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To the Graduate Council:

I am submitting herewith a thesis written by Ali Asghar M. Gharavi entitled "Postwar Economic Development of Iran." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Economics.

Major Professor

We have read this thesis and recommend its acceptance:

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POSTWAR ECONOMIC DEVELOPMENT OF IRAN

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A.A.M.G.

ABSTRACT

In this study the concepts of "take-off" and "surplus labor" are incorporated into a broad theoretical framework which is used as a basis for analyzing the postwar economic development of Iran.

Among other things, the analysis leads to two general conclusions. One, it appears that Iran has entered upon the take-off stage of economic development. Secondly, development to date has been influenced by the presence of surplus labor in the form of unskilled workers. At the same time, however, the shortage of skilled manpower appears to be one of the major bottlenecks to further development of the economy.

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CHAPTER I

INTRODUCTION

The objective of this study is two-fold. One objective is the tracing of the main strands of postwar economic development in Iran. The other is an interpretation of that development in light of a model formed of generally accepted theoretical constructs. In terms of the strategy of exposition, the theoretical statement precedes the empirical chapters. Finally, theory and practice are compared in the last chapter.

In Chapter II, a model of economic development is presented which attempts to clarify the importance of agriculture in the process of transformation of the economy, and highlight certain problem areas and policy considerations of agricultural development. It has been frequently observed that most underdeveloped economies are characterized by dualism. This concept may be defined as the coexistence of a small modern industrial sector located in major urban areas and a relatively large agricultural sector. In Chapter II, however, the assumption is that the economy is mainly agricultural where total output is divided among the population, giving rise to an equilibrium at a very low level between the demand for and the supply of agricultural products. To initiate economic growth, this equilibrium must be broken. For this purpose, certain conditions must be fulfilled. As soon as the equilibrium is broken, the process of transformation of the

economy begins, and a point is reached in this process where economic growth becomes self-sustained.

A brief history of economic development in Iran and the general features of the economy are considered in Chapter III. Participation of the Iranian government in promoting economic growth can be seen in this chapter where the development plans of the country, problems and achievements of each, and the exogenous factors that have affected them are considered. The tables presented in this chapter provide the basic features of the economy in selected years so that changes in these features over time will be evident.

Chapter IV is devoted to the state and organization of the agricultural sector before and after the land reform of the early sixties. The annual growth rates of food, population, and food prices provide a basis to compare agricultural progress in different periods. In view of the assumption that economic development brings about a transfer of labor from the rural to the urban centers, rural-urban migration from 1966 through 1972 and the factors that determine the direction and magnitude of migration are considered in this chapter.

Chapter V is used to reconcile the first three chapters. For this purpose, the conditions for "take-off" are examined in the context of Iran. And finally, the current problems facing the Iranian economy are placed in relief.

CHAPTER II

THEORETICAL CONSIDERATIONS

I. INTRODUCTION

In underdeveloped countries with overpopulation on the land, the process of economic development, defined as the growth of per capita real income, entails the reallocation of surplus labor from agricultural to non-agricultural sectors of the economy. Before this reallocation begins, it may be assumed that the economy is (a) mainly agricultural, and (b) at subsistence level. In other words, there is an equilibrium, at a very low level, between the supply of and the demand for agricultural products.

The emergence of an industrial sector, which often comes from outside the system, either by a foreign institution or the government, attracts some of the redundant agricultural labor by offering a margin over their real income level. As soon as this happens, the equilibrium will be disturbed in two ways: (1) increase in the average product or real income of labor remaining in agriculture, and (2) generation of new income due to additional employment in the industrial sector. The result is an increase in the demand for food. Assuming that there exists the possibility of trade between agricultural and non-agricultural products, the farmers will be induced to produce more in order to increase earnings from the exchange for other commodities.

If the process of reallocation of labor is to continue, it

is essential both to expand the small industrial sector to absorb redundant agricultural labor and also to obtain continuous rises in agricultural productivity to meet the community demand for food.[1]

II. STAGES OF ECONOMIC GROWTH

Rostow suggests five stages of growth[2] two of which, namely, the preconditions for take-off and the take-off, are relevant in this study. Nevertheless, we may start with the traditional society to set the stage for the process of transformation of the economy.

The traditional society is characterized by low productivity and a limit on the per capita output level, because "the potentialities which flow from modern science and technology are either not available or not regularly and systematically applied."[3] As a result, these societies have to "devote a very high proportion of their resources to agriculture."[4]

Increase in agricultural production is limited, because the area that can be brought under cultivation is of limited amount and so is the improvement in factor productivity. The latter is

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[1] See, for example, G. Ranis and J. C. H. Fei, "A Theory of Economic Development," American Economic Review, Vol. LI, No. 4 (September, 1961), pp. 533-58.

[2] The traditional society, the preconditions for take-off, the take-off, the drive to maturity, and the age of high mass-consumption. W. W. Rostow, The Stages of Economic Growth: A Non-Communist Manifesto (Cambridge: Cambridge University Press, 1971).

[3] Ibid., p. 4.

[4] Ibid.

due to the lack of technical know-how. With population growth, the result is an economy at the subsistence level with a so-called "unlimited" supply of labor. In the words of Lewis, "An unlimited supply of labor may be said to exist in those countries where population is so large relatively to capital and natural resources, that there are large sectors of the economy where the marginal productivity of labor is negligible, zero, or even negative."[5] This implies that, in these sectors, a large number of workers can be removed without affecting the level of output.[6] In such a

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[5] W. A. Lewis, "Economic Development with Unlimited Supplies of Labor," The Manchester School, Vol. 22, No. 2 (1954), p. 141.

[6] Some economists doubt the existence of redundant farm labor in poor countries. Their opposition is based on the fact that no one would employ marginal labor whose contribution to production is zero. This, of course, is not relevant in a peasant agriculture where additional labor does not increase the cost of employment on the part of the landowner. He gets his share of output regardless of the number of workers who cultivate his property. As population grows, more laborers would be working on the same piece of land, whether the piece of land is fragmented or not over time, but output would hardly increase. Accordingly, marginal product of labor falls as population grows. Here, the assumption is that other factors of production remain constant which is more or less the nature of a traditional peasant agriculture. The crucial fact about the surplus farm labor is that the same amount of labor would be spent in the production process by more workers as population grows. Therefore, removal of some laborers would not decrease the level of output up to the point where the amount of labor time divided by the normal hours of work per laborer would be equal to the number of workers on the land. Another question that must be answered is: if labor is in surplus, why are more labor-intensive techniques not used? Eckaus argues that a minimum capital is required even for the most labor-intensive techniques. But many poor countries have less capital than is required to utilize all the labor force, leaving some of the available labor in surplus. See C. Eicher and L. Witt, Agriculture in Economic Development (New York: McGraw-Hill Book Company, 1964), pp. 129-41. See also G. M. Meier, Leading Issues in Development Economics (New York: Oxford University Press, 1964), pp. 74-85.

situation, the emergence and expansion of industry is possible and is likely to be profitable, owing for one thing to the abundance of cheap labor.

Rostow's central issue is to isolate a relatively short period, two to three decades, during which time the economy transforms itself in such a way that economic growth becomes automatic.[7] The main characteristics that he attributes to the pre-take-off and the take-off stages are:[8]

During the pre-take-off stage three conditions must be fulfilled: emergence of a national government to think and act toward economic progress, continuous increase in both land and labor productivity to meet the demand for food, and the growth of social overhead capital.

The take-off stage must show: a rise in the rate of investment from 5 per cent to around 10 per cent of national income, development of some manufacturing sectors with high rates of growth, and the existence or emergence of a political, social, and institutional framework to give a self-sustained growth to the economy.[9]

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[7]W. W. Rostow, "The Take-off into Self-Sustained Growth," The Economic Journal, Vol. 66, No. 261 (1956), pp. 25-48.

[8]Rostow, The Stages of Economic Growth, op. cit., pp. 17-58.

[9]It must be pointed out that Rostow's doctrine has been criticized by some economists. G. M. Meier's, S. Kuznets', A. K. Cairncross', B. Higgins', and A. Gerschenkron's critical assessments may be summarized as follows: (1) Considering the course of development of presently developed countries, Rostow believes that underdeveloped economies will pass through the same process of economic growth. But there are differences between

Preconditions for Take-off

A traditional society requires a transitional period during which the preconditions for take-off are developed. Obviously,

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underdeveloped countries of today and the pre-industrial phase of developed countries. A number of these differences are: (a) Underdeveloped countries face the take-off stage from a lower per capita income than developed countries did. (b) Degree of improvement in agriculture as a base for industrialization is lower in many underdeveloped economies than it was in developed countries. (c) There is a wider difference between agricultural and non-agricultural per capita income in poor countries than there was in developed countries before their industrialization. (d) Rate of population growth is higher in underdeveloped countries than it was in developed countries. (e) One of the advantages of poor countries of today is that they can draw upon the accumulated stock of knowledge of developed countries. These differences imply that underdeveloped economies will not necessarily pass through the same process of industrialization as presently developed countries did. (2) With regard to Rostow's stages and their characteristics, some critical views may be mentioned: (a) A country's economic development process is affected by such factors as historical heritage, time of entry into the process of modern growth, degree of backwardness, and so forth; none of which is provided in Rostow's analysis. (b) the preconditions and the take-off stages seem to overlap, because the experience of most economies has been that agricultural expansion continued in the take-off stage. Moreover, agricultural revolution requires expanded output, expanded markets, and expanded loanable funds to the modern sector, all of which call for some leading sectors with high rates of growth. Similarly, rise in infrastructure investment depends upon the growth of some manufacturing sectors, and in turn, social overhead capital is needed more than ever as industrialization proceeds. (c) The existence of a leading sector depends on its contribution to economic development, and such a sector requires specification and evidence not found in Rostow's discussion. (d) As for doubling of investment in the take-off stage, statistical evidence does not confirm a sudden, but a gradual, increase in the ratio of savings and investment to income as development proceeds. (e) If self-sustained growth means a higher level of income per head of the population, giving rise to higher levels of saving and investment which, in turn, increase the rate of growth; then the same mechanism seems to operate during the take-off stage. By the same token, because income increases and social institutions improve during the take-off, it is logical to assume that growth is self-sustained during the same period. See Meier, op. cit., pp. 23-47; and B. Higgins, Economic Development (New York: W. W. Norton and Co., Inc., 1959), pp. 234-38.

the emergence or existence of a national government which is both willing and capable of determining and executing what is essential for economic development is a necessary condition in this stage. Unless some institutional reforms are carried out in a traditional society, by a national government, economic growth will not start and later sustain itself.

As for the second precondition, an agricultural revolution will not develop in the normal course of events, because factor productivity in this sector is low which "is largely due to the lack of certain complementary inputs of a technical, educational, and institutional nature."[10] Thus, according to Johnston and Mellor, "a crucial requirement for devising an appropriate agricultural development program is to identify these complementary inputs, determine in what proportion they should be combined, and establish priorities among programs designed to increase their availability."[11]

Another condition in this stage is the strengthening of social overhead capital; because it widens the market, accelerating technical advance, and giving rise to competition. The latter is due to the fact that as market widens, a number of producers of the same commodity may share the same market. Hence, "the enlarged market creates a qualitatively, not merely quantitatively, changed

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[10] B. F. Johnston and J. W. Mellor, "The Role of Agriculture in Economic Development," American Economic Review, op. cit., p. 582.

[11] Ibid.

situation."[12] However, in early stages of economic development, investment in social overhead capital is characterized by high opportunity cost, because only a small fraction of the capacity would be used.[13]

The Take-off Stage

In this stage, one or more industrial sectors take hold, with high rates of growth, bringing about forward and backward linkages. Forward linkages cause new leading sectors to emerge as the older ones decelerate.[14] Thus, according to Rostow, the crucial fact lies in "this demonstration of the capacity to shift from one set of leading sectors to another which distinguished abortive industrial surges of the transition period from a true take-off."[15]

That the emergence or existence of a political, social, and institutional framework is a necessary condition in this stage of economic development is because of the fact that there are many economic and non-economic forces operating within a society, all of which must be directed toward economic progress. Kuznets points out that the process of economic development requires a

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[12] E. E. Hagen, The Economics of Development (Homewood, Illinois: Richard D. Irwin, Inc., 1968), p. 126.

[13] Ibid., pp. 126-29.

[14] W. W. Rostow, The Economics of Take-off into Sustained Growth (London: Macmillan and Co., 1963), p. 8.

[15] Ibid.

"stable, but flexible, political and social framework, capable of accommodating rapid structural change."[16] As to the importance of this condition in the take-off stage, Lockwood argues that:[17]

> The great bottleneck in economic development is usually not a dearth of capital resources, or even skills. This may be serious at the outset. If it persists as a major obstacle, however, it is apt to be because of resistances encountered in constructing a social framework which will provide incentives and opportunity for human enterprise in new forms, thereby releasing the productive capabilities latent in most peoples of the world.

The quantitatively important condition in this stage is the shift from a productive investment rate of about 5 per cent of NNP to 10 per cent or more.

Rostow's characterization of the take-off stage is so that it seems he takes the ability of agriculture to expand its output as a precondition to this stage. But the agricultural sector must show a shift in its production function to meet the required increase in output. In other words, factor productivity in agriculture must begin to show substantial improvement so that economic development does not suffer from shortages of agricultural products, especially food.[18]

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[16] S. Kuznets, "Modern Economic Growth: Findings and Reflections," American Economic Review, Vol. 63, No. 3 (1973), p. 254.

[17] W. W. Lockwood, The Economic Development of Japan (Princeton: Princeton University Press, 1954), p. 499.

[18] In addition to the increase in the community demand for food due to the growth of population and per capita income, economic development gives rise to an increase in the demand for other agricultural products used as inputs in some new industries.

At the same time, the initial state of underemployment of the agricultural labor force must begin to disappear by a simultaneous transfer of the redundant labor from agriculture to industry and by the application of labor intensive techniques within agriculture.[19]

The end of the take-off stage must indicate that the surplus agricultural labor has disappeared, and also, the labor force engaged in agriculture is declining absolutely.[20]

III. INTERDEPENDENCE OF AGRICULTURE AND INDUSTRY

Industrial expansion affects the agricultural sector in the following ways:[21]

1. Industrialization increases the demand for food. Hence, with population growth, it generates a heavy pressure on food supply. This pressure is likely to create a more favorable market

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[19]Johnston and Mellor say that the process of agricultural development takes place in three phases. Improvement in the land tenure system is a precondition to agricultural development and is a necessary condition in Phase I. In Phase II, labor intensive techniques must be used, because it is likely to absorb a part of the surplus labor in agriculture itself. See Johnston and Mellor, op. cit., pp. 583-90.

[20]Phase III of agricultural development must be characterized by capital intensive techniques to release some of the agricultural labor for industrial employment. It seems that the beginning of Phase III coincides with the end of the take-off stage. See Ibid. Higgins asserts that, "sustained growth requires a shift to more extensive and more mechanized agriculture, which means getting people out of the rural sector and getting capital into it." Higgins, op. cit., p. 454.

[21]See, for example, W. H. Nicholls, "The Place of Agriculture in Economic Development," in K. Berrill edition, Economic Development with Special Reference to East Asia (New York: St. Martin's Press, Inc., 1964), pp. 338-39.

situation for agricultural products, in the sense that the price of food products tends to rise. The agricultural sector makes an attempt to increase production, thereby stimulates specialization in agriculture.

2. Industrial expansion gives a pull-effect to the redundant agricultural labor which is beneficial both to those who leave the sector and also to those who are left behind.

3. Industrialization offers to the agricultural population a wide range of consumer goods, and also capital goods for further expansion in production.

4. Industrialization creates urbanization. Urban people are less tradition-bound. Thus, industrialization is likely to break down traditional attitudes to life.

Rising agricultural productivity supports industrialization in several ways:[22]

1. It enables the increasing food requirements of the industrial sector to be met and fulfills the needs of its own increasing population. It also provides the raw material needs for some new industries.

2. It releases an increasing proportion of its labor force for industrial employment.

3. It increases agricultural income, creating demand for industrial products which stimulates industrial production,

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[22] Ibid., pp. 337-38. See also Johnston and Mellor, op. cit., pp. 571-81.

thereby increases the demand for labor in the industrial sector, strengthening the pull-effect on agricultural labor surplus.

IV. TRADITIONAL AGRICULTURE AND DISGUISED UNEMPLOYMENT

The agricultural sector in underdeveloped countries is called traditional, because all farming practices are based on a few production techniques which have been employed by the farmers in these areas for generations without substantial change.[23]

The main question is: how to induce traditional agriculture to produce more? In fact, there is no general formula to attain this objective. It depends on the economy under consideration. However, it is necessary to identify a few basic features, although at the cost of some simplified abstractions.

Traditional agriculture must be viewed as featuring a particular type of equilibrium in which "(1) the state of the arts remains constant, (2) the state of preference and motives for holding and acquiring sources of income remains constant, and (c) both of these states remain constant long enough for marginal preferences and motives for acquiring agricultural factors as sources of income to arrive at an equilibrium with the marginal productivity of these sources viewed as an investment in permanent income streams and with net savings approaching zero."[24]

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[23] T. W. Schultz, Transforming Traditional Agriculture (New Haven: Yale University Press, 1964), pp. 3-4.

[24] Ibid., p. 30. Dandekar argues that since population grows continuously, there will "be no state of stationary equilibrium,

The state of the arts remains constant because the farmers continue to apply those agricultural techniques and factors which have been passed on to them by their predecessors. In this situation, the motives and preferences of farmers are also constant during the same period. Thus, there is an equilibrium at a very low level which continues to decline as population grows. Eventually, a point is reached in this equilibrium where the rate of return on labor is so low that there is hardly any incentive to make additional savings and investment.

Such an agricultural system is characterized by disguised unemployment which is related to the fact that it is possible to remove a substantial number of labor without affecting the current level of agricultural output. According to Sen, it is "not that too much labor is being spent in the production process, but too many laborers are spending it."[25] Thus, laborers are abundant and not the labor time.

Causes of disguised unemployment may be broken down to social and economic factors. The social factor responsible for this type of unemployment is that traditional agriculture is often based on

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but the state of continuous deterioration with negative net savings and investment." He asserts that, "the characteristic condition of traditional agriculture turns out to be that it fails to produce a surplus over subsistence and hence soon begins to live on capital consumption." V. M. Dandekar, "Questions of Economic Analysis and Consequences of Population Growth," in C. R. Wharton, Jr. edition, Subsistence Agriculture and Economic Development (Chicago: Aldine Publishing Company, 1965), p. 371.

[25]A. K. Sen, Choice of Techniques (Oxford: Basil Blackwell, 1962), pp. 14-15.

family holdings. In the absence of alternative employment opportunities, all members of the family work together on the given piece of land and total output is divided among them irrespective of the work performance. As population grows, additional workers do not contribute any extra labor, but share in the total labor time. Economic causes of disguised unemployment are: (a) scarcity of capital and technology relative to the growth of labor force, (b) market imperfections both for factors of production and output, and (c) the system of production.[26]

V. INCREASING AGRICULTURAL OUTPUT

To initiate economic growth, it is essential to transform the existing situation. The key to this transformation is technology. In the words of Schultz, "technology is always embodied in particular factors and, therefore, in order to introduce a new technology it is necessary to employ a set of factors of production that differs from the set formerly employed."[27] Thus, dependency of farmers on traditional agriculture must be broken by making them learn, accept, and adopt a new set of factors of production. "The essence of the problem is to identify those factors that are

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[26]R. Nurkse, Problems of Capital Formation in Underdeveloped Countries (New York: Oxford University Press, 1967), pp. 32-36; Y. S. Cho, Disguised Unemployment in Underdeveloped Areas (Berkeley: University of California Press, 1963), pp. 4-5; J. S. Uppal, Disguised Unemployment in an Underdeveloped Economy (New York: Asia Publishing House, 1973), pp. 1-15.

[27]Schultz, op. cit., p. 132.

currently limiting increased production and to define a combination of inputs that will yield large returns in increased farm output and productivity."[28] In order to make technological change useful in the process of transformation, ways must be found to make them available and acceptable to the farmers. "Once this has been done, it will be clear that the suppliers of these particular factors of production, and the farmers in their role as demanders of them, hold the center of the stage."[29]

In order to determine those factors that must be introduced to the farmers, agrcultural research and rural extension programs are essential. Johnston and Mellor hold that, "the effectiveness of agricultural research is dependent upon an extension-education program which carries research finding to farmers and carries knowledge of farmers' problems back to the research staff."[30] In this way, those factors that limit increased production will be identified. The next step is to supply these inputs "at a price that will make it worthwhile for farmers to acquire them and to learn how to use them efficiently."[31]

In a traditional agriculture, the farmers would not be the demanders of the new and non-traditional inputs. They have to be

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[28]Johnston and Mellor, op. cit., p. 586.

[29]Schultz, op. cit., p. 104.

[30]Johnston and Mellor, op. cit., p. 536.

[31]T. W. Schultz, Economic Crises in World Agriculture (Michigan: University of Michigan Press, 1965), p. 47.

convinced by way of showing them the profitability of new factors with a calculation of the new input's price and yield which the farmer can understand. When the suppliers "succeed in producing and distributing these factors cheaply, investment in agriculture becomes profitable, and this then sets the stage for farmers to accept modern factors and learn how best to use them."[32]

All in all, programs to modernize agriculture must be based on the following foundation:[33]

1. New agricultural inputs that have a relatively high payoff are required.

2. A supply of these inputs must be available to farmers.

3. As farmers accept them, they must learn how to use them efficiently.

To determine a new set of factors of production with high payoffs through research, and then to produce and distribute them, requires a heavy investment by a non-profit-oriented body in order to set the price at a very low level, even at a loss, so as to be profitable and persuasive to the farmer who should use them. All these functions can best be done by government in a less developed economy, because of the lack of a profit incentive. One way of distributing these inputs is through rural cooperatives.[34] For

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[32]Schultz, Transforming Traditional Agriculture, op. cit., p. 145.

[33]Schultz, Economic Crises in World Agriculture, op. cit., p. 60.

[34]As will be seen in Chapter IV, cooperatives have been successful in the case of Iran.

this purpose, government must encourage the formation of cooperatives which not only distribute new factors of production, but also assist the farmers in various stages of production and marketing. "Promotion of cooperatives is an important government activity in economic development, as a method whereby farmers may obtain the benefits of the economies of large scale operation through joining together in a joint enterprise."[35] According to Tai, it is "necessary and desireable to integrate the farming community into cooperatives for purposes of credit provision, rural extension, marketing, and other services."[36]

In general four categories of benefits from cooperation may be listed:[37]

1. cooperatives provide farmers with services at cost, thereby lowering farmers' factor cost.

2. They introduce the use of modern techniques to the farmers.

3. They assist farmers in producing and marketing their products more efficiently which raises the farmers' income. This gives rise to an increase in rural demand for goods and services,

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[35]R. C. Buse and P. G. Helmberger, "Potential and Feasibility of Cooperatives as Instruments of Market Reform," in K. R. Anschel, R. H. Brannon, and E. D. Smith edition, Agricultural Cooperatives and Markets in Developing Countries (New York: Frederick A. Praeger, Inc., 1969), p. 206.

[36]H. C. Tai, Land Reform and Politics (Berkeley: University of California Press, 1974), p. 234.

[37]L. L. Mather, "The Principles, Functions, and Benefits of Cooperation," in Anschel and others edition, op. cit., pp. 22-24.

benefiting the economy as a whole.

4. They eliminate middlemen, to some extent, lowering the market price of agricultural products so that all members of the community may benefit.

The problems and difficulties that are likely to be encountered upon formation of cooperatives may be summed up to: (a) the lack of experience of farmers in cooperation, (b) the need for a large number of trained personnel to supervise them, and (c) the heavy investment required for this purpose.

In addition to technological and institutional changes required to increase agricultural output, the importance of education in the process of transformation should not be overlooked, because "all aspects of agricultural development hinge on developing a broad range of educational institutions."[38] A modern agriculture requires many skills and much new knowledge on the part of the farmers that can be had by the expansion of educational facilities. "The spread of education among the farm population broadens horizons, provides necessary skills for keeping records and accounts, and strengthens the capacity of farmers to make rational decisions."[39]

As to what kind of education is likely to be useful for rural people to raise their productivity, agricultural education

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[38] Johnston and Mellor, op. cit., p. 589.

[39] Ibid.

seems to be the answer. But in a traditional agriculture with a very low literacy rate, this is an impossibility in the short run, because of the tremendous cost of undertaking such a program and the time involved for this purpose. However, if the farmer was able to keep records of his farming operations, if he could calculate the costs and returns of different inputs, if he could understand that there were better methods than his existing ones, and if he could get information about the possibility of exchange of his products for other commodities; he would have the incentive and ability to keep looking for better methods of production in order to increase his output. Primary education provides the farmer, to some extent, with these qualifications. The problem is the cost of a nation-wide primary education program. In addition to the costs of buildings, equipments, and salary of teachers, such a program poses the problem of inavailability of enough teachers and their reluctance to work in rural areas. The result is overcrowded classrooms which lowers the standard of elementary education.[40]

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[40] In Iran, one of the important steps taken on this score, was the formation of literacy corps consisting of high school graduates to work as teachers in rural areas during their two years of militery service. This point is mentioned in Chapter III. As for the role of education in economic development, see H. Myint, Economic Theory and Underdeveloped Countries (New York: Oxford University Press, 1971), pp. 205-22.

CHAPTER III

A BRIEF HISTORY OF ECONOMIC DEVELOPMENT IN IRAN AND BASIC FEATURES OF THE ECONOMY

I. INTRODUCTION

The postwar development effort of Iran has been carried forward by the Plan Organization. It was established along with the enactment of the first Seven Year Plan Law in 1949. This law was the outcome of four years of discussion and preparation started at the end of the World War II. In 1946, a "Commission for Drafting Plans for Development of the Country" was established. The draft plan produced by this commission was the first draft of what became, three years later, the Seven Year Plan Law.[1]

Oil nationalization so changed the economic situation that the First Plan (1949-55) was halted. In 1954, it was decided to terminate the uncompleted First Plan and to start with a second Seven Year Plan to begin in 1955. The latter was limited to investment in government-owned plants, social overhead capital, and large-scale irrigation projects. The Third Plan, which was the first Five Year Plan, was affected by a program of reforms called the "White Revolution." The Fourth Plan was carried out in the normal course of events, and the Fifth Plan for 1972-77

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[1]G. B. Baldwin, Planning and Development in Iran (Baltimore: John Hopkins Press, 1967), pp. 22-25.

was originally approved by the Assembly and the Senate early in 1973. Subsequent sharp increases in oil prices and government revenues during 1973 and 1974 radically altered the plan's financial projections and called for a wholesale revision of the targets. The revised plan, providing for near doubling of investments over the original, was submitted to the Parliment in the winter of 1974.

II. GENERAL CHARACTERISTICS OF THE DEVELOPMENT PLANS

Despite the First Plan's lengthy preparation, the nationalization of the oil industry, in the early fifties, put an end to the income from oil which was the only means of financing plan projects. At the same time, the government failed to obtain a loan from the World Bank to provide the plan's foreign exchange requirements.[2]

The Second Plan (1955-62) was a program of government expenditures. It said nothing about the specific goals for the country, about the investment or development activities of other branches of the government, or about the private sector. It was not really a program for economic development. It had as over-all goals the increase of production, especially exports; development of agriculture and industry; discovery and exploitation of mines; and improvement in communication, health, and education. Oil

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[2]J. Amuzegar, Technical Assistance in Theory and Practice: The Case of Iran (New York: Frederick A. Praeger, 1966), pp. 100-03.

revenues, IBRD and U.S. loans, and central bank credit amounting to a total of $1.2 billion was devoted to economic superstructure: dams, roads, telecommunication, power plants, and large scale irrigation projects.[3]

In the late 1950's, Plan Organization made a high level of development expenditures. The rest of the government also embarked on a high level of expenditure. These two sources of government spending, combined with liberal bank credit and easy access to foreign exchange, generated a boom in private investment, mainly in urban housing and industry.[4] The general price level which had risen about 10 per cent from 1955 through 1957, started to rise at an annual rate of 10 per cent in 1958. The combination of easy credit, rising prices, and unrestricted imports gave rise to a substantial fall in exchange reserves. It was followed by a recession in the early sixties.[5]

The first two plans were limited to a particular set of government executed projects. The shift from partial to comprehensive planning was not seriously discussed until 1958, when a review of the country's development program was necessary for preparing the Third Plan. This program review played an important part in broadening the conception of Iran's development effort. Two of the more important conclusions were: (a) that a sound

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[3]R. E. Benedick, Industrial Finance in Iran (Boston: Harvard University Press, 1964), pp. 11-13.

[4]Baldwin, op. cit., p. 40.

[5]Benedick, op. cit., pp. 13-16.

development effort would require much closer cooperation among key government agencies, and (b) that future planning must be comprehensive and not partial, in the sense that planning should be concerned with development objectives covering the entire economy. The review implied that government investment activity outside the approved plan had been very high, foreboding trouble with public finance. In the private sector, a fast growing banking system had given rise to demands for credit that grew faster than the economy could absorb without putting pressure on prices. Inflation, however, did not become serious. Plan Organization left the monetary situation to the central bank and the IMF and turned its energy on preparation of the Third Plan to begin in 1962.[6]

In January 1963, a program of reforms that included six major steps was submitted to the nation as a referendum. The six items included in the referendum were:[7]

1. Land reform.

2. The nationalization of all forest lands.

3. Public sale of state-owned factory shares to finance the

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[6]Baldwin, op. cit., pp. 42-44.

[7]His Imperial Majesty, Iran, Philosophy behind the Revolution (London: Orient Commerce Establishment, 1971), pp. 65-136. In 1964 three more items, and in 1967 three further points were added to bring the total items in the charter to twelve. The last six points were: the health corps, reconstruction and development corps, houses of equity, nationalization of water resources, urban and rural reconstruction, and administrative and educational reforms. For details, see Ibid., pp. 137-79.

land reform program.

4. A nation-wide profit sharing scheme under which employers would be required to distribute 20 per cent of their annual profits to their employees.

5. Revised electoral laws to assure free elections.

6. Literacy corps consisting of high school graduates to spend most of their two-year military service teaching school.

Over five million votes had been cast in favor of the six-point plan and only five thousand votes against. This program of reforms was called the "White Revolution" and its occurrence in the early sixties interrupted the Third Plan. In 1967-68, the shares of agriculture, industry and mines, and oil in gross domestic product were 24.5, 21.3, and 13.8, respectively.[8]

During the Fourth Plan, the annual growth of GNP averaged a rate of 11.2 per cent.[9] Private sector investment grew at the rate of 12.9 per cent and public sector investment at the rate of 14.6 per cent a year.[10] At the end of the Fourth Plan (1972-73), contribution of agriculture, industry and mines, and oil to GNP were 18.1, 22.3, and 19.5, respectively.[11]

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[8] Iran Economic News (Washington, D. C.: Iranian Economic Mission, March 1975), p. 4.

[9] A Guide to Iran's Fifth Plan (Tehran: Kayhan Research Associates, 1975), p. 15.

[10] Ibid., p. 19.

[11] Ibid., p. 16.

As for the Fifth Plan (1972-73 through 1977-78), in view of the increase in the price of oil, anticipated oil revenues from the original estimate of $24.6 billion to an estimate of $98.2 billion during the plan period, removed all financial constraints on development spending. However, productivity and infrastructure capacity had not grown as rapidly as its financial resources. Major obstacles were anticipated in the availability of manpower, supply of energy, and construction materials. Because of these bottlenecks, total fixed investment was set at $69.6 billion during the plan period. Of the total, public sector investment will account for $46.2 billion and the remaining $23.4 billion will be invested by the private sector. Of total public sector fixed investment, $39.5 billion will be invested directly by the government in social welfare, infrasructure, and heavy industries; the remaining $6.7 billion will come from the revenues of the state-owned enterprises. As for the private sector, based on its past trend, $17.9 billion is expected to come from its own resources, and $2.8 billion from foreign capital. The remaining $2.7 billion will be provided by the government through loans and easy credit.[12]

III. GENERAL FEATURES OF THE IRANIAN ECONOMY

Iran consists of some 636,300 square miles with a total

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[12]It was decided that at the beginning of each year, after a review of the previous year's achievements, allocations would be made for key projects ——— a procedure which previously could not always be observed. See Ibid., pp. 9, 15-21.

population of around 33 million,[13] 186 cities and towns, and some 45,000 villages.[14] According to Baldwin, "Iran probably has the best natural endowment for economic growth of any country in the Middle East."[15] Because the country has no serious population problem, and no pressing shortage of arable land. Foriegn exchange is not a problem either, because of high exchange earnings of oil exports. Yet, 40 per cent of Iranians are illiterate and there are many who live in poverty.[16]

Some Leading Economic Indicators

Table 1 shows the shares of different sectors in Iran's gross domestic product. The fact that the share of agriculture in GDP has been declining over time is represented: 20.2 per cent in 1968 as against 29.8 per cent in 1960.[17] Table 2 shows that the percentage of total labor force engaged in agriculture was 47.3 in 1968 as against 56.3 in 1956. From Tables 1 and 2, it is

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[13] Iran Economic News, op. cit., p. 8.

[14] Cities and towns are defined as areas of over 5,000 population. Baldwin, op. cit., p. xv. Number of villages are obtained from: J. P. Gittinger, Planning for Agricultural Development: The Iranian Experience (Washington, D. C.: National Planning Association, 1965), p. 99.

[15] Baldwin, op. cit., p. 3.

[16] Time (November 4, 1974), p. 28.

[17] In 1972, the added value of the agricultural sector accounted for about 18.2 per cent of GDP when the oil sector was included, and for 22 per cent of GDP with the exclusion of the oil sector. A Guide to Iran's Fifth Plan, op. cit., p. 53.

TABLE 1

GROSS DOMESTIC PRODUCT BY KIND OF ECONOMIC ACTIVITY

(in billion rials)[a]

	1960[b]	(%)	1966[b]	(%)	1968[b]	(%)
Agriculture, forestry, fishing, and hunting	86.7	29.8	102.7	24.5	119.6	20.2
Mining and quarrying[c]	.6		1.3		1.6	
Manufacturing	83.1		164.5		220.4	
Electric, gas, and water	1.9		7.7		11.7	
Construction	12.6		20.6		26.1	
Wholesale and retail trade	28.5		33.9		40.1	
Transport, storage, and communication	21.7		27.0		29.3	
Finance, insurance, real estate, and business services	17.5		25.3		28.5	
Community, social, and personal services	6.9		11.6		18.3	
Government services	37.3		65.5		79.9	
GDP at factor cost	296.9		460.0		575.6	

Source: United Nations, Yearbook of National Accounts Statistics, 1972, p. 532.

[a]At constant prices of 1959.

[b]Year begins 21 March.

[c]Extraction of crude petroleum and gas are included in manufacturing.

TABLE 2

EMPLOYMENT IN THE THREE MAJOR SECTORS OF THE ECONOMY

	1956[a]	1966[a]	1968[b]
Total	5,907,666	7,115,787	7,220,400
Agriculture	3,325,721	3,380,023	3,413,800
(%)	56.3	47.5	47.3
Industry	1,187,843	1,886,988	1,821,800
(%)	20.1	26.5	25.2
Services	1,394,102	1,848,776	1,984,800
(%)	23.6	26.0	27.5

Source: Statistics Yearbook (Tehran: Statistical Center of Iran, 1970), p. 60.

[a]Census.

[b]Sample survey.

evident that 47.5 per cent of the labor force produced 24.5 per cent of GDP in 1966. This indicates that a relatively high proportion of the labor force was engaged in agriculture.

It has been frequently argued that one of the conditions of economic growth is an increase in capital accumulation. In Iran, gross fixed capital formation was estimated to be 55.4 billion rials,[18] or 16.5 per cent of GDP in 1960, and increased to 20.6 per cent of GDP in 1970.[19]

Table 3 provides the value of exports and imports of the country. It shows a favorable balance of payments which is due to the high proportion of oil in total exports. Table 4 represents the composition of exports for selected commodities, and the fact that oil contributes a substantial amount to exports is evident. The major non-oil exports of the country are raw cotton, fruits (mostly dried fruits), and carpets. Thus, Iran may be considered as an exporter of primary products, except for carpets which is the only manufactured item among the major non-oil exports.[20]

In 1948, total imports amounted to $170 million.[21] High exchange earnings, resulting from the rapid increase in oil

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[18]The exchange rate was 75.75 rials = $1.00 US and remained the same during 1960's. United Nations, Statistical Yearbook, 1967, p. 585; and 1972, p. 630.

[19]Calculated from: see Table 1; op. cit., p. 529.

[20]In 1974, oil exports amounted to $20.2 billion and exports of commodities amounted to $0.8 billion. Iran Economic News, op. cit., p. 8.

[21]Baldwin, op. cit., p. 63.

TABLE 3

VALUE OF IMPORTS AND EXPORTS

(in million rials)

	1959	1964	1969
Imports (c.i.f.)	49,078	50,669	104,831
Exports (f.o.b.)	57,151	94,964	159,029
Balance	8,073	44,295	54,198

Source: United Nations, Statistical Yearbook for Asia and the Far East, 1970, p. 150.

TABLE 4

EXPORTS OF SELECTED COMMODITIES

(in million rials)

	1959	1964	1969
Fresh and dried fruits	1,324.1	1,483.7	2,786.4
Hand woven carpets	1,520.4	2,733.4	4,486.4
Cotton	1,811.7	2,582.3	3,691.9
Petroleum products	49,227.9	74,185.8	147,753.5

Source: Ibid., p. 152.

production, gave rise to a tremendous growth in the volume of imports ($1,383.8 million in 1969). In 1964, consumer goods accounted for about 23 per cent of total imports. The shares of intermediate and capital goods were 57 and 20 per cent, respectively. From 1964 to 1969, there had been a drop in the absolute value of the imports of consumer goods. In 1969, the share of the latter in total imports was 9 per cent, that of intermediate goods was 68 per cent, and the remaining 23 per cent was capital goods.[22] At the same time, production of manufacturing goods rose from 114 billion rials in 1963 to 247.6 billion rials (at constant prices of 1959) in 1969.[23]

The foregoing suggests that there had been an increase in the demand for domestic relative to imported consumer goods over the period considered. With the safe assumption that the price of imported consumer goods is higher than that of domestic products, this change may be attributed to an increase in the difference between the prices of domestic and imported products due to import restrictions for protecting home industries.

In the period 1956-60, capital goods imports increased almost sixfold. Plan Organization estimated that total private investment more than doubled during this period, and the number

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[22]Proportions of major categories of imports are calculated from: see Table 3; op. cit., p. 151.

[23]See Table 1; op. cit.

of mechanized factories and workshops rose from 2,300 to 8,200 units.[24]

The most important industries in Iran are textiles, food processing, and cement. Invested capital in the first two industries, in 1960, accounted for 80 per cent of the total. The country's first modern industry was cotton textiles, and in the early sixties, about 99 per cent of the factories were privately owned. Food processing industry had a capital of over $243 million which was the largest in 1960. In the period 1956-63, cement output grew almost 500 per cent, and with a production of 850,000 tons, in 1962, completely substituted for imports of this product. Another major industry in Iran is fruit drying and, in 1960, all the plants were privately owned, and 80-90 per cent of the output was exported.[25]

Index of industrial production shows a growth rate of 109 per cent in the period 1963-69. Textiles increased 215 per cent and food and beverages grew 128 per cent in this period. Cement production rose from 787 thousand tons in 1963 to 2,326 thousand tons in 1969.[26]

Demographic Features

The total population of Iran was 25,078,923 in 1966. As is

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[24]Benedick, op. cit., p. 20.

[25]For details of industrial expansion, see Ibid., pp. 21-29.

[26]See Table 3; op. cit., p. 147.

shown in Table 5, the 10-59 age group, from which most of the working population is drawn, was 14,897,802. But the total labor force, as can be seen in Table 6, was 7,584,087, or about half the 10-59 age group. From Tables 5 and 6, it is clear that this is because of a very low female participation in the labor force which could be attributed to the social system of the predominantly Muslim society.

It is a well-known fact that, in many less developed economies, unemployment is usually low but underemployment widespread. In Iran, 2.6 per cent of the labor force was reported as unemployed in 1956. Unemployment figures in Table 6 show that there was an increase in the unemployed proportion of labor force to 9.6 in 1966. At the same time, there was a decrease in the percentage of population reported as the work force from 32 in 1956 to 30 in 1966.

The foregoing implies that, from 1956 to 1966, the rate of increase in the labor force was more than that of additional jobs created.

Table 7 represents the unemployed population by type of unemployment in urban and rural areas in 1966. As is evident from this table, 541,674 out of the total of 725,689 unemployed population were illiterate, most of whom lived in rural areas. From Tables 8 and 9, it is obvious that, on the one hand, a large proportion of population lived in rural areas, and on the other, a substantial number of them were illiterate.

TABLE 5

POPULATION OF IRAN BY AGE AND SEX, 1966

Age	Total	Male	Female
All ages	25,078,923	12,981,665	12,097,258
Below 10 years	8,543,079	4,435,427	4,107,652
10-59 years	14,897,802	7,686,852	7,210,950
60 years and over	1,638,042	859,386	778,656

Source: United Nations, Demographic Yearbook, 1971, p. 223.

Note: Figures in this table are calculated from the figures given in Ibid.

TABLE 6

ECONOMICALLY ACTIVE POPULATION AND EMPLOYMENT BY SEX

	Total	Male	Female
1956			
Labor force	6,066,643	5,491,012	575,631
Employed	5,907,666	5,334,331	573,335
Unemployed	158,997	156,681	2,296
Unemployment (%)	2.6	2.9	0.4
1966[a]			
Labor force	7,584,085	6,584,257	999,828
Employed	6,858,396	5,948,413	909,983
Unemployed	725,689	635,844	89,845
Unemployment (%)	9.6	9.7	9.0

Source: See Table 2; op. cit., p. 94.

Note: In 1956, about 6 per cent of the labor force consisted of 10-14 age group. It was increased to 10 per cent in 1966.

[a]Settled population.

TABLE 7

UNEMPLOYED POPULATION BY SEX AND TYPE OF UNEMPLOYMENT, 1966

	Total	Urban	Rural
Both sexes	725,689	158,067	567,622
Seasonal	441,448	23,160	418,288
Frictional	284,241	134,907	149,334
Male	635,844	146,386	489,458
Seasonal	372,190	21,275	350,915
Frictional	263,654	125,111	138,543
Female	89,845	11,681	78,164
Seasonal	69,258	1,885	67,373
Frictional	20,587	9,796	10,791

Source: See Table 2; op. cit., p. 95.

Note: Among the urban unemployed population 42.9 per cent were illiterate and 1.2 per cent with university education. In rural areas 83.3 per cent were illiterate and 44 persons with University education.

TABLE 8

LITERATE POPULATION

(7 years of age and over)

Area and sex	1956(%)[a]	1966(%)[a]	1971(%)[b]
Total country			
Both sexes	15.4	29.4	36.9
Male	22.4	40.1	47.7
Female	8.0	17.9	25.5
Urban			
Both sexes	34.6	50.4	58.6
Male	45.9	61.5	68.7
Female	22.4	38.9	48.1
Rural			
Both sexes	6.1	15.1	20.4
Male	10.9	25.4	31.9
Female	1.2	4.3	8.3

Source: Iran Almanac (Tehran: Echo of Iran, 1974), p. 415.

[a]Census.

[b]Sample survey.

TABLE 9

URBAN,[a] RURAL, AND TOTAL POPULATION

(unit: 1,000)

	1956	1966	1971
Total	18,800	25,079	30,159
Urban[a]	5,000	9,794	12,461
(%)	26.6	39.1	41.3
Rural	13,800	15,285	17,698
(%)	73.4	60.9	58.7

Source: See Table 5; op. cit., p. 144. 1956 figures are obtained from: Gittinger, op. cit., p. 35.

Note: The urban male population was 39.3 per cent of the total in 1966; it was increased to 41.6 per cent in 1971.

[a]Areas of over 5,000 population; see footnote 14, p. 27.

CHAPTER IV

AGRICULTURAL DEVELOPMENT IN IRAN

I. INTRODUCTION

In this chapter, an attempt is made to describe the state and organization of the agricultural sector. The most important event to have occurred in this sector was improvement in the land tenure system which began in the early sixties. Johnston and Mellor argue that land reform is likely to be a precondition for agricultural development, "since an unfavorable tenure situation may stifle the incentive for change even though the potential exists for large increases in output."[1] Agrarian reform in Iran will be described after a look at the sector before this event.

II. IRANIAN AGRICULTURE BEFORE LAND REFORM

In 1961, about 2.5 million families were engaged in agricultural production. They harvested crops on some 6 million hectares of land two-thirds of which was dry land.[2] Over 5.5 million hectares of the area under cultivation was devoted to wheat, barley, and rice. Wheat alone took up 4 million hectares of land and its production was about 2.8 million tons. Barley

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[1]Johnston and Mellor, op. cit., p. 582.

[2]Gittinger, op. cit., p. 99.

production was 1 million tons, and that of rice was over 500,000 tons.[3] These three major crops accounted for 36 per cent of the value of agricultural production. Animal products contributed another 36 per cent, and most of the remaining 28 per cent was accounted for by fruit, nut orchards, cotton, sugar beets, pulses, tobacco, vegetables, and melons. The total value of all agricultural products amounted to some $650 million.[4]

On the average, each rural family cultivated 2.4 hectares of land and earned an annual income of $260, or a per capita income of about $50. The number of agricultural workers, according to Gittinger, was "high relative to the intensity of cultivation possible with the techniques known and available to Iranian farmers."[5] This may be taken as first indication that marginal productivity of labor approaches zero.

The institutional setting of the rural sector was dominated by a system of absentee landlords, most of whom lived in cities and towns and left the daily administration of their villages to resident agents. A relatively high proportion of land was owned by a small number of landlords. However, there were many districts where ownership was not in the hands of a single individual, but

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[3] See Table 3; op. cit., p. 146.

[4] Gittinger, op. cit., p. 100.

[5] Ibid., p. 101. Rural family income is based on the assumption that the total value of all agricultural output accrued to the rural families. Per capita income is based on the average family size of five. See Table 5; op. cit., p. 400.

had been split up into shares. Generally, landownership had always, to some extent, been an urban phenomenon. The relation between the landlord and the peasant was based on a cropsharing agreement. There was a great dichotomy between urban and rural population and in 1950's, with the provision of greater amenities in towns, the discrepancy between urban and rural life became still greater.[6]

Although most of the agricultural land of the country was held by large landowners, large scale farming was not practiced, because both large and small estates were run on the basis of peasant holding. There were, thus, non of the economic advantages of large landownership. In most cases, primitive methods of cultivation was used and the result was poor yields. In the words of Lambton:[7]

> The amount of the crop available for sale or barter was usually extremely small. In the case of the cropsharing peasant, his portion, after the deduction of the landlord's share and the payment of various dues, was often insufficient to maintain him and his family until the next harvest. The peasant himself performed all the operations concerned with the production and disposal of his crops....His poverty prevented the accumulation of reserves. Thus he was seldom in a position to drive a bargain, but was forced by need to take whatever price was offered, however disadvantageous this might be. Inadequate communication made it difficult for him to do anything but sell his goods at the nearest market. The almost permanent state of need.....forced him to dispose of his produce immidiately after harvest, if it was not already pledged before.

This implies that the peasant had an extremely narrow risk

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[6] A. K. S. Lambton, The Persian Land Reform (London: Oxford University Press, 1969), pp. 19-25.

[7] Ibid., p. 29.

margin, because his income was very close to subsistence level and he could not afford a drop in his income if some technique proved unsuccessful. In other words, his subsistence income did not allow him to make an effort to find out the outcome of a new technology by trial and error. He had to be sure that the use of the new technique would improve yields before using it.

Iran's agricultural problems were more institutional than technological. Despite weaknesses in research structure, far more technology was known than was used. The problems were how to make this new technology available to the farmer in a form he could use, and how to create an economic environment which makes it possible to adopt innovations. This meant new institutional programs such as credit, extension services, and land tenure changes.[8]

There is not enough data available about the agricultural sector before 1955 to allow careful analysis. However, in the early fifties, the average annual growth rate of production of wheat, barley, and rice had been around 5.5, 5, and 13.5 per cent, respectively. Table 10 shows the production of these three major crops in the same period. The average annual growth rate of population had been about 2.4 per cent.[9]

In the late 1950's, two-thirds of the area under cultivation

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[8]Gittinger, op. cit., pp. 102-03.

[9]The growth rates of major crops are calculated from Table 10, and the growth rate of population is calculated from: United Nations, Demographic Yearbook, 1961, pp. 132-33.

TABLE 10

PRODUCTION OF MAJOR CROPS

(in 1,000 tons)

Year	Wheat	Barley	Rice
1951	1,800	720	360
1952	2,041	840	420
1953	2,245	820	500
1954	2,100	820	526

Source: United Nations, Statistical Yearbook, 1954, pp. 63, 66, 68; and 1957, pp. 79, 82, 84.

was planted in wheat and barley. Table 11 summarizes the relative values produced and the uses of land by crops in the late fifties. As is evident from this table, 35-40 per cent of the total values produced directly from the land is accounted for by wheat. It is also clear that milk accounts for over half the values produced by livestock.

The average growth rate of agricultural production, during the second half of 1950's, had been 3-4 per cent yearly.[10] Population had been increasing at about 2.3 per cent per year during the same period.[11] It meant that agricultural output was increasing faster than population. However, the key factor in increase in the demand for food and fiber was not only the growth rate of population, but also the rate of increase in national income. Besides, the low nutritional levels among most of the people of the country implied a high income elasticity of demand for food. Moreover, the acceleration of industrialization meant a further increase in the demand for agricultural products.[12] For one thing, the consumer price index shows an average annual increase of around 13.2 per cent for food and 10.4 per cent for all items during the period 1958-60,[13] which means that demand

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[10]Baldwin, op. cit., p. 77.

[11]Calculated from: United Nations, Demographic Yearbook, 1962, p. 137.

[12]See baldwin, op. cit., p. 78.

[13]Calculated from: United Nations, Statistical Yearbook, 1962, p. 482.

TABLE 11

LAND USES AND THE VALUES PRODUCED, LATE 1950's

	Land use by crops (1,000 hectares)	Relative values produced (%)
Wheat	3,100	24
Rice	270	8
Barley	910	4
Cotton	310	4
Pulses	130	1
Fruit and nuts	930	16
Vegetables and melons	230	3
Others[a]	240	4
Milk		21
Meat		8
Wool and hair		2
Eggs		2
Poultry		1
Others		2
Total	6,120	100

Source: Baldwin, op. cit., p. 74.

[a]Including tobacco, sugar beets, vegetables, oilseeds, gums, tea, etc.

had been increasing faster than supply.

The second plan program (1955-62) in agriculture was characterized by large investments in constructing three multi-purpose dams. Some $325 million, or 18 per cent of the total budget, was spent on construction of these dams. In contrast, $75 million, or 6.5 per cent of the budget, was allocated for all other agricultural programs. The second plan was more a capital investment program than an agricultural program.[14] An estimate showed that $200 million cost of two of the dams and the associated canal networks would require about 50 years to return the original investment. In contrast, the rapid adoption of diesel pump irrigation, by several hundred owners in the south, was estimated to return the original investment of $10-15,000 within three or four years. From the foregoing it is clear that if the large amounts of money had been spent on small-scale rather than large-scale irrigation projects, it would have been more economical with respect to agricultural development.[15]

Despite the second plan's emphasis on large-scale multi-purpose river development projects relative to research and experimental work necessary for agricultural development, enough work had been done to make the following statements:[16]

Improved seed was capable of raising wheat and barley yields

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[14]Gittinger, op. cit., p. 58.

[15]See Baldwin, op. cit., pp. 82-83.

[16]Ibid., pp. 84-85.

by around 40 per cent compared with traditional seed qualities.

Rice yields could be raised about 50 per cent by using chemical fertilizers.

improved horicultural practices (thinning of trees, pruning, chemical fertilizers, spraying, and pesticide control) could increase citrus yields 500 per cent within three or four years.

Better management of date groves could raise yields three-fold; apricot orchards could become five to six times more productive with similar changes.

The yields of deciduous orchards (apples, pears, peaches, plums, and cherries) could be increased, on the average, five to ten times by such rehabilitation measures as top-working of the soil, disease control, chemical fertilizers, proper pruning, and similar steps.

The use of chemical pesticides and better pruning could double grape yields.

Production costs of vegetables could be cut by one-third through planting better varieties and by using chemical fertilizers and small power equipment for soil preparation and spraying.

Cotton output could be increased by one-third through the use of better seed and improved cultural practices such as row planting, weed control, and timely sowing.

Well-bred dairy cows could yield 100 per cent more milk than randomly bred cows.

By the late 1950's, these significant innovations were known. The problem was how to make them available to the farmers. This

was to be done by difusing information and credit to those who made production decisions. For this purpose, the rapid expansion of extension service and credit institutions was necessary.

The agricultural sector's objective for the Third Plan was based on three primary targets:[17] (1) increasing production to support the over-all growth rate of 6 per cent per year in national output, (2) improving the levels of living of the rural people, and (3) improving the distribution of income within the agricultural sector.

The third target implied that production in the lowest-productivity regions should be improved. But with a limited personnel and institutional resources, the first target argued for using these resources in the highest productivity parts of the country. As for the second target, "rural life was judged able to take care of itself in view of the general improvement in agriculture's terms of trade."[18] Because the demand for agricultural output grows faster than agricultural production, and it is not necessarily the case for other products. Thus, price of agricultural output relative to other commodities will tend to rise. Therefore, the emphasis was only on the first target; that is, increasing agricultural output.

However, with the introduction of land reform, the relative importance of the first and the third targets was reversed.

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[17] Ibid., p. 76.

[18] Ibid., p. 77.

III. AGRARIAN REFORM

This section is divided into three parts. In the first part, land reform program in Iran is described. The second part deals with rural cooperatives, and the third part is devoted to agricultural production in the early sixties.

Land Reform

The first land reform bill was passed by the Assembly and the Senate in 1960. This law limited land holdings to 400 hectares of irrigated or 800 hectares of unirrigated land. The landowner was to sell the land in excess of the maximum permitted to the peasant in ten annual installments. The difficulty of implementing this law was that there had been no land measurement in Iran.[19]

The land reform law of 1962 limited the amount of land anyone could hold to one village, in the sense that the landlords were allowed to retain one village among their villages.[20] Any land in excess of this permitted maximum was to be transferred to the peasantry. Another important provision of this law was that it made the membership in a cooperative society a condition of the receipt of land. But this law did not touch all classes of

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[19] Lambton, op. cit., pp. 56-59.

[20] At the time of the land reform, some two hundred families owned more than one hundred villages each. Another ten thousand villages were owned by landlords owning over five villages. Villages belonging to those landowners who owned one to five villages amounted to some seven thousand; Baldwin, op. cit., p. 94.

peasants. Those who cultivated land in the village which the lanlord had retained as his chosen village, or the village owned by small landowners whose estates were not subject to transfer, continued to cultivate the land on the old cropsharing basis.[21]

In January 1963, the Additional Articles to the Land Reform Law of 1962 were issued. The landlord, or landlords, of a village were given three choices: (1) to rent the land to the occupying peasant, (2) to sell the land to the peasants, or (3) to divide the land between himself, or themselves, and the peasants in the same proportion as the crop was divided between the two parties.[22]

By February 1966, over 43,000 villages had been transferred to the peasants in different parts of the country.[23]

Rural Cooperatives

One of the most important postwar developments in the agricultural sector was rural cooperative movement run by the Agricultural Bank (later the Agricultural Credit and Rural Development Bank). In 1939, rural fund societies were established to help the peasants. In 1958, they were changed to rural cooperatives, and in 1960, some 639 societies were in existence with a membership of 290,000. The majority of these cooperatives were

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[21]For details of the land reform law of 1962, see Lambton, op. cit., pp. 63-86.

[22]The implementation of Additional Articles was known as the second stage of land reform as distinct from the execution of the Land Reform Law of 1962 which was called the first stage. Ibid., pp. 104-08.

[23]Ibid., p. 121.

credit societies.[24]

Along with the introduction of land reform, it was decided to increase the number of cooperatives to supply whatever productive services the landlord had formerly provided. In theory, a rural cooperative was to be established wherever the land was transferred to the peasants. But in practice this was not possible, because of the lack of required funds and limited personnel to supervise cooperatives. Originally it was intended to set up multipurpose societies, but trained personnel were not available to supervise complicated operations nor did the members have experience in cooperation. As a result, at first, the functions of cooperatives were limited to provision of credit. Gradually, however, the functions were extended to the provision of seed, fertilizers, pesticides, and cloth.[25]

In 1965, the number of cooperatives in existence was some 4,280 with a membership of 574,650. By the spring of 1968, some 8,652 societies with 1,105,402 members had been established. In 1967-68, cooperatives sold about 12,000 tons of fertilizers, 1,585,920 kilograms of improved seed, and 5,587,480 kilograms of good quality local seed.[26] Compared to the background of the

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[24] Ibid., pp. 46-47.

[25] Ibid., pp. 303-10. In 1963, a Central Organization for Rural Cooperation was established. Each province of the country was divided into areas, and cooperatives in each area were united into federations. The CORC appointed a manager and an executive committee in each federation. CORC supervised federations, and federations supervised cooperatives. See Ibid., pp. 297-302, 318-19.

[26] Ibid., pp. 327, 360, 364.

situation, there had been much progress in the cooperative movement since 1960.

Agricultural Production, 1960-65

During the first half of 1960's, because of the uncertainty over the future position of lanowners, there was a reluctance both to make new investments and to maintain properties. In the case of the land that had been transferred to the peasants, understanding of the purposes and functions of the cooperative movement was still somewhat primitive. As a result of this and other factors, the average annual growth rate of food supplies (around 2.5 per cent) had been less than that of population (2.9 per cent). The percentage increase in food prices had been about 2.2 per year over the period.[27]

IV. RURAL-URBAN MIGRATION

Migration may be said to involve "a search for opportunities in higher-paying occupations."[28] It can be considered as a private investment with its costs and returns which may be broken down to money and non-money costs and returns.

The private money costs include expenses of moving from the rural to urban areas, and the costs of acquiring the required skills for urban occupations. The non-money costs include the

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[27]Growth figures are calculated from: see Table 3; op. cit., pp. 145, 143, 153.

[28]L. A. Sjaatad, "The Costs and Returns of Human Migration," Journal of Political Economy, Vol. 70 (1962), p. 83.

opportunity costs, or forgone earnings, and the psychic cost of giving up the familiar environment. In theory, the maximum amount that one is willing to give up not to migrate represents the value of psychic costs.[29]

The private money returns to migration consists of the increment to the migrant's real income stream to be obtained by moving to urban areas. The non-money returns reflect the migrant's preference for urban as compared to rural residence.[30]

Table 12 shows rural-urban migration and population of Iran in the two sectors in the period 1966-72. According to this table, the net movement of population from the rural to the urban centers had been at an annual rate of 5-8 per thousand of rural population.

Since non-money costs and returns can not be measured, it may be assumed that migration is a function of population, difference between the cost of living in rural and urban areas, and the difference between earnings in the two sectors. Further, migrants are likely to consider the expected costs and returns for a move to urban areas. Therefore, it seems logical to assume that the rural-urban migration of each year is partly determined by the cost and income differences of the previous year.

The average annual food and non-food expenditures of a rural

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[29] See Ibid., pp. 83-85.

[30] Ibid., pp. 85-91.

TABLE 12

POPULATION AND RURAL-URBAN MIGRATION

Year	(a) Urban Population	(b) Rural Population	(c) Rural-Urban Migration	(d) Total Population
1966	9,794,000	15,995,000	123,125	25,789,000
1967	10,350,000	16,443,000	168,660	26,793,000
1968	10,856,000	16,722,000	210,892	27,578,000
1969	11,361,000	17,037,000	172,188	28,398,000
1970	11,896,000	17,360,000	193,600	29,256,000
1971	12,461,000	17,698,000	186,287	30,159,000
1972	12,800,000	17,750,000	182,850	30,550,000

Source: (a) and (d) from: United Nations, Demographic Yearbook, 1971, p. 144; and 1972, p. 149. (b) calculated from (a) and (d); (c) calculated from (a), (b), and (d).

Note: Rural-urban migration for each year is calculated by the assumption that the increase in population in rural and urban areas are proportionate; that is, if no migration had taken place, the same proportion of population would have been in the two sectors as the previous year.

and an urban family, and the expenditure difference in the two sectors of population are illustrated in Table 13. In so far as population and income difference increase over time,[31] it seems that rural out-migrants consider mostly expenditure difference of the previous year with much higher income in urban relative to rural occupation taken as granted. This can be seen from Tables 12 and 13, showing that rural-urban migration had been varying inversely with expenditure difference over the period.

V. PRODUCTION AND THE AREA UNDER CULTIVATTON

Between 1965 and 1969, there was an increase in the production of major crops per hectare which data are presented in Table 14. On the average, wheat production increased at an annual rate of 8.7 per cent, partly due to the use of improved seed. Production of rice per hectare grew 1.9 per cent a year, mostly due to increased use of chemical fertilizers. But the increase in barley production was not considerable.[32]

Over the period considered, agricultural production in the aggregate grew faster than total population. The average annual

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[31]Since rural income in Iran is virtually agricultural, it does no harm to reality to assume that rural income is equal to agricultural income. Thereby, urban income would be the difference between rural and national income. As is evident from Table 1, the share of agriculture in GDP had been declining which implies that income difference between the two sectors of population had been rising over time. Estimate shows that in 1973-74, 73 per cent of the urban families of Iran earned over 50,000 rials. At the same time, 67 per cent of the rural families earned less than 60,000 rials; see Table 8; op. cit., p. 345.

[32]Growth figures are calculated from Table 14.

TABLE 13

AVERAGE ANNUAL FAMILY EXPENDITURE IN RURAL AND URBAN AREAS

(in rials)

Year	(1) Rural Family Expenditure	(2) Urban Family Expenditure	(3) Expenditure Difference
1965	45,222	99,074	53,852
1966	47,846	100,819	52,973
1967	52,640	99,286	46,646
1968	48,665	100,626	51,961
1969	47,490	90,845	43,355
1970	50,150	115,853	65,703
1971	59,822	111,141	51,319

Source: (1) and (2) are calculated from: see Table 2; op. cit., pp. 630, 632. (3) calculated from (1) and (2).

TABLE 14

PRODUCTION OF MAJOR CROPS PER HECTARE

(in tons)

Year	Wheat	Rice	Barley
1965	0.725	2.32	0.83
1966	0.760	2.33	0.83
1967	0.909	2.48	0.85
1968	1.036	2.53	0.89
1969	1.001	2.50	0.80

Source: Calculated from: see Table 3; op. cit., p. 146.

rate of growth for the former has been around 4 per cent (food production has grown at about 4.1 per cent yearly), and for the latter about 2.9 per cent. Food prices have risen about 1.1 per cent per year for the same period.[33]

The total area under permanent cultivation at the end of the Third Plan (1967) was 7.1 million hectares and expanded to 7.65 million hectares by the end of the Fourth Plan (1972).[34] Table 15 provides the area under cultivation according to different agricultural products at the beginning and the end of the Fourth Plan. This table shows that a high proportion of the cultivated land was planted in wheat and barley. But the importance of the former relative to the latter can be seen from the fact that there had been 1.5 per cent increase in the area under wheat cultivation and no increase in the area devoted to barley cultivation during the course of the plan. Moreover, it has been pointed out that production per hectare rose for wheat but not for barley in the late sixties.

Rice and cotton took up the same amount of land at the beginning of the plan, but in so far as about 44 per cent of the area devoted to the latter crop was dry land, the land under cotton cultivation grew faster than that of rice during the period. All in all, about 83 per cent of the area under cultivation was planted in wheat, barley, rice, and cotton in 1967. This had

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[33]Calculated from: see Table 3; op. cit., pp. 145, 144, 153.

[34]See Table 15.

TABLE 15

AREA UNDER PRINCIPAL CROPS

(in thousand hectares)

	1967	Increase during the Fourth Plan	1972
Wheat	4,000	60	4,060
Barley	1,200	0	1,200
Rice	355	25	380
Pulses	147	40	187
Sugar beets	115	35	150
Sugar cane	5	4	9
Cotton	355	40	395
Tea	26	5	31
Tobacco	20	0	20
Fruit	360	20	380
Vegetables	200	25	225
Others	317	100	417
Total	7,100	550	7,650

Source: See Table 2; op. cit., p. 262.

been reduced to 79 per cent by 1972, partly because of the zero change in the area under barley cultivation.[35]

VI. IRAN'S FIFTH PLAN IN AGRICULTURE

Since 40 per cent of the country's labor force still lives in rural areas, one of the major objectives of the plan is to increase the level of agricultural production and the size of the farmers' per capita income in line with an increase in per capita production. The share of agriculture in GDP has been declining during the last few years, the result of a much slower rate of growth relative to other sectors of the economy. Consequently, the implementation of advanced technology in various operating units has been given a high priority. Total credit for agriculture will increase from $1.14 billion in the Fourth Plan to $5.5 billion in the new plan. Programs are under way to increase the number of cooperative members from 1.8 million in 1972 to 3 million by the end of the plan. At the same time, the number of large cooperatives will reach about 3,000 units.

The aim of these institutional, technical, and financial measures is to achieve a 7 per cent annual rate of increase in the real value of agriculture over the course of the plan.[36]

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[35]Figures in this paragraph are calculated from: see Table 2; op. cit., p. 262.

[36]For details of the Fifth Plan in agriculture, see Iran's Fifth Plan, op. cit., pp. 53-62.

CHAPTER V

CONCLUSION

In this chapter, in order to reconcile theoretical and practical considerations of the previous chapters, an attempt is made to examine the conditions of the take-off stage in the context of Iran.

Establishment of the Plan Organization indicates the willingness of the government to promote economic progress, but the government did not develop sufficient capability to effectively promote economic development during the period of the first two plans. The shift from partial to comprehensive planning and the White Revolution, in the early 1960's, may be taken as an indication of the beginning of the construction of a political, social, and institutional framework capable of structural change. This is to say that the preconditions for the take-off are being developed.

Due to a paucity of net investment data for Iran, a case of a developed country in her take-off stage may be considered as a base for comparision. In Canada, for example, Gross Capital Formation as a percentage of GNP had been 15.1 at the beginning of the take-off stage. At the same time, 4 per cent of NNP had been reported as Net Capital Formation.[1] Accordingly, GCF/GNP had been over 3 times as much as NCF/NNP. As for Iran, in 1960,

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[1] Rostow, The Take-off into Self-Sustained Growth, op. cit., p. 35.

GCF/GNP was 19 per cent. During the recession of the early sixties, there was a reduction in the investment rate and in 1964, GCF/GNP was 12.6 per cent.[2] After 1964, however, GCF/GNP started to increase substantially. In 1966 and 1973, data shows 20.3 and 25.6 per cent for GCF/GNP, respectively.[3] From the foregoing, it may be said that the investment condition for the take-off stage was met in late 1960's, assuming that NCF/NNP is at least one-fourth of GCF/GNP.

It was pointed out that, from 1963 to 1969, industrial production grew by 109 per cent.[4] During the Fourth Plan ending 1972, the chemical and petrochemical industries grew at an average annual rate of 23 per cent. The growth rate of mechanical industries averaged 30 per cent a year during the same period. In 1972, GNP amounted to $17.26 billion, $2.5 billion of which was contributed by automotive industry.[5] The foregoing implies the development of manufacturing sector with a reasonable rate of growth.

Taking per capita income as an indicator of economic development, estimates show an average annual rate of 7.7 per cent increase in per capita GNP during the Fourth Plan; from

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[2]Baldwin, op. cit., p. xiii.

[3]Calculated from: Tehran, Annual Report of the Central Bank of Iran, 1973, pp. 128-29; also see Table 2; op. cit., p. 663.

[4]See p. 33.

[5]Iran Economic News, op. cit., pp. 2, 6.

$383.4 in 1967 to $556.7 in 1972.[6] Compared to India which, according to Rostow, launched her take-off in 1950's,[7] Iran has a per capita income of over three times higher (1969 data shows a per capita income of $86 for India).[8]

Problems of Iranian agricultural sector before land reform revolve around the system of absentee ownership and are compounded by a very low literacy rate in rural areas and a lack of institutional resources. Land reform disrupted production for three to four years, but after 1965, the state of the agricultural sector started to improve. Literacy corps raised the rate of the rural literate population.[9] Land reform made the peasant the owner of the land he was working and responsible for his own affairs. Furthermore, membership in cooperatives helped the peasant in various aspects of credit, production, and marketing. Increase in land productivity[10] indicates that cooperatives helped the farmer learn, accept, and adopt a new set of factors of production. Chemical fertilizers, for instance, had not been used by the peasant before land reform.[11] In contrast, in 1967-68, some 12

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[6] Ibid., p. 6.

[7] Rostow, The Stages of Economic Growth, op. cit., p. 9.

[8] United Nations, Statistical Yearbook, 1972, p. 623.

[9] See Table 8, p. 38.

[10] See Table 14, p. 58.

[11] Lambton, op. cit., p. 342.

thousand tons of fertilizers were sold through cooperatives.[12]

Rural-urban migration had been at an annual rate of 5-8 per thousand in the period 1966-72.[13] The share of agriculture in GDP, during the same period, had been declining at an average rate of about 1 per cent yearly.[14] Accordingly, the rate of decline in the rural population as a percentage of the total had been slower than that of share of agriculture in GDP. This implies that the income difference between the two sectors of population has been widening over time (with the assumption that the difference between agricultural and national income accrues to the urban population), which is likely to increase the pull-effect of the urban centers. Moreover, the expected increase in the oil revenues is likely to have a favorable effect on industrial expansion, making the pull-effect of the industrial sector still greater.

The present problems of the economy of Iran are in the availability of skilled manpower which must be distinguished from the redundant unskilled labor, infrastructure capacity, and supply of energy and construction materials. Estimates show that, during the Fifth Plan, 2.1 million additional jobs will be created, but there will be only 1.4 million Iranians qualified to fill them.[15]

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[12] See p. 52.

[13] See Table 12 and p. 54.

[14] See Table 1, p. 28.

[15] Time, November 4, 1974, p. 37.

The rapid expansion of the economy, due to the doubling of Fifth Plan investments, will create a pressing need for transportation and communication, telecommunication, and housing. By the same token, the supply of energy fuels for electricity generation, transport, and industry constitute a bottleneck in the course of the plan. At the same time, road building and housing will increase the demand for construction materials substantially.[16] According to a survey undertaken in 1973, there were 1,625,000 housing units available for 2,759,000 urban families and 2,908,000 units for 3,489,000 rural families. There was, thus, a shortage of 1,715,000 housing units in the whole country.[17]

Programs are under way to build 810,000 urban housing units, 260,000 of which will be constructed by the public sector. In the rural areas 200,000 units will be built by the private sector and 40,000 by the public sector. Private sector activity in construction of housing will be encouraged through housing loan associations, low interest credits, and tax relief.[18] In the course of the plan, government is to create a transportation capacity in keeping with the needs of the economy and to expand telecommunication to cover the entire country.[19]

In summary, it might be argued that Iran moved through the

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[16] Iran's Fifth Plan, op. cit., p. 9.

[17] Ibid., p. 125.

[18] Ibid., p. 126.

[19] Ibid., pp. 93, 111.

preconditions stage during the period of the first two plans and has now entered into the take-off. Industrial development is leading this growth. While surplus labor in the Lewis sense is available in Iran, it is probably not a key factor in capital formation. Indeed, much of the labor migrating from rural to urban environs does not have the skills required in an industrializing society. Their conversion to skilled industrial manpower is a prerequisite to continuation of the sustained economic growth enjoyed thus far.

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