages should be the working unit for extension service. In order to get responsibilities parallel to the abilities of all partners, the following factors should be taken into account in establishing the village level units:

1. Presence of an agricultural cooperative.
2. Presence of an elementary school.
3. Villages which have more developing agricultural activities.
4. New established colonies or villages.
5. Size of the village (3500-4000 inhabitants).
6. Congregation of settlements having 35000-40000 inhabitants.
The Adequate Size of Extension Team on the Village Level

The proposed extension team should be composed of:

1. Agricultural engineer (college graduate) who will serve as chairman.

2. Two agricultural assistants (agricultural secondary school graduates) who will serve as general agricultural activists and for village youth development, and teaching agriculture in the village primary schools.

3. Home demonstration agent (home economics secondary school graduate)

4. Veterinary agent (veterinary secondary school graduate)

5. Secretary

6. Transportation and adequate equipment.

Preliminary Description of the Job

In cooperation with local leaders, the cooperative's board of directors, local peasants union office, and the people, the extension team will:

1. Define local problems. First of all those problems of common interest which can be used as focal points of joint activities within the village, such as a village library, dispensary, complementary necessities (community or activity center), digging water wells, establishment of collective irrigation canals, and so forth.

2. Develop an educational program to cover agricultural
services (from farm to farm), veterinary aide (farm to farm or backyard to backyard), home demonstration (home to home) and 4-H club activities.

3. Establish an order of priority in extension teaching. Some villages will start on cattle breeding, others on planting, fertilizer demonstrations, development of bee-keeping and poultry keeping, fruit and vegetable industrialization, village library, other appropriate activities.

5. Cooperate with other agencies.
6. Form a local agricultural extension board.
7. Teach agriculture at the village elementary school.
8. Develop a village youth organization.

**National Agricultural Extension Organization**

Whatever the temporary Syrian agricultural extension organizations are, it is a fact that the ministry of agriculture and agrarian reform has been the central office for agricultural extension work. The time is present for the establishing a mode of administrative relationships and communication between these organizations and the ministry of agriculture and agrarian reform into unified individual frame of references.

The accompanying pattern of organization has been set up to cover the central headquarters of agricultural extension work, connect extension workers with specialists
and help supervise extension work all over the country. As proposed and shown in chart four, extension organizations are developed to carry out extension work as teams, each one strengthening the other. In order to make the proposed national agricultural extension organization practicable, a group of comprehensive recommendations need to be executed. These are:

1. Social centers under the authority of the ministry of social affairs should be brought under the supervision of the ministry of agriculture and agrarian reform.

2. Tobacco and sugar beet cultivation has to be encouraged, not in the interest of profit corporations, but in terms of farmer's acceptance, comforts, reliefs, and in the interest of their welfare. Because of that the ministry of agriculture and agrarian reform should redeem the supervision of these agricultural activities, and establish two central bureaus as shown in the proposed organization for the ministry of agriculture and agrarian reform. These bureaus can be established in Latakia and Homs provinces. Farmers, sugar beet companies and tobacco monopoly relationships will exist through a neutral, intermediary officers of the agricultural extension service.

3. Syrian rural primary schools should carry out extension work and give guidance to farmers.
Chart 4—Proposed organization for the Ministry of Agriculture and Agrarian Reform in Syria

The Ministry of Agriculture and Agrarian Reform

- Board of Research
- Permanent Under Secretary of State
- Board of Seed Multiplication Corporation
- Director of Administration
- Board of the Euphrates Project Authority
- Director of Legislation
- Inspection Director
- Director of Foreign Relation
- Finance

Director General and Coordinator of Specialties

- Cereal Director
- Horticulture Director

- Forestry Health Director
- Forestry Director
- 4-H Club Director

- Animal Health Director
- Animal Husbandry Director
- Agr. Education Director

- Invisible Need
- Statistics Director
- Agr. Cooperation Director

- Tobacco Bureau
- Cotton Bureau
- Steep Affairs

- Plant Protection Director
- Sugar beet Bureau
- Agr. Chambers Office

- Poultry Husbandry Director
- Invisible Need
- Agrarian Reform

Director of Agricultural Services in a Governorate

Vice-Director and Coordinator of Specialties and Research

Experimental Stations

Vice-Director and Coordinator of Agricultural Extension
The question is, how to eliminate such duplication and present a unified frame of reference in approaching, working with, and teaching people.

The proposed national agricultural extension organization permits the ministry of agriculture and agrarian reform to conduct and operate agricultural extension work on the national level, including the teaching of agriculture which have been done by the ministry of education.

4. Agricultural organizations are called to study the importance of having one extension organization in the light of other nation's experiences and local situation.

Seed Multiplication Programs and the Suggested Seed Multiplication Organization

Improved seeds are an essential element in the increase of agricultural production. Research and experiences in developing countries show that it is very important to propagate and distribute the improved varieties as an integral part of an extension educational package as well ad to obtain or develop them.

It was mentioned before that the Syrian concerned agricultural research and extension agencies had spent an excellent effort and succeeded in the adaptation of different agricultural exotic technologies including improved seed varieties.
Research and extension are now gaining momentum in Syria. Extension as the out-of-school education system is of particular importance in Syria where a large proportion of the population has not had and will not have the chance to attend technical schools.4

According to the first and the second five year plans, (1960-1965; 1966-1970) the ministry of agriculture and agrarian reform, the cooperative agricultural bank, the general agency for cereal and flour, the cotton marketing agency and the sugar beet industrial companies are suppose to produce annually 150,000 metric tons of improved wheat seeds, 25,000 metric tons of registered cotton seeds, 1,100 metric tons of improved potato seeds and 200 metric tons of sugar beet registered seeds.5

Until 1968-1969 seed multiplication programs annually supply the country with 15,000 metric tons of wheat seeds, 15,000 metric tons of cotton seeds, 300 metric tons of potato seeds.6


Barriers to the fulfillment of the seed multiplication program are the joined common responsibilities of the ministry of agriculture and agrarian reform, the cooperative agricultural bank, the cotton marketing agency, the general agency for cereal and flour, and the Syrian sugar beet industrial companies.

The conflicts of interests of these organizations hinder the full development of the program. For example, the ministry of agriculture and agrarian reform is a non-profit organization, it objects to any kind of profit out of the program. On the other hand all the other concerned organizations are profit oriented agencies and they participate in the program as being a profitable enterprise.

With this type of collective management of the program none of the sponsoring agencies has the ability to assume a full responsibility for the seed multiplication program and for the distribution of seeds to farmers, so a change has to take place in the management of the program.

Syria inherited some government corporations with its independence, such as the tobacco monopoly, the cereal's bureau (general organization for cereal) and some non-agricultural corporations. The creation of corporations in Syria has been expanded in recent years on the ground that public corporations and authorities are the most suitable organizational structures for large multipurpose schemes which require a high degree of coordination in planning and execution.
Thus in order to achieve an effective seed multiplication program, and to facilitate for the best use of limited resources available, it is advocated that the most fitting organizational structure to handle this problem is the corporations' system.

In so far as the program is concerned the benefits of this system could be summarized in the following:

1. Local experiences with seed multiplication and other programs have shown that, the distribution of responsibility for decision-making with respect to the various stages and facets of the program in the absence of some central co-ordinating body would make it difficult to control effectively.

2. To ensure that the different phases of the development program are well-integrated and correctly timed, there is a need for continuity in operational planning and execution. This may best be achieved through a single executive agency - say seed multiplication and distribution - that would coordinate the wide range of activities involved in program development.

3. Substantial numbers of additional skilled personnel are needed by each one of the participating agencies to implement its share in the seed multiplication and distribution program. With the creation of the proposed corporation, this situation would be avoided.
Chart 5.--- A suggested structure for seed multiplication and distribution corporation

--- Command lines
--- Coordination lines

The Ministry of Agriculture and Agrarian Reform

Board of Directors

Managing Director General

Public Relation Office

Director of Finance and Administration

Finance and Accounting Division

Personnel, Management and Common Service Division

Division of Distribution

Staff Development Division

Director of Operations

Division of Planning

Division of Industrial Seeds

Division of Cereal Seeds

Division of Vegetables Seeds
4. Farmers, agricultural cooperatives and the government departments involved in the agricultural sector would be dealing with one organization insofar as the seed multiplication and distribution program is concerned, and this would clearly be desirable from the standpoint of operational efficiency.

5. The corporations' system permits for operating on the business line, flexibility and the creation of competitive spirit in the organization.

Agricultural Research

Agricultural research was initiated by the ministry of agriculture. It has been developed as well as the agricultural services.

In Syria there is no central department responsible for agricultural research within the framework of the ministry of agriculture. The production departments, i.e. cotton breeding, animal resources, forestry, plant production, agricultural and horticultural, are responsible for initiating their own research programs.

In 1959 an agricultural research council was established by a presidential decree. This council, which held four meetings a year, normally consisted of the minister of agriculture, his under secretary, the minister of agrarian reform and directors of the various production departments.

departments in the ministry of agriculture. It also
included a representative of the universities. The
function of the research council was largely to promote
agricultural research and to avoid duplication in the
various departments and institutions undertaking agricul-
tural research.

Toward the end of 1960 a high council of science was
established in Syria. This body was composed of represen-
tatives of the ministries directly concerned with national
development. It has a coordinating function to avoid dup-
lication in research in all fields carried out by the
various ministries, institutions and universities. The
high council has the responsibility to coordinate the
scientific and training five year plans of technical min-
istries and universities. The ministry of agriculture and
agrarian reform was represented on the high council by the
secretary-general of agriculture and agrarian reform. Due
to the lack of a full time research administration, authori-
ty and funds, the high council continued as a nominal en-
tity.

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8. Ibid.
The high council can also make recommendations for the provision of funds for important research projects, but it is understood that it meets very infrequently.9

In 1964 a central department for agricultural research was established at the ministry of agriculture, as a nucleus organizational structure. The department has been created to:10

1. Administer agricultural research carried out by the ministry of agriculture and relates it to the agricultural extension program.

2. Outline a program of applied research in major areas of importance.

3. Develop a nucleus of agricultural researchers sufficient to maintain and advance agricultural research in Syria.

In 1967 most of the regional experimental stations were attached to the department of agricultural research. For many reasons this department has been exclusively involved in the fields of plant breeding (cereal) and soil


survey in connection with land fertility and fertilization trials. Other departments in the ministry of agriculture such as the department of agricultural economics, the cotton bureau, the department of animal breeding, the forestry department, and the animal health department (veterinary medicine) continued their research activities.\textsuperscript{11}

Research Institutions other than the Ministry of Agriculture and Agrarian Reform

Research undertaken by Syria's two colleges of agriculture, the sugar beet industrial companies and the monopoly of tobacco, has been in a number of agricultural subjects within the responsibilities of these organizations.\textsuperscript{12}

Suggested Organization for Agricultural Research in Syria

It was encouraging to find all these institutions teeming with specialists and all are engaged actively and incessantly in investigations and research for development of agriculture in the country. The main goals are alike but the reality was that most of them operate in a watertight compartments. The striking example of that was the complete separation of tobacco research. Lack of


\textsuperscript{12} Ibid.
integration and general mobilization of powers towards the common goal were the scourge of the present research institutions in the country. Another deficiency of the present research institutions besides dissipation of efforts, was the weakness of research in the area of socio-economic variables which were basic in agricultural development. Agricultural patterns were imposed upon nomads without knowing beforehand their attitudes and aptitudes and how to satisfy these attitudes and aptitudes.

The science of rural sociological research which studies the social, psychological and cultural side of the rural population investigating their values, attitudes and motives by rural sociologists, cultural anthropologists and social psychologists, is completely lacking. Admittedly such studies are rather non-traditional and nowadays are mainly most advanced in the U.S.A., but they are most essential for ensuring that agricultural development and production in general is sustained and that the new innovations conform with the populations' pride and dreams. These are studies of the mental and decision making processes of persons who carry out the farming.13

In progressive agriculture, sooner or later emergency situations such as an unexpected invasion of insects or unknown epidemic of plant or animal diseases will develop.

These type of situations cannot be solved by consulting library materials, on the other hand imported varieties and animal breeds maybe will show some deterioration which seriously limits their usefulness. Thus agricultural research in Syria must be developed to the degree that it could carry out a pioneer agricultural research, think ahead of farmers and at the same time take the opportunities provided by new information resulting from basic research elsewhere, and take the advantage of every step forward made in agricultural knowledge in any part of the world. To this end, a unified agricultural research program is needed and change in the present organizational structure is indispensable.

Objectives of Agricultural Research

Agricultural research programs should act upon the objectives of the country in agricultural and rural development. Accordingly the overall objectives of the suggested organization for agricultural research will include:

1. To stabilize the growth of agriculture income and free it from the sharp seasonal and annual fluctuations.
2. To increase the country's capacity to export, and to improve the quality of exports.
3. To decrease the country's need for imports.
4. To supply local industries with agricultural raw
materials and to establish new industries to improve the marketability of agricultural products.

5. To increase the production of food and consumer goods.
6. To lower production costs so that local production can compete with the similar one in foreign markets.
7. To increase the productivity of the principal factors of production, i.e., labor, land and capital.
8. To realize a structural balance in the plant and animal products.
9. To find the best methods for agricultural processing from the technical and economic point of views.
10. To improve the social and economic conditions of shepherds, especially those living in the steppe area.
11. To realize agricultural integration by the use of agricultural rotation between crop growing and animal husbandry.
12. To solve problems emerging from cooperative activities of production and marketing.
13. To solve problems emerging from small farming operations

Implementation of Research Results

In the final analysis the farmer who tills the land will turn out to be the most important agent to ensure success of development projects. Results of research and science have to reach the farmer so that he can utilize them voluntarily and convincingly to achieve optimum
yields and results. In the steppe region the Bedouins are proving to be one of the bottlenecks in achieving maximum yields. They have to learn to maintain optimum productive animal populations, to learn to sow crops in the right place and at the right time. The gap between scientific knowledge of agricultural production and actual practice on the farm is large. Extension of research findings and recommendations to the farmers should be promoted.

The Suggested Organization for Research

In order to eliminate the dissipation of the efforts and to ensure the mobilization of powers toward the common goal, a central national institute for agricultural research is suggested (the national institute for agricultural research in Syria) with a semi-autonomous status within the framework of the ministry of agriculture and agrarian reform.

The national institute for agricultural research will be directed by a board of directors under the chairmanship of the minister of agriculture and agrarian reform. The board of directors will be composed of the permanent under secretary of state for agriculture and agrarian reform, the dean of the college of agriculture of the university of Damascus, the dean of the college of agriculture of the university of Aleppo, the director general of the seed
Chart 6.— Suggested organization for the agricultural research

The Ministry of Agriculture and Agrarian Reform

Director General

Public Relations Office

Foreign Relations Office

National Center for Plant Production Research

Industrial Crops

Plant Breeding

Plant Disease

Horticulture

Forage Fodder

Soil Chemistry

Forestry Research

Plant Physiology

Water Requirements

Agr. Mechanics

Finance and Administration

Personnel Management

Staff Development

Laboratories Affairs

Technical Services

Libraries Affairs

Transportation

Finance and Accounting

Veterinary Research

Marine Biology

Agricultural Economics

Agricultural Vocational Education

Agricultural Extension

Agrarian Reform

Governorates Agricultural Experimental Stations and Regional Agricultural Research Centers
multiplication and distribution corporation, the director general of agricultural research institute.

The director general of agricultural extension, the director general of agricultural specialties and the director general of the Agricultural Euphrates Project Authority. Funds and research directive derived from a plurality of sources:

1. The ministry of agriculture and agrarian reform for general financing and for programs adjusted to the agricultural development plans of the country and the needs of farming communities;
2. The higher council of research for long-term research;
3. The colleges of agriculture for basic research;
4. Uncommitted institutional funds for exploratory research master and doctorate theses;

Centralized administration of research, and partly decentralized implementation of research based on a network of regional experiment stations will be the main guideline for the national institute of agricultural research.

Role of Agricultural Colleges in the Development

Syria's colleges of agriculture have been established very recently. Syrian universities belong to the ministry of higher education, although they enjoy an autonomous status.
Consequently agricultural colleges do not participate in the agricultural extension educational program except the supply of Syria with the greatest part of its need to the agricultural engineers.

With the establishment of the faculty of agriculture at Aleppo, Syria will soon be graduating enough engineers to fill existing vacancies. It is imperative that the extension service and the faculty of agriculture work closely together. Since the faculty of agriculture does not have any field service itself it will be through the extension service that indigenous problems of Syrian agriculture will be made known to the student. 14

The efficiency and the objectives of these colleges must be more realistic if they are to supply adequately Syria's needs for technicians and well trained personnel. Furthermore, in the opinion of the writer agricultural colleges in Syria should have a principal role in the development of agriculture, and if they want to assume and play this role they must get away from the traditional, classical, and isolated learning, and to emphasize applied research and reshape their educational patterns in such a way to involve themselves in the agricultural extension field work.

Cooperation with the ministry of agriculture and agrarian reform is indispensable and should be built on a legal basis. This cooperation must be a two-way affair. On the one hand, colleges must have an opportunity to participate in research in agricultural experiment stations and to help learning and teaching be perfected. On the other hand colleges should gain an immediate knowledge of local problems and help in their solution.

Suggested Administrative Modification for the Agricultural Euphrates Project Authority

The Agricultural Euphrates Project should benefit agricultural and rural development. Difficulties of building an effective administrative organization, the settlement of thousands of farmers on small farms, the establishing of many agricultural cooperatives, training personnel and carrying out an agricultural extension and research programs are many ideas to be taken into consideration. Although the necessity for a firm management, direct command and prerogatives at all levels are self-evident in the administration of any great undertaking such as the agricultural phase of the Euphrates Project, the need for a free-flow of experiences and knowledge between the agricultural Euphrates Project Authority and other specialized agricultural organizations in the country is urgent.
It is attempted in this section to suggest an administrative link to channelize technical cooperation between the agricultural Euphrates Project Authority, the ministry of agriculture and agrarian reform, the seed multiplication and distribution corporation, and the national institute for agricultural research.

We support strongly however, a close working relationship with the ministries and universities in such a big national undertaking, for their help will be needed both for constructive ideas, for secondment either permanently or temporarily of key personnel even to their departments own detriment, and for a sense of association and pride in the project.15

A technical specialized board of directors is suggested to compile the country's agricultural experiences and to make the best use of these experiences in the agricultural phase of the Euphrates Project. The board of directors should be established under the chairmanship of the minister of agriculture and agrarian reform. It should include the directors general of the above mentioned organizations, the permanent under secretary and the director generals of agricultural extension and specialties at the ministry of agriculture and agrarian reform, the two deans of the colleges of agriculture and the director general of the Agricultural Euphrates Project Authority.

The implementation of this suggestion requires the attachment of the agricultural Euphrates Project Authority to the ministry of agriculture and agrarian reform instead of the prime minister office.

Future Course of Man-Land Relationship (the agrarian reform)

Land ownership is a grass root value for citizenship, social belonging, and economic motivation in the Syrian rural areas. The agrarian reform abolished feudaldism as a main impediment to the promotion of this value and consequently to establish a conglomeration of small land owners with a new socio-economic system to govern agricultural production and production relationships. The main features of the new system are:

1. Personal initiative released by ownership of the land.
2. Cooperation to substitute for previous feudalistic production relationships, and to secure the advantage of large scale agricultural operation.
3. Government interference to safe guard public interest and to provide facilities beyond the abilities of both the individual farmer and his cooperative.

The agrarian reform opened vast horizons for social change and agricultural development.
It created new owners, new farms, new working and living conditions, and successfully embraced them in the new system.

The eight years experience in agrarian reform in Syria provides some useful knowledge about the complicated problems of social progress in a less developed society. About the question whether social change should spring from the below or whether it can come from above via institutional reforms? This experience is illuminating. It adds further evidence to that social change can be initiated from above. This can be especially noticed in the cooperative movement.16

The three point system implies that the agrarian reform has been performed as an economic and social scheme for agricultural and rural development. Agricultural development resulted in the growth of industry and other sectors in the economy, subsequently trouble has arisen because incomes in agriculture rise more slowly than in industry.

The Effect Of Industrial Development

Economic growth of other sectors rather than agriculture has been accompanied by a decline in rural population.

In table 16 it was indicated that the percentage of rural population to the total population declined from 72.2 per cent to 64 per cent or 8.2 per cent in the period 1955-1968. This healthy phenomenon indicates a transfer in the labor force from agriculture to other sectors on one hand and an opportunity for vacating agricultural land on the other.

**Land Fragmentation**

A corollary points to the vacated land are that of land consolidation. Lands were distributed to farmers on the basis of human social units, or on the basis of the number of the family members. Title to land or the land ownership certificate was granted to the head of the family on behalf of his dependents. Upon the death of some beneficiaries the agrarian reform faced the problem of land inheritance, consequently the split-up of distributed land among descendents into fragments. Although the agrarian reform foundation has insisted that descendents must agree between each other to keep lands distributed to them operating as one productive unit.

Fragmentation of lands was taking place in accordance

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17. Social Units are assigned to the family members according to the following: Heads of family 1.25 units, wife 1 unit, sons or daughters aged 18 and above 1 unit, between 12-17 years 0.75 unit, between 6-12 years 0.5 unit and up to 6 years 0.25 unit.
with prevailing inheritance rules which were legally, socially and traditionally rooted more than any administrative measures taken by the agrarian reform.

**Future Measures to be Taken**

Greater future need for deliberate maneuver will be offered in Syria with its predominantly small holding sector, where more farm proprietors will leave the land, more land fragmentation will take place, and the institutional rigidities are greater. Thus reforms will be required and the agrarian reform should think ahead, and take position on these issues.

Exactly what kind of land tenure measures are to be taken to counter the process of land fragmentation and to use future opportunities which will be offered by migration trends to solve the problems of low incomes in agriculture will depend on future objectives of agricultural policy.

Many factors enter into the formation of agricultural policy. Political pressures of agricultural organizations, the desirability of self-sufficiency in food production, and the faith in the virtues of the three point system of the agrarian reform are the most obvious factors which will continue to affect future agricultural policies. On the basis of the assumption that the three point system will exist as a dynamic guideline within the scope of
private land ownership episode in Syria, and the con-
tinuation of the promotion of efficiency in agriculture through the application of new means of production and new techniques which necessarily lead to greater return to capital and greater productivity per unit area.

A future man-land relationship should be accentuated as follows:

1. The agrarian reform law number 161 of 1958 and its amendments by the law number 88 of 1963 should be rewritten to include minimum ceiling limits for different kind of farming operations under different weather conditions and in different agricultural zones in Syria.

2. If the distributed agrarian reform land has been susceptible to fragmentation upon the death of the head of the benefited family, the agrarian reform should have enough power to compulsory acquire the sale or the lease of land to other farmers within the maximum ceiling limits for land ownership or to local cooperatives, provided the availability of managerial and technical ability on the part of these cooperatives for large scale farming operation.

3. Free technical vocational education training should be available for those who wish to leave farming.

4. Economic growth and industrial advancement in the United States of America have led to the emergence
of a new type of land tenure "contract farming" or what so called vertical integration in agriculture. According to this tenure, farming operations are said to be vertically integrated when the farm operator shares his managerial decision in exchange for services or supplies.

The advantages of this tenure are:

2. Better coordination of the functions of the farm and farm related industries.
3. The stipulation of large scale operation, conservation and protection of the size of farm from splitting among children.

As a result to the industrial development in Syria pressure on agricultural land will be reduced in the long run, consequently the price of land will be fallen with a dearth of prospective buyers. At the same time agricultural land will continue to be a source of security in Syria. Former farmers who have secured and preferred non


agricultural jobs may nevertheless wish to keep their land as a place to retire to in old age.

The three point system of the agrarian reform in Syria has ample prospects to meet future needs to maintain a parity between agricultural and non agricultural incomes through vertical integration in agriculture and consequently by achieving greater productivity per land area unit. For this end the agricultural cooperative unions and/or the agricultural cooperative societies should:

1. Be educationally and economically, elevated to the degree that they can manage commercial plantations for different kind of farming activities.

2. Maintain enough economic accessibility to buy and lease agricultural lands as a corporated entity.

3. Have a legal right to possess and operate lands above the ceiling limits of maximum land ownership stated in the agrarian reform law and its amendments. That is might require a new amendment to the agrarian reform law.

Suggested vertical agricultural integration through cooperatives should be differentiated from that followed in some countries through collectivized or communized farming. It also has to be differentiated from that approach followed in Syria through state farms which were established for another purposes.
CHAPTER X

GUIDLINES AND RECOMMENDATIONS

Agriculture has played a major role in the development of the Syrian economy. It will continue to be the most important segment of life activities in Syria; consequently, further development of agriculture and rural life is of vital importance for Syria's well being.

Development is not sophisticated machines to be bought or imported, an articulated teaching institute's curriculum or palatial neighborhoods to be built. It is the integration of all facets of materialistic civilization in the way of life of indigenous people, the educational abilities and the affluent capabilities to use them and share their values with developed nations.

The research problem was that agricultural extension educational programs may not be emphasized as a major and decisive variable in the agricultural developmental projects and in the process of agricultural, social and economic development of rural people in the emerging countries.

The overall objectives of the study were:
1. To determine from literature what relationships exist between agricultural extension education and agricultural development.
2. To describe and assess the effectiveness of agricultural extension programs in increasing agricultural production in Syria.

3. To describe and assess the effectiveness of agricultural extension programs in the development of economic, social and agricultural organizations such as the agricultural cooperatives in rural areas in Syria.

4. To propose an organizational pattern for the public agricultural sector as a base for more effective agricultural extension education and which may enhance the pace of agricultural development.

5. To examine the opportunities for better man-land relationship under the Syrian conditions.

An initial list of variables was selected with reference to the objectives of the study. Variables were identified, quantified or described through different methods of data collection.

The methods that were utilized in collecting the needed data were: Official records and statistics of the Syrian government; official records and production yearbooks of the FAO of the United Nations; the Ford Foundation and other international agencies' studies about Syrian agriculture; current literature and the writer's knowledge and experience that he had gained through his work in the ministry of agriculture and agrarian reform in Syria.

Tables of data, graphic representation and trend
analysis were presented to explain the relationship between the agricultural extension program and different quantified variables on agricultural production and agricultural organizations.

The steppe region including the tribal community was analyzed to see an area of little development. The proposed organizational pattern, the suggested man-land relationship, the guidelines and the recommendations were based primarily upon the findings of the study.

Based on the findings of the study, it is attempted in this section to project guidelines and recommendations for rapid agricultural and rural development and for an effective agricultural extension program. The following points are presented:

1. Guidelines for rapid rural development in Syria.
   b. Rapid agricultural production development.
2. Recommendations for an effective extension programs.
   a. An effective agricultural extension program.
4. Needed research.

Guidelines for Rapid Rural Development in Syria

Agricultural and rural development and the fullest possible knowledge of rural people's life, their traditions
habits, value systems and performance are complementary factors that must be kept in mind at any stage in the process of development.

Rural community life involves not only techniques of soil cultivation, but also the people themselves.

The lack of integration between different developmental approaches and programs initiated by governmental agencies constitutes a shortcoming in the process of agricultural development. The writer believes it is imperative that agricultural improvement, if it is to be sound, should be undertaken in conjunction with improvement in other aspects of rural community.

Rapid Socio-Economic Integration

Social and economic integration of different segments of society helps in the promotion of collective developmental efforts and in the acceptance of innovations by rural people.

Intensive extension work with the necessary means of communication can be employed to induce socio-economic integration through creative acts and successful achievements which will inspire extension workers, leaders and people to become more active in bringing and adopting innovations. Socio-economic integration can stimulate agricultural and rural development by increasing the wants, needs and inspirations of people. It suggests
to them the possibility of better way of life. It can also provoke people into more vigorous agricultural economic activities.

Thus it sounds like a truism to say that in order to ensure a rapid social and economic integration communication media should and must reach every village in Syria.

Rapid Agricultural Production Development

Agricultural production development is the process by which farmers show and display continuous changes in their attitudes, skills, and farming managerial capacity in the allocation of farm resources and the use of improved inputs, produce more agricultural commodities, and gain more economic return.

This understanding of the agricultural production development process, the aforementioned concept of development and the findings of this study lead to the following guidelines pertaining to the development of Syrian agriculture.

1. Agricultural development requires the abolition of illiteracy in rural areas. Consequently elementary education should be enforced in rural areas. Illiteracy control programs should be enlarged in scope and action.

2. Agricultural development requires that intensive agricultural extension educational programs cover all
Syrian villages. The intensity of extension programs should parallel the intensity of agriculture.

3. Agricultural development requires the strengthening of present agricultural cooperatives and the voluntary involvement, participation and recruitment of all Syrian farmers in the agricultural cooperative movement. To this end the ministry of agriculture and agrarian reform must recruit more agriculturists.

4. Improved seed varieties palatable to Syrian agriculture have been under use on a small scale in Syria. If rapid agricultural development is to occur, registered seeds must be available in adequate quantities for all agricultural crops.

5. Seventy per cent of chemical fertilizers, pesticides and insecticides available to Syrian agriculture, are applied to cotton and other industrial crops. Rapid agricultural development demands the application of commercial fertilizers, and control of diseases and pests of plants to all agricultural plant crops.

6. Syrian agriculture suffers from the lack of integration between animal production and plant production and the prevalence of indigenous inefficient productive animals. Animal production should be given intensive research and extension work.
7. Dry farming in arid and semi-arid zones is subjected to severe drought from time to time, the problem which constitutes a major source for the unstability of cereals and lentils production in the country. Agricultural development requires the improvement of land use patterns in these areas, through adopting suitable crops rotations, implementing soil and water conservation measures, introducing leguminous crops in rotations and evolving varieties resistant to dry conditions.

8. The left behind Bedouins with their nomadic life and the steppe region with its vast grazing areas and its millions of sheep folks constitute a major potential possibility for the development of sheep industry in Syria. The integration of agricultural development approaches implies: (a) The settlement of the Bedouins; (b) A considerable shift from natural grazing to more intensive system; (c) Rejuvenating the national grazing resources; (d) Technical improvement in fodder raising; (e) The establishment of tailored agricultural extension programs to deal specifically with the Bedouins' problem.

9. Although governmental marketing agencies in Syria handle agricultural products and participate in the distribution of agricultural requisits, farmers in remote villages do not have enough physical access to markets
because of the lack of transportation facilities and agricultural cooperative marketing services. Sound agricultural development demands adequate access to markets for farm products and increasing efficiency in the marketing process.

10. Rapid agricultural development necessitates efficiency in forecasting economic demand and supply of all major agricultural commodities and the probable future trend of specific major costs of producing each one of these commodities. This guideline requires strengthening of the agricultural economic apparatuses in different concerned agencies and a full cooperation between these apparatuses, and the agriculture extension service.

11. Syrian agriculture reaches the stage of development where seeds, fuels, feeds, insecticides, implements, etc... are purchased in the market either for cash or on credits. And most of its products are sold in the market. It is imperative that the important element in this process is the margin of total income from agricultural products sold over the total production expenses of the farm including the wages of the family labor hand and services. Profitable farming puts emphases on resource allocation, so rapid agricultural development requires a continuous research on the effect of different farm practices and farm
production implementation. It also requires a strong agricultural cooperative extension program on farm management.

12. The implementation of the agrarian reform, the domination of governmental marketing and credit agencies in the agricultural sector and the sponsoring of agricultural cooperative extension by the government make it clear that governmental policies toward the agricultural sector play the utmost decisive and strategic role in the development of agriculture in the country. Thus if agricultural development is to be accelerated, government policies must be consciously and continuously reexamined from the standpoint of their impact on agricultural development. With this respect agricultural cooperatives must be encouraged to get deeply involved, analyze and criticize government policies concerning rural life and express their opinion with faith in democracy and freedom to do so.

13. The process of agricultural production involves a longer production cycle. Months elapse between seeding time and harvest, years between the birth of animal and the time it becomes commercially productive, and years before fruit trees come into bearing. Consequently there is unknown volume of concealed unemployment inside the country. The temporary migratory
movement of young and adult people to neighbour­ing countries is not a satisfactory remedy. Rural industries and processing plants which depend on agricultural raw materials should be expanded in the agricultural producing areas.

Recommendations for an Effective Extension Programs

Syria is in the midst of an economic and social move­ment toward a higher degree of agricultural development. It is passing in the most important period on which every future success will depend, national strength, successful cooperation, and efficient farming require educated people who are capable of adapting to a highly technical system. Whatever we push, the cooperative movement or the agri­cultural services without progressive leadership, specialized unified agencies, and designed agricultural extension programs we cannot achieve the ultimate goal.

An Effective Agricultural Extension Program

It is well known that change occurs by the gradual casting aside of the old by the growth of the new which is necessarily stimulated by the need for change.

Syrian agricultural extension activities have been concentrated on farming improvement as a key problem. Irrespective of the positive effectiveness of these ac­tivities, integrated and balanced development includes
farm and home development, community adjustment problems, policy discussions, and other areas of concern. It is ever more apparent that it is impossible to cope with these problems while Syrian agricultural extension program still stays within the concept of approaching only one key problem (farming improvement). Thus we need to identify the basic prerequisites for an effective agricultural extension program. These might be:

1. To determine the whole circle of value systems that affect and modify the farmers way of life.

2. To determine the needs, wants and aspirations of the people to be served, including adult men and women, and young boys and girls.

3. The use of the special knowledge of the agent and supervisory staff of how programs can be most effectively organized.

4. The intelligent use of the knowledge of every one involved in the agricultural extension work.

5. The establishment of an organizational framework where extension personnel and concerned people join together to study situations, identify problems, collect facts and information, establish goals and objectives, consider alternative means of solving problems and attaining goals and objectives, choose appropriate alternatives, devise plans for implementing
the chosen alternative, initiate actions, execute their plans, maintain a record of their actions in terms of the established goals and objectives and replan for more extension educational achievements.

Rural welfare is a complexion attributed to many factors as well as a result of rising agricultural productivity and family income. Developing countries including Syria, if they want to keep pace with present civilization and accelerate agricultural and rural development must prepare their people, men, women, boys, and girls to be productive citizens and make intelligent decisions.

Syrian rural young people who are out of school, who drop out of school, and those who are in schools have exceeding abilities and energies and extension program should include the rearing of these abilities within the scope of its functions.

In Syria rural women participate in the agricultural activities and have a decisive role in the family life. The promotion of home making and management and the development of rural family life lay in the heart of the agricultural extension program.

Extension program development process must reflect the educational nature of the proposed unified agricultural extension organization. That is could be manifested
by the following points:

1. Following a systematic procedures in the program planning including a conscious, persistent scientific evaluation.

2. The development of village rural youth clubs and a national rural youth movement.

3. The escalation of extension home demonstrations work on the village level.

Summary Statement

The agricultural extension programs in Syria are products of scientific borrowing and of incorporation of our own innovations. The activities of the agricultural extension programs compliment the present agricultural development of Syria. Farmers concerns were heard individually and collectively through the agricultural cooperatives and other agencies such as the chambers of agriculture.

Agricultural research institutions were insuring continual streams of new ideas and technologies to support agricultural development in the country.

Agricultural engineers disregard their background training which differs according to differences between learning systems in the world were carefully schooled in their job requirements and sufficiently manning the agricultural extension program within the potential limits available to them.
Agricultural extension work has proved to be an effective tool for agricultural and rural development in Syria. It has transformed the Syrian agriculture to a certain position where it has earned the right to be recognized for outstanding agricultural achievement among developing countries.

Agricultural development is a continuous movement where new situations, requisites and new organizational requirements are emerging all the time.

The overall organizational patterns in the agricultural sector and their interrelated parts have recognizable deficiencies which have to be eliminated through intelligent scientific evaluation, if agricultural extension program as aiming at the initiation of clearly defined educational objectives and providing a consciously perceived educational experiences for all those who are involved in the agricultural development. It must be enlarged in scope and functions to include young people and housewives by the innovation of youth village clubs and extension home demonstrations work in the Syrian villages.

Needed Research

Future agricultural and rural development in Syria will depend on both agricultural research and agricultural extension work as a main stream for the introduction of change.
Investment in people through agricultural extension educational programs should be derived from a stream of scientific knowledge and research.

Major critical areas needing research regarding agricultural extension program in Syria are:

1. To develop an agricultural extension educational program for the development of Bedouins and to identify the best methods for its implementation in Syria.

2. Aggressive agricultural extension services and extension educational activities have been carried out in Syria. At the same time agricultural extension and social centers operates upon inquiries from farmers. The need is urgent to know which method is more effective? and more relevant to be stressed under the Syrian conditions.

3. Socio-economic circumstances varies from region to region in Syria. There is a need to determine the association between selected people characteristics and success in farming and consequently the rate of adoption of new means of production.

4. Agricultural vocational education is undertaken under the ministry of agriculture and agrarian reform. There is a need for the development of a role-performance model for vocational agriculture curriculum and to link this model with the extension educational program undertaken by the same ministry.
5. Structural and technological changes are taking place in Syria because of the effects of agrarian reform and agricultural extension efforts. There is a need to determine the impact of these changes on employment, incomes and living conditions in rural areas and consequently to design agricultural extension educational programs in terms of the specific requirements for agricultural development.

6. Syria maintains one socialistic agricultural cooperative "Al Manajeer" as a pilot pragmatic trial to this model of farming under the Syrian social conditions. There is a need for the evaluation of the achievements of this cooperative in comparison with the other 1003 cooperatives.

7. Various types of cooperatives and analogous organizations for production, supply, marketing and services are operating in Syria. There is a need for the evaluation of these activities to ensure maximum benefits to farmers from the point of view of employment, incomes, incentives and educational achievements.

8. Local councils, voluntary organizations and leaderships are of crucial importance to the success of agricultural extension work. The need is urgent to determine and describe the best ways and means of encouraging their active participation in promoting rural progress.
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