BASIC CHARACTERISTICS OF TURKISH AGRICULTURE AND PROBLEMS OF PRODUCTIVITY*

Reşat AKTAN†

I. INTRODUCTION

In Turkey, as in almost every other country, agricultural problems closely concern the government and the public. There are many justifiable reasons for this concern. First of all the agricultural sector produces the commodities that satisfy the most basic needs of the humans. Especially in developing economies, agricultural operations comprise the most extensive and significant sector of the economy. The livelihood and employment of millions of people directly depend on this sector. Another reason of the close concern of the politicians and public administrators in agricultural affairs is the fact that in democratic countries the majority of the electors are farmers.

Developing the Turkish agriculture confronts us as an important and urgent matter. The status of livelihood, employment and welfare of the over 20 million agricultural population whose earnings are very low as compared with the population of urban areas and employed in other sectors, raising the rural population as prescribed by the Constitution to a "level of livelihood in line with justice, full employment and worthy of human dignity" are only possible through developing agriculture.

---

* This is a revised version of a paper presented to the Seminar on "Problems of Increasing Productivity in Turkish Agriculture and the International Experience" organized by the Economic and Social Studies Conference Board between October 2 and October 6, 1972 in İstanbul.

† The author owes thanks to Mehmet Arda for his assistance in the preparation of the tables.

Agriculture in Turkey is afflicted with numerous chronic problems; it cannot always fully perform the functions expected from it. There is a scarcity of resources in agriculture, particularly those of land and capital. In a large part of the country Nature is ungenerous, the climate is inconvenient and unreliable. There are deficiencies and inefficiencies involving ownership and utilization of land, which is the most important resource, that need be corrected in a legal and actual status. The insufficiency and shortness of production occurring from time to time and in various parts of the country for all the aforementioned reasons, the damages caused by the Acts of God and numerous pests, the inefficiency and shortcomings in the distribution and use of crops cause scarce or difficult living conditions for the majority of the farmers. The Government is not always concerned enough to bring solutions to these important problems over a reasonable period; setting and implementing the most beneficial agricultural policy by a single authority cannot be achieved because of the difficulties in setting up a stable and rational organization and in finding the leaders to mobilize this mechanism and to enforce it effectively and regularly. In consequence, the agricultural sector is unable to assist the other sectors and thereby contribute to the economic growth; it sometimes even hinders the general development and imposes a burden on it. Similarly, the contribution of agriculture to the public finance does not reach the expected levels and the government assistance to this sector remains, per force, limited and insufficient.

There are two other factors in Turkey which absolutely necessitate achieving agricultural development as soon as possible. These are, firstly, the rapid growth of population which renders the agricultural problems increasingly more difficult and complex; and secondly, the fact that Turkey is preparing for a period of nearly ten years to come a member of the European Economic Community (EEC) under a covenant. The population boost, while increasing the demand for agricultural commodities on one hand, emphasizes the employment problem on the other, as a consequence, the land which cannot feed the population living on it under the present circumstances, drives away the excess population to urban areas or to foreign countries, which in turn, creates many new problems. Our membership in the EEC opens our economy to foreign competition and forces us to compete with

the most advanced countries of Europe. It is a requisite that the sector of agriculture, which we expect to earn the greatest benefits for our economy within this cooperation, must be shortly placed in a rational and effective operation; it must supply the agricultural commodities required by the domestic and international markets in abundant quantities, high quality and reasonable prices, thus while it increases the welfare of the population earning their livelihood in this sector, it also contributes to the economic development.

Since in developing the agricultural sector in this country, the method of expanding production by opening up new lands to cultivation is almost impossible, we only have recourse to the methods of increasing the productivity. Productivity and agricultural production are directly proportional to welfare. In fact, productivity represents a way of development that is more reliable and has a greater potential. The potential opportunities provided by productivity are almost limitless, especially in the field of plant production. Indeed, the developed countries of Europe and North America owe their significant agricultural development, achieved during the first half of the past century, to this factor. It would be the most rational and efficient attitude for our country to tread the same path, to adopt in our agriculture the technological innovations applied in advanced countries to utilize the natural, human and capital resources in the optimal and most efficient way. Our following the policy of increasing the productivity, which is a priority problem of the common agricultural policy of the EEC will ensure our occupying the position we are entitled to in this Community; our not being undermined during the tough competition that will ensue, but our gaining an elevated position for our economy.

This paper intends first to analyze the structure and characteristics of the Turkish economy in general lines, then to focus on the productivity problems. It offers a comparison of Turkey with some other countries in the perspective of both the agricultural structure and productivity. In making these comparisons, countries in the same parallel with Turkey in regard to their level of development or their agriculture or weather conditions have been chosen on one hand, and consideration has been given to the countries with an advanced agriculture on the other hand. The paper discusses agriculture in its rather limited sense, that is

to say, it deals with farming that encompasses plant and animal production; the subsectors of forestry and water products, because of their own characteristics and problems, are not included here. On this occasion, it would be justified, I believe, to point out the general inadequacy of the scientific work and the required statistical data on productivity.

II. CHARACTERISTICS OF THE TURKISH AGRICULTURE

A characteristic feature of the Turkish agriculture is that it is the activities spread all over the country, affect the welfare and livelihood of two thirds of the entire population directly, and of the rest indirectly. When agriculture, which is responsible for the largest contribution to the national product, is compared with the next largest sectors, it is noteworthy that the difference is still great. Agriculture is similarly significant in regard to the principal economic activities such as industry, local and particularly foreign trade and transportation. Also agriculture not only has a direct or indirect impact on the economy, but it plays a vital part in the social and political life of the country too.

Although the importance and status of agriculture in the economic and social field is diminishing with time, since the socio-economic change, due to its nature, proceeds slowly, it seems as if agriculture will maintain its peculiar status and importance in the country for some time to come.

Traditional and modern agriculture:

Agriculture for the most part, has a traditional character. Small marginal family enterprises and livestock breeders who are partly self subsistent, still comprise a major part of the farming population. In these enterprises, in which the traditional production factors such as land and labor, the efforts of supplying for the food and clothing needs of the family and for the seed, fodder and fertilizers required by the enterprise play a major role, a general stagnation and balance is apparent in the production activities; the production efforts of the farmers and their mode of living are almost interwoven. When empirical methods, generally primitive implements and equipment, the insufficient levels of

capital and education combine with inconvenient external conditions, the production and income in this sector fail to rise and consequently the farmers' standard of living remains low. This type of agriculture which is seen mainly along the northern and southern mountain ranges, at the areas where these ranges join the Central Anatolian Plateau and on the mountainous zones of the east and south Anatolia, is maintained because of the division of land into excessively small units, the distance to the markets and centers of habitation, and additionally, the guarantee supplied by personally satisfying the needs of the family and the enterprise, although partly.

However, the traditional agriculture, which is significant in regard to certain regions and crops, is being gradually replaced by modern agriculture in the parts where new plant varieties are being introduced and improved methods and better inputs are being given recognition by the farmers. The changes in traditional agriculture occur sometimes, as in Central Anatolia, by introducing hoeing plants like sugar beets and potatoes, by cultivating fruit orchards and vegetable gardens along many river valleys or in plains, by establishing tea and tangerine orchards on the coast of the Black Sea, citrus and banana orchards and truck gardens on the Southern Coast. And in some cases, technical innovations like using new high quality seeds, irrigation, fertilizers, mechanization, disease and pest control bring about changes in traditional agriculture. For all these reasons, the former stagnancy and balance of the changing agricultural enterprises are becoming upset, each change encourages others, thus continuous movements towards improving agriculture, obtaining better crops and higher yields can be observed.

Modern commercial agricultural enterprises, almost entirely market-oriented, organized and operating along the lines of the principles of the monetary economy, are situated, for the most part, in Çukurova and Antalya in the South, along the river valleys lying towards the Aegean Sea in the West and on the plains in the south of the Marmara Sea. Modern agriculture in which the average and large size farms are leaders in general, have access to sufficient land and capital; by virtue of the low costs, attained through advanced techniques, new methods and inputs particularly mechanization, are able to maintain a better compe-

titive position over other enterprises and they have better access to marketing, credit and incentive programs. It is observed that this type of enterprises, although have achieved balance only recently compared with the yet changing enterprises, still pursue innovations and continue their development, albeit more slowly. In these agricultural enterprises where capital, entrepreneurship and technology increasingly diminish the importance of the land, yield and production increase, the income and living standards of the farmers rise. Although modern technology, which provides a better cooperation and balance with Nature, has decreased the dependence of agricultural production on the forces of Nature, on the other hand we find that the results of the agricultural activities are influenced increasingly by the market and conjuncture.

Dependence of agricultural production on Nature:

It is true that agricultural production still relies heavily on Nature, that the adverse, versatile and unreliable climatic conditions diminish to a large extent, human control of the production activities. This observation which is true for the most part for traditional agricultural enterprises and for the regions where a dry climate is dominant, makes the planning of agricultural efforts very difficult and even in some cases, impossible and meaningless; it excessively weakens the human control of the results of agricultural activities, hence a very inconsistent yield pattern emerges. Since the changes and innovations in the agricultural technology gives mankind a chance of more harmonious cooperation with Nature, the fluctuations in yield and production can be rendered less effective.

Dependence on Nature is born out of being unable to control the soil, the climate and the biological rhythm of plant and animal life. In addition to these, diseases and pests, especially when they are of epidemic scale, become natural forces against which the farmers are nearly helpless. As there is a high degree of dependence on Nature in developing economies and traditional agriculture, it is possible to determine the situation in Turkey by the fluctuations in the production indexes, in the rates of agricultural development and in the yields of various crops. It can be further established that the figures given in Table 1, covering the

TABLE: 1

Indexes of Agricultural Production and Income,
Ratios of Agricultural Development, and
Yield Fluctuations in Certain Crops
1950-1970

Years	Agricultural Production Index 1952-56=100	Agricultural Income Index 1948=100	Agricultural Development Ratios (%)	WHEAT Yield		Barley Yield	Corn Yield
				Turkey	Breeding Farms		
1950	–	97,0	24,0	864	980	1.076	1.058
51	–	117,1	20,7	1.169	1.075	1.301	1.364
52	100	124,7	6,9	1.194	1.222	1.379	1.304
53	107	136,5	9,5	1.248	1.435	1.494	1.224
54	87	109,6	-19,7	765	835	960	1.269
55	100	119,5	9,1	977	982	1.131	1.211
56	108	129,9	8,7	872	760	1.110	1.190
57	106	133,2	2,5	1.159	1.230	1.387	1.057
58	122	156,5	17,5	1.147	1.080	1.333	1.304
59	124	156,0	-0,3	1.042	610	1.200	1.428
60	125	157,8	1,2	1.097	870	1.304	1.568
61	127	152,8	-3,2	907	790	1.058	1.442
62	133	105,8	5,8	1.083	1.190	1.250	1.199
63	140	113,9	7,6	1.273	1.409	1.504	1.477
64	146	113,9	-	1.054	1.082	1.163	1.470
65	141	110,1	-3,3	1.076	1.280	1.191	1.454
66	157	122,7	11,4	1.208	1.310	1.402	1.527
67	160	123,8	0,9	1.250	1.610	1.394	1.556
68	167	126,1	1,9	1.154	1.260	1.304	1.527
69	166	126,0	-0,1	1.230	1.320	1.414	1.517
70	171	127,3	-2,0	1.163	1.290	1.255	1.605

Note: Yield figures are given in Kg/Hectare.

TABLE: 1 (continued)

Years	Sunflowers	Cotton	Sugar Beets	Potatoes	Tobacco
1950	600	264	16.781	8.002	727
51	999	234	26.831	7.906	730
52	893	244	22.260	8.559	674
53	956	230	22.243	9.542	740
54	862	244	16.844	9.174	645
55	896	251	17.814	10.238	693
56	607	259	16.926	10.000	662
57	616	216	15.331	10.084	735
58	688	285	16.689	10.744	734
59	880	312	20.990	10.135	731
60	897	282	21.680	8.750	734
61	822	326	22.073	9.558	721
62	738	371	21.719	10.876	601
63	925	410	24.376	11.428	560
64	1.031	479	25.198	11.724	711
65	1.000	474	21.689	11.586	596
66	917	536	28.885	11.667	576
67	1.070	551	35.122	11.733	637
68	958	611	37.266	12.196	596
69	1.086	626	32.702	12.331	466
70	1.041	759	34.342	12.355	419

Source: Agricultural production index is taken from FAO *Statistical Yearbook*; agricultural income index and development rates are from *5– Year Development Plans*; yields are from State Institute of Statistics publications.

entire country, show considerable variations from one region to another. The fluctuations are less violent in the crops grown in the coastal regions where weather conditions are more reliable.[1] Also, irrigation has favorable impacts on the fluctuations and can even sometimes eliminate them completely. Indeed, some crops like cotton, which are irrigated for the most part, show much less fluctuations. The application of new technologies such as utilization of fertilizers and machinery, good management, disease control etc. lower the level of yield fluctuations and the reliance of production on Nature. The limited work prove this decrease quite decisively according to scientific criteria. Indeed, a study of the State Planning Organization[2] shows that the rate of the fluctuation has decreased for 10 of the 13 crops included in the study, between the priod of 1955 – 1962 preceeding the planning, and the planned period, and a regularity has been brought to the production of these crops. In wheat, among the crops under study the fluctuation rate around the trend curve of the yield before the planned period was 9,5 %, whereas it has decreased to 6,2% during the planned period. In absolute figures, the fluctuation in the wheat yield was 115 Kg. /hectare and 85 Kg. /hec., respectively. The same figures are respectively 154 and 31 Kg. in corn, 282 and 229 Kg. in rice, 128 and 60 Kg. in sunflowers, 27 and 25 Kg. in cotton, 725 and 150 Kg. in potatoes, 476 and 208 Kg. in grapes. The fluctuation rate has also become lower for peaches and oranges. The findings of the studies made by Prof. Forker, the Economic Advisor of AID, also show that the fluctuations have diminished over time.[3]

Accordingly, technological advancement not only increases the yields, but also has, in addition, another benefit, which is no less important. This is diminishing the dependence of production on Nature, and by ensuring mankind's dominance upon natural forces and his better cooperation with the latter, bringing order and reliance to agricultural production. It is not necessary to further stress how much Turkish agriculture needs such order and reliance, it is so evident.

1 Olan D. Forker, *Agricultural Price Policy in Turkey*, p. 12.

2 Nazmi Demir, Arif Uğur and Orhan Saygıdeğer, *Bitkisel Üretim-Girdi İlişkileri Üzerinde Ekonomik Analizler* (Economic Analyses on the Plant Production - Input Relations) Ankara 1971.

3 Olan D. Forker, *ibid*, p. 12 a.

Contribution of the agriculture to the economic development:

The development and modernization of agriculture is rather involved in vegetal production; a general stagnance and attachment to the traditional methods are still prevalent in livestock breeding. The changes and advancements in the Turkish agriculture are still far from making this sector perform the important part that falls upon it in the overall economic development of the country. The striking vitality and high level of production of the Turkish agriculture during the early 1950's had led to the belief that this sector could be the motive power and leader of economic growth. But this promise did not materialize and it was realized that the stride in agriculture was not continuous and wellrooted but rather a quick-dying blaze which had come to happen through the combination of some measures taken in the fields of transportation, loans, subsidies, etc., with favorable weather conditions. The period of low agricultural ontput starting in 1954, turned the country for 10 years into an economy that was not self sustaining, but dependent on the foreign world for the most important food products such as wheat and vegetable oils. The shortcomings of the agricultural sector continued during the planned period. Although a quite modest rate of development (4, 2%) had been set and particularly in the First 5-year Plan agriculture was given second priority in the schedule of investments, the result achieved in agriculture was 25 % short of the targets in both planning periods, thus it was observed that agriculture could not keep up with economic development, and let alone achieving what was expected of it in contributing to development, in a sense it was rather a constraint on the economy. In fact, according to the calculations made on the stable prices of 1948, during the preplanning period, whereas net national product had increased at the rate of 90 % until 1961, the income increase achieved by agriculture was only 53 %. During the same period, of the sectors producing physical products, industry achieved a growth rate of 198 % and construction 314 %. On the other hand, the calculation made during the planned period on the stable prices of 1961 indicate that net national product grew by 177 % and agriculture by 127 % till 1970. The same figures for the industry and construction sectors were, respectively, 209 % and 199 %.

Among the various factors leading to this result, we can enumerate the facts that production is still dependent upon natural forces; the required reforms in agriculture have not been made; and the general economic measures that would support agricultural development have been neglected.

Diversity of production:

In Turkey which shows numerous variable climates and has different types of soil and topographical structures, agricultural production shows great variations. To such an extent that excepting some tropical crops like coffee, cocoa, rubber and jute, all kinds of agricultural products of good quality, from the sub-tropical crops such as tea, bananas and citrus fruits to every type of field and orchard crops of the temperate zone and cold plateaus to various animal products can be easily raised in Turkey. In the dry and semi-dry zones which cover two thirds of the country, the basic agricultural crop pattern consists of livestock breeding and grain production, occasionally combined with industrial and gardencrops. Various industrial raw materials and fodder, together with livestock breeding and truck gardens are raised in the coastal areas, deltas and valleys where the soil is richer and the climate is more temperate, and also better irrigation opportunities exist.

The majority of the agricultural production is sufficient, both in variety and quantity, in normal years, to satisfy the local demand. Turkey is an exporter of many crops. In recent years, three fourths, and in some years even a larger percentage of our total exports consists of agricultural products, ranging between 4 % and 16 % of the agricultural production, including some crops which enjoy a monopolistic position against competition, such as tobacco, hazelnuts, figs and raisins. However, the unreliability of the domestic and foreign markets, the substantial price fluctuations from year to year, sometimes during the same year or season, rather dampens the enthusiasm of the farmers to produce for the market, and forces them to act more cautiously and therefore to grow conventional crops that are although less profitable, can bear the risks of the market better. On the other hand, as mentioned above, the natural forces prevent a full adjustment of agricultural production to the needs and

demands; consequently from time to time, sometimes during the same year abundance and scarcity follow each other in various regions.

Agricultural structure in Turkey:

Turkey has some special characteristics in regard to the ownership of the land, distribution of the enterprise sizes and the forms of agricultural organization, which factors affect the total quantity, productivity and profitability of agricultural production. Small family enterprises have always been in majority. In time, the percentage of small enterprises increases, consequently the agricultural enterprises are divided and diminished infinitely. In fact, the number of the small enterprises, with less than 50 decares of land, before 1952, was 62,1 % of the total agricultural enterprises, and the land cultivated by them was 18,6 % of the total arable land. These percentages rose, respectively, to 68,8 % and 23,7 % in 1963; 75,0 % and 31,1 % in 1970. These figures show that, in time, the number of small agricultural enterprises increases while middle and large enterprises are continuously broken into smaller ones. However, during the same period, the average size of the small enterprises first declined and then expanded slightly. On the other hand, while in 1952 the percentage of large enterprises, commanding over 500 decares of land, was 1,5 % with the cultivated area 24,8 %, these percentages declined respectively to 0,5 % and 13,2 % in 1963; to 0,4 % and 6,0 % in 1970. These figures show that large enterprises are being divided rapidly, that while their numbers are decreasing, their average size is diminishing even at a faster rate; that while the number of the small enterprises is increasing, their average sizes first diminished and then in recent years there was a slight expansion in size.

Another important characteristics relating to the enterprises is that agricultural enterprises in many cases are not formed of a single unit, but consist of numerous and scattered fields and parcels of land. Thus, it becomes impossible to achieve a planned, economical and rational production in such divided and scattered enterprises; also irrigation, mechanization, disease and pest control activities are more difficult; therefore chiefly the land resource, followed by the human, animal and machine

energy and time, are wasted, unnecessary legal conflicts arise and consequently production is harmed. According to the statistics, in 1950 only one twentieth of all farmers owned a single farm unit, two fifths owned enterprises consisting of more than seven units and the average number of units per enterprise was seven. In time this situation has somewhat improved and while the percentage of single unit enterprises approached 10 % in 1963 and 22 % in 1970, the ratio of enterprises with more than six units of land during the same years was at first nearly 50 %, then fell to 20 %. In 1970 the average number of land units per enterprise was five. By these figures, it can be said that there has been an improvement, per se, in the situation of fragmentation of farms.

In Turkey most of the farmers own the land they till. The percentage of the farmers working of their own land rose from 72,6 % in 1950 to 87,3 % in 1963 and 83,5 in 1970. Although the percentage of the tenant farmers and sharecroppers and of the land they till are not very high, tenantry and sharecropping systems have unfavorable impacts on agricultural production, since the conditions of this type of operation are very primitive, unfair and unreliable.

On the other hand, land ownership, motivated by the objective of securing social and political prestige or accumulating wealth and protecting values against inflation, leads to "absentee" landlords, as a consequence of which, while agricultural incomes flow to the cities and towns and the land is neglected on one hand, the number of the land-hungry increases on the other hand. In a large part of the agricultural lands, almost in all of it, land registers and cadastral maps are either nonexistent or the records are wrong or incomplete, therefore property security in agriculture cannot be sufficiently established, legal conflicts ensue and various disadvantages concerning production, yield and investments arise.

The practice of joint ownership in pastureland encourages the livestock owners to take the highest advantage of the pastures, almost in a spirit of profiteering, without feeling any responsibility, without any obligations of maintenance, protection or improvement in exchange of the benefits obtained. This irregular exploitation also causes great injustice; peasant families who

have equal rights on the pastures in theory, take advantage of this resource in different degrees, proportional to the number of their stock. This irregular and unfair situation causes the pastures to be devastated and ruined completely under the burden of haphazard over-grazing, moreover it leads to their diminishing in area and being opened to farming.

Problems related to land use:

A significant and adverse development, related to the pastures and utilization of land in Turkey, is that the highly inclined lands which must remain as pastures for technical considerations, are opened, wrongly and under the pressure of the population, to cultivation and in several years these lands whose permanent plant cover is removed, are devastated by erosion and left aside as wasteland. According to the statistics, during the thirty years between 1938 and 1967, a decrease of 14,9 million hectares of pastureland has occurred; after substracting the 11,8 million hectares of increase in farming, garden and orchard areas during the same period, there is a balance of unaccounted for 3,1 million hectares. This almost corresponds to the increase in "unproductive lands" which are not good for any kind of production. Consequently, as a result of the wrong policy of land utilization, the pastures needed for livestock breeding are shortly appropriated for plant production, and after some time they become wastelands; thus a harmful as well as dangerous circumstance of throwing the most valuable resource to the "waste bin" arises.

Another question pertaining to the utilization of land is in connection with the fallow method, applied in a large part of the country. The percentage of the land laid fallow in the dry, and semi-dry regions to the total arable area rose from 31,8 % in 1948 to 35,8 % in 1970. This even can be explained on one hand by the increasing erosion and wasting of the land, and on the other hand, by the shifting of the farms towards the inclined marginal lands, less suitable for agriculture, which must be preserved as pastures. The percentage of fallow varies from one region to another; in the southern and eastern sections of Central Anatolia where the climate and land conditions are poorer, it is 42 % and in southeast Anatolia as high as 45 %, whereas it is around 17-20 % in the Marmara and Black Sea regions.

Composition of agricultural production:

As Table 2, based on the national income figures of the State Statistics Institute indicates, the composition of the agricultural production in Turkey depends largely on the plant crops. According to the average taken from the contribution of various production lines to national income in 1970, more than two thirds of the total production is vegetal, with livestock breeding comprising only 26,8 %. The plant production rate, which was lower formerly has increased steadily in time and the livestock breeding on the contrary has declined. Indeed whereas in 1938 the rate of plant production was 54,0 % and that of livestock breeding was 39,2 %, plant production increased in 1948 and 1958, respectively, to 57,6 % and 61,3 %, and during the same years livestock breeding declined respectively to 37,0 % and 33,6 %. This indicates that in the subsector of livestock breeding the production growth has remained far behind the development in plant production. In fact, the indexes prepared by OECD show that according to the basis of 1952/53 - 1956/57 = 100, the total agricultural production rose to 147 and livestock breeding to only 129 in 1963/64.[4]

TABLE: 2

Composition of Agricultural Production in Turkey (%)

1970

Subsectors and their divisions	Share in Total
I. Farming	98.0
A. Plant production	67.8
1) Field products	49.7
a) Grains	30.3
b) Pulses	1.6
c) Other	17.8
2) Garden-Orchard products	18.1
B. Animal Production	26.8
C. Agricultural Crafts	3.4
II. Forestry	1.3
III. Fishing - Hunting	0.7
Total	100.0

Source : State Statistics Institute, National Income Figures.

Within the total, the share of the other productions such as agricultural crafts, etc., outside the above mentioned two important branches of production are negligible and also

4 OECD, *Agricultural and Food Statistics*, 1952-1963, p. 9.

this share, in line with the economic development, shows a tendency to decline over the years.

It is possible to observe this situation and development in the composition of agricultural production, in the tables prepared by the Agricultural Bank, on the gross production values. Indeed, according to the said tables, whereas in 1952 plant products were responsible for 64,8 %of the farm production and animal products for 35,2 %, these percentages changed to, respectively, 70,3 % and 29,7 % in 1963, 68,7% and 31,3 % in 1970. These two evaluations, made by different organizations using different methods, come about essentially the same.

This production composition, first of all, by having a lower percentage of animal products, is contrary to the situation in the agriculturally advanced countries of the world. Secondly, since the share of the animal products declines in time, this change is again contrary to the pattern of change in many other countries. Indeed, taking the average of 1958-1963, the share of livestock breeding in agricultural production is 63 % in U.S.A., 75 % in Belgium, 77 % in Holland, 81 % in England, 88 % in Ireland and 90 % in Denmark.[5] Moreover, in these countries the share of livestock breeding in agricultural production has a rising trend. These percentages in the same countries during the early 1950 s were: 54 % in U.S.A., 60 % in Belgium, 62 % in Holland, 76 % in England, 84 % in Denmark. It is only in developing countries like India, Portugal, Yugoslavia, Greece and Spain that animal husbandry has a small share of the agricultural production as in Turkey. However, Turkey has the lowest share of livestock breeding among all OECD countries.

Since this country, in regard to her natural opportunities and resources, is convenient for both types of production, there is no natural restraint or necessity for a low share of livestock-breeding or for its further decline over the years. However, although the animal products, which are produced in two phases, have higher nutritional and market value, their production is more difficult, costly and time consuming. Moreover, this branch of production requires the capacity of the land resource to feed and shelter humans to be lower than many types of plant pro-

5 OECD, *ibid*, p 14

duction, and consequently, a more extensive and wasteful utilization of it. While developed and wealthy nations are progressively consuming more animal products, the developing countries cannot share the same tendency, and animal products are considered among luxury items in a sense; consequently, developing countries are obliged, per force, to give priority to the conventional plant crops which grow more easily and quickly, use the land resource more intensively and are, at the same time, cheaper. Another factor enhancing this tendency is the fact that technological advancements that make revolutions in agricultural production occur more frequently in the field of plant production. However, in order to satisfy the growing demand for animal products, which courses parallel to the economic development, and also for export purposes, the Turkish agriculture should set up an objective of increasing animal production.

Vegetal production:

In plant production, field crops have a higher share than fruits and vegetables. In 1970 whereas the total field lands consisted of 30,9 % of Turkey's total area, the share of truck gardens and fruit orchards was 3,8 %. In regard to the utilization of the land resource, the comparative shares of these two types of plant production have undergone quite significant changes over time. Indeed, the percentages were, respectively, 17,3 % and 1,7 % in 1938, 17,9 % and 1,9 % in 1948,29,3 % and 2,5 % in 1958. According to these figures, although the area of both types of production expanded over time, the fruit-vegetable production, especially in recent years, grew more rapidly. So that, in a comparison, taking the acreage in 1951 as 100, while farming area expanded to the index numbers of 152 in 1960 and 159 in 1970, the fruit-vegetable area expanded during the same years to 130 and 194. In other words, over the past twenty years the farming area expanded 59 % while the expansion in the fruit-vegetable area was 94 %. Another noteworthy and happy fact is that while almost all the expansion in farm lands occurred during the first ten years of the period in question and then remained constant, the expansion in the fruit-vegetable area gained velocity during the last ten years.

A comparison between the production values indicates that the development in fruits and vegetables in this respect is more significant than the acreage figure. The reasons for this can be easily understood if consideration is given to the fact that especially fruits have higher monetary value than most of the farm products. In fact, in 1952 field products' share within the total agricultural products was 55 %, fruits and vegetables 30,8 %, whereas these percentages were, respectively, 57,9 % and 12,4% in 1963, 47,3 % and 21,4 % in 1970. Accordingly, while the share of the field products within the agricultural production, in terms of monetary value, had a fluctuating and declining trend for the past 19 years, the share of the garden produce grew steadily and rapidly. In other words, during this period when the share of the garden produce was initially one tenth of the total agricultural production, it doubled in value and increased to over one fifth.

The seeded area in the field farming sector in 1970, except for the fallow lands, consisted of 84,9 % of grains (wheat alone having a share of 55,2 %), 3,4 % of pulses, 6,5 % of industrial plants, 6,5 % of oil seeds[6], and 1,5% of root plants. As these figures indicate, in respect to the utilization of the land resources, grains, especially wheat, comprise the most important production branch of farming in Turkey. In 1951 grain areas comprised 83,1% (wheat 45,2 %), pulses 4,1 %, industrial plants 8,5 %, oil seeds 8,5 % and root plants 1,3 %. According to this, for the past twenty years there has been a small increase in the acreage under grains and roots, and a decline in the others. Among the industrial crops, while the area under cotton diminished almost by one half, the area under tobacco and sugar beets was almost doubled. During the same period the increase in wheat was over 20 % and its supremacy among field products is progressively growing.

Animal production:

An altogether different picture appears when we study the composition of the values. Indeed, in 1970 the share in the agricultural production was 26,3 % for grains (17,0 % for wheat), 16,7 % for the industrial crops and 1,8 % for pulses. According

6 Cotton, poppy, linen and hemp areas are included in both groups.

to these percentages, grain production did not have as high percentage in value as in acreage, on the contrary, its value declined sharply during this period when the acreage expanded. It is an interesting fact that, especially in the case of wheat, which is the most important basic crop of the Turkish agriculture, while the planting area expanded by over 20 %, the production value declined over 20 %. On the other hand, the industrial plants group which include generally valuable crops, had a share of nearly one fifth the total agricultural production value last year, and while their planting area diminished by half, their production value increased. This is a very fortunate situation, showing that the productivity and profitability of the industrial crops are rising. The pulse plants have a negligible share of the production value and also they seem to be in a standstill.

The source of the animal production, livestock, consisted in 1970 of 73 million heads of cattle, sheep and goats and 34,3 million heads of poultry. Half of the livestock population whose numbers amounted to twice the human population, were sheep (36,5 million). The percentage of goats was slightly over 20 % and that of the cattle was a little less than one fifth. Cattle, sheep and goats amounted to a total of 60,2 million heads and poultry to 21,6 million in 1951. Accordingly, in addition to the numbers slaughtered or died every year, the increase in 20 years was 21 % in cattle, sheep and goats, and 59 % in poultry. However, the increase in various stock was in different percentages (47 % in sheep, 25 % in cattle and — 10 % in goats).

Within the animal production, which comprised 31,3 % of the total agricultural production value in 1970, the share of meat was 15,4%, of milk 12,8 % , of wool and fleece 1,2 % and of the other products 1,9 %. In 1952 while the share of the animal products within total production was 35,2 %, milk had the chief place with 17,6 % followed by meat with 14,3 %,wool and fleece with 2,0 % and other products with 1,3 %. These figures indicate that the composition of animal production changed in time in favor of meat and other products and adversely for milk, fleece and wool. Beef at all times did not have more than one third share among the other types of flesh.

Structure of production by geographical regions:

After having analysed the composition of agricultural production on a countrywide basis, it should be fitting to point out the characteristics of this composition as manifested in various regions. For this purpose, I am first going to divide Turkey, for practical considerations, into three regions, namely the coastal areas, Central Anatolia and East Anatolia; then I am going to figure out and compare against each other the production percentages of some important crops, selected to represent various branches of production, in the above mentioned regions. As we know, in reality the agricultural regions are more numerous and bringing them down to only three groups is disadvantageous both in regard to homogenity and size. Also disadvantageous to study only a dozen representatives of the hundreds of products. However, we have to suffice with this in the face of the impossibility of making this comparison in finer details.

As Table 3 indicates, some crops are concentrated in certain areas and some others can be raised in any part of the country. The regional concentration of the ubiquitous crops is not identi-

TABLE: 3

Regional Distribution of Agricultural Production in Turkey
1968

	Coastal Regions	Central Anatolia	East Anatolia
A. Plants:			
Wheat	34.3	54.2	11.5
Barley	29.2	55.5	15.3
Pulses	45.0	38.4	16.6
Tobacco	88.5	8.3	3.2
Sugar Beets	31.9	63.2	4.9
Cotton	95.1	2.1	2.8
Hazel nuts	95.7	3.0	1.3
Grapes	52.8	34.1	13.1
Citrus	100.0	—	—
Olives	98.7	—	1.3
Total	54.0	36.9	9.1
B. Livestock:	29.2	42.4	18.4
Sheep			
Goats	48.8	26.8	24.4
Cattle	41.8	33.7	24.6
Milk	43.9	28.9	17.2
Meat	60.0	27.1	12.9
Total	44.0	35.2	20.8
C. Plants + Livestock	50.0	36.4	13.6

Source: Reşat Aktan, *The Economy of Turkey*, Ankara 1972, p. 224.

cal. Thus the characteristics and difference of the regions appear. While one half of the agricultural production is concentrated on the coasts, Central Anatolia produces a little over one third and East Anatolia is behind the two other areas. While Central Anatolia has the same percentage in plant and animal production, the share of the plant production is higher on the coasts compared with higher animal production in East Anatolia. Grain, pulses, vineyards and livestock breeding are ubiquitous while citrus fruits, olives, tobacco, cotton, sugar beets and hazelnuts are entirely or for the most part concentrated in certain areas.

The pattern of regional agricultural production also emerges from Table 3. In truth, production is highly diversified on the coasts; all kinds of plant and animal crops can be raised easily and abundantly. Although the coasts are specialized in garden cultures and industrial crops, they also have a significant position in other farm products and livestock breeding; in none of the crops the ratio is much lower than one third. Agriculture in Central Anatolia is specialized in grains, livestock and sugar beets. This region is also a substantial grower of pulses and fruits are almost nonexistent here. East Anatolia is backward in all kinds of production and particularly poor in industrial plants and fruits. Even in livestock breeding, in which this region is relatively advanced, its share is barely one fifth of the total in Turkey.

Changes in crop pattern:

In this country where the land resource is limited and labor relatively abundant, encouraging the labor-intensive branches of agricultural production is both necessary and useful. Among such production we can mention chiefly the garden cultures, followed by industrial row crops and livestock breeding in stables. Since all these branches produce products with high market values, they will make a large contribution to individual and national income. The extensive coasts and some valleys and plains are very suitable for garden cultures in respect to natural conditions, especially the climate. The high quality of certain garden crops, early and late offseason crops and some others, harvesting more than one crop annually in some regions clearly show what a great potential Turkish agriculture has in this culture and that the future is in this field.

The above explanations are aimed to show that the present production pattern is developing in this direction to some extent, that commercial agricultural production and various intensive cultures are concentrated in the coastal regions. Hovever, there are some adverse developments too; e.g., the shifting of wheat and tobacco areas to the alluvial plains of the said regions. The agricultural policy in Turkey must encourage the branches of agriculture which enhance the opportunities of employment, utilize natural conditions in the optimum manner and produce crops of high value in order to further develop agriculture in the coastal regions and valleys in general; it must endeavor to stop, even turn back the adverse tendencies developing for various reasons. Grains, pulse plants, potatoes, etc, which are the basic foods of the public, and livestock breeding in the pastures must be concentrated in other parts of the country.

It is not easy to change the production pattern in agriculture. The need for food, which increases under the pressure of the farm families and the general population, the perpetual division and diminishing in size of the enterprises, and the unstability and other disadvantages of the tenancy and sharecropping conditions, scarcity of capital and credit, the shortcomings of the marketing system, the difficulties in making and implementing agricultural plans, and as a consequence of all these factors, the little flexibility of the supply of agricultural products, are important problems of agriculture that need be given priority. While making a land reform on one hand to improve the ownership and usage of the land, the basic agricultural production patterns can be changed in the desired direction on the other hand, by increasing all kinds of public assistance and incentives and by putting a larger amount of various modern agricultural inputs in the coastal regions and valleys.

III. THE PROBLEM OF PRODUCTIVITY

The concept of productivity is used as a yardstick of the effectiveness of economic activities. Agricultural productivity can be figured out separately for each of the production factors as land, labor, capital, etc., or it can be figured out for the total agricultural inputs. The most practical measure, especially for

less developed countries, is productivity per land unit and per capita working population. Unfortunately adequate and decisive productivity figures for the Turkish agriculture are not available. Therefore, we have to suffice in this paper with some rough estimates and imprecise calculations.

Level of agricultural productivity:

It would be useful in establishing the situation of Turkey, to find the productivity level per unit area and per person employed in agriculture and to compare this level with that of other countries. A calculation prepared by UN Food and Agriculture Organization (FAO) which covers the years 1962 - 1966 can be used for this purpose[7]. This calculation first gives comperable gross agricultural product per hectare of agricultural land for 52 countries. According to this, when the average of the gross agricultural products of the 52 countries is accepted as 100, Taiwan with a value of 1160 and Egypt with 1140 are at the head of the table, followed by Holland with 950, Belgium with 900, Japan with 780. On this list where Denmark is situated with 650, West Germany with 575 and Greece with 175, Turkey comes 36 th from the top and takes on the value of 90. According to these figures, productivity per land unit in our country is a little below the world average, and 2/3 of the countries show higher levels than Turkey. Among the 15 countries coming after us, there are Mainland China (60), Syria (60), Mexico (50), Tunisia (40), Australia (15) and at the very bottom, Ethiopia (10).

In the second section of the calculations of the FAO, the value of gross agricultural product per male population is given comperatively for 29 countries. When the average of the 29 countries is accepted as 100, at the top of the list comes New Zeland with a value of 775, Australia with 660, and the USA with 520, followed by Canada (360), Belgium (220), England (210), Denmark (190). On this list, Turkey is 24 th from top with productivity per person around 25. On this list where Italy (50) and Greece (35) are much below the average as well, Japan (20), Portugal (15), Korea (5) are among the 5 countries below our country. According to these figures, the situation of Tur-

7 FAO, *The State of Food and Agriculture 1968*, s. 78.

key with respect to productivity per person is much behind the world countries.

An estimate of the United Nations Food and Agriculture Organization, made some time ago, given in Table 4, has been completed by adding the figures for the Turkish agriculture, reached by applying the same method, and also the figures for a more recent year. Plant production is represented here by eight items of farm crops which provide over 84 % of the food requirement of the world population. These crops have been converted to the wheat unit by using certain coefficients on the basis of their caloric values.[8] Animal products are represented by the numbers of cattle, sheep and pigs, converted into the standard livestock unit by using certain coefficients.[9]

As the Table indicates, the per hectare plant productivity in Turkey in 1965 was very near one ton. This level was lower than the average of all continents including Africa, and consequently of the world. Per hectare productivity was more than twice of Turkey's in Europe and North America, 40 % higher in Asia and 15 % higher in Africa. The situation in the past years was nearly similar. The only difference was that the level in Turkey was slightly higher than in Africa. During the first 12 years of the period under study, there was no improvemet in Turkey's productivity, only a 15 % in the last 17 years; that is to say, nearly 1 % per annum recorded. All other regions made substantial improvement during the entire period. However, the progress was steady in some regions and sporadic in some others.

In 1965 per capita plant production in Turkey was twice that of Asia and four times of Africa, but lower than the average of the world and of the other continents. Over the time, at first there was no change in the plant production of per capita agricultural population, but in 17 years there was an increase of approximately 20 %. The world average did not change at all during the first part of the period under study either, but it increased nearly twofold during the second part. Production per capita agricultural population increased more or less in all the continents, steadily in some and sporadic in some others.

8 These crops and their coefficients are as follows: wheat 100, barley 64,8,rye 98.8, oats 58,4, corn 106,3, rice 82,9, sugar 105,4, potatoes 21.

9 The coefficients are 0,8 for cattle, 0,1 for sheep and 0,1 for pigs.

TABLE: 4

AGRICULTURAL PRODUCTIVITY in TURKEY and WORLD 1936, 1947/48 and 1965

	Plant Produce Per Hectare (Tons)			Plant Produce per capita Agricultural Population (Tons)			Standard Livestock Unit		
	1936	1947/48	1965	1936	1947/48	1965	1936	1947/48	1965
WORLD	1.24	1.30	1.63	0.42	0.42	0.78	0.51	0.48	0.58
NORTH and CENTRAL AMERICA	1.07	1.50	2.32	1.80	2.57	3.84	1.58	1.63	2.56
SOUTH AMERICA	1.28	1.39	1.69	0.58	0.48	0.72	1.94	1.87	2.38
EUROPE	1.51	1.34	2.25	1.04	0.88	1.86	0.82	0.70	1.22
OCEANIA	1.06	1.20	1.52	1.94	2.38	4.97	8.04	7.92	16.00
ASIA	1.26	1.20	1.38	0.24	0.22	0.28	0.25	0.23	0.35
AFRICA	0.77	0.73	1.10	0.12	0.12	0.14	0.51	0.54	0.59
TURKEY	0.83	0.83	0.96	0.50	0.51	0.60	0.81	0.84	0.59

Source: FAO, *Monthly Bulletin of Food and Agricultural Statistics*, vol. 2, No. 9; FAO, *Statistical Yearbook 1965;* figures for Turkey are the author's calculations.

The number of the standard livestock unit per capita agricultural population in 1965 (0.59) was the same as the world average, and the level in Africa, slightly higher than in Asia, but lower than in all other regions. Over the time, while the level in Turkey at first remained costant and then declined at the rate of 30 %, the average of the other continents and the world rose. This is another indication of the decline of livestock breeding in Turkey.

Agricultural output:

According to a study of the U.S. Department of Agriculture, the value of the per hectare agricultural output in Turkey was 127 dollars in 1960.[10] Among the 22 countries under study, the highest output was in Japan with $ 961 /H, and the lowest was in Tanganyica with $ 39 /H. While the output of India and Mexico were lower than that in Turkey with 91 and 110 dollars respectively, Pakistan with 133, Yugoslavia with 141, Spain with 150, Greece with 205, Israel with 557 and Egypt with 643 dollars were in a better position. Only seven of the 22 countries realized a per hectare output lower than that in Turkey.

The same study shows that in 1960 the agricultural output in Turkey was $ 326 per capita of agricultural population.[11] Among the 19 countries under study, the highest per capita output was in Israel ($ 1825) and the lowest in Thailand ($ 94). In seven countries the per capita output was lower than that in Turkey, with India 114, Pakistan 182, Yugoslavia 250 dollars. On the other hand, Egypt realized 365, Mexico 369, Greece 391, Spain 656 dollars and were consequently in a better position than Turkey.

The same report gives, in addition to the level of per capita agricultural production or output in a given year, also the changes occurring in these values in time. According to the findings of the report, during the 1948-1963 period plant yield in Turkey increased 4,5 % annually; subtracting from this the annual population growth of 2,9 % during the period, the increase of per capita agricultural output remains around

10 USDA, *Changes in Agriculture in 26 Developing Nations, 1948 to 1963*, Washington 1965, p. 89.

11 *Ibid.*

1,6 % annually.[12] The 4,5 % annual increase is higher than that in 17 of the 26 countries in the list, including Greece, India, Pakistan, Egypt, Spain and even Japan. So this means that agricultural production in Turkey has achieved a rapid increase during the same period. However, as a result of the rapid population growth during the period, per capita production increase remained at a quite low level. On the other hand, since in Greece, although the production increase was merely 3,7 %, the population growth also remained at 1 %, and consequently the per capita production increase in the country came to a higher level than that in Turkey.

Since the production increase did not follow the same trend throughout the period, the per capita production of 3,1 % realized during the first half, declined to 0,2 % during the second half. This is an indication that agriculture could maintain the same level of achievement throughout the period, the increasing bottlenecks and problems during the second half curbed the velocity of production to a considerable degree. This is a dangerous trend for the agriculture of the country.

Later, the findings of another study by the same organization covering the 1950-1968 period, gives the average annual increase of the total agricultural production in Turkey as 3,4 % and that of plant production as 2,2 %[13]. Calculating the per capita production on these more recent figures which appear more realistic and confirm our figures and observations more closely, we find 0,7 % for total production and -0,6 % for plant production. In most of the countries included in the study, the per capita agricultural output grew at a faster rate than the population and in only 13 countries production failed to catch up with the population boost. In 22 of the 58 countries, the increase in per capita output was over 1 %. Considering that in Turkey the agricultural population increased slightly faster than the total population, the ratios of output per capita rural population declined even further.

A safer way to determine the success of the agricultural sector is to compare the growth of annual production with the increase of the demand for agricultural and food products.

12 USDA, *ibid.*, p. 6.

13 USDA, *Economic Progress of Agriculture in Developing Nations, 1950-1968*, Washington 1970, pp. 11, 16.

In the first of the above mentioned USDA studies, the average annual increase of food demand in Turkey for 1950-1960 was calculated as 4, 5 %[14]. Accordingly, the increases in plant production and demand during the 1948- 1963 period balance each other and the remaining value is zero. Since the rate of the production increase over the time was variable, while there was a surplus (6,0 - 4,5 = 1,5 %) during the first half, the result of the second half was a deficit (3,1-4,5 = -1,4 %).

In the second study, the rate of production increase as well as the rate of demand increase had different values from the first study. In this study, since the real income increase was taken as 2,9 %, the coefficient of income elasticity as 0,5 % and the population growth as 2,7 % for the 1950-1968 period, the internal demand for agricultural products in Turkey was calculated to grow 3,7 % per year averagely. [15] Consequently, Turkey apparently had a deficit of -0,3 % in agricultural production throughout the period.

Both studies indicate that Turkish agriculture has not been successful for the past twenty years, that it has been difficult to satisfy the internal demand and that this is a threat to the economy of the country. Consequently, it becomes clear once again that the economic policy much pay closer attention to agriculture and measures to increase productivity and production must be taken without loss of time.

Yields in vegetal production:

A study of the USDA, analysing the changes in the yield of plant production during the 1948-1963 period in 22 countries, finds the rate to be 16,7 % for Turkey.[16] According to this appraisal, during the 15-year period a yield increase of slightly over 1 % was achieved in plant production in Turkey. During the same years, the highest rate of yield increase was recorded in Israel

14 USDA, *Changes in Agriculture in 26 Developing Nations, 1948 to 1963*, Washington 1965, p. 4.

15 The population growth is taken as 2,6 %, per capita real income increase as 3,2 % and the coefficient of income elasticity as 0, 5%, USDA *Economic Progress of Agriculture in Developing Nations, 1950-1968*, Washington 1970, p. 14.

16 USDA, *Changes in Agriculture in 26 Developing Nations 1948 to 1963*. Washington 1965, p. 21.

with 120, 4 % and the lowest in Brasil with 5,9 %. Among other countries, while Iran with 12,5 %, India with 11,5 % and Pakistan with 8,5 % of yield increase were behind Turkey, Egypt with 20,1 %, Spain with 31,0 %, Yugoslavia with 33,2 %, Greece with 39,3 % and Sudan with 50,8 % achieved much better results.

A later study of the same organization, covering the 1950-1967 period[17] establishes the average annual rate of increase in plant production to be 2,2 % in Turkey;[18] after subtracting from the latter the 1,5 % of average annual expansion of the planting area, the per hectare production increase is found to be 0,7 %.

This result, in which the figures confirm each other and are not contrary to other countries, is higher only than those of nine countries among the 54 under study. And these are Libya, Morocco, Tunisia, Irak and Panama who are very poor in natural resources and Brasil, Jamaica and Burma who have excessive population pressures and other important socio-economic problems. This percentage is 3,8 % in Greece, 4,3 % in Bulgaria, 5,0 % in Yugoslavia, 2,5 % in Mexico, 2,3 % in Egypt, 1,7 % in Spain and 1,5 % in India and Pakistan.

As can be observed in Table 5, during the past 25 years, the yield declined only in one (tobacco) of five significant farm

TABLE: 5

Indexes of Yield Increase of Some Farm Products in Turkey
1946-1970

Crops	1946–50	1951–55	1956–60	1961–65	1966–70
Wheat	100	123	123	125	139
Barley	100	131	133	129	142
Tobacco	100	91	93	81	70
Cotton	100	95	106	162	242
Sugar Beets	100	130	118	146	213

Source: State Institute of Statistics, *Agricultural Structure and Production*, various years.

17 USDA *Economic Progress of Agriculture in Developing Nations, 1950 to 1968*, Washington 1968, p. 16.

18 The fact that this study finds the average annual increase of plant production to be half the percentage of that in the first study, shows that, notwithstanding the differences in time, content and method of appraisal, the trend of production bottleneck appearing in the first study has worsened in time and therefore has lowered the average.

products, and it increased in the others. Among the increasing yields, the rate was lowest (around 40 %) in wheat and barley and the highest in cotton (142 %); sugar beet yield also rose at a high rate. The yield change was continuous and steady only in wheat, all the others fluctuated. The changes realized during the 25-year period followed different courses for each crop; in barley and sugar beets the first change and in cotton the third change amounted to significant rates. But almost in all five crops the most recent change rates were the highest. The pattern in yield changes can be explained as follows: During the early 1950's the economic policy attached great importance to agriculture. The first three years of the same period, when weather conditions were optimum, were the most productive years. Although 1954 was a very bad year, it did not lower the five-year average. The important changes in the last ten years must be due, I think, the results of technological advancements in agriculture, especially to the use of fertilizers, irrigation and chemicals.

Although Table 5 and Table 6 compare almost the same periods the fact that the wheat yield increase given in the first is almost double of the second is because different years were taken as the basis for the indexes. As the period of 1948-1952, taken as basis in Table 6 consisted of, in general, years of rich crops, the average yield was calculated to be 1000 Kg./H. Whereas, the basis period of 1946-1950 in Table 5 included both good and bad harvest years and consequently the 5-year average reached only 863 Kg/H.

Wheat yields:

At the top of Table 6, four countries are listed whose yields grew twofold or more (annual average over 5 %) between the two periods. We can see that the yield in these countries during the 1948-52 period was low, in absolute terms for Mexico and Israel, and relatively, considering the natural and economic conditions, in Bulgaria and Yugoslavia. Also these countries attached special importance to agricultural development and made great efforts and investments for this objective.

The average annual yield increase in the seven countries in the second group varies between 2,5-4,5 %. Among these count-

ries, India, USSR, Greece and USA started at both absolutely and relatively low yield levels and the other three countries at quite high levels. In some of the countries in this group , extensive efforts were spent to achieve agricultural development and in others the agricultural sector maintained its development parallel to the overall development.

TABLE: 6

Wheat Yields in Various Countries (Kg /H)
1948-52 and 1966-70 Averages

Countries	1948–52	1966–70	Increase %
Group I:			
Mexico	880	2680	205
Israel	660	1600	142
Bulgaria	1240	2750	122
Yugoslavia	1190	2350	97
Group II:			
France	1830	3430	87
USA	1120	1920	71
Greece	1020	1690	66
USSR	840	1326	58
India	600	1040	58
Italy	1520	2290	51
W. Germany	2620	3880	48
Group III:			
Denmark	3630	4420	22
Holland	3660	4410	20
Turkey	1000	1200	20
Group IV:			
Australia	1120	1200	7
Argentine	1150	1200	4
Iran	900	910	1
World	990	1430	44

Source: FAO, *Statistical Yearbook*, various years.

In the three countries in the third group , the average yield increase was around 1 % per annum. Two of these belonged to West Europe and had attained the highest yield in the world right from the outstart. The yield in Turkey, the third country in this group was, at the beginning, very close to the world average and quite low. The yield increase in Turkey was lower than the average world increase and also the level at the end of the period was 16 % less than the world average.

Mexico, Israel, Greece, USSR and India, where the yield level at the start of the period was equal to or less than that in Turkey, increased their wheat yield 2-10 times the rate in Turkey. Consequently, it is apparent that Turkey remained backward in regard

to wheat production and was unable to increase the productivity sufficiently.

The last group in the Table comprises three countries where wheat yield increased negligibly or remained constant. The yields which were anyway low in these countries underwent little change, and at the same time, contrary to all the other countries, there were fluctuations in the yield. (The 1961-1965 yields not given in the Table are 1220 Kg. /H in Australia, 1530 Kg. /H in Argentine and 800 Kg. /H in Iran.) The fluctuations in these countries must be due mainly to the excessively versatile weather conditions although the figures were the averages of five years, and the application of dry farming methods.

At the beginning of the period under study, the wheat yield in Turkey was almost at the same level as the world average; there were only five countries with lower yield than Turkey's. During the period the world average rose to twice that in Turkey and thus at the 18 years wheat yield in Turkey declined to 16 % below the world average. The level in Turkey remained lower than those of all other countries, except for Iran and India. However, since the rate of yield increase in India is nearly three times that of Turkey, it is very probable that wheat yield in India will catch up and even surpass that of Turkey.

Cotton yields:

Table 7 gives a comparison of the cotton yields in Turkey with the yields of various countries. The cotton yield average of Turkey for the last five years (592 Kg. /H) was more than

TABLE: 7

Cotton Yields in Various Countries (Kg/H)
1948-52 and 1966-70 Averages

Countries	1948–52	1966–70	Increase %
Turkey	250	592	137
Mexico	330	710	115
Iran	200	404	102
USSR	480	824	72
USA	320	520	63
Pakistan	200	295	48
Egypt	520	690	33
India	90	118	31
World	220	258	17

Source: FAO, *Statistical Yearbook*, various years.

twice the world average. The highest yield average during the same period was in USSR. She is followed by Mexico and Egypt with slightly lower rates. The cotton yields of all the other countries are less than that in Turkey.

The Table shows that during the 18-year period the highest yield increase occurred in Turkey. This was at the rate of two times the increase in USA and exactly eight times the world average. The next highest rates of yield increase in cotton after Turkey occurred in Mexico, Iran and USSR.

Initially the cotton yield in Turkey was 250 Kg/H, slightly above the world average. At the time the yield in Egypt was above two times and in USSR nearly two times the yield in Turkey. It is noteworthy that USSR, starting at an already high level, achieved a considerable increase and held the world record in yield. The fact that Turkey started at a relatively low level must be one of the reasons of her achieving the highest yield increase among the countries in the Table. However, India, Pakistan and Iran, who started at even lower levels did not have the same success.

According to this Table, Turkey is one of the countries who has attained the most successful results in raising cotton.

Sugar beet yields:

Table 8 compares the sugar beet yields of various countries with the levels in Turkey. It indicates that in recent years the average yield in Turkey is a little above the world average and nearly 50% above the yield in USSR. However, the level in Turkey is below those of all the other countries. The highest yields in sugar beets are achieved in West Germany, France and Israel.

TABLE: 8
Sugar Beet Yields in Various Countries (Kg/H)
1948-52 and 1966-70 Averages

Countries	1948–52	1966–70	Increase %
Israel	216	421	95
USSR	134	217	62
Turkey	193	311	61
France	279	431	57
W. Germany	330	440	33
Italy	279	366	31
USA	329	292	19
World	213	284	34

Source: FAO, *Statistical Yearbook*, various years.

The yields all over the world recorded significant increases during the last 18 years. The highest rate of increase was in Israel (95%) and the lowest was in USA (19%). Turkey achieved an increase of nearly double the world average.

At the beginning of the period the yield in Turkey was lower than the world average and of the levels of all the other countries, except USSR.

According to this Table, Turkey is among the countries who have achieved significant growth in raising sugar beets.

Yields in animal production:

In order to have an idea on the yield level of livestock breeding in Turkey, we can study the yields of meat, milk and fleece. Since domestic and foreign statistics do not give the meat yields of the butchered stock, we are going to find this figure by dividing the total quantity of meat obtained at the municipal abattoirs during certain years, by the number of the beasts slaughtered during the same year. Thus the figures will give us a correct indication of the meat yields of the stock slaughtered in the city and town abattoirs. However, in case the stock slaughtered in villages and other places outside the abattoirs are of different quality, the figure we obtain may not correctly represent the average meat yield in Turkey.

The 1970 yields for the four main types of flesh are 17 Kg. for mutton, 8 Kg. for lamb, 85 Kg. for beef and 31 Kg. for veal. Let us now first compare these figures with the yield of some other countries, (three of them our Mediterranean neighbors and four agriculturally advanced countries of the world.) Then let us make a comparative analysis of the change in yield over the time. The meat yield figures for the other countries have been taken from the FAO statistics, showing the average net carcass weights of five years. The yield of mutton in 1968-1969 was 14 Kg. in Greece, 15 Kg. in Yugoslavia, 16 Kg. in Spain consequently the yield in Turkey was slightly higher. On the other hand, the same values in England, Germany, Holland and the USA varied between 20-26 Kg. Also, during the 1951-1970 period, there was no increase in the mutton yield in Turkey, except for a slight fluctuation. The yield increased in some of

the other countries under comparison, decreased in some others, and in some it remained constant.

Lamb is consumed, among the countries under comparison, only in Greece, Spain and Yugoslavia. The yields in those countries are almost similar to Turkey's. The lamb yield in Turkey and in the other Mediterranean countries increased very slowly over the time.

Turkey is well behind all the other countries in regard to the beef yield. To such an extent that in Greece and Yugoslavia the beef carcass weights are double and in Spain nearly three times that of Turkey. The yields in the four developed countries are easily over three times that of Turkey. In England and Holland, in addition to fluctuations, there was a tendency towards a slight decline. And in the remaining five countries yields increased steadily, as much as 75 % in 18 years as in the case of Greece.

In regard to veal, the yield level in Turkey surpasses only England's (23 Kg.)and is behind all the others. The veal yield in Turkey is less than one third of Holland's, and less than one fourth of the yield in Greece and Yugoslavia. While the veal yields in Turkey and England remained constant throughout the period of study, there were significant increases in all the other countries, at the rate of onefold in Spain and Germany and over threefolds in Greece.

Cow's milk was taken to represent the milk yields; the averages of the 1948-1952 and 1961 -1966 periods and the 1969 yields in Turkey and the other countries were compared. According to the findings, the yield of cow's milk in Turkey was 597 Kg. This figure was a little over half of the yield in Greece and less than half of those in Yugoslavia and Spain. In two of the four advanced countries, the milk yield was nearly 4000 Kg. and in the two others, more.

The milk yield in Turkey over the period fluctuated slightly and increased very little (14 % in 18 years). In the other countries, the increase was steady and at much higher rates. (Around 30 % in Greece and Yogoslavia).

Comparing the fleece yields of the same countries during the same period, we find that in 1970 it was 1,33 Kg. in Turkey

and while this figure was equal to the yield in Yugoslavia and a little over that in Greece, it was far below the yields in other countries. The highest fleece yields were in Germany (3, 92 Kg.) and in U.S.A. (4,24 Kg.).

The fleece yield in Turkey remained almost constant throughout the period under study and even declined slightly. The same is true for all the other countries except Spain. It increased steadily as much as 30 % during this period in Spain.

Agricultural income:

In 1970 the total income in the agricultural sector in Turkey (forestry and fishing included) was 38,3 billion T. L. in current prices (24,3in the constant prices of 1961.) This income represented 30,8 % of the current national income of the same year. Since in 1927, when the first national income estimate was made, the share of agriculture was 67,0 % this means that it has declined by more than half during 43 years. However, the decline of the share of agriculture was not steady, but sporadic. Indeed, this share declined to 47,4 % in 1938, then suddenly jumped to 53,2 % in 1948 and fell back to 47,7 % in 1958. However, for the last ten years fluctuations were lighter and the decline was more rapid and steady.

The agricultural income per capita agricultural population is not known for certain. Very little information is available especially about the differences between various branches of production and agricultural regions. The average per capita income, arrived at by dividing the total agricultural income in 1965 by the agricultural population was 2,216 TL. This figure was less than half the average per capita income in Turkey and less than one fourth the per capita income in the industrial sector during the same year. The result of a similar comparison in 1955 showed that per capita income in agriculture was over one half of Turkey's average, but below one fourth of the income in industry.

The first scientific work on agricultural incomes was Eva Hirsch's studies covering 1951 to 1953.[19] These estimates based on the land ownership and utilization situation and the

19 Eva Hirsch, *Poverty and Plenty on the Turkish Farm*, New York 1970.

quantities of agricultural production, indicate the level of annual agricultural income per farm family during the said period also the income distribution. Accordingly, the average icome of the 10% of the farmers earning the lowest income was 278 TL. while of the 10 % earning the highest income was 8,926 TL and the average for Turkey was 4,367 TL. The 10 % of the lowest income group had 1,0 % share of the total agricultural income, and the highest 10 % had a share of 52,8 %. 80 % of the farmers earning low incomes had one third share of the agricultural earnings and the remaining 20 % with high incomes had two third share.[20]

A recent estimate in agricultural incomes has been made by Prof. J. L. Enos.[21] According to the appraisals of 1962, the low income group of agricultural producers, comprising 72,2% of the total working population, had 22,4 % share of the national income which corresponded to 1,040 TL per man. The middle income farmers were 3,4 % of the working population and their share in national income was 8,2 % or 7,730 TL. The high income group comprised 0,7 % of the working population, with 7,8 % share, corresponding to 41, 340 TL per man averagely. Although this study was different from the former one in method and nature, the findings of both confirm each other.

The State Planning Organization made two estimates on the agricultural income distribution for 1963.[22] The first of these stated that the small enterprises, 68,8 % of all agricultural enterprises, had 24,8 % share of the agricultural earnings, with an income of 2,900 TL per enterprise and 485 TL per agricultural worker. The middle enterprises, 27,5 % of all enterprises, had 42,0 % of the agricultural earnings, with an income of 10,300 TL per enterprise and 1,117 TL per worker. The large enterprises comprised 3,6 % of the total, their income share was 23,2 %, earnings per enterprise 44,510 TL and earnings per worker 7,413 TL. The percentage of the largest enterprises to the total was 0,1 %, their income share 10,0 % with an income of 298,500 TL per enterprise and 49,750 TL per worker.

20 Eva Hirsch, *ibid.*, pp. 159, 170.

21 AID charged Prof. Enos with the preparing of this report to be presented to the Turkish Government; it has not been officially published.

22 *The Second Five Year Development Plan*, p. 240; SPO, *The Study on Income Distribution*, Ankara, 1966.

According to the second study of the State Planning Organization, the one fifth lowest income group of farmers had 6,0% of the agricultural earnings while the highest earning one fifth had 50,0 % share. We figure out by the detailed tables that the 8,0 % farm families of lowest income, earning averagely 1,553 TL per year had only 1,9 % share of the total agricultural income, while the 0,05 % families of the highest income group, earning averagely 346,466 TL, had 2,8 % of the agricultural income. That year the average agricultural income per family was 6,516 TL.

A recent study on income distribution [23] confirms the findings of the former estimates and studies.

Indeed, this study shows that 59,1 % farm families with a less than 5000 TL average per annum income had 18,9 % share of the total agricultural earnings; 23,5 % families at the income level of 5-10,000 TL had 19,9 % share and 0,7 % families earning above 100,000 TL had 8,3 % share. According to the same study, 10 % farm families of the lowest income group earned 1,0 % of the total agricultural income and the 10 % highest income families earned 49,0 %. Thus the proportion between the earnings of these two social groups was 1: 49.

All these figures and estimates, incomplete and inadequate though they may be, are sufficient to prove that the incomes earned by the majority of the Turkish farm families are not at a level "to provide a standard of living worthy of the human dignity"; that compared with the other sectors, there are very wide differences; that the income distribution within the sector is very unfair; and that the incomes fluctuate wildly over the time. The measures to be taken in this area must have a view toward correcting this unfair situation, raising the income level, reducing the unjust distribution, setting up a parity between urban and rural incomes, improving the income fluctuations, thus ensuring the "livelihood guarantee" of the farmers.

---

23 Tuncer Bulutay, *et. al., Türkiyede Gelir Dağılımı* (Income Distribution in Turkey) 1968, Faculty of Political Sciences publication, Ankara 1971.

IV. DIFFICULTIES OF INCREASING AGRICULTURAL PRODUCTIVITY

In order to raise the productivity level, it is necessary in Turkey, as in other countries, to concentrate the measures and efforts in three groups:

1) Implementing the new production technology;

2) Giving impetus to capital accumulation and investments in agriculture;

3) Making the institutional reforms to support agricultural development.

However, it is not as easy as it appears at first sight, to achieve the above. In taking each of these measures there are various and numerous difficulties. These difficulties that will be discussed exhaustively and in detail by the other speakers and participants in this seminar, will be mentioned here only summarily and in outline; there will be no attempt on my part to go into detail, nor to try to suggest possible solutions.

Modern production technology:

The adoption and implementation of the modern production technology by the entire, or at least the major part of the agricultural sector both creates many problems and difficulties and takes a long time. Part of these problems relate to the inner structure and organization of the agricultural sector, while an important part comes from outside the sector and is beyond the control of the farmers. The principal intrinsic problem of the sector is the large numbers of the agricultural population, scattered all over the country. Indeed, according to official and unofficial estimates between 3,5 and 4,5 million farm families live in 40 to 50 thousand settlements [24] and it is not an easy task to reach them all, to introduce them the new inputs and produc-

24 While the 1963-1970 agricultural censuses results gave the number of the enterprises (or farm families) as 3,1 million, the Union of Chambers of Agriculture, the most extensive farmers organization in Turkey, states that there are 4,5 million farm families. On the other hand, although the number of villages and small towns are 35.997 according to the 1970 population census findings, when various settlement forms such as wards, hamlets, groups of houses etc. in the same precinct are taken into account, the number is estimated to reach 50.000.

tion methods, to extend them the auxiliary agricultural services. It is clear that such a task requires a large staff of technicians and extension personnel, a well set up and properly functioning organization, undefatigable patience and perseverance and a long time.

When we add to the above the complexity of the agricultural production technique, and the fact that numerous crops are raised, each with its peculiar characteristics and problems, the difficulty is further enhanced.

Essentially, the belief that Turkish farmers are fatalistic, conservative and against innovations is not well grounded. However, since innovations are always risky, the small farmer at the marginal standard of living is economically powerless to take the risks. Therefore, it is not enough for the farmer to believe in the benefits of the innovations and the changes; the benefits in question must carry small risk and promise advantages big enough to justify his risking his family's means of livelihood for a whole year. In addition, a land ownership and utilization system must be established in the country, which will ensure that the farmer himself reaps the benefits of the innovation he adopts.

The principal extrinsic problem of the sector, confronted in establishing modern technologies in agriculture, is the farmers' lack of general and technical education. The facts that in 1970 the literacy rate in Turkey was still around 55 %, with lower percentages in the rural areas, and that compulsory primary education is still unenforced in 15,000 villages and additionally the almost nonexistent technical agricultural training, all contribute to the difficulty of introducing the innovations to the farmers. The worldwide experience proves that in going into modern agriculture, the part played by the human factor, that is to say, the education and training of the farmers, is far more important than all the other factors put together. General primary level education broadens their horizons and develops their desire for change. In addition to the general and technical education, it is necessary to train the farmer as an entrepreneur and manager, to teach him how to combine the various productive resources at the optimum ratios to organize the agricultural enterprise, also to develop his entrepreneurship as a producer and merchandiser.

Education takes long and its results are not spectacular because they are not felt immediately, but still it is the surest way to development.

The fact that in many cases the villages, where agricultural production takes place, are scattered all over the country, that one third of them are situated at mountain and forest regions, the lack of the necessary transportation and communications facilities to reach such villages cause further difficulties. Other problems are the insufficiency, irregularity and dispersion of the public organizations to extend and demonstrate the technologic developments to the farmers, the smallness of the material and immaterial sacrifices of the Government to encourage the farmers to adopt and implement the changes, and the fact that in most cases such assistance does not reach the places and persons where most needed.

Capital accumulation in agriculture:

Capital, which is the second most important element in increasing productivity and raising the efficiency level of the two basic resources in agriculture, namely, the soil and manpower, is also scarce in the Turkish agriculture. The live and material stock of the farmers, buildings and other facilities are inadequate and primitive and their revolving capital is very little. The farmer in low-incom, self-subsistent enterprises has no means for saving. And the savings, accumulated in middle and large enterprises where the income level is convenient, usually flow outside agriculture to other sectors such as commerce and construction; and consequently a very low level of savings can be achieved in agriculture. The risks of agricultural production, the low profits in the operation, and in addition to that, the inconsistencies of the marketing and pricing of the products hinder capital from flowing from the other sectors into agriculture. The private commercial banks refuse to extent loans to the sector, except to finance the exports of agricultural products and the marketing operations of the big farmers. The limited credit opportunities provided by the Agricultural Bank and the agricultural credit cooperatives, often with some inconvenient terms, are not usually properly utilized, except for the superwised loan implementations of an experimental nature. It is estimated that two fifths of the enterprises have no access to the loan oppor-

tunities and almost half of those that have can only secure loans too insufficient to make any investment and often spend what little they can get for consumption.

Important infrastructure facilities like roads, irrigation network, etc. are very costly, therefore require substantial capital layouts and on the other hand implementing the new technology on the part of the farmers also needs capital or loan assistance. Therefore, reorganizing the capital and loan system in agriculture is essential for increasing productivity, besides its other advantages.

Institutional reforms:

The third group of measures to increase the agricultural productivity is concerned with developing the institutional structure that supports farming activities and with improving the organization. This set of measures is headed by the reorganization of the marketing system in its broad sense, correcting the deficiencies and shortcomings. It is necessary to improve the market presentation activities such as the grading, standardization and packaging of the products, storing and transportation operations, the sales procedures and channels on one hand, and to provide the various new inputs, increasingly required by the farmers, at the needed time and place and at convenient terms on the other hand. At present a good marketing system and network which covers the entire country and every type of produce and input does not exist. Traditional markets and procedures generally cause too many middlemen to take the lion's share for themselves, and prevent a fair share of the consumers' money to flow back to the farmers in return of their labor and other resources.

Parallel to the economic development and prodcutivity increase, the market economy progressively gains importance and it becomes essential to ship to the domestic and foreign markets such products as satisfy the desire and demand of the consumer. Similarly, the input markets must be improved, the monopolistic and speculative mentality and tendencies that seem to rule this market must be eliminated.

I had briefly mentioned above the deficiencies of the land ownership and utilization system in agriculture. Eliminating these deficiencies will bring the farmer guarantee to benefit by the

fruit of his labor and overcome the resistance to change, will facilitate the spread of technological development. On the other hand, by multiplying the number of the family enterprises which would be economically viable within the present market economy, by ensuring that wealth and incomes are distributed more fairly, and making certain that a larger mass of farmers benefit by the various Government aid programs, services and assistance, we shall have come nearer securing social justice and have created a steady society free of social conflicts.

It is a fact that there are various public organizations to implement the services provided by the Government to the agricultural sector, and to carry out the policies. The most important of these services are extension, research, training, credit, marketing, subvensions, preserving and developing natural resources, controlling plant and animal diseases and pests. There are also some private farmers associations, set up for various purposes, some of which perform a semi-public function. Among the farmers associations, especially cooperatives, in addition to their extensive field of services and multilateral objectives, are very helpful in increasing agricultural productivity, by combining the voluntary efforts and enterprises of the small farmers who, within the economic system of our day, have little chance at success through individual efforts, and by undertaking, whenever necessary, some public functions too. However, while developing the cooperatives under the leadership and protection of the State, and ensuring that they gain power via horizontal and vertical combinations, it is also necessary to see to it that cooperatives must not lose their nature of being voluntary organizations or become forced or phony set-ups.

Correcting the deficiencies in the institutional structure which supports the agricultural sector requires deep rooted reforms of administrative, social, economic, political and even legal nature. This, of course, needs great efforts, investment, organization and a long period of time. It is for this reason that this is the most difficult part of agricultural development.

Agricultural policy:

Having reviewed briefly the necessary measures for raising the productivity level of Turkish agriculture and the relevant

probable difficulties, we now come to reviewing the outlines of the agricultural development policy and the problems of implementing the same. The past experiences show that the important stance of the agricultural sector in the Turkish economy has not always been properly appreciated by the policy makers in agriculture. There are several cases during the Republican era when the agricultural sector was recognized priority in the economic policy, when it was considered the starting point of economic development; but in each instance this attitude was short lived, agriculture was again pushed to the background and even neglected, Even during the planned period this inconsistent attitude has not been given up, the priorities given to agriculture in the 5-Year Plans have been amended and sufficient allowances have not been included in the general budgets, plans and programs to provide the necessary services to the farmers. The structure of the Turkish economy, the necessity of a balanced, frugal and undisturbing economic development require that the national policy should attach importance to the agricultural sector than it has done heretofore.

Another point, no less important, is that the agricultural policy is devoid of a general philosophy and strategy; that its objectives and methods are not clearly defined. In Turkey there is no single authority within the public system, responsible of the agricultural policy. Various ministries and organizations, established under different statutes, are charged with codifying and implementing the agricultural policy. The Ministry of Agriculture, the chief authority in this field, has almost no concern with the economic aspects and problems of agriculture, but is only involved in the technical aspects. On the other hand, this scattered and manifold organization cannot make an integrated, all inclusive policy, nor can it provide coordination and harmony in implementation, consequently a good agricultural plan with clearly defined objectives and priorities cannot be made. This situation curbs agricultural development, leads to wasting of the scarce resources, repetitions, unnecessary red tape and bureaucracy. On the other hand, next to the scarcity of the inputs and production, we can see surplus products, overstocks, consequently waste of resources, in tea, sugar, tobacco, raisins, and some fresh fruits and vegetables. In order to achieve

agricultural development it is essential to set up, at the soonest, a system that charges the responsibility of the agricultural policy to the Ministry of Agriculture, entrusts the most important instruments and organizations of policy and implementation to the control of this Ministry, and ensures the coordination of all public services relating to agriculture.

Strategy for agricultural development:

The agricultural strategy be so prepared that, instead of wasting the existing limited resources through spreading them thinly over all the regions and numerous purposes, it must select certain problem areas or production branches and concentrate efforts and resources on them.

In view of the inadequacy of the resources allocable to agricultural development, such a policy seems to be inevitable for Turkey. At the same time, implementation of complementary measures in a single package and making a frontal attack on certain subjects and problems will ensure taking better results and a more effective utilization of the scarce resources. Neglect or default of one of the interacting measures would diminish the success of the others; also unbalanced concentration on any of them would be an irrational attitude.

Selecting the regions or production branches to be given priority in development will cause difficulties. For, there is a hard to eliminate conflict between choosing a social criterion which gives priority to the less developed regions and production branches, thereby diminishing the differences between the regions and social groups, and choosing an economic criterion which gives priority on the developed regions and production branches, thereby ensuring better results over a shorter period.

On whatever criterion the choice is made, it would be right to make individual programs for each region, based on their special characteristics; to clearly define the share of responsibility falling upon the public and the private sectors in attaining development; to utilize the scarce resources in the most effective ways and places; to give careful considerations to the time factor. It would be helpful to adopt a general policy that would delegate responsibility to the farmers associations and to the private sector in increasing amounts, in the basic agricultural de-

velopment efforts such as preserving and developing natural resources, providing irrigation, credit and other inputs, processing and marketing the produce, fighting diseases and pests, etc.

The other three subjects that must be given consideration in a policy of increasing agricultural productivity are the problems of establishing social justice, agricultural employment and preserving the natural resources. Social justice must be considered within the agricultural sector between the regions, production branches and the social groups performing various functions in an agricultural enterprise, or between agriculture and the other sectors. The price and incomes that rise owing to the productivity increase may upset the equilibrium between all the people and production branches. The agricultural policy must set the measures that will not allow the crop prices to fall excessively, not open chasms between groups, distribute the benefits of increased productivity fairly among the landowners, workers and consumers. For this purpose, the agricultural subsidy or price subvension policies must be revised. Moreover, the general economic policy must be harmonized with the development of agricultural productivity.

In view of the land-human relations in agriculture, the rapid population boost and the limitations of the development of employment opportunities outside the agricultural sector, while the number of the open and disguised unemployed in this sector increases on one hand, the people whom the land cannot feed flow to the cities and to foreign countries. Under the circumstances, the green revolution must not be allowed to leave more people unemployed, disguised or otherwise, which would be a waste of the most valuable resource, i.e. manpower; and while "time is borrowed" in a sense through a population planning program, the outflow from agriculture must be adjusted and regulated; the unemployed must be furnished with opportunities of work in the fields of processing and preparing the produce for the market, manufacturing the inputs and providing the other services; the necessary training and aid for transition from agriculture to other jobs must be provided. It should not be forgotten that in many countries intensive agriculture creates more employment opportunities than the industry sector.

The new technology which ensures the increase of agricultural production may help utilize the land intensively, eliminating in many cases the need to lay the land fallow and idle, sometimes even allowing double or triple crops in a year by using new seeds, thus preventing its erosion and overwork. The agricultural policy must bring the necessary measures to preserve and develop the natural resources and provide, whenever necessary, that excessively exploited farm land are "put to retirement" under a permanent plant cover such as pastures or forests.

Difficult as it may be to take the suggested measures concerning the agricultural policy, it is certain that many problems will arise in implementing, as well in codifying the policies. Additionally, all these efforts would require a tremendous load of work and a long time.

V. SUMMARY AND CONCLUSION

The explanations and information offered in the previous chapters of this paper show that the level of agricultural productivity in Turkey, figured out on per unit of land or per capita, is low compared with the world standards. Moreover, productivity does not follow a steady course, but fluctuates wildly at times. In general, any increases in the level of productivity are effected at slow and modest rates and coincide rather with the recent years. However, in some branches of production, significant increases of productivity, especially when calculated per unit of land, can be observed.

Agricultural earnings are low, their distribution within the sector is unfair, and the differences of level between agriculture and the other sectors are too high. Moreover, agricultural earnings over the time are extremely inconsistent, therefore the farmers have very little guarantee for their livelihood. It is also determined that the domestic terms of trade between agriculture and the other sectors work against agriculture and that the people in this sector cannot have a fair share of the economic development.

The paper explains, in some detail, that increasing the agricultural productivity entails numerous difficulties and bottlenecks.

Among the various difficulties, the most important would be extending the new agricultural technology to millions of people scattered all over the country to the remotest parts, mountain and forest regions, providing for those people general and technical training; allocating sufficient capital funds to agriculture; and effecting the necessary institutional reforms to extend the various services more effectively. Overcoming the innumerable problems, rearranging this largest traditional sector with democratic methods require tremendous efforts, investment and personnel allotments and a long time.

It is a fact that in the past Turkish agriculture did not achieve a satisfactory rate of development and the present outlook is not very promising. However, neither the past nor the present performance and achievement level of agriculture should mislead and close our eyes to an important truth: There is no doubt that Turkish agriculture has a great potential of development. The levels of productivity and production can be increased significantly by utilizing the existing physical and human resources more effectively and by allocating more resources to the agricultural sector. Moreover, the wide gap between the existing new technology applied in many countries of the world and our technological level, and additionally, the fact that the technological strides in the world, parallel to the developmet of the human intellect, are illimitable, further contribute to our potential in the agricultural sector.

It is clearly apparent what need be done, especially about technical questions, in order to attain the desired productivity increase and development in agriculture. We can even state that there have been too many studies and researches and too many expert reports have been written on this subject. However, the economic aspects and problems of agriculture have always been neglected and not given sufficient consideration. On the other hand, there are many institutions involved wilh agriculture, some duplicated, and these institutions maintain extensive and well spread organizations in the country. Also it is a fact that there is no shortage of technical personnel in agriculture, that there are large staffs of qualified personnel at every level. What is lacking is the adaptation and application of the policy measures to the conditions of the country and of the regions. This requires

eliminating the confusion and lack of coordination at the top levels of administration, mobilizing the resources and the organization in a spirit of fight.

The destiny of Turkish agriculture has to change. The lives and futures of a major part of the nation depend on this sector and also the principles of social justice necessitate this change. Agriculture in Turkey is assigned important roles in the economic and socio-political life. Especially in the present, when we are on the threshold of becoming a member of the European Economic Community, the Government must attach a far greater importance to agriculture than it has done heretofore. As it is known, there are very close mutual relations between agriculture and economic development and industrialization. Turkey's development is closely related to the advancement of her agriculture and achieving a successful growth. In other words, the way of economic development in Turkey is through agriculture. In a system of balanced development, the other sectors must support and assist agricultural development. The experiences in the past and in other countries demonstrate that the neglect of the agricultural sector may be very costly for agriculture and the life of the nation.

Raising the level of agricultural productivity is one of the surest ways of development both in this sector and in the allover economy. Although productivity is not an objective by itself, it is an instrument for the welfare and happiness of the people. Developments in productivity may cause economic, social and even political disturbances. Therefore, it must not ever be forgotten that the contemplated measures must be of political validity and codified in such a way that they will cause the least disturbance and agitation in the community.