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Structural changes in Turkish agriculture during the initial Five year Development Plan (1963-1967)

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STRUCTURAL CHANGES IN TURKISH AGRICULTURE DURING THE INITIAL FIVE YEAR DEVELOPMENT PLAN (1963-1967)

by

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CHAPTER I. INTRODUCTION

Turkey remains an underdeveloped country[1] with 70 percent of its population actively engaged in agriculture. Capital is scarce, per capita income is low and unequally distributed, the rate of population growth is high. Furthermore, the nation is dichotomized into two broad sectors, agricultural and non-agricultural. The dualistic nature of the Turkish economy is very noticeable and fits the general outline developed by Lewis:

> There are one or two modern towns, with the finest architecture, water supplies communications and the like, into which people drift from other towns and villages which might almost belong to another planet. There is the same contrast even between people; between the few highly westernized,... and the great mass of their countrymen who live in quite other worlds. (29, p. 408)

In this thesis, through the use of the dualistic approach, we shall be appraising the contributions of certain agrarian structures to Turkish economic development during the initial economic development plan period (1963-1967). The term agrarian structure is used in identifying the institutional framework of agricultural production. In this sense, it is a broad term which encompasses land tenure structures, taxation, marketing, credit and extension services.

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[1]Underdeveloped countries refer to the group of countries where per capita real income is low compared to Western countries or those having "per capita incomes less than one quarter those of the United States or, roughly, less than $500 per year." (14, p. 6).

Land tenure structures, although an important factor in economic development, will not be treated in this study. Neither are we concerned with the technical aspects of the formulation and implementation of the First Five Year Development Plan.[1] Instead, our efforts are concentrated on the appraisal of organization and functioning of credit, marketing, general education and extension services as parts of the plan in terms of their effects upon development efforts within Turkey.

The Problem and Its Setting

Turkey is among the few underdeveloped nations that have concentrated on socio-economic development for four and one-half decades. Founded in 1923, the Republic of Turkey immediately launched measures to encourage economic development. In 1924, the new Republic passed legislation to encourage cultivation of more land by exempting from military service those who cultivated a minimum land area, and requiring all farmers who owned two draft animals to cultivate at least 11 hectares. After 1927, incentives in the form of tax and tariff exemptions and free public lands for factory sites were provided to the private sector (15, p. 372).

Since 1923, a considerable number of advances have been

[1]For brevity, The First Five Year Development Plan (1963-1967) will hereafter be referred to merely as the Plan.

made in increasing the living standards of the people. Some of these achievements are briefly summarized. Before adoption of the Latin alphabet in 1928, only 10.6 percent of the population knew how to read and write. By 1930, this rate had increased to 19.2, by 1950 about 1/3 of the population was literate and by 1950 this percentaged increased to 40.1. Similarly, other indicators of social and economic development show a significant upward trend. For example, numbers of students at all levels of education climbed rapidly from 350,000 in the early days of the Republic to 1 million in 1940 and to 3 million by 1960. There were about three thousand hospital beds for the whole country when the Republic was established. By 1940, hospital beds had increased fourfold and had reached 45 thousand by 1960 (41, p. 8).

Advances in the supply of electric power, construction of railroads and highways all indicate the magnitude of the achievements. In 1930, electricity was consumed only in the few big cities with total consumption of 106 million kilowatts. Subsequently, power lines were extended to other areas and by 1940 consumption had increased about fourfold and in 1960 it reached 2,886 million kilowatts. Railroad tracks also doubled from about 4 thousand kilometers in the early days of the Republic to 7,800 kilometers in 1960. Highway construction was given preference over

railroads. Compared to 18.000 kilometers of highways in the late 1920's, the national highway system comprised over 61,000 kilometers in 1960 (41, p. 8).

More specifically, however, Turkish society was reorganized and some very fundamental structural reforms were carried out; such as reorganization of government administration, emancipation of women and a modern legal system modeled after Western institutions.

These measures laid down the infrastructure for a dynamic economy. However, as yet, the economy has not been able to leave the Rostowian "take-off" phase into a self-sustaining development.[1] Naturally, there are many complex and interdependent social, economic and political factors which have retarded orderly and self-sustaining economic development.

Fascinating as they may be, it is not our intention to review the past policy measures followed by various administrations in pursuit of the economic development of Turkey. Rather, we shall limit ourselves within the context of the first Plan. For this is the period when scientific planning was introduced in Turkey.[2] More specifically, this period

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[1] Rostow's table of tentative, approximate take-off dates classify Turkey as having gone into the take-off stage in 1937 (47, p. 162).

[2] Economic planning is not altogether a new venture for Turkey, since there were a number of plans drawn and one Plan was implemented in 1933. However, these were not comprehensive economic development plans embracing all sectors of the economy, but rather industrial plans for construction of State Economic Enterprises (10).

represents the first time that the overall performance and potentials of the economy were evaluated. Within the political framework of the 1960's, the initial five year segment of the 15 year Development Plan was drawn and adopted by the Grand National Assembly on November 21, 1962. Promulgated in the Official Gazette No. 11272 of December 3, 1962, the Plan became operative as of January 1, 1963 (41, p. iii).

The framework of the problem under consideration is based on recent contributions in economic development. As will be shown in the second chapter of this study, most of the recent contributions stress the usefulness of an aggregative two sector approach to development. It is no longer a question of concentrating efforts on development of industry or of agriculture, but interdependence of both sectors on each other is widely recognized. Yet, the departure point is taken to be the agricultural sector. In other words, the agricultural sector initially becomes the locomotive of the transformation process. Most of the population is in agriculture and initial incipient increases in productivity most likely will be generated there. Also, agriculture is called upon to feed the labor force transferring into industry by keeping the agricultural wages constant at some institutional rate. As productivity increases in this sector, with constant wage rates and growing employment opportunities in nonagricultural sectors, labor moves from agriculture to other sectors.

Meanwhile, it is expected that the industrial sector will accumulate capital to the extent that employment opportunities expand and more labor is transferred into this sector from agriculture. This process continues until the dualistic nature of the economy disappears.

Naturally, for the above process to work as orderly and as effectively as possible, there should be an institutional framework geared in this direction. This is why the role of agrarian structures in economic development become crucial. We adopt the United Nations definition of the term "agrarian structures" and use it to mean the institutional framework of agricultural production.

> It includes, in the first place, land tenure, the legal or customary system under which land is owned; the distribution of ownership of farm property between large estates and peasant farms of various size; land tenancy, the system under which land is operated and its product divided between operator and owner; the organization of credit, production and marketing; the mechanism through which agriculture is financed; the burdens imposed on rural populations by governments in the form of taxation; and the services supplied by governments to rural populations, such as technical advice and educational facilities, health services, water supply and communications (58, p. 5).

Importance of agrarian structures was recognized in the Plan and the structures were given priority in the form of institutional reforms in the agricultural sector (41, pp. 165-169). Thus the problem is one of identification of the Turkish agrarian structures and evaluation of their contributions or defects in the overall performance of the economy.

Objectives of the Study

Our focus of attention is on certain agricultural means that were employed in implementing the Plan. In order to evaluate the effectiveness of these structural means we introduce norms to evaluate the performance of structures taken as means. The norms are considered to be the target variables or the ends-in-view of the Plan and deviations from these norms create the problematic gap under study.

The three objectives of the study may be stated as follows:

1. To analyze the problematic gap in ex post sense, that is, the gap between the desired goals for the agricultural sector in 1967 and the actual performance of the economy by the completion of the plan.

2. To identify the causes for the existence of the problematic gap and the direction of the failure elements and success elements in pursuing these goals of the society.

3. To suggest remedial actions that might be developed during the Second Five Year Development Plan, 1968-1972 inclusive.

Procedures of the Study

The general working hypothesis of the study is that structural changes in Turkish agriculture play a key role in bringing about agricultural and economic development.

The procedure for testing the hypothesis is composed of two phases. The first phase is an outline of the recent theoretical contributions in the field of economic development which are relevant in pursuing the three objectives of the study. More specifically the dualist economy approach is employed and within it the contributions of structural changes in agriculture are assessed.

The second phase consists of an empirical assessment of the Turkish development effort insofar as data are available. With the insight gained in the first phase and through the help of previous studies conducted on similar grounds, potentials of the agricultural sector are identified. Also, through the conceptual framework as formulated, certain success and failure elements of the existing agrarian structures are identified. In the remedial phase, possibilities of eliminating the failure elements and the necessary actions that should be taken in order to expand the success elements are discussed.

Throughout the second phase, tests to determine the "physical surplus" creation and transference of it out of Turkish agriculture will be conducted. These tests will be carried out with the help of population movements and agricultural output changes, changes in the burden of agricultural taxes and movements of the internal terms of trade between agriculture and industry. Relevance of structural changes will be appraised on how successful they have been in

reaching the Plan targets.

Significance of the Study

Economists tend to shy away from dealing with the institutions through which the economy functions. This has been unfortunate, especially for the development economists, since the preliminary task of any policy should have been the identification and strengthening of structures that are conducive to development effort.

The result of this neglect in the literature has been to the effect of listing certain "reforms" or "institutional changes" that are thought to be significant in economic development. However these changes have not been incorporated into the body of the economic theory in general, but rather treated as a side issue. As Raup points out:

> Available theories of economic behaviour have been made from the systematic study of firms and individuals. Built into these theories is a strong tendency to hold the institutional framework stable in order to analyze the response of firms and individuals to economic stimuli that can be reduced to manageable proportions. Formidable complexities arise when economic dynamics are applied to institutional frameworks (40, p. 2).

Yet, is it not true that this task of venturing into no-man's land falls on the shoulders of the economists, if the science of economics is to fulfill its mission? We think it does, and so we adopt Timmons' approach:

> The work of the economist must become relevant and responsive to the problems present in the actual world insofar as these problems concern the achievement

> of economic objectives. Thus, as we view it, the work of the economist encompasses analysis of land tenure structures as an integral part of providing an understanding of developmental problems and how these problems may be solved (54, p. 7).

With regards to Turkish economy there has always been a "felt need" by the public in general for some sort of a reform in agriculture. This need has been termed "land reform" sometimes, or "agrarian reform" other times, but never explicitly and meaningfully defined.

The symptoms of the need of a structural change have always been there; all one has to do to be convinced is to have a look at the Turkish daily papers. Seldom a day passes without murder cases or acts of violence involving land disputes being reported. These are not specific and isolated cases but outbursts of the defective agrarian structures of the country. Many examples on the insecurity of tenure and the resulting disincentive in agricultural production can be provided, but one case will be cited as illustrative:

> ... on 8 Nov. 1964, another incident had occurred between two villages near Cermik because of a land dispute and some people had been killed. The Gendarmes[1] moved into action against one of the villages, and this was extensively reported in Cumhuriyet. It caused terrible embarrassment for the Minister of Interior at the time, but the presence of Gendarmes did not prevent the killing of a farmer from one of these villages

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[1]Gerdarmes are some sort of a military police force which police rural areas and are directly responsible to the Minister of Interior.

(Cumhuriyet, 1 Dec. 1964) by men roaming in the mountains and bent on vengeance against the rival village. The same paper reported on 4 Dec. 1964 that the villages concerned had now decided to migrate out of the area to escape any further repraisals (61, pp. 1-2).

What we are concerned with here is not security of life, liberty and opportunity per se (though obviously these are the ultimate ends of the society) but rather the defective agrarian structures which lead to insecurity in tenure and prevent potentials of this sector from materializing.

This study provides the foundations for detailed inquiry into the Turkish land tenure structures. At this first stage it is only intended to deal broadly with the institutional framework of agricultural production. Without such a broad basis, it is the belief of this author that any analysis exclusively treating land tenure problems of Turkey is somewhat superficial.

The study will be significant because it will not only identify and analyze agrarian structures, but it will also shed light on success and failure elements on the Plan. It will make possible the suggestion of corrective actions for the Plan.

Plan of This Report

The study is made up of five chapters. Chapter I is an introduction to the general problem. It consists of the problem and its setting, objectives of the study, procedures

of the study, significance of the study and plan of this report.

Chapter II is the general framework of development and consists of two main sections. One deals with recent economic development theories. The other includes the conceptual framework of analysis.

In the first section beginning with A. Lewis' path breaking work, contributions of Ranis and Fei, Johnston and Mellor, W. Nicholls and E. Thorbecke's analysis of the dualist nature of the labor surplus underdeveloped economies are reviewed. Special emphasis is given to concepts of surplus agricultural production, underemployment, marginal physical product and institutional wage rate. Meanwhile our focus of attention will be on the required structural changes that facilitate economic development.

The second section concentrates on the means-ends continuum as applied to the Turkish economy. Based on Dewey, Salter and Timmons' contributions our inquiry proceeds to identify ends of the agricultural sector. Pursuing these ends serves the purpose of both establishing the norms of the study and identifying the problematic situation in the ex post sense. Hence they help to formulate hypotheses in order to fill the gap between what exists and what is desired.

Chapter III includes the characteristics of the Turkish agricultural sector prior to 1963. It is the application of

the insight gained in the previous chapter to the Turkish case. In the sub-sections of this chapter characteristics of the agricultural sector and its capacity to create a surplus is identified. With the use of available statistical data, whether or not there has been a transfer of labor and capital to the non-agricultural sector throughout the Turkish development effort prior to 1963 is analyzed.

Chapter IV is the strategy and policy in agricultural development within the Plan. It consists of two sections; objectives of the agricultural sector and changes in the Turkish agricultural sector from 1963 to 1967.

In the first section targets of the agricultural sector set for 1967 are defined and various means to attain these goals are identified.

In the second section, the gap between the achievements and the targets of the agricultural sector is defined. In other words, in an ex post sense, the problematic gap and the means that have contributed to its existence are identified. To what extent the nature of Turkish agriculture has altered due to the contributions of these agrarian structural changes will be looked into, and success and failure elements are discussed and policies for remedial actions are suggested.

Finally, the study concludes with Chapter V which is a summary of the foregoing arguments and suggestions for further research in Turkish agrarian structures.

CHAPTER II. FRAMEWORK OF DEVELOPMENT

In the first chapter we have introduced the problem and its setting. In this chapter the theoretical and conceptual framework of approach suitable to the Turkish development effort is outlined.

Recent Theories of Economic Development

Economic theory has been enriched with various theories (17, 24, 28, 34, 46) since the problems of what are commonly called the underdeveloped countries began to gain the increasing interest of the Western world. Although these countries have been grouped under the same heading each has its own peculiar characteristics and each experiences its own development process. These differences make any general approach to the problem quite difficult.

Nevertheless, once qualifications are taken into account for the specific case under consideration, then economic development can be characterized as a general transformation process. As stated by Prof. Thorbecke:

> It can be said - very succinctly--that the path of development consists of a general transformation from an economy characterized by abundance of labor and extreme scarcity of capital, and a very small modern industrial sector superimposed upon, and not integrated to, a large native agricultural sector (economic dualism), to an economy in which the proportion of the labor force employed in agriculture has become small (say one-fourth or less) and the two sectors have become integrated (52, p. 8).

Within this general framework, Arthur Lewis' ideas (29) brought about a fresh perspective in dealing with labor surplus underdeveloped countries. Lewis views the problem as essentially one of an economy being effectively dichotomized into "capitalist" and "subsistence" sectors. The former makes up the smaller section of economy that uses reproducible capital and the latter makes up the rest of the economy.

The argument runs as follows. There exists an unlimited supply of labor employed at a subsistence wage rate. Employment opportunities exist in the capitalist sector which in return expands and creates employment opportunities as capital accumulation takes place. This transformation process continues until the unlimited supply of labor is exhausted. At this point, the "capitalist" and the "subsistence" sectors are integrated. Wages are determined by the marginal productivity of labor and no longer by some institutionally set subsistence level.

As illustrated in his article (29, p. 406) Lewis contends that scarce capital of the society in the capitalist sector is applied to the point where marginal productivity of labor equals the subsistence wage rate. Only a part of the labor force is employed in this sector while the rest "earn what they can in the subsistence sector of the economy" (29, p. 407). In Figure 1, the horizontal axis

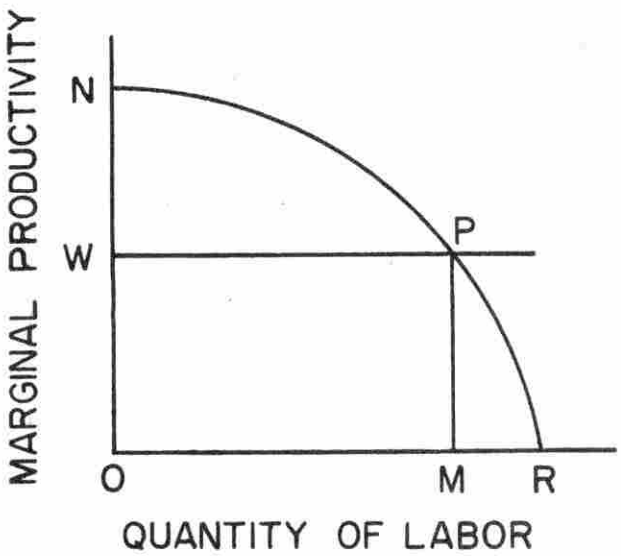


Figure 1. Employment in labor surplus underdeveloped economy

measures quantity of labor and vertical axis measures marginal productivity of labor and OW is the current wage rate defined to be slightly higher than the subsistence earnings mainly because of the high cost of transference into the more disciplined capitalist sector. Capital is employed until the marginal productivity of labor equals the current wage. This is the OM portion of the total labor force. Thus OWPM become the wages fund of the capitalist labor force and WNP, the capitalists' surplus. The rest of the labor force, MR, has to remain in the subsistence sector earning subsistence wages.

The central argument of the thesis deals with what is done to the capitalist surplus. As far as it is reinvested in creating new capital, the capitalist sector expands and employs more people, transferring them out of the subsistence sector. In the next round, the capitalist surplus is larger, capital formation is greater and the process goes on until the labor surplus disappears. But it may come to a halt even before the exhaustion of surplus labor, because of a worsening in the terms of trade to the capitalist sector. Therefore throughout the process terms of trade should not be let to move in favor of the subsistence sector.

The key assumption of the model is the existence of an unlimited labor supply at a constant real wage which is determined by some "subsistence" criterion.

Though Lewis has brought insight into the problem, he has neglected to identify the role of agriculture within the development process. As will be shown subsequently, later contributions have carried his framework further to the extent of identifying the role of structural changes within the development process.

Agricultural Sector's Role in Economic Development

Following the path that Lewis formulated, two significant contributions were made by Ranis and Fei (39) and Johnston and Mellor (18). Taking "underdeveloped" economy to mean "labor-surplus, resource poor variety in which the vast

majority of the population is typically engaged in agriculture amidst widespread disguised unemployment and high rates of population growth" (39, p. 533), Ranis and Fei base their article on Lewis' analytical framework. However, they take it a step further by identifying the role of the subsistence sector (used synonymously with agricultural sector) in the development process.

They claim that during the transformation process which Lewis describes, the agricultural sector is neglected. If the latter does not grow, Lewis' mechanism may halt prematurely. In other words, the agricultural sector should be analyzed more thoroughly and possibilities of productivity increases in this sector should be provided if the economy is to advance in a "balanced path" to development.

For our purposes, it is not necessary to go into the details of the Ranis and Fei model. But in order to clarify such concepts as redundant labor, disguised unemployment, agricultural surplus and institutional wage rate, it is useful to make a brief outline of the development process. This explanation is provided in Figure 2 (39, p. 535).

Figure 2.1 applies to the industrial sector and Figures 2.2 and 2.3 depict the agricultural sector. Figure 2.1 measures the industrial labor on the horizontal axis and its marginal physical productivity on the vertical axis. Employment in this sector is determined by the intersection

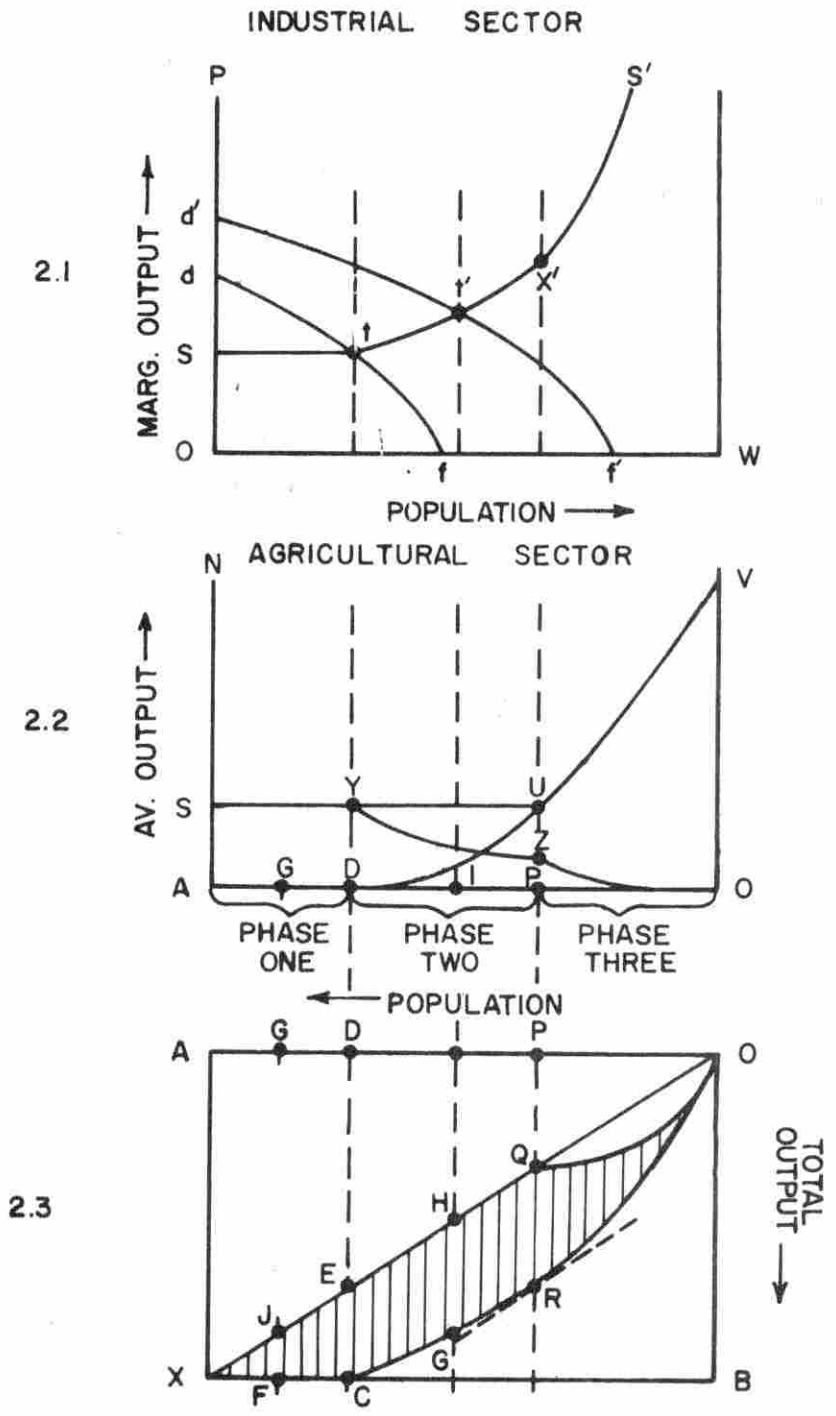


Figure 2. Development of a dualist economy (39, p. 535)

of the demand curve for labor (i.e., MPP curve dtf) and the supply curve of labor Stt's' at point t. St portion of the supply curve is horizontal which defines the Lewis notion of "unlimited" labor supply at a constant institutional wage. The supply curve of labor slopes upward beginning at tt' signifying that "redundancy" of labor has ended.

In Figure 2.3 agricultural labor is measured on the horizontal axis OA (right to left) and total agricultural output on the vertical axis OB. The curve ORCX shows total physical productivity of labor, ORC portion shows the diminishing marginal productivity of labor and throughout XC marginal product of labor is zero. Thus AD labor force can be called "redundant" since its displacement out of agriculture could not decrease total agricultural output.

At the initial stage, we may suppose the total population is in agriculture (OA) producing AX of total output and consuming it all. Then the real wage is equal to AX/OA (or the slope of OX) and sustained there by institutional means. Since under competitive assumptions, labor would have received a real wage = MPP_L = zero. Thus this wage is called the "institutional wage rate".

To find the amount of disguised unemployed in agriculture, we should identify the point where MPP of labor equals the institutional wage rate. Suppose this equilibrium is at R where the dotted tangency line is parallel to OX -

institutional wage rate. Thus the AP portion of the total labor force is disguised unemployment since its contribution to output is less than it receives in the form of wages in return (MPP of labor is less than the institutional wage). AD amount of the disguisedly unemployed is "redundant" since their contribution to production is zero ($MPP_L = 0$) and yet they get a share from the total output.

Figure 2.2 depicts more clearly the concepts of disguised unemployment, redundant labor force and institutional wage rate. Agricultural output per worker is measured on vertical axes. Horizontal axes measure agricultural population left to right. Let ADUV be the MPP curve of labor in this sector and let AS equal to institutional wage rate.

Then we can distinguish three phases in the development process. The first phase is when MPP of labor equals zero and institutional wages are above this. In the second phase, MPP of labor is positive but still less than the institutional wage rate. In the third phase, MPP of labor is positive and above the institutional wage rate. This is the turning point, since wages can no longer be determined by institutional factors but productivity of labor force in agriculture. From this point on, agriculture can be said to have commercialized.

The most crucial point in the process becomes the transition into the third phase. Since there will no longer

be disguised unemployment, employers will have to bid up for labor in agriculture and thus full commercialization of this sector will come about. Ranis and Fei define this process as "the end of the take-off process. We know no other way to establish a nonarbitrary criterion for an economy reaching the threshold of so-called self-sustaining growth" (39, p. 537).

As can be seen in Figure 2.3, as the "redundant" labor force is taken out of this sector a surplus agricultural output appears. Total agricultural "surplus" is defined as "that portion of total agricultural output in excess of the consumption requirements of the agricultural labor force at the institutional wage rate" (39, p. 538).

If total redundant labor AD is taken out of agriculture and reallocated in industry, then the required agricultural output to feed the remaining force is DE and EC is the total agricultural surplus. This surplus may be regarded as the subsistence bundle of goods of the reallocated labor and should be siphoned off into industry. Otherwise, there will be a tendency for the "institutional wage rate" of the remaining agricultural laborers to increase, in which case reallocated labor force will have to be fed through other means (such as international aid). But since we are operating within a closed economy model this is not acceptable.

As was pointed out earlier in treating the Lewis article, this transformation process continues until labor surplus

in agriculture is exhausted and the economy is fully integrated. However, the process may come to a halt even before this point is reached if terms of trade move against the industrial sector. To overcome this deterioration in the terms of trade, agricultural productivity should be increasing rapidly so that a bigger output and therefore a bigger surplus is possible. Since "the 'worsening of the terms of trade' for the industrial sector occurs as the result of a relative shortage of agricultural commodities seeking exchange for industrial goods in the market" (39, p. 539) it can be averted if agricultural productivity increases rapidly.

We shall not go into the changes in agricultural and industrial productivity in a "dual" economy as treated by Ranis and Fei. We have already deduced important contributions for the construction of our framework. However their shortcoming was to accept the institutional framework of agricultural production as given. Contributions of changes in agrarian structures within this transformation process is identified by other authors on the same path.

Changes in Agrarian Structures

The Johnston and Mellor contribution (18) is essentially in the same vein as that of Ranis and Fei. They too believe that:

rural welfare as well as over-all economic growth demand

> a transformation of a country's economic structure, involving relative decline of the agricultural sector, and a net flow of capital and other resources from agriculture to the industrial sector of the economy. (18, p. 590)

Like the previous argument, they also specify three distinct phases of agricultural development. But their analysis goes a step further and identifies some of the structural changes that should accompany each phase of the development process.

According to the Johnston and Mellor classification:

Phase I is development of agricultural preconditions and includes improvements in land tenure, creation of an environment suitable for change, availability of knowledge of improved techniques and market outlets for agricultural products.

Phase II is expansion of agricultural production based on labor-intensive, capital saving techniques, relying heavily on technological innovations. And at this point they identify four categories of complementary inputs regarded to be important in increasing agricultural productions. They are:

(1) research to develop improved production possibilities,
(2) extension - education programs,
(3) facilities for supplying inputs of new and improved forms, particularly improved seed and fertilizers, and
(4) institutional facilities for servicing agricultural production, such as credit and marketing agencies (18, p. 584).

Phase III is expansion of agricultural production based

on capital-intensive, labor-saving techniques and is regarded to as "fairly late stage of development" (18. p. 583).

On the same path, using the tools of production theory, Nicholls (33) reaches the same framework of Ranis and Fei in terms of the importance of achieving and sustaining a reliable food surplus. However he differentiates between "under-populated" and "overpopulated" countries and their capacities respectively to create an agricultural surplus, within a "one" and a "two" sector agricultural economy. One sector economy is taken to mean "agriculture of the given country is entirely engaged in food production, any agricultural surplus consisting only of food" (33, p. 19). Whereas in the latter "agriculture has two sectors--one engaged in food production (largely for domestic consumption) on small owner-operated farms, the other producing industrial crops (largely for export) on large scale, highly capitalized, well managed, and highly productive plantations" (33, pp. 19-20).

Apart from identifying and analyzing to some extent the modes of production within agricultural development effort, Nicholls varies from Ranis and Fei on the securing and transfer of the agricultural surplus. Nicholls points out that "unused or underutilized labor represents a stupendous waste. If properly organized and motivated, such labor can be turned to direct capital formation ... the challenge lies in finding democratic organizational techniques for recruiting

redundant rural labor effectively on a voluntary basis" (33, p. 24).

In the case of landlord-tenant mode of production, Nicholls is not very optimistic with regards to the transference of the agricultural surplus into productive investments. He agrees that the landlord class could voluntarily invest its surplus in non-agricultural activity thus reducing redundant labor force or improve food technology which further increases agricultural surplus. But in Nicholls' words:

> By becoming willing to devote its accumulation to domestic investment rather than to lavish living, a landed oligarchy could provide out of its agricultural surplus the stimulus for helping an overpopulated country to move from a state of initial stagnation into one of ultimately self-sustaining economic growth. However, for the various economic and political reasons already considered, the landlord class is not often likely to play this role voluntarily (33, p. 27).

Since no voluntary action to transfer this surplus is expected, then government intervention is necessary in each phase of the development effort in order to devise means to attain the targets of the society. But what are these important policy means that should accompany economic development process in agricultural sector? In this respect, Thorbecke's contribution (9, 53) is very significant, because he has incorporated the policy means that change agrarian structures in each phase of this development process. Like the previous authors discussed, Thorbecke identifies three distinct phases in the transformation

process and provides the agrarian policy means most appropriate in each phase.

His presentation is provided in Table 1.

According to Table 1, each phase of development has special characteristics which require the most appropriate policy means to be employed. Thus, in the first phase reforms are the most suitable policy means. These reforms are changes in the foundations of the economy and they can be thought of, essentially, as a means to reorganize the society in a manner most conducive to development. In a sense, members of the society make a new "contract" within themselves and reorganize their relationship with respect to agricultural production. Changes in tenancy arrangements, land redistribution and land consolidation are some of the crucial means of this phase.

In the next phase, structural means are important. These are policy measures to complement the means employed in the previous phase. Importance is attached to investments in social overhead capital that will lead to more efficient production. Some of these policy means are; more support for education, extension service, research on improved seeds, fertilizers, pesticides as well as, creation or improvement of credit and marketing facilities, construction of village roads.

Third phase is the beginning of commercialization in

Table 1. Agrarian policy means and the process of economic development[a]

Economic Development Phase	Characteristic Features	Major Objectives	Principal Agrarian Policy Means Appropriate to Period and Conducive to Growth
Phase I: Stagnation	MPP labor = 0 (labor redundancy)	Distributive justice	Land redistribution
	Supply of labor in agriculture infinitely elastic at institutional wage rate	Equality of opportunity	Changes in land tenancy Taxation Social-overhead capital
	Supply of labor in industrial sector infinitely elastic at institutional wage rate	Economic development	Subsidies Extension
	Economic dualism		
	Preconditions to take-off not met		Reforms most important policy means
	Existence of agricultural surplus		
Phase II: Take-off	0 < MMP labor < institutional wage rate	Economic development	Research
	Supply of labor in agriculture infinitely elastic at institutional wage rate	Productive efficiency	Public investiment in social-overhead capital and farm implements
	Supply of labor in industrial sector upward sloping	Equality	Education
		Justice	Extension Credit and marketing facilities Taxation

[a]Source: (53, p. 281).

Table 1 (Continued)

Economic Development Phase	Characteristic Features	Major Objectives	Principal Agrarian Policy Means Appropriate to Period and Conducive to Growth
			Structural changes most important policy means
Phase III: Commercialized Agriculture	MPP labor $\geq$ institutional wage rate	Productive efficiency	A number of instrument variables
	Agricultural and industrial sectors fully integrated	Economic growth	

agriculture and thus integration of the economy. Therefore a number of instrumental means, such as changes in tax rates and in the tax incidence, direct or indirect subsidies on fertilizers, farming equipment will suffice to contribute to the development of the agricultural sector.

The above outlined scheme certainly provides one with an analytical framework most useful in dealing with "labor surplus" underdeveloped countries. However, two difficulties are observed when we try to put the framework into operation. First it is almost impossible to identify the phase of the actual state of development of those countries. As Condos points out:

> it would seem that one phase extends itself into the next, so that parts of the agricultural economy can be said to correspond to phase one while others to phase two (4, p. 61).

This observation is certainly relevant for the Turkish case as well. Since, especially in coastal regions as well as in fertile valleys of the country, commercialized nature of the agricultural production makes the general classification of the economy as a whole rather difficult. Central Anatolia and Eastern regions of the country may be said to correspond to the first phase, whereas other regions may be thought of in the second or the third phase. Therefore it seems to us that most appropriate policy means should be employed according to the regions studied rather than the general level of development of the country as a whole.

Above argument brings us to the second point. It seems to the author that some form of a weighted policy means approach could prove to be more beneficial than the single most appropriate means in each phase of development. Such that in the first phase reform measures are given more importance, but structural and instrumental changes should be accompanied by some weight. Similarly, in the second phase some sort of a balance should be found between all three means giving structural means much of the weight.

These two arguments do not diminish the importance of the outlined scheme. In fact, in the next section through a conceptual framework we identify the interdependences of various policy means in pursuing the goals of the nation.

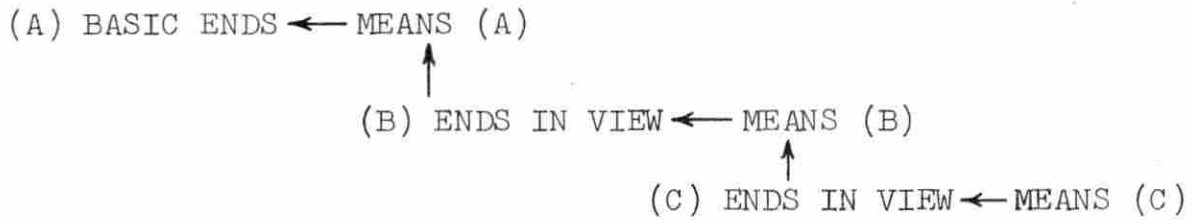
Conceptual Framework of Analysis

As argued in the first section of the study, economic development proceeds on two fronts; agricultural and non-agricultural sectors. But because of its size and potentiality the former sector is relied upon for the "financing of the transformation process". Importance of this sector within the process leads one to take a closer look at its problems. And this is dealt with through a conceptual framework that seeks to identify defects in agrarian structures which obstruct agricultural and therefore national development.

The inquiry proceeds on the grounds Dewey (5) and

Salter (48) established and Timmons (55) applied to land tenure problems. Framework of analysis is the "means-ends-continuum". Within this framework, ends perform a "two fold function". First, they establish the norm with which the problematic situation may be determined as the gap between the norm and the present situation. Second, ends are also used in evaluating the means used in order to determine their contribution in reducing or widening the problematic gap.

However, not all ends are the immediate goals of a society. Such that some ends may be means to higher ends-in-view. Thus, as Timmons (56, p. 14) identifies, there is a hierarchy of ends, some ends being means to more ultimate ends. Thus in a continuum means-ends can be shown:



Ultimate or basic ends are (or should be) common to all societies, since these are the most fundamental yearnings of all human beings. Then the basic ends of all societies are life, liberty and opportunity. Turkey, being no exception, has these basic ends in view when it signs the bill of human rights or constructs a development Plan. Pursuing economic or agricultural development is not an end in itself, but means to improve the life of its citizens,

providing more opportunity and greater freedom of choice in their activities.

These basic ends are essentially complementary, but at times they may become competitive. Timmons clarifies this point:

> ...certain conflicts arise in maximizing achievement of one or two of the three ends. Life might be purchased with the cost of liberty and opportunity. Similarly, liberty might be purchased with the cost of life. Wars have been fought with huge sacrifices in human life for liberty. Thus, conflicts in achieving unitary ends must be resolved in an optimum achievement of all ends (56, p. 19).

Even though our basic ends are the same, in this study we shall be dealing with a lower level end; namely agricultural development. And the initial means of our analysis are the changes in agrarian structures.

The ends-in-view for the Turkish agricultural sector are three fold:

1. Improved agricultural productivity and efficient allocation of resources
2. More equitable distribution of agricultural income and wealth
3. Increased total agricultural production together with increase in per capita income of agricultural labor force

Some of these ends may be in conflict. For example, when pursuing goal 2 we may have to employ means to redistribute land and restrict private ownership above a certain limit

of hectares. However, this may conflict with goal 1 if there are increasing returns to scale in agricultural production and we may have to forego potential productivity increases due to modern technology and scale of operations. Similarly pursuing goal 3 may end up in terms of trade changing in favor of agricultural sector, which may bring about a premature halt to the transformation process.[1]

If agricultural development is identified by all the above three ends, then we should resolve the conflict between ends-in-view by first establishing some form of a balance between the goals pursued (such as giving higher priorities to some ends). Competitive as well as complementary relationships among the goals should be considered and the ones that are expected to contribute more towards the attainment of the basic ends should be given higher priority.

Another way to solve the conflicting ends may be to employ means that do not lead to contradictory goals. For example, if goal 2 is pursued not through the means of land redistribution it may be thought of conflicting with goal 1 (for fear that there are increasing returns to scale in agricultural production). But instead, other means such as an increased rate of taxation of land may be levied on land above a certain limit. Then goal 2, better distribution of

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[1]This fact was mentioned in the previous section of this chapter.

income and wealth is achieved, and the effects of the means pursued may be neutral or positive on goal 1, improved productivity and efficiency of resource allocation (since a land tax may induce landlords to allocate their resources more efficiently).

In Figure 3, we construct a conceptual scheme that evaluates the consequences of changes in agrarian structures in terms of their contribution to agricultural and national development, and ultimately to the basic ends-in-view.

Basic ends of the Turkish society, like any other society are Life, Liberty and Opportunity. To reach these ends three means are employed; economic development, political stability and social justice. A country not developing economically can at best provide life (at some subsistence level) to its citizens. But it cannot provide opportunity to improve themselves nor much freedom. Even life at a subsistence level becomes questionable if there is high population growth and no economic development.

Similarly political stability and social justice are other means to reach the basic goals of the society. In a society where there is political chaos and constant overthrows of government, no one can be certain of his life let alone freedom and opportunity. Where social justice does not exist, where only the powerful (physically and/or politically) rule and where there are not equal opportunities for success,

then society as a whole cannot attain the ends-in-view.

Above discussed means are, however, an end to agricultural and industrial development. Since here we are interested only in the agricultural development, we shall not deal with the various aspects of industrial development. In order to reach the goals of economic development, political stability, and social justice; agricultural sector should employ means to increase agricultural productivity, better income and wealth distribution, increases in total output and per capita income. In the absence of these means, economic development is expected to be slower, political power more likely to fall in the hands of a small minority and there is not much chance for political stability nor for social justice.

Similarly, agricultural development becomes a lower level end-in-view and agrarian policy means are pursued to reach these goals. These are divided into three; reforms, structural changes and instrumental variables. However they should not be regarded independent of each other. Because employment of one policy mean in the absence of the others may result in partial fulfillment and not the complete attainment of the goals. For example, if only reforms are employed (such as land distribution) as means to increase agricultural output and productivity, then the results are likely to be disappointing. Since in the absence of complementary measures of extension service

(dissemination of knowledge), agricultural credit and the like, the ends pursued will not be achieved. Peasants receiving the redistributed land will eventually fall back into the hands of the landlords for lack of credit and may become sharecroppers in their own fields. Or because of lack of managerial skills on the part of the new owners (peasants), total output may decline and reform policy may be self-defeating. Therefore, it is the "optimal mix" of all these policy means that should be employed in each phase of development of every country, rather than an application of only one set of most relevant means.

Figure 3 is constructed in a means-end-continuum in order to evaluate the impact of changes in agrarian structures with special reference to agricultural development of Turkey.

With reference to Turkish experience, some "optimal mix" of agrarian policy means should be employed in order to reach the goals of agricultural development. Characteristics of the optimal mix of policy means will depend on the phase of the country in economic development, as well as the "welfare function" of the society represented by the ideology of the political power they have elected into office. It is assumed that the political party in power may not be elected into office if it does not represent and pursue the wishes of the people.

Accordingly, if Turkey is in the second phase of development, that is in "take-off" stage, as claimed by most

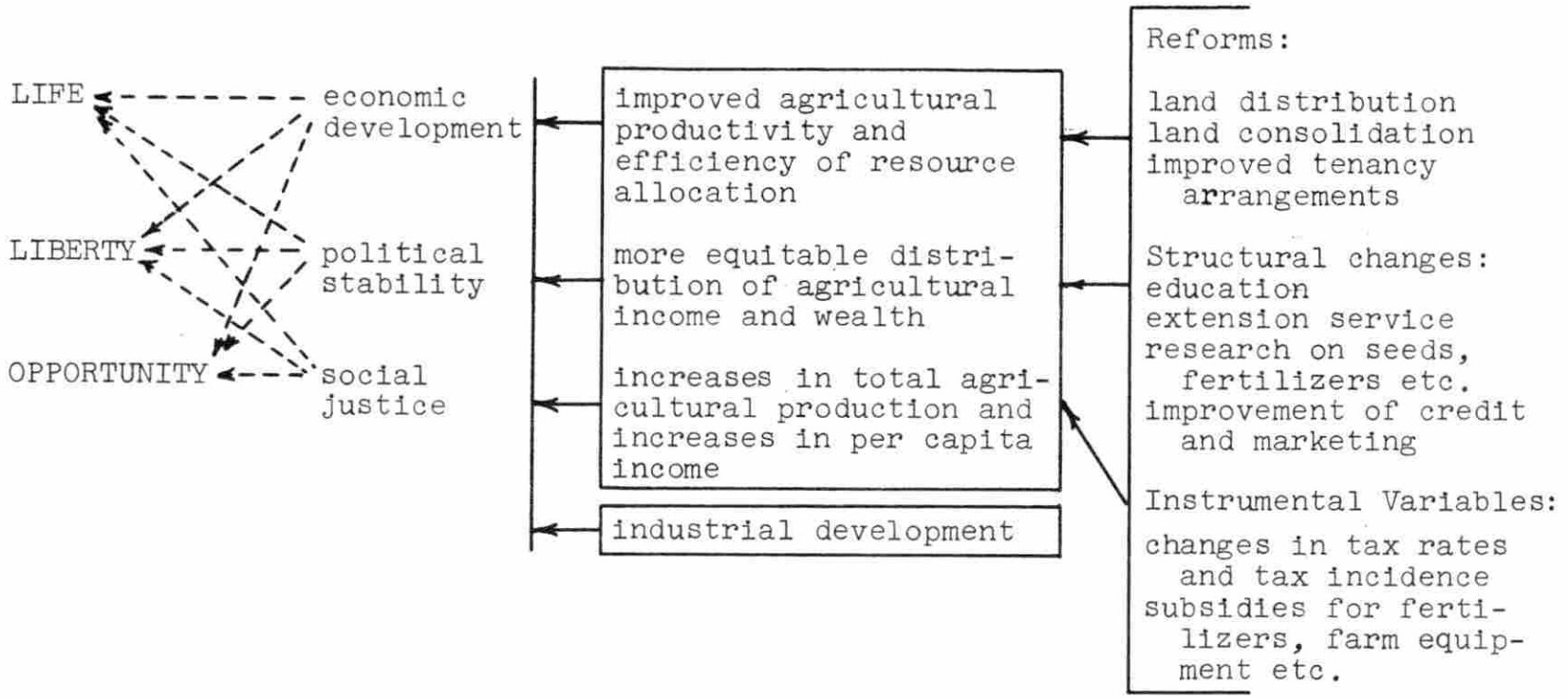

Figure 3. Impact of changes in agrarian structures in a means-ends-continuum

of the economists who have analyzed the country, then the relevant optimal mix of policy means must be such that structural changes should be given more weight than reforms and instrumental variables. This observation is substantiated by the plan (41, pp. 165-169) which proposes a policy mix under the heading of "institutional reforms". Under this title, all policy means are covered but the weight is attached to the structural changes, that is agricultural education, extension service and research, improvements in credit and marketing facilities.

Therefore, in this study, we concentrate our efforts only on the above mentioned structural changes. Reforms in the use and ownership of resources although an integral and important aspect of structural changes in Turkish agriculture, is not treated in this study. First because no reform measures have been implemented during the period under consideration and second because it will be treated in a more comprehensive manner in a future study.

CHAPTER III. CHARACTERISTICS OF THE TURKISH AGRICULTURAL SECTOR PRIOR TO 1963

In the previous chapter theoretical framework of approach suitable to the Turkish development effort has been outlined. In this chapter characteristics of the Turkish agricultural sector prior to the Plan phase is identified with a view of appraising the contributions of this sector towards general economic development of the country.

Compared to the early days of the republic, Turkey has made remarkable progress in economic and social development. Indices of national income, per capita income and agricultural production show these facts clearly in Table 2.

Table 2. Indices of national income, per capita income and agricultural production[a]

	1927	1938	1945	1950	1958	1961
National Income	53	100	77	121	213	226
Per Capita Income	65	100	69	101	129	125
Agricultural Output	57	100	74	116	199	205

[a]Source: (41, p. 8).

However, as can be observed, the rise in per capita income has been slight compared to the increases in the National income. Thus, increases in the national income has been offset by the rapid rate of population growth and living

standards of the people have not improved significantly. Further increases in living standards will require a significant decline in the rate of population growth and even higher rates of increase in National income.

Although the agricultural sector's relative importance in national income has been declining steadily, it still is the most crucial sector of the economy. Since 77.4 percent of the active population is employed in this sector (41, p. 400) contributing to 42 percent of the national income (41, p. 9). Perhaps the magnitude of the contributions expected out of this sector come into better focus when one puts down the present nature of the problems facing the country:

> The following figures are significant indicators of the magnitude of the problems that must be considered in Turkey. Of the population of school age and above, 60 percent is illiterate. 53 percent of the villages and 55 percent of the small towns have either no drinking water or not enough, 69 percent of the population is without electricity. Out of every 1000 babies born, 165 die in the first year. 2.5 percent of the population has tuberculosis... There are 60 students for every school teacher and 25-30 villages to every agricultural expert... The population of Turkey is increasing very rapidly. It is calculated that even at the most active season, there are about one million unemployed in the agriculture sector (41, p. 24).

In the past, the agricultural sector's response to the challenge of rapid population growth (which is around 2.9 percent annually) had been to expand the area under cultivation thereby increasing production. Cultivated land as percent of total area has increased rapidly from 18.7 percent in 1950 to 29.9 percent by 1960, practically reaching the

physical limits of the land (41, p. 24). The expansion was secured at the expense of meadows and pastures which accelerated the already existing overgrazing problem. Palmer points to the problems created by the extension of cultivation:

> ...it is generally agreed that the spread of the cultivated area has passed beyond the point of maximum rational use, and that it threatens a further deterioration of fertility, an increase in erosion, and a potential flood danger. Certainly it can be said that further increase is strictly limited, and that the total area used for agriculture is more likely to decrease than to increase in the future (37, p. 58).

Both the causes and later the effects of this expansion in the cultivated area over the past two decades have been due to the sudden and mass influx of farm machinery into Turkey. Increases in agricultural production as the goal-in-view, introduction of tractors and modern farm equipment created far reaching social-economic problems never anticipated by the originators of the policy.

The number of tractors increased rapidly from a mere 1,356 in 1946 to 9,170 in 1949. By 1953 there were over 35,000 in operation, by 1960 it had passed 42,000. The number of tractors reached its peak in 1966 with over 65,000 (43, p. 3). This is an incredibly fast pace of increase; nevertheless area cultivated by the tractors has been about 1/6 of the total area under cultivation. Still tractors had profound influence on the rural way of life in Turkey.

Besides their social-prestige value, tractors became a symbol, an agent of modernization in the village level.

With them mobility of labor accelerated, communications and transportation between villages and cities increased, even infant mortality rates declined.[1]

Economically, tractors caused two crucial changes in Turkish agriculture. First, as pointed out earlier, area under cultivation increased rapidly in favor of croplands and against pastures and meadows. This problem created further land disputes (since pastures belonged to all villagers-communal ownership) and accelerated the already present overgrazing problem. Second, it created a labor surplus in agriculture. As early as 1952, Robinson identified the inbalance created by tractors in a cotton growing region:

> Change in labor requirement wrought by the tractors has been in the direction of vastly increasing underemployment, drastically curbing winter migrant labor needs, and significantly stepping up summer employment. Greater underemployment and seasonality of labor have emerged (45, p. 458).

Inevitably increases in area cultivated, mechanization of agriculture, increased use of fertilizer and extension of irrigated lands have all contributed to the increases in agricultural output. Increases of production are observed

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[1]Robinson (45, p. 458) quotes an interview with a doctor in one rural health center in which the latter declares that due to the introduction of farm machinery, mothers were displaced out of agriculture and thus had more time to take care of their children causing infant mortality rate to decline. For more detailed account of farm mechanization in Turkey see 22.

on cereals (usually regarded as subsistence output) as well as on fruits, pulses and industrial crops (commercial output).

However, with respect to the agricultural production mechanization essentially created two separate producer groups. The first is the semi self-sufficient majority of the small farmers who market the produce left over in excess of their own consumption requirements. These farmers own uneconomical parcels of fragmented land and operate with oxen and wooden plough. In addition to working on their own plots, most members of this group comprise the seasonal migrant labor force drifting into cities during the slack period in agriculture. The second group consists of the medium and large farmers that grow cash crops. This group is market oriented, commercialized and has the technical know-how, as well as the means to acquire modern technology. Hence, it was to this second group that mechanization provided the benefits, since the first group neither had the capital (or available credit at their disposal) nor the technical sophistication to utilize modern technology. Besides, their uneconomical holdings are fragmented into even smaller parcels of land which make tractors virtually impossible to use.[1]

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[1]Pine (38, p. 265) declares cropland of these farmers to be 10-12 noncontiguous irregular tracts.

Thus, in fact, two sub-sectors in agriculture were created--one producing and the other essentially sustaining the supply of labor until better opportunities are found in the non-agricultural sector. This phenomenon is not unique to Turkish agriculture. Owen points that, in case of a failure on the part of the non-farm sector to make available new job opportunities, then this potential labor supply can be left indefinitely where it is at the expense of the farm sector (36, p. 62). Owen also adds that:

> The challenge in most of the underdeveloped countries is to find a way to effect the most efficient working compromise between the advantages of farm-sector-based social welfare for the poor and the developmental potential of adequate sized family farms. This objective in most cases, no doubt, may best be realized through a deliberate creation of two sub-sectors in agriculture, one being designed to maximize the output of social welfare for surplus labor and the other to exploit the full dynamics of the Mill-Marshalian model in respect to development. This, of course, is precisely what has happened as a haphazard by-product of the process of development in the United States and other economically advanced countries. By accident more than by design the farm sectors in all of these countries comprise a minority of highly productive commercial farms and a large majority of essentially subsistence farms, with the former producing most of the surplus commodities and the latter supporting most of the surplus people (36, p. 64).

As an example, in the footnote of the same page Owen argues that in 1959, 2 .3 percent of all farms had supplied 71.8 percent of all farm products sold in the markets in the United States. We have no comparable data for Turkey, but it is very likely that a similar two sub-sectors in agriculture occurred, especially with the introduction of

new technology beginning around 1948.

Hence, if we assume grain production to be concentrated on the semi arid Central Plateau[1] where family farms are sub-optimal, fragmented and characterize semi-self-sufficient units, then grain output can be said to be produced essentially by the subsistence farmers.[2]

In a sense, this sub-sector has fulfilled the task assigned to it; that of keeping the redundant labor force in the form of involuntary underemployment until job opportunities in the non-farm sector increased. To this end grain outputs were increased (through extension of cultivated area) in order to sustain the increasing population. However, yields in grains have not increased during the same period, as pointed in Table 3, suggesting the fact that climatic conditions still dominate and required technological changes have not taken place within the subsistence sector of Turkish agriculture.

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[1]This assumption is relevant since West (59, p. 28) identifies "The Central Anatolian Plateau is the principal soft wheat area. The major part of the barley production is also on the Central Plateau."

[2]1963 sample survey (44, p. 22) shows that farms having more than 50 hectares account for only 15 percent of total wheat production, while 8.9 percent is produced in state farms and the rest of wheat production--about 76 percent came from small farms of size 50 or less hectares.

Table 3. Area, production and yields of some selected grains[a]

Years	Wheat			Barley			Oats		
	Area	Output	Yield	Area	Output	Yield	Area	Output	Yield
1946	3,830	3,648	952	1,735	1,653	953	272	230	817
1950	4,477	3,871	864	1,901	2,047	1,076	302	315	1,043
1954	6,405	4,900	765	2,500	2,400	960	348	325	934
1958	7,450	8,550	1,147	2,700	3,600	1,333	389	480	1,233
1960	7,700	8,450	1,097	2,836	3,700	1,304	430	530	1,232
1961	7,717	7,000	907	2,786	2,948	1,058	412	535	1,055
1962	7,800	8,450	1,083	2,800	3,500	1,250	410	450	1,098
1963	7,850	10,000	1,273	2,750	4,288	1,504	410	500	1,250

[a]Area in thousand hectares, output in thousand tons and yield is in kilograms/hectare. Source: (43, p. 4).

As can be seen in the above table, area under cultivation and production has been increasing but yields per hectare has shown an erratic trend, increasing and decreasing depending on the annual weather conditions rather than the technological changes in this sector.

However, in the commercialized subsector of agriculture the picture changes noticeably (except in the case of tobacco production where increases in the cultivated area on the marginal and unsuitable soils have decreased yields). Yields of all other crops show a significant increasing trend. Table 4 is constructed for the same periods in order to be able to make a comparison with Table 3 meaningful.

Table 4. Area, production and yields of some industrial crops[a]

Years	Potatoes			Sugar beets			Cotton		
	Area	Output	Yield	Area	Output	Yield	Area	Output	Yield
1946	57	264	4,612	35	621	17,542	246	59	239
1950	75	605	8,022	50	855	16,781	448	118	264
1954	109	1,000	9,174	71	1,200	16,844	581	142	244
1958	137	1,472	10,744	140	2,337	16,689	631	180	285
1960	160	1,400	8,750	203	4,385	21,608	621	175	282
1961	147	1,405	9,558	130	2,877	22,073	649	212	326
1962	136	1,489	10,869	125	2,731	21,719	660	245	371
1963	140	1,600	11,428	135	3,281	24,376	628	257	410

[a]Area in thousand hectares, output in tons and yield is in kilograms/hectare. Source: (43, p. 6).

The commercialized nature of this sub-sector is evident by the importance attached to measure increasing yields of the various products. Farmers have been eager to experiment in new varities of seeds, as well as mechanization, fertilizer and irrigation. Cotton production is the most striking example in this respect:

> The productivity of cotton growing is one which has really advanced in Turkey. This is largely due to two factors: the introduction of new varieties of cotton, and the increase of irrigation. The advance has taken place since 1957. Some new varieties were brought in on the farmers' own initiative from Syria and America, but the government is now aiding in the selection of varieties with research and with direct help to the farmers. The cotton research center in Adana has developed and introduced recently a variety called "Delpatine 15/21" which is adapted both to irrigated and nonirrigated fields, and is suitable for ecological conditions of Turkey (37, p. 122).

Hence, in a broad way characteristics of the Turkish agricultural sector are said to consist of two sub-sectors, differentiated by the agricultural products they produce as well as the size of the farms and the technology being used in them. However, characteristics of the agricultural sector alone do not explain the contributions expected out of this sector within the development process. In the next section of this chapter, with the tools developed throughout the study, we shall assess whether or not Turkish agriculture contributed significantly to the economic development of the country.

Contributions of Agricultural Sector in Economic Development

In order to inquire about the contributions of the agricultural sector during the plan period, we shall make use of the tools that were developed in the previous sections. Mainly we are interested in the "surplus" creation potential of Turkish agriculture. Is there an evidence of disguised unemployment and constant institutional wage in Turkish agriculture? How have the terms of trade been moving in Turkish economy? These questions will be discussed in a "classical" aggregative closed economy model, similar to the one developed in Chapter II.

Disguised unemployment in agriculture

The existence of redundant or/and disguised unemployed in the agricultural sector of the underdeveloped countries has been a controversial issue in the literature. The most vocal critic of the existence of the disguised unemployed in agriculture has been T. Schultz. He argues by examples that agricultural output declines if labor is taken out of this sector:

> In Peru a modest road was recently built down the east slopes of the Andes to Tingo Maria, using some labor from farms along the way mostly within walking distances; agricultural production in the area dropped promptly because of the withdrawal of this labor from agriculture (49, p. 62).

The concept of disguised unemployed has not been supported by other empirical studies either. Kao, Anschel and Eicher in their survey reach the conclusion that "to date, there is little reliable empirical evidence to support the existence of more than token - 5 percent - disguised unemployment in underdeveloped countries" (21, p. 141). Further critical studies on this matter are cited in Jorgenson (19).

With respect to the Turkish case, can we identify labor redundance or disguised unemployment? In Turkey, population has increased quite rapidly, as can be seen from Table 5 below. More interesting for our purposes has been the rather rapid rate of urbanization. However, out of this table is it possible to conclude that there was redundant labor force in agriculture and it has transferred into the industrial sector (if urban population is assumed to represent

non-agricultural sector)?

Table 5. Urban and rural population[a](000)[b]

Year	Total	Rural	Urban	Per Cent Urban
1935	16,158	12,825	3,333	20.6
1940	17,821	13,947	3,874	21.7
1945	18,790	14,625	4,165	22.2
1950	20,947	16,260	4,687	22.4
1955	24,065	17,646	6,419	26.7
1960	27,755	19,762	7,993	28.8
1965	31,391	21,754	9,637	30.7

[a]Due to the unavailability of data on labor force actively engaged in agriculture total rural population is substituted for agricultural sector.

[b]Source: (41, p. 32).

Out of Table 5, it is not possible to argue that there has been a significant transfer of agricultural labor force into industry or that there was labor redundancy in the agricultural sector. Although rate of urbanization has been much faster than the population growth, still we cannot possibly argue that redundant labor has been transferred into industry, because: (1) we must prove that marginal physical product of labor in agriculture is equal to zero - if it is redundant and (2) in the dualist model when redundancy of agricultural labor comes to an end, total labor force in

that sector declines absolutely and not relatively--like it was in Turkey.

Distinguishing redundancy of labor in Turkish agriculture is not possible through the proposed ways above. First, we have not enough and reliable data to compute marginal product of labor in agriculture and secondly, far from an absolute decrease in their numbers there has been an increase in agricultural population.

However, another means can be employed to see whether or not there has been a significant transfer of labor force out of agriculture. This is the calculated "land/labor" ratio. We shall see how this ratio behaved; if it has increased through time then ceteris peribus it can be concluded that there was a significant transfer of labor out of agriculture. And in the absence of a decline in the agricultural output this labor force becomes "redundant". Land/labor ratio is shown in Table 6.

Table 6. Land/labor ratio in Turkish agriculture[a]

Years	Area Sown (1000 ha.)	Rural Population (1000)	Land/Labor Ratio (hectars/person)
1945	8,044	14,625	0.55
1950	9,868	16,260	0.61
1955	14,205	17,646	0.81
1960	15,305	19,762	0.77
1965	15,294	21,754	0.70

[a]Source: Area Sown (43, p. 5), Rural population (41, p. 32).

Table 6 apart from showing the great population pressure on land in Turkey, identifies a significant increase in the "land/labor" ratio between the years 1950 to 1955. One is tempted to conclude that this is due to a transfer of labor out of agriculture. However, the main reason is due to an unprecedented rate of increase in the new areas opened for cultivation. Thus, one cannot justifiably argue that there has been a transfer of labor into industry, but if expansion of the area cultivated had remained constant at the rate in between 1945 to 1950, there still would have been an increase in the land/labor ratio (though of course in less absolute degree).

The fact that there was a transfer of labor out of agriculture until the 1960's and that they can be identified as redundant (since there was no decline in the agricultural output during the period) should be observed in the rapid pace of growth of the non-agricultural sector of the Turkish economy during 1950 to 1955. Largely financed through international aid, ambitious construction projects such as, dams, highways, irrigation facilities etc. were undertaken by the government. Since most of these works did not require skilled labor, there were ample opportunities of employment and this at least induced a major portion of the redundant labor force to transfer into the non-agricultural sector. Another evidence of the transfer is the sudden surge of

shanty towns around all the large cities beginning in fifties.

Transfer of the surplus agricultural labor force has probably leveled off after 1955 since employment opportunities in the non-agricultural sector has not been increasing rapidly. This observation is in accordance with Owen's thesis (36), explained earlier. When the non-farming sector fails to provide jobs, then redundant farm labor remains in agriculture and takes the form of involuntary underemployment.

If surplus labor force is taken to mean the maximum laborers that can be displaced without a decline in output during the peak seasonal activities in agriculture, then there has been a substantial increase lately. According to the plan (41, p. 400) redundant labor force in the month of peak activity in agriculture doubled in July, 1960, to 800,000 (compared to July, 1955) and reached 1,000,000 by 1962.

Thus, it can be concluded that there exists disguised unemployment in Turkey in the form of sharing the total work load, resulting in a low positive marginal product for agricultural labor. However, the redundant portion of this surplus force (in the sense of marginal physical product of labor being equal to zero) is difficult to identify and probably small. Unemployment in the underdeveloped countries is difficult to measure

> ...because the size of the labor force itself is determined by the number of jobs available, and there is a large reserve of employable men and women always available...the crucial (point is that there are)... too many people for too few jobs...Turkey has not had the sense of need for jobs until very recently... (But) the disappearance of the agricultural frontier in the 1950's, the quickening pace of urbanization, the increasing role of spokesman for labor, and the newly declared policy of encouraging family limitation--all suggest that Turkey is now to be regarded as a surplus labor country (50, p. 352).

Considering also the fact that there is a steady flow of migration of labor into Western Europe since 1960's, of which total number has passed well over 200,000 and probably there are twice as many on the lists waiting to go. The above conclusion is hard to disagree with.

Agricultural Surplus and Its Transference into Non-Agriculture

Production of both the subsistence (Table 3) and the commercialized sub-sectors (Table 4) indicate the increases in agricultural output. There is reason to believe that many of these achievements can be linked to the extension of the area under cultivation. This was accompanied by a change in the resource mix (i.e., utilization of modern technology, better seeds and management etc.) on the part of the commercialized sub-sector. However, further increases of agricultural output will depend on measures taken to increase agricultural productivity, since physical limits of land have been reached as is claimed:

> the income growth of the fifties came mainly through increased agricultural output achieved by extending the area under cultivation. In ten years the cultivated area increased by two-thirds, tractors being used to break up burnt forest, state land, unowned land and village commonland, and it does not appear that the process can be repeated (6, p. 132).

No matter what the causes had been or the present problems it has created, increases of agricultural output overtime does indicate the existence of a potential agricultural surplus. However, this potential surplus can only be materialized if institutional wages remain constant throughout the time agricultural productivity is increasing and labor force is being transferred into the non-agricultural sector. If institutional wages do increase, then it implies that total agricultural surplus has been consumed in the agricultural sector and no transfer of this resource has taken place.

Hence, constancy of institutional wages becomes an important tool in determining whether or not total agricultural surplus has in fact been transferred out of agriculture. With regards to Turkey, unavailability of data on real incomes per capita of rural population forces us to take an indirect estimation of the actual transfer of this surplus.

Two significant policies can be pursued by governments determined to transfer this surplus. The first is the price policy favoring non-agricultural sector and the second is imposition of heavier taxes on agriculture relative to other sectors. To be successful either or both of these policies can be applied. Japanese experience is a good

example in this respect. Agricultural surplus has been an important source of finance throughout the initial phase of the Japanese economic development. Besides a deliberate price policy favoring the non-agricultural sector, heavy taxes were imposed on the agricultural sector. Direct taxes on agricultural incomes around 1883-87 were 22.1 percent and declined up to 7.8 percent in 1933-37; whereas taxation of non-agriculture was around 3-4.2 percent for the same period. In fact, land taxation was the most prominent source of revenue of the government, reaching as high as 85.6 percent of total taxes in 1888-1892 (35, p. 311).

With respect to Turkey, whether or not a price policy favoring non-agriculture has been pursued is dealt with in the final section of this chapter. Meanwhile, we turn to taxation of agriculture in Turkey.

Taxation of Agriculture

When republican Turkey was established it had inherited several forms of agricultural taxation from the Ottoman Empire. Among these the tithe (asar) occupied the most prominent place--close to one-fourth of all revenues of Ottoman finances. In addition to the tithe, agriculture also paid a tax on livestock and another on the assessed value of the land; altogether they constituted nearly half of the total government revenues (51, p. 1).

After republican Turkey was founded, the tithe was repealed because it was an arbitrary, unjust and oppressive tax system.[1] A somewhat modified form of this tax (Tax on Soil Products) was put into effect from 1943 to 1946 in order to increase the public revenues caused by a large scale of mobilization due to the war. This method of taxation proved to be costly--since the produce had to be assessed on the fields by a large number of government weighers, assessors and crop keepers. This was an emergency tax; so as soon as the war was over, starting in 1946, the tax on soil products was abolished.

Other forms of agricultural taxation that remained in effect during some parts of the republican era are road tax, livestock tax and land tax.

Road tax was a poll tax on the adult male population payable in work or an equivalent amount in monetary terms. The tax was imposed as six work days a year in 1925, increased to eight or ten days in 1929 and again decreased to its original level in 1931. Road tax was paid either in cash or in kind, that is, in the form of labor on public highways. However, it has proved to be rather unpopular, since often peasants were forced to work on distant highways which they

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[1]The Ottoman government used to sell the tithes of the districts at auctions to tax farmers. The latter, after acquiring the privileges of tax collection, used to sell their rights to other collectors. These tax farmers constantly abused their rights and pressured peasants to sell their own share of the produce at lower than market prices (51).

had no access to. Perhaps if a tax program contributing directly to the welfare of the village community had been adopted, then the burden of the tax would have been acceptable. Finally it was abolished in 1952.

Livestock tax is based on the origins of Islamic law (Seriat) and used to be collected in kind in its original form. Later it was reformed and the rates were calculated according to the animals yearly gross produce. Livestock tax was imposed on all animals and covered besides sheep and goats, cattle and all work animals. Inherited from the Ottoman tax system, this tax was continued during the republican period. In the early days of the republic the rates of the tax were adjusted to take into account the changes in agricultural prices. But since 1942, no revaluation had taken place and the real burden of the tax declined steadily as agricultural prices kept on increasing. By 1951 work animals and cattle were exempted from this tax and finally in 1962 when income tax was extended to agriculture this tax was abolished altogether.

Income tax law was introduced in 1949. However, this law exempted totally all the incomes derived in the agricultural sector. The face saving explanation was that peasants were illiterate and could not possibly comply with the bookkeeping obligations of the income tax system. However, this was not a good excuse for large landowners who had all the

means to comply with the income-tax laws. In fact such a general exemption was a reflection of the political power of the large land owners. During the 1950's the agricultural sector benefited from the infrastructural investments (construction of dams, roads, flood control etc.) of the government and yet did not contribute to this effort through direct taxes (land tax will be discussed presently). Some attempts of the government to include agriculture into income taxation was very effectively blocked by the large landed interest group until the military coup of 1960 blew up their line of resistance.

Military government extended income tax to agriculture. Originally some 30 percent of the land owning peasants were excluded from income taxation. Although this new tax affected only large land owners, the protests were vigorous and as soon as a civilian government was elected, the exemption limit was increased from 150 to 500 donum (750 decares) extending the exemption to some 60 percent of the landowners. Besides exemptions, generous personal allowances and deductions were provided for all farmers regardless of the farm size. Hence, in the first year of implementation in 1963, the income tax collected out of agriculture amounted to only 25 million TL., or only 0.12 percent of the gross agricultural product and 1/8 of what the government hoped to collect (51, p. 19).

Land taxation was also inherited from the Ottoman Empire periods. The assessment of land for tax purposes necessitated a cadastral survey, since prior to the republic no regular cadastral survey had been conducted. However, such a survey proved to be very slow and costly. Instead, an experimental land survey was conducted (lands being classified into good, medium and poor quality) and a new land tax based on it was promulgated in 1931.

According to the tax, the intention was taxation of the produce of land. Since this was very difficult to determine, current value of the land was accepted instead as tax base. For the registration purposes, assessment value of individual patches of land was made according to the declaration of the owner and confirmation of the other peasants, without actual measurements on the field. This survey, conducted in 1936, has been in use for land taxation since then.

Although originally it was decided to reassess land values every ten years, no revaluation had taken place since 1936 (2, p. 196). The registered values of land eroded with the inflations of war and post war periods, such that the share of land tax in total government revenues dropped drastically from 3 percent in 1936 to 0.4 percent in 1960 (20). The erosion of the tax base had reached such a degree that the tax collectors preferred to pay the tax of a whole village himself rather than travel to remote villages to

collect taxes (27).

The military government of 1960, assuming that the value of land produce increased ten to twelve times since the last assessment in 1936, decided to increase ten times the assessed value of land. Admittedly, this was a rough and average adjustment, not necessarily reflecting each individual case. But opposition was strong and well organized and as soon as the civilian government returned to power, the assessed values of land were decreased to three times the original level. This final revision has increased the land tax absolutely, but the tax burden has never reached its original levels in 1936. Table 7 shows total revenues of government and share of land tax in total taxes.

Table 7. Share of land tax in total taxes (million TL.)[a]

Years	Total Taxes	Land Tax	Share of land tax in total taxes (%)
1955	2,481	19	0.8
1956	2,816	19	0.7
1957	3,592	20	0.6
1958	4,142	22	0.5
1959	5,535	24	0.4
1960	5,671	25	0.4
1961	6,699	44	0.7
1962	7,114	68	1.0
1963	8,424	65	0.8

[a]Source: (7, p. 22).

As can be observed in the above table, the burden of land tax declined steadily until it was adjusted in 1960 by which time it has only reached the 1955 level and not the original level of 1936.

It can be argued that agricultural sectors' contribution (in the form of direct taxes) has been rather insignificant through the economic development process. Instead of heavier taxation, agriculture's share of financing development effort has declined steadily. Therefore, it can be concluded that taxation has not been used as an effective tool to transfer agricultural surplus in the Turkish economic development effort.

Internal Terms of Trade

Internal terms of trade index is another good indicator to assess whether or not Turkish agriculture has contributed to development effort. In the event of a failure on the part of direct taxation of agriculture to contribute to development significantly, another mean to achieve the same end is to administer agricultural prices so that directly (purchase of all agricultural produce by government agencies) or indirectly (through imposition of quotas to be delivered at lower than market prices) government may interfere with internal terms of trade and favor the non-agricultural sector. Hence, it becomes important to identify how internal terms

of trade have been moving throughout the development process.

Internal terms of trade is an index such that "the ratio of price index of goods sold by farmers (the numerator) and a price index of goods bought by them (the denominator), where the denominator includes the prices of goods bought both for consumption and production purposes" (16, p. 441).

Thus it can be represented as:

$$T = \frac{P_A}{P_{NA}}$$

T = Terms of trade index

P_A= Price index of agricultural products

P_{NA}= Price index of non-agricultural products

According to the "classical" closed economy model (in which our framework is constructed), terms of trade should move in favor of the industrial sector, so that "surplus product" is created and transferred for capital formation. Lewis provides historical examples from Japan and U.S.S.R. on how it was carried on successfully and concludes:

> ...if the capitalist sector depends upon the peasants for food, it is essential to get the peasants to produce more, while if at the same time they can be prevented from enjoying the full fruit of their extra production (29, p. 434).

There are two studies (7, 16) which we can make use of in dealing with Turkish internal terms of trade. Although they employ different sets of data and assumptions and one of them covers a longer period, they are comparable and

with some qualifications, both show the same trend beginning 1950.

Hirsch's study (16) constructs an index of terms of trade of Turkish farmers with 1929 as the base year. Absence of an official consumers' price index for farmers forces them to construct one, using 19 consumption items. Choice of these are based on a survey of the pattern of consumption expenditures of peasant families in Central Anatolia in 1936. Apart from the implicit assumption of no change in the tastes and patterns of consumption of the peasants since 1936, the study uses the price index of Ankara for 14 of the items used in the index (16, p. 445).

However, they are well aware of the shortcomings and conclude that "these results must be qualified for several biases that had been shown earlier to be caused by some of the data used to construct the index" (16, p. 453). Resulting terms of trade index of Turkish farmers are shown in Table 8.

Another terms of trade index is constructed by Egeci for a shorter period (1950-1963), taking the base year at 1963. She represents agricultural output with 59 items "about 80-90 percent of agricultural production" (7, p. 25) and consumption of rural population with 26 items. Choice of the later being based on a survey of rural consumption

Table 8. Index of terms of trade of farmers (1929=100)[a]

Year	Index	Year	Index	Year	Index
1927	102.5	1938	78.9	1949	90.0
1928	110.7	1939	75.3	1950	92.4
1929	100.0	1940	77.2	1951	88.4
1930	68.9	1941	91.4	1952	88.7
1931	58.6	1942	109.2	1953	93.3
1932	52.5	1943	136.7	1954	91.1
1933	48.1	1944	85.1	1955	97.0
1934	52.6	1945	84.8	1956	97.6
1935	68.6	1946	90.7	1957	109.5
1936	78.2	1947	86.9	1958	103.9
1937	78.8	1948	97.0	1959	100.8
				1960	103.0

[a]Source: (16, p. 454).

in Cukurova--representing Turkey.[1]

Her findings are summarized in Table 9 below:

Table 9. Internal terms of trade (1963=100.0)[a]

Year	P_A	P_{NA}	Terms of trade index
1950	31.6	45.7	69.1
1951	31.8	45.9	69.3
1952	34.0	48.5	70.1
1953	35.0	48.9	71.6
1954	33.9	49.8	68.1

[a]Source: (7, p. 31).

[1]She applies a check on rural consumers' price index, which has doubled during 1953-1963 and concludes it to be consistent with Ankara-Istanbul indexes which has increased by 2.5 times during the same period.

Table 9 (Continued)

Year	P_A	P_{NA}	Terms of trade index
1955	42.8	54.0	79.3
1956	48.2	60.2	80.1
1957	63.3	66.0	95.9
1958	70.7	78.1	90.5
1959	76.7	94.0	81.6
1960	81.1	95.3	85.1
1961	85.9	94.9	90.5
1962	94.3	95.7	98.5
1963	100.0	100.0	100.0

Both studies show a marked improvement of terms of trade in favor of agriculture beginning around 1953. The Hirsch study is quite valuable since it considers a longer time span. However, one should take into account its biases in which case:

> during the depression, the decline in the index should have been somewhat less pronounced, and this should also have been true of the rise during the war. Thereafter, the index should have been slightly higher than shown above, although the difference is probably negligible until the year 1955. From 1955 on the rise in the terms of trade should have been a good deal more marked than is shown in the index, so that the slight increase reflected in the index during this period should definitely be significant (16, p. 454).

All indicators reviewed point to the fact that the agricultural sector had been neglected as an important source of finance for the national economic development. Importance has been attached mainly to increased production in this sector and, on the whole, this has been achieved. However,

the equally important problem of transferring this potential agricultural surplus out of this sector has not been attacked.

Political or otherwise, whatever the reasons for this choice may have been, it has helped to aggravate the problems of economic development of Turkey. Meanwhile, it can be argued that it has increased the real incomes of the rural population and thus created a market for non-agricultural products. But the problem facing the economy at this stage of development is scarcity of capital rather than the narrowness of the market. To this extent increases in real incomes of rural population has put brakes on potential, capital accumulation. With regards to this potential Miss Egeci estimates that:

> If consumption per agricultural labor had been constant at 1950 level, it would have created a savings fund of 11 billion TL. in the period 1950 to 1963; if consumption had been constant at 1955 level, then this fund would have been 7 billion TL. for the same period. Thus, it can be said that annually close to one billion TL. of savings potential has not materialized (7, p. 38).

In order to overcome the shortcomings of agricultural sector in financing the development effort, various policy means have been suggested in the Plan. In the next chapter of this study we evaluate how successful have these structural changes been in reaching these targets. In comparing the actual achievements of the sector, we identify the problematic gap and point out the success and failure elements that caused this gap to be as it is.

CHAPTER IV. STRATEGY AND POLICY IN AGRICULTURAL DEVELOPMENT WITHIN THE PLAN

In the last chapter we have identified the characteristics of Turkish agriculture and evaluated its contributions to the development effort prior to the Plan. In this chapter, we use the Plan (1) to articulate the objectives of the agricultural sector, (2) to discuss the structural means employed and (3) to appraise the changes in the sector resulting from the measures employed.

Objectives of Agricultural Sector

The Turkish economic development Plan has been constructed to reach the higher ends-in-view (i.e., life, liberty and opportunity) of the society as outlined in the conceptual scheme in Figure 3 of Chapter 2. In this means-ends-continuum targets of the agricultural sector become lower ends in identifying the problematic situation. Therefore the objectives of this sector become the norms of this study and deviations from these norms by the completion of the Plan in 1967 create the problematic gap which we try to identify and help to shorten.

The Plan proposed four targets or objectives for the agricultural sector; a) production, b) consumption, c) better income and wealth distribution and d) allocative efficiency. More specifically, and in its own words these

four objectives are:

(1) To maintain a 7 per cent rate of growth in gross national product without resorting to inflation; at the same time, to raise agricultural production with a view to expanding exports and meeting the growing industrial needs for raw materials, thus fostering industrialization;
(2) To improve nutritional levels, by increasing the intake of protein and, in particular, of animal protein foods;
(3) To further the social aims of the plan by: promoting the increase of consumption with the object of reducing income disparities; contributing to reduced unemployment; hindering unplanned urbanization due to the excess flow of workers from villages to cities over and beyond the employment-creating capacity of non-agricultural sectors; and, in general, by encouraging agricultural and community development.
(4) To achieve the long-term objectives of the plan by promoting the balanced utilization of land in the long run, and in this way help to conserve resources as well as ensure their most efficient use (41, p. 129).

Thus the "problematic situation" (ex post) arises as soon as "there is a divergence between the above four objectives and the actual achievements of this sector by the completion of the Plan in 1967." However "most problematic situations require more research resources than are available for individual studies. Consequently it frequently becomes necessary to delimit a segment of a problematic situation for study. The problem delimiting process has two major functions. First, it sets forth the precise problem to be studied. Second, it places limitations on the nature of results that may come from a segmental inquiry by indicating the part of the whole to be studied" (54, p. 25).

Taking the above considerations in mind, we limit ourselves to the production problem and pursue a segmental inquiry. Meanwhile we endeavor not to lose contact with the interrelationships between the production problem under study and the broader problematic situation.

The Plan sets some definite targets with respect to agricultural production. These targets are classified into three; (a) yields per hectare for each output, (b) total production for each crop and (c) an average annual rate of growth for the agricultural sector.

In order to make comparisons possible with Tables 3 and 4, the same key crops are taken here (except oats for which no targets are set in the plan) to identify the problematic gap of each sub-sector of agriculture. Thus, for subsistence products, estimated target yields (kilogram per hectare) are 1,210 for wheat and 1,424 for barley in 1967. For the commercialized sub-sector yields are set; for sugar beets at 21,350, cotton 390 and potatoes 11, 190 for the same year (41, p. 138). Comparing these targets with the actual achievements of these sectors in Table 10 indicates that as early as 1966, yield estimates were within reach of fulfillment in the first sub-sector and had surpassed these targets in the latter, by as much as 35 percent as in the case of cotton.

However, since in Turkey's climatic conditions from year to year play such an important role in affecting annual

Table 10. Plan targets and actual achievements of yields (kg./hec.)

Crops	Plan targets[a] (1967)	Achievements[b] (1966)	5 Year Average[b] (1962-1966)
Wheat	1,210	1,208	1,139
Barley	1,424	1,402	1,302
Potatoes	11,190	11,667	11,455
Sugar beets	21,350	28,855	24,368
Cotton	390	536	454

[a]Plan targets (41, p. 138).
[b]Achievements and 5 year average (43, pp. 4-6).

yields, a better comparison between the targets and the actual achievements would be to take the five year average of yields of these crops. These comparisons of plan targets and actual achievements of yields of certain products are provided in Table 10.

It is interesting to note that even when the effects of the climatic conditions are ruled out of consideration by a simple five year average, the commercialized sub-sector has reached and surpassed the set targets. On the other hand, yields in subsistence sub-sector have been much lower than estimated, creating a problematic situation.

Estimates of total agricultural production in Turkey are much less reliable than yield estimates. The latter are

obtained by definite field samplings each year whereas the former are based upon the reports of extension agents from each district. However, "they have no means of measuring but seem to base their estimates on whether or not there has been an increase in the cultivated area compared to the previous year" (37, p. 90). The resulting official output figures are suspected of being much too high and even within the official government agencies they are used with reservation. In fact Ministry of Agriculture and State Planning Organization have estimated much lower output figures for wheat and use these for their own purposes.

This scepticism is justified if one takes into account the divergence between the official output figures on the State Institute of Statistics and 1963 sample survey of the same official agency. As an example, it can be shown that for the year 1963, the official wheat production figure is declared to be more than 33 percent higher than even the upper limit of wheat production estimate of 1963 sample survey. Wheat production is shown as 10 million metric tons in 1963 official figures (43, p. 6) whereas sample survey estimate is 5.993 million tons with an upper limit of 7.495 million metric tons (44, p. 8). Part of the divergence between the estimates may be attributed to under reporting in the sample survey for fear of increased taxation. However, such a wide gap cannot be accounted for by under

reporting alone. Probably there are biases on both sets of estimates, but the method of gathering annual official figures makes them more suspect and unreliable.

The general consensus when dealing with agricultural production data in Turkey has been to deflate it by some coefficient. In the case of wheat production, the suggested coefficient of deflation has varied from 20 to 30 percent of the official figures (12, 15, 37, and 59).

Obviously, with such an unreliable data it is not very meaningful to inquire whether or not agricultural production targets have been reached. However, overestimation has been mainly on the subsistence crops, i.e., wheat and barley. With respect to industrial crops, official estimates are very close to sample survey results (43). This is mainly because official agencies of government are directly or indirectly in the marketing side of the picture (example: sugar beets are purchased and processed in State Sugar Factories, tobacco industry is in the hands of the State Monopoly Administration) and usually these are the reporting agencies. Therefore wheat and barley production figures are more suspect than others and most likely to have been over-estimated. In which case, it is not possible to argue that subsistence sub-sectors output targets have been reached by the completion of the Plan.

Similar conclusions are reached when the average annual

growth rate of agriculture is discussed. The Plan set a target rate of 4.7 percent of annual growth of agricultural production (41, p. 124).

However, the experienced growth rate of agriculture during the first four years of implementation has been 3.1 percent annually. In 1963, a rapid increase of 7.6 percent was followed by no increase in 1964, a decline of 3.3 percent in 1965 and again an upsurge of 8.6 percent in 1966 (57, p. 303). Kayran identifies the characteristics of Turkish agriculture and reasons for these fluctuations:

> These important fluctuations in the annual rates of growth are evidence of the fact that agriculture still depends very largely on climatic conditions. When agricultural production is examined more closely and for each group of products, however, it becomes evident that with industrial crops for instance, where factors like fertilization, irrigation, use of improved seeds come into play, there is much less variation in annual rates of growth (23, p. 126).

Hence, the problematic gap can be formulated as the divergence between the expected and the actually realized yields of the semi-self-sufficient sub-sector. Neither the kilogram per hectare yields of wheat and barley (the most important agricultural outputs of this sub-sector) nor the production of these crops have reached the target levels by the completion of the Plan in 1967. The result has been a lower rate of growth in the agricultural sector as a whole which naturally affected the rate of development of the country adversely.

Changes in Turkish Agricultural Sector From 1963 to 1967

In this section we formulate hypotheses in order to explain why the problematic gap exists as delimited in the previous section. Therefore we identify the factors that contributed to the problematic gap. That is, what are the success and failure elements that led to the achieved amounts of production and yields in wheat and barley production in Turkey.

Then the "diagnostic hypotheses" can be formulated:

If structural changes are not provided in a coordinated form to the semi-self-sufficient sub-sector, then the desired increases in agricultural productivity will not materialize.

Since we are dealing mainly with certain "structural means (as delimited earlier)" to reach the agricultural development goals, our concern is on: (1) education, (2) extension service, (3) research on seeds, fertilizers, pesticides etc., (4) improvement of credit facilities and (5) organization of marketing.

General education

As agricultural industry gets more and more sophisticated by the application of modern technology, the increasing role of education as an important mean to improve agricultural productivity and thus to contribute positively to the development efforts of a nation is widely recognized.

Education is regarded as an investment in human capital and very effective in increasing labor productivity. Therefore due importance should be given to education policies pursued in development effort with special emphasis on the agricultural sector.

The importance attached to education in reaching the basic goals of the Turkish society is well summarized in the Plan:

> ...education is effective in increasing the creative ability and productivity of society and in realizing the principles of social justice and equality of opportunity for all members of society, thereby, enabling them to undergo the type of training best suited to their particular abilities. Education serves the very important function of helping people to gain an insight into the laws of the natural and social environment they live in, enabling them to assess the implications of their actions, and generally increasing their wealth and happiness (41, p. 395).

More specifically, agricultural education not only widens the horizons of the individual, but equally important, it promotes the managerial skills of the farmer. It breaks the traditional farming techniques in general and provides incentives to take risks and to experiment with new variety of seeds, unconventional modes of production. Thus education becomes the key link to commercialized agriculture.

Special characteristic of traditional agriculture is the skeptical attitude of the farmers towards new modes of production. No doubt this suspicious attitude stems from the fact that conventional methods of production have always

provided them with at least some subsistence level of living. Whereas the new techniques invariably carry some risk and uncertainty as to the outcome which the farmer is unwilling to take. On this point Akhan makes these observations:

> As one of the main obstacles, we may mention the suspicious attitude taken by farmers all over the world toward innovations of any kind. One reason for this suspicion has a real ground and is connected with the fact that almost all changes, but especially those which are not well devised and fully tested, carry with them a certain amount of risk and uncertainty. Insufficient knowledge and ignorance of opportunities, together with adherence to traditionalism accentuate the suspicion of farmers with regard to technological changes (1, p. 2).

In this respect education is a vital tool to broaden the knowledge of the farmers, increase their decision making abilities and provide them with new opportunities. In sum, education is conducive to incentives of farmers to experiment in new technology and risk taking.

However, for education to fulfill the goals expected out of it, certain preconditions should be met: (1) education at all levels should be wide spread and accessible to qualifying students and (2) it should be specific and oriented towards the career the student is seeking, rather than broad and general.

The justification of the above pre-conditions are provided in the Kiray study (25). She identifies that even at Oruclu, the least developed and most isolated village out of the four villages studied, there is a strong desire

to increase their well being but education is not regarded to be the most important means to attain this goal:

> All the problems of today perceived by Oruclu households indicate objective evaluation of their places, dissatisfaction from it and search for channels of mobility. In the survey 47.1% of the responses show that they are not satisfied with their lot today and they want a higher standard of living and better life. But they are not yet clear how to get to that end. The mobility channels seem to be, as it is perceived by the villagers, for 26.6% to try to produce more in the village for 8.8% to have education and for 5.9% to move to the city (25, p. 50).

It should be pointed out that according to the villagers, getting an education is a separate and distinct form of moving on the social ladder by being a government employee, a clerk or a school teacher etc., and not incorporated into increases of productivity at the farm level. In a way, villagers have rightly pointed out the fact that orientation of the Turkish education system is such that it alienates the rural population and no direct benefits are conceived to accrue to the agricultural sector.

Table 11 identifies the fact that not only primary education had not been universal, but equally or more important has been the fact that access to secondary and higher levels of education was severely limited. Even if one assumes that five years of formal primary education does at least achieve some degree of knowledge, the share of benefits because of this knowledge is hardly channelled into agricultural production. The reason is that the second

Table 11. Educational structure of Turkey (thousand students)[a]

Type of school	Population of school age	Actual enrollment	Percentage attending schools
Primary	4,513	3,160	70
Middle	1,786		
Technical		68.4	4
General		333.0	19
Lycee	1,505		
Technical		46.5	3
General		86.0	6
University	1,816		
Technical		10.0	1
General		51.0	3

[a]Source: (31, p. 196).

pre-condition of agricultural education cannot properly be met within the primary education level. Modern agricultural technology requires more than being able to read and write. To this end vocational schools in junior high and upper levels are required to teach basic skills of modern technology to rural students.

The yearly budgets[1] and the Plan give due importance to education and set targets for 1967 to accommodate 87 percent of school age children in primary school level, 20 percent in secondary levels. In lycee and higher levels, vocational

[1]Education occupies the second priority of importance, after defense expenditures in the annual budgets.

and technical education is given greater weight over general education. The proposed targets are to accommodate 5.2 percent of students in general and 5.8 percent in vocational and technical schools (41, p. 404).

These are not modest targets, since investments on education are costly and not only require physical construction of schools etc., but also necessitate rapid increases in the number of teachers and all related services. To overcome the last bottleneck, after the 1960 coup d'etat graduates of senior high schools were sent to village schools as teachers instead of the usual military duty. This practice could have served a good purpose but it did not last long and within a few years it was terminated. But probably the most satisfactory experiment conducted on agricultural education in Turkey was the establishment of the Village Institutes in 1939. These institutions were oriented toward agricultural production and met the second pre-conditions until they were all closed in 1954. The great achievements of these institutions for the agricultural sector is summarized in Lewis:

> At the village institutes, children of either sex who had completed their course at a village primary school were trained as teachers. The period of instruction was five years. The boys were also taught a craft such as building or carpentry; the girls learned such things as midwifery and the care of children. All had to join in the work of the Institute farm. Those who failed to show promise as teachers were allowed to specialize in a craft or trade that would enable them to serve their community. The work of these Institutes was of inestimable value; in many cases the buildings were put up by the students themselves, whose enthusiasm

> and faith were unbounded. The best of them went back to their villages qualified not only to teach reading, writing and civics, but also as pioneers of scientific farming. They were pledged to serve as teachers for at least twenty years after graduation (31, p. 110).

Although the experiment was successful, institutes were severely criticized; accused of leftism and of being tools of the government politics (30, p. 471) and were finally closed down by the new party that came to power through the 1950 elections. Hence, the opportunity to reach villages through the kind of education that they really needed was blocked. During the Plan period, educational level of the country increased as a whole, and particularly on the rural level. Total students enrolled in primary schools increased by 45 percent during 1960-1966 and villages with schools, by 24 percent. However, these achievements have fallen short of functional orientation of education targets of the plan, such that by the completion of the Plan, State Planning Organization summarized the shortcomings;

> Education has been confined to a schooling system. Its relationship to its immediate environment and business activities has been limited. Functional orientation of education, especially with regards to technical education, has not been achieved. A system accessible to all deserving students to reach higher education has not been established. A sufficient number of scholarships and boarding houses has not been provided. In fact, with respect to state scholarships and boarding facilities there has been a declining trend in recent years (57, p. 159).

Education is certainly a success element if properly and functionally used in increasing agricultural productivity.

However, from the ongoing argument it is clear that education in the agricultural sector has not met these qualifications during the Plan. In this sense, education has not fulfilled its potential contribution to the semi-self-sufficient sub-sector. Later in this chapter attention is devoted to possible educational measures that will enhance Plan objectives more effectively.

Extension service

Under the Plan, the objectives call for increased agricultural production with the use of improved technology and resource mix. In an attempt to implement these objectives the extension service was reoriented and augmented to bring improved technologies to the farmer as an integral part of the Plan. The Plan recognizes that increases in agricultural productivity depend upon these factors:

1. knowledge and use of better variety of seeds, fertilizers, pesticides etc.
2. knowledge and use of better techniques of cultivation and production
3. proper uses of irrigation

Since agricultural producers are atomistic competitors each of which are small and far away from the origins of new technology, the job of disseminating knowledge on the above factors fall heavily on the shoulders of the extension service. By the very nature of the work to be done, extension service should be large enough to reach most of

the farmers and up to date with the new findings of modern research.

With respect to Turkish experience, an extension service attached to the Ministry of Agriculture has been in service for some time. However, the scope of the extension service is not well defined and mostly overlaps the services provided by other agencies of the government. For example; training of farmers in the use of irrigation water is under the auspices of the Soil and Water Directorate (Topraksu) which is attached to Ministry of Village Affairs. This agency not only helps the farmer in digging the tertiary canals to connect them to the irrigation systems being built, but may also aid in selection of crop to be grown, kinds and amount of fertilizers to be used (37, p. 67). Along with other agencies, like Veterinary Administration which has juridistiction on animal diseases as well as breeding and Plant Protection Directorate, a confusing picture arises as to the responsibilities and the jurisdistiction of the extension service.

In order to make most effective use of all these agencies measures to ensure conformity of these services with the objectives of the agricultural policy of the Plan is proposed. But this is not enough:

> In order to attain the agricultural objectives of the plan, extension services must be enlarged and made more efficient... It is estimated that extension activities will require a staff of 7,700 trained workers as against the existing number of about 4,400 (41, pp. 165-166).

Problems faced in the beginning of the plan are still there; there has not been an effective reorganization of all the various agencies providing extension service. There is still an acute shortage of transportation facilities such that even the present number of extension workers has not had sufficient contact with the farmers. Palmer identifies the shortages as follows:

> Most farmers have probably never seen an extension worker from any of the agencies. The number of agents in each agency is completely inadequate to cover the country: indeed, the number in all of them combined is inadequate. There are cases, for instance, of dams which have been built, together with the primary and secondary canals, but where the tertiary canals on the farmers' land have not been constructed and the application of water to farming has never been made (37, p. 68).

In spite of all these shortcomings, there are some encouraging signs especially with regards to training new recruits for extension work. Agricultural Technical schools at the mid school level and Regional Agricultural schools at the high school level are having an increased enrollment and graduates of these should reach 900 by 1969 as opposed to 150 in 1965.

Although most of the shortcomings of the extension services were in existence at the completion of the Plan in 1967, still important grounds were covered. Extension workers, no matter how limited the contacts they may have had with the farmers, at least had provided the motivation, created an awareness of the possibilities of an untraditional

technology to the semi-self-sufficient sector.

Agents of extension services have had an important role in convincing the farmers of the superiority of chemical fertilizers and the economical gains that would accrue to them if they invest in new technology. Rapidly increasing demand for the consumption of fertilizers is indicative of the achievements extension services have produced. Therefore, it is safe to argue that in spite of all the shortcomings, agents of the extension services have been able to carry the message to the farm level. Due to their hard work, problem - atic gap has not grown larger than as it exists today.

Research activities

The most important and promising factor to influence agricultural productivity within a relatively short period of time is research on the agricultural input-mix. Carefully guided and properly tested, research activities can provide new varities of seeds more adaptable to the climatic and soil conditions of a particular country. Similarly, effective use of fertilizers, pesticides etc. may greatly increase average agricultural yields within a short period of time.

Substantial productivity increases due to improved seeds, better methods of production etc. have been observed in the countries which had problems similar to those Turkey is facing today. As in the case of wheat, mainly because of improved seeds Mexico has made a great break through and,

in a few years' time, has changed from an importer of wheat to a major exporter. There is no reason to believe that the same results cannot be duplicated in Turkey. While access to this new technology developed in other parts of the world is open to all countries, care should be taken to adapt these innovations into the particular environment of a nation. Otherwise, farmers are reluctant to experiment with the new technology if the risk of an unfavorable outcome is not minimized.

Importance of organized research in adapting and developing new varities of seeds best suitable for the climatic and soil conditions of Turkey is self evident. However, research activities as such have been fragmented and uncoordinated; usually leading to a waste of scarce resources:

> There is much duplication and overlapping of research projects in various centers, and insufficient communication between the centers. These research stations were established, usually one at a time to meet specific needs, without careful coordination with previously established stations. Nor is there good communication between research centers and institutions for training extension workers, nor with the extension workers themselves (37, p. 69).

These shortcomings of organized research have led individual farmers (with means to do so) to seek new varities of seeds themselves. "October, 1965, one farmer in Tarsus planted about 30 kilograms of Mexican semi-dwarf wheat he had obtained through a friend... October, 1966, 101 Cukurova farmers planted 60 tons of Sonora 64 semi-dwarf wheat they had managed to buy through their own resources"

(60, p. 18).

Unprecedented rates of increase in the demand for chemical fertilizers is another example which indicates that incentives on the part of the farmers to experiment with the new technology is present. An effectively organized research center is required to make best use of this potential. With respect to new input-mix, the Plan predicted that by the completion year 1967, chemical fertilizer demand would increase five-fold compared to 1962. Similar increases were expected for the use of pesticides and imported seeds (41, p. 149). However, due to the work of the extension agents, demonstration effects and availability of credit, fertilizer use exceeded even the most optimistic estimations; so much so that it was declared:

> In fact the greatest achievement of the agricultural sector in the First Five Year Plan has been in the use of chemical fertilizers. Annual fertilizer use has surpassed the targets by 35 percent by the completion of the Plan (57, p. 313).

Inspite of these impressive rates of increase in the use of fertilizers and new varieties of imported seeds, still there is much room for improvement. For example, fertilizer use still falls short of the required amount in Turkey. Such that:

> Turkey is far down the list of countries in the amount of commercial fertilizers applied per hectare of agricultural land. Noyan gives the figure of 2.97 kilograms (chemical content) per hectare of 1961-62, and 5.47 for 1965. This compares with 35.21 kilograms per hectare for Spain and 42.87 for Greece, both for 1961-62. He considers that 35 kilograms per hectare is a minimum requirement for Turkey, or 6.4 times as much as was used in 1965 (11, p. 80).

Hence, although there has been encouraging starts, it can be argued that importance of organized research activities are only newly beginning to be realized and careful tests will be required to obtain the full benefits of the new technology. By the completion of the Plan, research activities had not produced their full potential. In the near future research activities will have to gain more importance, since:

> Turkey has taken a bold step forward in attempting to increase wheat yields by introducing large amounts of these new semi-dwarf and other improved wheat varieties from Mexico and the United States. These wheats, when grown under proper cultural practices, should markedly increase wheat yields. However, before maximum yields can be obtained with these genetically improved wheats, a great deal of information must be obtained through research conducted in Turkey. The major objective will be to determine how well these new wheats are adapted to the conditions in this country and to determine what cultural practices will be necessary to obtain high yields. This information is particularly important since these new wheats were developed for regions where climatic conditions are similar, but not exactly like those found in Turkey (26, pp. 72-73).

Credit

It is interesting to note that in Turkey almost all the necessary institutions (agricultural banks, cooperatives, marketing boards etc.) for an advanced agricultural production have been in existence for a long time. However, "forty years of experience has shown that problems are not solved by establishing institutions alone. Because, first these organizations have not been founded properly to execute their functions and second, their coordination and cooperation

with each other has not been established" (3, p. 11).

In the case of credit organizations, for example, the most important credit institution of the nation "and the source of 99 percent of the agricultural credit is the Agricultural Bank of Turkey which was founded in 1863. The bank serves 1,600,000 farm families plus the people in almost all the principal towns and cities through 670 branch banks with 10,000 employees and through 1,715 agricultural credit plus 214 agricultural marketing cooperatives. The credit cooperatives have a membership of 1,067,000 farm families in 17,300 villages. Both types of cooperatives were organized by the Bank and are financed and supervised by it" (32, p. 11).

In spite of this impressive background and scale of operations, by the completion of the plan agricultural bank credits had not reached all the farm families. By the end of the plan 40 percent of the farm families had not received organized credit (through the bank or cooperative). Of the rest of the farms which received credit, the majority could get only about 296 TL. on the average, whereas a very small minority 0.003 percent of all the farms received on the average 626,000 TL. credit (57, p. 242).

The reason for the failure of credit institutions to reach the farmers effectively at all levels is mainly due to the orientation of these organizations. Bankers, especially

in the underdeveloped countries, give priority to security rather than productive or profit aspects of a loan. Hence, a small farmer with good potentials to increase his output may be denied a loan to invest in new technology, simply because the bank is not willing to take a risk. Whereas a wealthier farmer may get credit and finance his son's wedding or circumcision ceremony through the loans he has secured for agricultural improvement purposes. Obviously a credit institution based overwhelmingly on security of repayment of the loan cannot provide potentially efficient farmers with means to improve their technology.

With respect to the size and operations of the unorganized credit market in Turkish agriculture, there exists no data to make a meaningful analysis. However, scanty observations and certain specific cases illustrate the fact that there exists an informal credit institution commonly referred to as the "moneylender". This form of market may be the source of as high as 45 percent of all outstanding debt of the agricultural society (42, p. 41). These moneylenders are often the local merchants or the large land owners who reside in the villages. Usually they serve the semi-self-sufficient farmers who find their informal approach to their credit needs (at the right time and place) rather attractive. A study conducted on Denizli province explains the existence of these "moneylenders":

> A problem is the limited amount of the credit of these government agencies which is not enough to meet all the demands. Another problem is that most of the farmers borrowing money are required to guarantee repayment, at least, with their land. In most cases, the farmers do not have the title in deed of their own lands, even though they are recognized owners. For this reason, they are forced to get credit from merchants and other people under more severe conditions (42, p. 42).

The same study claims that most of the credits secured through these channels were used in increasing consumption and has not been productively employed. In which case, the marginal contributions of these credits in increasing agricultural productivity has been close to zero. An additional problem is that this form of credit finally leads to complete dependence of the farmer on the merchant or the land owning class. Since "in most of the cases, the farm families had to borrow new money and had to have new debts, in order to pay the debts of the previous years" (42, p. 46).

It is evident that the needs of the semi-self-sufficient farmers have not been served through the organized credit mechanism. It is equally true to point out that there needs a new institution to replace the "moneylenders" but be as informal and as easily accessible and yet that should supervise the credits to be spent on increasing agricultural productivity. A new form of agricultural credit is being experimented upon by the Agricultural bank such that:

> ...banker, in co-operation with the extension agent and other agencies, advises the farmer on the use of the credit to which he is entitled, and extends the credit only if the purposes for which it is to be used conform

> with good pracice and serve to advance the efficient production of farm products. The purchase of equipment, of good seeds, of fertilizer, of good breeds of livestock, and of similar goods is thus encouraged, and the loans can be repaid out of the increased profits of the farm (37, p. 71).

However, the effects of these new credit forms on promoting agricultural efficiency and reaching the potentially good farmers can only be materialized during the second plan 1968-1972 and therefore it can be argued that during the time under consideration agricultural credits have not contributed positively in reducing the problematic gap.

Marketing

Turning into marketing institutions, the state achieved reasonable measures in promoting agricultural output through the use of its agencies, as early as 1930. In order to provide incentives for the farmers to increase production and to secure a reasonable income, government went into direct purchases and marketing of some key products, at slightly higher than market prices. Hershlag summarizes:

> In 1932 an institute was established in association with the Agricultural Bank, with the task of purchasing wheat from the farmers, storing and selling it. The farmers received prices exceeding the market level, and the government made good the difference, thus imposing the burden of rescuing agriculture on the taxpayer... (This institute became 'The Central Office for Soil Produce'-Toprak Mahsulleri Offisi in 1938 and) its functions were extended in 1939 to the purchase and marketing of barley and oats, and in later years, to additional produce (13, pp. 144-145).

This process of subsidizing the products has continued during the Plan. Prices above market rates have certainly

provided incentives to increase production and better storage and marketing facilities of Toprak have contributed positively to the problematic gap. However, shortcomings of product subsidies should not be underestimated. In the past, at certain critical times, it became a powerful tool to influence rural votes. Thus the governments in power have been tempted to increase purchasing prices of agricultural products, to be able to hold office next term. These abuses of power may lead to dangerous inflationary processes, like it did in the late 1950's. No matter how these subsidies are financed, through taxation of urban population or inflation, it disturbs allocative efficiency of resources and puts additional strains on the economy.

Thus, while there are definitely some shortcomings which should always be kept in mind, still product subsidies and state purchases of the agricultural produce have created incentives and certainty of income to the farmer, just as better storage and marketing facilities have greatly improved preservation of agricultural outputs. In these respects state marketing channels have been a success element through its contribution to the problematic gap.

// Remedial Measures

This section searches for measures to widen the success elements and to control the failure elements discussed in the diagnostic phase. However, the nature of all the means

discussed in the previous section is such that there is a complementary relationship among all of them.

An effective extension service is only possible when farmers are educated enough to follow the instructions, and have means to purchase the modern inputs. Similarly research activities have little value if they cannot be transmitted to the extension agents and through them to the farmers. Also, education without the necessary means to implement the knowledge gained becomes useless.

// Thus, a vicious circle is formed. Education, extension service, research and credit and marketing facilities are all means which have potentials to contribute positively to the agricultural productivity and output.// However, a single solution, an expansion of one, cannot reach the targets set if other factors are lagging far behind. What is required is a well coordinated program approach to the problem.

The form in which means should be implemented are also crucial to the problem. Hence, the crucial point is not only more education at all levels, but what kind of education? Certainly, primary education should be pressed harder and at least all school age children should have access to it. But the education problem is not solved by primary schooling alone. In order to be effective in increasing agricultural productivity, special schools oriented towards the agricultural and rural way of life, catering to villagers in particular

should be established. It should not be such a difficult task to organize these vocational type schools, since Turkey has experimented with rather successful Village Institutes. These institutes can be re-established taking into account their previous short-comings, as well as broadening their base in the light of modern technology and new knowledge.

Usually in the underdeveloped countries while there is an excess supply of labor, there is a bottleneck or an acute shortage of skilled labor at all levels of activity. Certainly re-establishing these schools in functional education lines not only helps the agricultural sector but also provides the industrial sector with a reserve pool of skilled labor and decreases the burden of transfer between the two.

Therefore, for education to materialize its potential contributions to economic development, vocational education at the secondary level should be given importance. There are hopeful signs, in the Second Five Year Development Plan the shortcomings of the Turkish education system was realized and measures to direct educational resources towards more vocational and technical training are suggested. How successful these recent changes will prove to be, will be seen by the end of 1972.

Although extension service has been relatively successful in reaching at least some segment of the farmers, its overall

performance is far from being satisfactory. Responsibilities are fragmented within several agencies under different ministries. Coordination between these agencies is non-existent, which lead to duplication of services and waste of scarce resources of the society. A strong extension service organized under one ministry is the pre-requisite for an effective service. After this reorganization, the training of the agents is of secondary importance. Up to now increases in agricultural productivity were possible through simple suggestions of better cultivation practices or similar forms of advice on the part of the extension agents. Since that phase has passed, in the near future it will be increasingly more important for the agents to be better educated and provided with the recent findings of modern technology and research activities.

Also, the number of vehicles at the disposal of the extension agents was grossly inadequate for this service to function properly. Therefore, with respect to the extension service, remedial actions that should be pursued during the second plan phase are threefold:

1. Reorganization of extension service under one ministry
2. Better education facilities and access to research activities provided to the agents
3. Investment in modern equipment and transportation system.

Although there are plans to reorganize extension activities and increase the quality of advise provided, conflicting interests of various agencies of the government make it difficult, if not impossible, for such sweeping changes to be implemented by the completion of the second Plan in 1972.

Research activities that were carried on in Turkey were usually insignificant, fragmented and uncoordinated. But research to test better methods of cultivation, new varieties of seeds more resistant to climatic conditions etc., are the most crucial factors to increase agricultural productivity. The role of research institutions will be gaining importance during the second Plan. However, as it stood in 1967, the number and quality of researchers were inadequate to meet the requirements of the country. Research facilities, except in a few special cases, were out-of date and inadequate to the requirements of modern technology.

Remedial actions in research activities that should be followed during the second plan phase are:

1. To organize a research council with the aim of upgrading, promoting and coordinating research activities
2. Training personnel both in Turkey and abroad in sufficient numbers and quality in order to meet the demand for researchers
3. Upgrading the quality of equipment and research facilities.

Since research activities are long term investments, the outcome of these measures will be forth coming after the completion of the Second Five Year Development Plan. Even then, if carefully planned and properly executed; investment on research activities can provide the greatest rate of return in terms of their contribution to agricultural and therefore to the economic development of the country.

With respect to "credit institutions", there is need to change the loan policy of the Agricultural Bank. It is important that the banks responsibilities should be confined exclusively to the agricultural sector and efforts should be made to widen the base of their operations. So that the great majority of the farmers can benefit sufficiently out of the agricultural credits. Equally important is the fact that low cost, long term agricultural improvement credits, should be provided to the potentially efficient farmers. To be effective, the uses these credits are put into should be supervised by various agencies of the bank.

By the completion of the plan no remedial actions had taken place. Such that Eren criticized this lack of enthusiasm:

> The Plan wisely emphasizes the need for long term agricultural credits and wisely criticizes the practice of the Agricultural Bank in meeting long term needs with short term credits. Sadly, however, inaction in this field continues. No change has been effected in the constitution of the credits of the Agricultural Bank. No new institution has been planned for directing savings into this vital sector

> of the national economy. On the Turkish development scene, unfortunately, agriculture continues to sag, calling for sustained and meticulous attention (8, p. 195).

Marketing activities, however, had been rather successful in closing the problematic gap. Still some remedial measures can be taken in this field. The shortcomings of subsidizing agricultural produce leads to political influence and inefficient resource allocation, as was discussed earlier. Since the goals are to increase agricultural productivity and output, the best means to encourage farmers to adopt new technology and increase production would be to subsidize the factors of production rather than the agricultural produce.

Thus, market mechanism may be left to determine agricultural product prices freely which may lead national agricultural prices to become competitive to international price levels. On the other hand, through factor subsidies farmers may be encouraged to make use of new technology which they could not have been able to afford previously. These factor subsidies may be discontinued eventually, once agricultural incomes on the average reach a satisfactory level and production may progress without the need of state intervention on allocative efficiency of resources.

The most important aspect of all of the structural means discussed are their interrelationship to each other. Success in achieving higher agricultural productivity and output depends on a coordinated attack on all fronts.

A package program containing better and relevant education, more effective extension service, carefully guided research and better organization of credit and marketing institutions are needed. When due importance is not given to this inter-relationship, then efforts to reach targets are frustrated by the bottlenecks created due to the shortcomings of one or the other factor.

CHAPTER V. SUMMARY AND CONCLUSIONS

This study is undertaken to analyze the existence of the problematic gap in the agricultural sector defined to be the divergence between the desired goals and the actual achievements of this sector by the completion of the Plan in 1967.

To this end, the study has been pursued in two phases. First, it was necessary to review some of the recent theories of economic development relevant to the objectives of the study and construct the means-ends-continuum of Turkish economy. Second, we turned into identifying the characteristics and the contributions of the agricultural sector within the Turkish economic development. Then the problematic situation is identified and analyzed in the ex post sense. That is the difference between the desired goals and the actual performance of the semi-self-sufficient sub-sector. Through the help of working hypothesis, in the diagnostic phase, contributions of some structural means were analyzed and remedial actions suggested. However, due to unreliability and lack of some specific data, no statistical tests have been performed.

The general conclusions that are reached can be summarized as such:

Agricultural sector has not been a financier of economic development in Turkey. There is no indication to point out

the fact that an agricultural surplus was created and transferred out of this sector.

In spite of the means taken to speed up the development effort, Turkish economic development has not reached the annual 7 percent rate of growth set as target by the Plan.

A major set back in reaching this target growth rate has been the performance of the agricultural sector in the planning period. Climatic conditions have influenced agricultural yields and outputs adversely, such that rate of growth of this sector remained at 3.1 percent as opposed to the target rate of 4.7 percent.

However, a closer look at the Turkish agricultural sector discloses two sub-sectors; one which is semi-self-sufficient (that bring agricultural produce to the market over and above their own consumption requirements) and the other completely commercialized. It was seen that the former was affected more than the latter because of annual climatic conditions.

Agricultural produce (i.e., mainly wheat and barley) of the semi-self-sufficient sub-sector has not reached the targets set forth by the Plan, creating the problematic gap. Yields as well as the total agricultural output was lower then the targets set by the Plan. This has led to a decline in the rate of growth of the agricultural sector and therefore the economic development of the country.

Since only structural means were implemented to achieve the agricultural development targets of the Plan, this study concentrated only on key means--namely: education, extension service, research activities, credit and marketing facilities. It cannot be proved conclusively but conceptually it can be argued that extension service and marketing facilities were generally "success" elements. They have helped the problematic gap to be not larger than it is at present.

Education, research activities and credit facilities have not realized their potentials. With respect to the semi-self-sufficient sub-sector, their contribution to increase agricultural productivity has been insignificant or non existent. Since most of the rural population in this sub-sector has not benefitted from most of these services provided by the various government agencies, it is not surprising to identify them as "failure" elements.

These means by themselves are not failure elements, but because they were not organized and effectively mobilized they have not contributed positively during the Plan phase. Once the remedial actions are taken, such that better organized and well oriented education, research and credit facilities are provided, then they will help to influence agricultural production positively.

The study was delimited to the agricultural production aspect of the targets of the Plan. Consumption and better allocation of resources were not treated. Similarly, land

tenure problems of Turkey, although very important in affecting agricultural production, are not included because they will be treated much more broadly in a separate study. Therefore, the limitations of such a segmental inquiry should be realized. The problem analyzed here is one segment of a much broader problem of increasing agricultural production in a manner most conducive to the general development of Turkey.

Throughout the study unavailability of certain specific data or the general unreliability of the statistics (a common problem Turkey shares with the rest of the underdeveloped countries) has prevented the author from taking statistical tests. However, the problem has been formulated in a conceptual framework and simple but meaningful operations have been performed to point out the structural bottlenecks Turkish agriculture is still facing.

It would have been useful to test how the hypothesis of marginal productivity of agricultural labor being less than the average wage rate and to see if there has been increases in the institutional wages. However, these would have required much more extensive research facilities and field studies that were presently available to the author. It would have been equally important to test here the different forms of education, forms of credit and rates of interest, marketing and extension service and their effects on increasing agricultural productivity. These are the

shortcomings of the study that are left for future studies. More specifically, however, improvements of data will be the prerequisite for further research on agricultural production function and other statistical phenomena.

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