Mahmood Hasan Khan

The Role of Agriculture in Economic Development

A Case Study of Pakistan

PROEFSCHRIFT
ter verkrijging van de graad van doctor in de landbouwkunde
op gezag van de Rector Magnificus, Ir. F. HELLINGA,
hoogleraar in de cultuurtechniek,
te verdedigen tegen de bedenkingen van een commissie uit de
Senaat van de Landbouwhogeschool te Wageningen
op vrijdag 18 februari 1966 te 16 uur.

1966 *Centre for Agricultural Publications and Documentation*
Wageningen

PROPOSITIONS

I

NICHOLLS is correct in asserting that both "in theory and policy, economists have largely neglected the *initial* importance of the production side of agriculture, which they try to make the cart behind an industrial horse".

> W. H. NICHOLLS, "An 'Agricultural Surplus' as a Factor in Economic Development," *The Journal of Political Economy*, Vol. 71, No. 1, 1963, p. 2.

II

The view of certain western economists that the extended or joint-family system in most Asian countries is necessarily an obstacle to economic development is as ethnocentric as it is ambivalent.

III

In the context of economic development today, the law-and-order bureaucracy imposed by the British on the Indian sub-continent has rightly been attacked as being "adverse to the organization of men".

IV

It seems that one of the fundamental weaknesses of the rural extension services in most underdeveloped countries is the lack of social *identification* of the extension agents with the peasants.

V

There are strong reasons to believe that in a Muslim society a determined and well-directed population policy, particularly a family-planning campaign, would be accepted without any organised resistance.

VI

"It is suggested here that in an underdeveloped community which is supported by long-standing social institutions, the decision-making process under certain conditions may be centralized in the hands of a few".

> ASGHAR FATHI, "Leadership and Resistance to Change: A Case From an Underdeveloped Area," *Rural Sociology*, Vol. 30, No. 2, 1965, pp. 208–209.

VII

The existing administrative organisation of the community development programmes in many underdeveloped countries seems to be basically defective in that it often helps to waste these countries' critical resources.

VIII

Bilateral economic aid to the underdeveloped countries is by and large not only inadequate but politically charged.

IX

Land reform measures in most underdeveloped countries are often undertaken without any prior assessment of their consequences on the economic system for the improvement of which these reforms are ostensibly advocated.

X

Doctrinarian economic planning in the contemporary developing economies may prove more detrimental than no planning at all.

Thesis MAHMOOD HASAN KHAN
Wageningen, February 18, 1966

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A Case Study of Pakistan

Dit proefschrift met stellingen van MAHMOOD HASAN KHAN, M. A. (Econ.), M. Soc. Sc., geboren te Rampur, U. P., (Br. Indië), 8 augustus 1937, is goedgekeurd door de promotor,
DR. TH. L. M. THURLINGS, hoogleraar in de staathuishoudkunde.

De Rector Magnificus van de Landbouwhogeschool,
F. HELLINGA

Wageningen, 3 december 1965

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pudoc

1966 *Centre for Agricultural Publications and Documentation*
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This thesis will also be published as: Agricultural Research Reports 674

To My Parents

Acknowledgments

I owe a great debt of gratitude to many persons for their assistance in the present study, and I doubt whether the debt can ever be repaid. The best I can do is to acknowledge it here.

My first debt is to Professor DR. TH. L. M. THURLINGS. Without his ungrudging and generous support I would have been unable to carry out my research work at this University. He not only inculcated in me a systematic mode of thought but often saved me from the many pitfalls into which students in general, and those of economics in particular, fall.

Drs. A. A. P. VAN DRUNEN in his less obvious but sincere way was always ready to help me with his almost inexhaustible patience and unassuming scholarship. I made nearly the same inroads on Dr. Ir. M. T. G. MEULENBERG's precious time and critical mind. I am most grateful to both of them. I am also grateful to Mr. H. HAKSTEGE for the painstaking skill with which he made the drawings.

My deepest thanks are due to Mr. J. DINGLEY, B. A. (Cantab.), who besides correcting so diligently yet smilingly the many language errors, offered me his hospitality during my stay in London.

I must also acknowledge the generosity of the Landbouwhogeschoolfonds and the Centrum voor Landbouwpublikaties and Landbouwdocumentatie (PUDOC), without whose financial assistance this work could not have been published in the present form. While I am thankful to the various officials of these two bodies for helping me personally in many ways, I should like to mention in particular Dr. Ir. E. MEIJER DREES whose skill in dissecting the manuscript enabled it to go to the press.

I must thank the staff of the Agricultural University Library and the various government and non-government agencies in Pakistan for providing me with almost all the basic material needed for the study.

Needless to say, during my absence from home my parents and other members of my family had to bear many sacrifices for which I am deeply grateful. I am also grateful to the ROSANOW family who always treated me as one of themselves during my stay at Wageningen.

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Introduction

In analysing the role of agriculture in the process of economic development, first of all it is essential to define the notion of economic development itself. In the context of this study, this process embodies (a) the growth of output per head of the population, and (b) distinct changes in the structure of the economy under investigation. The first also includes the distributive aspect of the total output, thus signifying economic progress. The structural changes in the economy refer to the inter-sectoral shifts in the distribution of output and employment. While these changes may be sufficient to indicate economic development in a particular economy, they do not explain the why and how of the process itself.

The answers to these questions may be sought in the causes of such changes.[1] While formulating the general frame-work of the present study all these factors have been taken into consideration. In fact, they indicate in abstract terms not only its scope but also its limitations.

The present work could be conveniently divided in two parts. The first part, comprising Chapters 1 and 2, is mainly theoretical. The second part, from Chapter 3 to 6, consists of an empirical study of the Pakistan economy. The theoretical part attempts to provide an analytical frame-work for the study of economic development in which the role of agriculture is given the central place. In the empirical part, the attention is focussed on (a) the basic features of the economy of Pakistan, with special reference to the place of agriculture in the economic system, (b) some major causes of the backwardness of agriculture, (c) the role of the State in the development effort, and (d) the prospects and problems of self-sustained growth during the next twenty years.

The starting premises of the theoretical explanation of economic development is the characterisation of the structure of an underdeveloped economy. Here such an economy is characterised by dualism, a concept which is specifically defined. The most important feature of this dualism lies in the preponderance of an agricultural sector which shows hardly any sign of change. Since this stable equilibrium represents economic stagnation, it has to be broken. Thus economic development requires the initiation of growth-inducing forces in excess of growth-depressing ones. While both of these forces are always present in any economy, economic development begins if and only if certain factors propitious to growth are generated.

[1]On this subject there are innumerable works. However, for a brilliant discussion on the method of analysis of economic development, see: W. A. Lewis, *The Theory of Economic Growth*, (London: George Allen & Unwin Ltd., 1955), pp. 11–18.

Since in the initiation of growth the emergence of certain conditions is essential, both in quantitative and qualitative terms, the concept of 'take-off' has been found operationally useful. However, in keeping with the basic objective of this study, in addition to the conditions suggested by ROSTOW, the acid-test for a successful take-off lies in the ability of agriculture to fulfil three basic requirements which are described in Chapter 1. Following this scheme, in Chapter 2 an attempt is made to outline a strategy for agricultural development during the take-off period.

Obviously in selecting a theoretical frame-work for analysing the problem under consideration many abstractions had to be made. However, the salient feature of this approach lies in the limited nature of the problem itself, i.e. the characterisation of a dual economy, the identification of some crucial factors consistent with economic development, and the required fulfilment of certain conditions by the agricultural sector consistent with its role during this process.

The part dealing with the Pakistan economy follows the scheme given in the first part. Thus, in describing the basic features of the economy in general and its agricultural sector in particular, the problems of dualism become quite clear. In Chapters 3 and 4 a detailed analysis of the structure of agriculture and its problems are presented. In so doing the accent is laid heavily on those factors whose presence or absence may explain the present state of backwardness in Pakistan agriculture. Almost all of this analysis refers to the period from the birth of Pakistan to 1960–61.

The realisation that economic development in Pakistan is both desirable and possible has already become manifest in the increasingly keen participation of the State through planning. In planning, the government in Pakistan have found a reasonably good instrument by which peoples' interest in economic development can be aroused and participation ensured. In Chapter 5 the various aspects in which the State has been playing a leading role are presented.

In fact, with the completion of two five-year economic plans by 1965, there is a growing confidence in the kind of changes which have so far taken place throughout the economy. These changes are manifest not only in the institutional frame-work, infrastructural development and the reorganisation of the major sectors, but also in the growth rates of those factors which are essential to achieving self-sustained development. However, with these encouraging developments, the strain on the economic system in general and on the agricultural sector in particular is also becoming greater.

With a view to demonstrating the prospects and problems of economic development in Pakistan, the government have recently formulated a Perspective Plan for a period of twenty years, from 1965 to 1985. The selection of this period seems to concur with the notion of take-off: the apparent similarities between the projected changes in the Plan and those identified in this study with the take-off resulting into sustained growth. Therefore, in Chapter 6 the Plan is appraised critically and conclusions are drawn. The major conclusion is that the alleged take-off, occurring during 1965–85, cannot be completed within this period because some of the crucial assumptions and changes projected in the Plan are either unrealistic or inconsistent.

This study has several limitations which should be mentioned here. On the theoretical

level, the very intricate nature of the process of economic development itself puts severe restrictions on the choice of a suitable analytical frame-work. Moreover, this choice is also influenced by the limited scope of the subject under study. While these limitations may be due largely to personal choice, the ones present in the part related to the economy of Pakistan are of a more substantive character.

There are three major limitations with regard to the analysis of the Pakistan economy. The first is the inadequate nature of the data presented. This is the more so in the case of most agricultural statistics. The second originates in the physical separation of Pakistan into two provinces, East and West Pakistan. Finally, the analysis of the future prospects and problems of economic development in Pakistan is even more limited in its predictive value. This is partly also due to the first limitation. While these limitations are the most obvious ones, there are others which are mentioned in the course of the analysis itself.

1 Economic Development and the Concept of Take-off

1.1 Introduction

Most of the contemporary underdeveloped economies have a distinct dual character. In such economies a small market sector, which comprises almost all the industrial activity, trade and some part of agriculture involved in foreign trade, is superimposed upon a large subsistence sector producing food and other such commodities which are used primarily for the self-consumption of the agricultural population. The latter sector is characterised by a very low factor productivity, especially caused by a severe shortage of capital and technical know-how, whereas the growth of the population adds to the superfluity of labour. Thus the role of the agricultural sector is of pivotal importance in transforming the dual structure of these economies into an integrated whole. However, as NICHOLLS has so clearly pointed out, the process of industrialisation is often, and most regrettably, misread to mean that the 'Law of the Declining Relative Importance of Agriculture' must be emphasised at the cost of a simultaneous development of agriculture itself.[2]

In attempting to analyse and explain the transformation of the dual economies, several approaches have been adopted. For the present study the analytical frame-work provided by the stages-of-growth schema will be used. Before attempting to formulate such a theoretical frame-work, in which the process of economic transformation could be analysed with a view to giving agriculture its due place, a few essentials of the concept of dualism will be recapitulated, along with an explanation of the initial mechanism by which this dualism could emerge.

1.2 The Emergence of a Dual Economy

Since the concept of economic dualism has come to be regarded as a fundamental proposition in the study of an underdeveloped economy, it deserves a clear-cut explanation.[3] Initially, at least for the convenience of a theoretical analysis, it may be assumed that the agricultural economy is more or less at subsistence level, where the total volu-

[2]W. H. NICHOLLS, "An 'Agricultural Surplus' as a Factor in Economic Development," *The Journal of Political Economy*, Vol. 72, No. 1, 1963, p. 2.

[3]See: W. A. LEWIS, "Economic Development with Unlimited Supplies of Labour," *The Manchester School*, Vol. 22, No. 2, 1954, pp. 146–47, and J. C. H. FEI and G. RANIS, *Development of the Labor Surplus Economy: Theory and Policy*, (Homewood, Illinois: Richard D. Irwin, Inc., 1964), Chapter 2.

me of agricultural production is consumed in such a manner that every person gets his bare sustenance. In other words, there is an equilibrium, although at a very low level, between the supply of and demand for agricultural goods. Thus it is only after the emergence of the industrial sector that this equilibrium may change. But what can be the source for the opening up of an industrial base? In fact, under the given circumstances, hardly any, for *ex hypothesi* capital is almost totally absent in such a subsistence economy.

However, there are at least two considerations which may help to create an industrial sector. First, capital might be injected into the economy by a foreign institution or by a public body through outright grants or loans from abroad. Second, since a large part of the redundant agricultural labour force represents a stupendous waste of manpower, it might be employed directly to create real capital by some 'bootstrap' operations.[4]

Both prospects suffer from serious limitations. Let it, in the first instance, be assumed that either a foreign-based capitalist or a public body at home emerges to attract some part of the agricultural labour force to alternative job opportunities. Whatever the exact form of the industrial activity, in so far as it can attract the initial group of the agricultural labour force from the agricultural sector by offering them a margin over their real income level, many of these workers may leave their homes permanently. But, as soon as this happens, *ceteris paribus*, the previous stationary equilibrium will be disturbed in two ways.[5]

Firstly, with the departure of a part of the agricultural labour force (and assuming no change in the total agricultural product), the increase in the average product or an improvement in the real income of those workers who are left behind in the agricultural sector will induce them to increase their own food consumption. This is the more likely because these workers will have to work harder and longer for keeping the total agricultural output at the same level. This means that, with an increase in per caput food consumption *in situ*, those of the workers who move out cannot afford to carry with them, as it were, their own 'bundles'. In fact, with the given supply of total agricultural produce, even if some total surplus of food should result, – the consumption level of the remaining population is not likely to proceed along the average product curve – the obvious consequence of labour reallocation will be a shortage of food per person released from the agricultural sector.

Secondly, in the new industrial sector, additional employment is likely to increase the total consumption of the community. However, it is quite possible that this extra consumption may not entirely equal the additional wage bill. For one thing, there may be some saving from the industrial wage itself and, for another, the people on whose income the marginal worker was formerly living in the agricultural sector may now save a part of the expenditure which they had to undertake in maintaining this worker. In

[4]R. NURKSE, *Problems of Capital Formation in Underdeveloped Countries*, (Oxford: Basil Blackwell, 1953), pp. 32–47, and C. N. VAKIL and P. R. BRAHMANAND, *Planning for an Expanding Economy*, (Bombay: Vora and Co., 1956).

[5]That this disturbance is not taken into account by FEI and RANIS in their 'static' model is the major fault of their entire thesis: *op. cit.*, pp. 24–27. (*fn.* 3)

any case, extra employment means extra consumption. The volume of extra consumption following one unit of extra employment can be estimated by the equation:[6]

$$x = (c \,.\, w) - (d - c' \,.\, d),$$

where x is the unit of extra consumption, w is the industrial wage-rate per newly employed person, d is the consumption per person when disguisedly unemployed in the agricultural sector and c and c' are the propensities to consume of the industrial worker and his former hosts, respectively.

Since it is most unlikely that the workers or the farmers will have a low propensity to consume, the values of c and c' may be very near unity, so that the extra consumption almost equates the wage bill. Then, the alleged 'saving potential' left in the agricultural sector, after the disguisedly unemployed workers emigrate to the industrial sector, cannot be realised until at the same time the total product of the agricultural sector begins to increase. What is even more likely is that, if the exchange mechanism starts to work, the terms of trade will move against the industrial sector because of the rigidity of the given total agricultural product curve.

Now, turning to the second major argument, if the redundant agricultural labour force is mobilised to create real capital (for it may be assumed that there is hardly any other source of capital formation) the limitations remain as severe as in the context of the first argument. Given the stationary situation in the agricultural sector with regard to food production, however ingenious the bootstrap operations might appear to be, as a part of the redundant labour force is withdrawn from agriculture the economy must face a shortage of food. In this case, even if no extra wage is paid to these mobilised workers (which again seems to be a doubtful proposition) it is very unlikely that they and their former hosts in the agricultural sector can work extra hours (or put in extra effort) without also increasing their former level of consumption.

The upshot is: that if an industrial sector has to emerge and further sustain itself, the agricultural sector must also increase its total output right from the beginning.[7]

Once the economy assumes a dualistic character, the role of an 'agricultural surplus' becomes even more crucial if the transformation process has to continue further. It is the more so when the population also grows, as it indeed must. If some people are to be engaged at an increasing rate in economic activities other than agriculture, the latter sector must be capable of producing a total output which, in addition to meeting the needs of its own members, can also feed those who move out of it. But while the evolution of a dual economy could be explained in its socio-historical perspective, the fact remains that this type of economy usually does not create out of its own dynamics those forces which can sustain the change necessary for each consecutive higher level. Notwithstanding some occasional spurts, the economy is not able to generate a rate of growth of output which can outstrip the annual increases in its total population, thus leaving it to remain in a stage of semi-stagnation. So long as this condition perpetuates,

[6]A. K. SEN, *Choice of Techniques*, (Oxford: Basil Blackwell, 1962), pp. 61–67.

[7]Thus the basic error in such models as that of FEI and RANIS is very clear.

and there are strong reasons for it to do so, and unless there is a basic change in its socio-technological frontier, the dualistic character of the economy cannot possibly be transformed into an integrated whole within a reasonable span of time. This is precisely the very core of the problem of economic underdevelopment in the world of today.

Within the scope of the present study the basic characteristics of an underdeveloped economy broadly speaking are: labour surplus, a relatively high rate of population growth, poor resources (including reproducible capital), and an acute shortage of entrepreneurship.

With a view to transforming such an economy it is necessary not only to expand the already existing narrow industrial base to absorb the redundant labour force dwelling in the agricultural sector, but it is equally essential to obtain continuous increases in agricultural productivity. This can be fulfilled only if some basic socio-technological changes are acecpted in the process of economic development. And, since the rate of growth of population in the early period of development is likely to be considerable, especially viewing it on the basis of the availability of other factors of production, both the absorption of the redundant labour force and the tempo of the increase in agricultural labour productivity have to be still higher. Thus the minimum will be to avoid the Malthusian trap and, at best, it seems to provide a road to self-sustained economic development.[8]

1.3 Approaches to Economic Development

In recent economic literature the epiphany of the phenomenon of economic development has taken a variety of courses, ranging from some loosely defined myths to panphysical abstractions. The veneration with which the problems involved are viewed seems to originate mainly from the contemporary socio-political scene of the world. For one thing, the world-wide upsurge of the 'revolution of the rising expectations' and the 'will to modernise', usually following the liquidation of colonial and semi-colonial political systems, have hastened the pace of theorising. Besides, the fact that a large part of the world's population thrives in extreme poverty, as against the increasing affluence in a few developed countries, has innumerable political ramifications.[9]

[8]This statement should in no way be misconstrued to imply that the social objective of economic development, viz. the betterment of the mass of people in a society, is being confused with the means to attain this end. On the contrary, no economic development in aggregate terms could be worth its name without also taking into consideration two important factors. Firstly, it is not the volume of national product which must increase secularly, nor is it the rate of its increase alone, but that this rate should always outstrip the rate of population growth thus indicating an increasing output per capita. Secondly, the increase in output should not be accompanied by an increasingly skewed income distribution: the poor should not get poorer and the rich richer.

[9]For a penetrating analysis of this subject, see: G. MYRDAL, *Economic Theory and Underdeveloped Regions*, (London: Gerald Duckworth & Co., Ltd., 1957), pp. 6–8.

Economic development is at once a catchword: a term which, among other things, adds a special dimension to the present international political situation. To one side it seems to hold the key to individual political freedom, summed up in that elusive term democracy; to the other side it means the liberation of the have-nots from the clutches of the haves.

Thus, given such broad and often uncompromisingly rival loci of interest with different time and spatial perspectives, it is not surprising that the concept of economic development has been treated in a variety of ways. The fact that economic development is a process which forms only a part of the more complex phenomenon of social change has made some approaches more relevant than others, depending upon the specific object of study. The mere recognition that economic development entails economic and non-economic factors does not, however, solve the problem of ultimate choice. Any choice which weighs some factors as more important than others will obviously leave many facts unexplained. But the economist must make a choice and explicitly state its limitations.

1.4 A General Evaluation of the Theories of Stages of the German Historical School

In economics, several attempts have been made to present a general account of the process of economic transformation in human societies. A loose, and to a certain extent systematic, body of knowledge has been made available by the exponents of the German Historical School.[10] Their writings form the general basis of the 'theories of stages' of economic growth. However, both in the original German writings and in their interpretations, there is a great deal of confusion. In the words of HOSELITZ, the confusion can be attributed to the following main factors:

'The first is the problem of whether the identification and classification of different economic stages is a means of studying the progressive development of a given economy, or whether it is a device for the comparative analysis of economic systems. The second is the question of whether these are stages essentially "ideal" constructs, designed to facilitate the analysis of economic systems and their dynamic aspects, or whether they are abbreviated and somewhat schematic presentations of actual historical developments. The third problem – and this interests us most in connection with the study of economic growth – is the question of identifying the factors which make for change, especially those which determine the transition of an economy from one stage to the next.'[11]

The German economists, while attempting to discover some laws of development in different societies, have not succeeded in identifying the factors that make for the stages in this process.[12] This failure can partly be ascribed to the complexity of the many inter-

[10]In a condensed form the writings of various authors of this School are given in *Theories of Economic Growth*, ed. B. F. HOSELITZ, (Glencoe, Illinois: Free Press, 1960), pp. 193–238.
[11]*Ibid.*, p. 194.
[12]See the exception of SCHUMPETER: *The Theory of Economic Development, pp. 57–94.*

twined factors which determine change. But also the change itself cannot always be clearly discerned. For one thing, the nature of several determinants, even if some of them could be isolated, is not always explicable. The other thing is that the historical perspective is not the same one: it varies very much from one society to another. Thus the temporal and spatial heterogeneity of social and economic phenomena cannot be compressed into one broad yet operationally useful frame-work to explain economic development. Neither can these changes be predicted to follow only one characteristic course experienced by some societies in the past.

1.5 The Rostovian Schema of the Stages of Economic Growth

1.5.1 General Discussion

The German Historical School has recently reappeared, although in a different and perhaps more persuasive manner, in the writings of ROSTOW.[13] While he seems to have avoided the analytical weaknesses inherent in German writings, he has nevertheless failed in substantiating many of his claims, based as they are on scanty and often questionable evidence. Nor has he succeeded in presenting an analytical frame-work which can be completely relied upon without additional investigations and systematic judgements. Viewed by contemporary interest in the problems of economic development, the greatest contribution of his *Manifesto*, besides perhaps its elegant metaphoric usage of such terms as the 'take-off' and 'compound interest', seems to reside in its timing, coming just when a compact body of some prophetic message was somehow badly needed to relieve the anxieties of those engaged in the sordid task of development. This is perhaps also the greatest fallacy of his work: his misconception, unless others have missed the point entirely, about the applicability of his schema to all societies and all times. In other words, he attempts not only to explain the economic history of mankind through his stages-of-growth schema, but he also wishes to see other societies developing through such a neat and discontinuous sequence of stages. His assertion, although he does not state it explicitly, that these stages follow a fixed sequence cannot be substantiated fully by historical evidence.

The fact that some leading economists regard ROSTOW's schema with great scepticism can well be justified, partly by the very unwieldy nature of the task which he

[13]W. W. ROSTOW has written three main works on this subject: *The Process of Economic Growth*, (Oxford: Oxford University Press, 1960), hereinafter referred to as *The Process;* "The Take-off into Self-sustained Growth," *The Economic Journal*, Vol. 66, No. 261, 1956, pp. 25–48, hereinafter referred to as *The Take-off; The Stages of Economic Growth: A Non-Communist Manifesto*, (Cambridge: Cambridge University Press, 1960), hereinafter referred to as *The Stages*. However, besides these works, ROSTOW has spelled out some new arguments on the validity of his stages-of-growth hypothesis in a more recent publication of the International Economic Association: *The Economics of Take-off into Sustained Growth*, ed. W. W. ROSTOW, (London: Macmillan & Co., 1963), pp. xiii–xxvi and pp. 1–21, hereinafter referred to as *The Economics*.

appointed himself to undertake and partly, both for time and evidence, it is still too early to prove entirely the validity of the essential characteristics contained in his analytical frame-work.[14] It appears that this resentment originates often from the uncanny way in which, sifting through the economic history of so many diverse societies and different time perspectives, he has been able to disregard diversities and to force resemblances. However, if ROSTOW has paid little or no attention to the empirically testable qualities of certain features in his schema, it is probably not because he is unaware of them. Perhaps it is the enthusiasm for prophesying which proves fatal to some of his basic assertions. Therefore, once the almost evangelic trappings are removed from his *Manifesto*, it is possible to make use of his characterisation of the process of economic growth.

Returning to the three criteria suggested by HOSELITZ for analysing the value of a theoretical frame-work such as ROSTOW's three sets of questions must be put. They are:

a. Does ROSTOW want to explain the progressive development of a given economy by identification and classification of economic stages? Or, alternatively, can this categorisation explain the development of different economic systems?
b. Is his schema essentially an 'ideal' construct designed to facilitate the analysis of different economic systems? Or, does it present a somewhat abstract explanation of the actual historical development of different economies?
c. Does ROSTOW's schema highlight those factors which determine change in an economy during its transition from one economic stage to another?

Judged on the basis of the above three questions, it seems that the total of ROSTOW's writings promises to fulfil all of them. This can be readily illustrated. For instance, at the very outset of his *Manifesto*, he makes such a promise almost unequivocally in the following terms:

'Having accepted and emphasized the limited nature of the enterprise, it should be noted that the stages-of-growth are designed to grapple with a quite substantial range of issues. Under what impulses did traditional, agricultural societies begin the process of their modernization? When and how did regular growth come to be a built-in feature of each society? What forces drove the process of sustained growth along and determined its contours? What common social and political features of the growth process may be discerned at each stage? And in which directions did the uniqueness of each society express itself at each stage? What forces have determined the relations between the more developed

[14]For some adverse comments and analysis, see: J. R. HICKS, "Review of W. W. Rostow's The Process of Economic Growth," *The Journal of Political Economy*, Vol. 61, No. 2, 1953, pp. 173–74; J. H. HABAKKUK, "Review," *The Economic Journal*, Vol. 71, No. 283, 1961, pp. 601–4; P. A. BARAN and E. J. HOBSBAWM, "The Stages of Economic Growth," *Kyklos*, Vol. 14, Fasc. 2, 1961, pp. 234–42; G. OHLIN, "Reflections on the Rostow Doctrine," *Economic Development and Cultural Change*, Vol. 9, No. 4, 1961, pp. 648–55; A. K. CAIRNCROSS, *Factors in Economic Development*, (London: George Allen & Unwin Ltd., 1962), pp. 131–44; E. E. HAGEN, *On the Theory of Social Change*, (Homewood, Illinois: The Dorsey Press, Inc., 1962), pp. 514–22; S. ENKE, *Economics for Development*, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), pp. 194–204; and H. BAUDET and J. H. VAN STUIJVENBERG, "Rostow's Theory on Growth," *Weltwirtschaftliches Archiv*, Band 90 Heft 1, 1963, pp. 57–78.

and less developed areas; and what relation, if any, did the relative sequence of growth bear to the outbreak of war? And, finally, where is compound interest taking us? Is it taking us to Communism; or to the affluent suburbs, nicely rounded out with social overhead capital; to destruction; to the moon; or where?'[15]

Ironically enough ROSTOW emphasises the 'limited nature of the enterprise' in the statement preceding the above-quoted passage as follows:

'I cannot emphasize too strongly at the outset, that the stages-of-growth are arbitrary and limited way of looking at the sequence of modern history: and they are, in no absolute sense, a correct way. They are designed, in fact, to dramatize not merely the uniformities in the sequence of modernization but also – and equally – the uniqueness of each nation's experience.'[16]

When the foregoing two statements are put in juxtaposition, the platitudinous nature of ROSTOW's emphasis becomes quite obvious. Thus tested by the set of three criteria (and they all seem to be interrelated in some respects) it is remarkable that he is grappling with almost every one of them. But how far he succeeds in doing so is the more relevant question to answer.[17]

For the present study there are two alternatives: either to accept ROSTOW's stages-of-growth schema in its entirety (as answering the test of the third criterion), or to accept in part his schema as an ideal construct. Notwithstanding the temptation to qualify ROSTOW for his all-embracing explanation of the various intertwined factors which stresses the transition of an economy from one stage to the other, the first problem is to judge the presence of a stage itself. It will be pointed out later on that the complexity of the constellation of various forces does not permit the acceptance of the neat and almost irreversible nature of stages. Therefore, with some modifications, it will be argued that ROSTOW's schema must basically be viewed as an ideal construct if his analytical approach is to be made operational.

Since economic development is regarded essentially as a process which brings about in a more or less 'traditional society' those changes in its production function (along with the gradual emergence of a new social setting) which are usually conducive to the furtherance of basic changes, the Rostovian schema is quite relevant. The relevance of the validity of the Rostovian frame-work, for the purpose of this study, can be demonstrated by the following two conditions:

a. the stages-of-growth approach is regarded primarily as an ideal construct: there is no evidence to conclude that this model would fit all human societies;
b. some leading features in this frame-work, not necessarily only the bone-structure proposed by ROSTOW, suggest ways of determining changes during the period of economic development: it is not necessarily as sequential as he suggests.

[15]ROSTOW, *The Stages*, *op. cit.*, pp. 1–2. (*fn.* 13)
[16]*Ibid.*, p. 1.
[17]In fact, in grappling with as many questions as ROSTOW puts initially, he is influenced more by the contemporary political controversies than by intellectual objectivity. In so far as he keeps the former as his primary objective, it must be confessed that ROSTOW sounds quite convincing; but, if judged by the rigours of economic theory alone, there is much more to be desired.

Thus the range of questions is quite limited: Firstly it has to be established whether the transition of a traditional society from the quasi-equilibrium state of stagnation to the 'take-off' stage can be usefully examined within the analytical domain of ROSTOW's thesis. Secondly, whether the characterisation of his stages can be modified to include those strategic variables which can explain the cause of change in one society but not necessarily in another. This way of looking at the Rostovian schema will, it is hoped, in the end provide an analytical frame-work in which the process of economic development can be isolated and identified in a particular society.

1.5.2 The Two Stages of Economic Development

ROSTOW suggests in all five stages of economic growth, of which two are relevant here: the 'pre-take-off' and the 'take-off'. His central issue is to isolate a relatively short period – a 'brief time interval of two or three decades' – during which time 'the economy and the society of which it is a part transform themselves in such ways that economic growth is, subsequently, more or less automatic'.[18] But a traditional society, as ROSTOW envisages it, does not propel towards take-off without a transitional period in which the preconditions for the eventual take-off are developed, hence the need to regard the two periods separately, each representing a different stage. However, as will be argued later, there is no need to establish a preconditioning period of such a long duration as ROSTOW envisages. Nor are the conditions, which he so confidently puts forward, necessarily present. Likewise there is no need to believe that the take-off occurs in such a short period, or that it is manifest in only those characteristics which ROSTOW takes for granted. These two stages, not so much for the reason that they are separate and follow each other in a neat sequence, should be analysed in turn.

ROSTOW describes the departure of a traditional society to the pre-take-off stage as follows:

'We start with a reasonably stable and traditional society containing an economy mainly agricultural, using more or less unchanging production methods, saving and investing productively little more than is required to meet depreciation. Usually from outside the society, but sometimes out of its own dynamics comes the idea that economic progress is possible; and this idea spreads within the established *élite* or, more usually, in some disadvantaged group... More often than not the economic motives for seeking economic progress converge with some non-economic motive... Education, for some at least, broadens and changes to suit the needs of modern economic activity. New enterprising men come forward willing to mobilise savings and to take risks... The commercial markets for agricultural products, domestic handicrafts ... widen. Institutions for mobilising capital appear;... Basic capital is expanded, notably in transport and communications... And, here and there, modern manufacturing enterprise appears, usually in substitution for imports.'

'Since public-health measures are enormously productive in their early stages of application and, as innovations go, meet relatively lower resistance in most cultures, the death rate may fall and the population begin to rise, putting pressure on the food supply and the institutional structure of agriculture...'

[18]ROSTOW, *The Take-off*, *op. cit.*, p. 25. (*fn.* 13)

'The rate of productive investment may rise...; but this is unlikely to do much more than keep ahead of the population increase. And, in general, all this activity proceeds on a limited basis, within an economy and society still mainly characterised by traditional low-productivity techniques and by old values and institutions which developed in conjunction with them. The rural proportion of the population is likely to stand at 75% or over.'[19]

As to the take-off, ROSTOW has this to say:

'The beginning of take-off can usually be traced to a particular sharp stimulus. The stimulus may take the form of a political revolution which affects directly the balance of social power and effective values, the character of economic institutions, the distribution of income, the pattern of investment outlays and the proportion of potential innovations actually applied; that is, it operates through the propensities. It may come about through a technological (including transport) innovation... It may take the form of a newly favorable international environment...; but it may also come as a challenge posed by an unfavorable shift in the international environment...'[20]

In any case, the take-off is a crucial stage, for it 'is the interval when old blocks and resistances to steady growth are finally overcome. The forces making for economic progress, which yielded limited bursts and enclaves of modern activity, expand and come to dominate the society. Growth becomes its normal condition. Compound interest becomes built, as it were, into its habits and institutional structure'.[21] In a more systematic form the following main characteristics are attributed by ROSTOW to the pre-take-off and take-off stages.

For the *pre-take-off stage* at least three conditions must be fulfilled, i.e. (a) there must emerge an effective national government, composed of an élite which thinks that economic progress is possible and, being desirable for the society at large, it must somehow be striven for; (b) there should be a steady increase in both land and labour productivities for food as a stimulant for the emergence of the industrial sector; and (c) the social overhead capital must be strengthened during this period.

The *take-off stage* must show: (a) 'a rise in the rate of productive investment from, say, 5% or less to over 10% of national income'; (b) 'the development of one or more substantial manufacturing sectors, with a high rate of growth'; and (c) 'the existence or quick emergence of a political, social and institutional framework which exploits the impulses to expansion in the modern sector and the potential external economy effects of the take-off and gives to growth an on-going character.'[22]

1.5.3 A Critique of the Pre-take-off and Take-off Stages

A moment's reflection will show that both of these stages present difficulties as has also been pointed out by some other authors. As for instance, KUZNETS has raised some

[19] *Ibid.*, pp. 27–28.
[20] *Ibid.*, p. 29.
[21] ROSTOW, *The Stages, op. cit.*, p. 7. (*fn.* 13)
[22] *Ibid.*, p. 39.

very interesting questions, especially with regard to the fact that, if one were to accept the stages-of-growth approach, one must be able to draw a distinct line between the pre-take-off and take-off stages.[23]

Thus it seems that the fundamental problem must be set in terms which do not necessarily imply the presence of a neat sequence of all events which ROSTOW attempts to convey: that it is only after the preconditions have been met, that the take-off will occur. In the following an attempt will be made to give a critical examination of the validity of the preconditions of take-off and the characteristics of the take-off itself.

1.5.3.1 *The Preconditions of the Take-off*

The assertion that the preconditions as referred to by ROSTOW should occur first in time is not always borne out by historical evidence. Instead it could rightly be argued that the kind of broad changes, to which ROSTOW alludes to be occurring in the pre-take-off period, seem to have taken place *during* the take-off rather than preceding it. However, the establishment or the emergence of an effective socio-political frame-work could be regarded as an exception.

As to the *changes in the social frame-work*, perhaps no one will be so naïve as to suggest that the changes in social attitudes and the emergence of an élite are not necessary preconditions for self-sustained economic development. In fact, the growth process in a traditional society can begin only by a change in its social system. However, to say, and without much concrete evidence, that 'specific case studies show the same emergence of more favourable political, social, and economic institutions by degree, while economic growth also proceeded by degree and without waiting upon any given institutional structure'[24] amounts to an extreme statement. For, despite all good intentions, unless some basic institutional changes (or more accurately reforms) are carried out in a given traditional society, there can hardly be any foundation for economic growth to start and later sustain itself. Attitudes are perhaps too complicated to be explained within a narrow and discreetly selected frame-work of economic variables alone. They seem to change by degree, hence take a relatively long time to manifest real change.

[23]To an objection raised by S. KUZNETS, ROSTOW has replied as follows:
"The history of traditional societies offers us many cases of growth, including cases of significant changes in production functions. What is lacking is a more or less regular flow of innovation on a scale capable of defeating Ricardian diminishing returns and the Malthusian propensities of the people. On this view of what modern growth is about, the take-off has particular meaning that transcends the aggregates and the sectors; it is the phase when a society demonstrates the capacity not only to mount an accelerated industrial surge, but to move on to absorb and apply new production functions, progressively spreading the techniques that modern technology can offer, as deceleration operates on the initial leading sectors."

From this ROSTOW goes on to assert that "the take-off is a definitive watershed in a society's history: the innovational process has ceased to be sporadic and is a more or less regular institutionalized part of the society's life." ROSTOW, *The Economics, op cit.*, p. xxiii. (*fn.* 13)

[24]HAGEN, *op. cit.*, p. 518. (*fn.* 14)

However, the institutional structure of the same society could be reformed discreetly.

Thus economic development may not wait upon appropriate changes in the attitudes, impulses, motivations and drives of every member of the society; it can certainly be induced initially by the emergence of a congenial socio-political frame-work. Any reforms thus enforced by the legal apparatus of an effective public authority (usually a national government) will surely be able to win the acceptance of the great majority, if their effectiveness can be demonstrated. However, gaining the co-operation during the initial process may prove to be an arduous and usually a long drawn-out task. And if the process of economic take-off is to be compressed into, say, one generation, as historical evidence has it, the entire society must be well prepared to respond to the fundamental changes in its various institutions. It does not, however, mean that in doing so all classes of people in the society will necessarily have to undergo the unspeakable experience of violent changes in the whole system.[25]

That *agricultural productivity must increase* in the pre-take-off period to perform its vital role during the take-off, ROSTOW neglects that in the normal course of events virtually nothing new originates in the rural milieu: an exogenous force is required to push forward the sluggish animal. Agriculture, especially its food producing sub-sector, exhibits a low supply elasticity thus inhibiting the prospects of economic development; this inertness should be recognised as a distinct characteristic of the pre-take-off period.

During the early period of economic development, whatever expansion of the total output of food may take place, it results from the cultivation of previously marginal and sub-marginal lands and by way of increasing the possibility of exchange with other commodities. Thus, while productivity in agriculture does not show any significant improvement, the disposable food commodities have to compete with an ever-growing population. If new techniques have to be effectively institutionalised, so that an autonomous shift in the total food output via improved land and labour productivities may arise, the agricultural sector (and society in general) must have a social bed prepared to accept these changes as essential to economic development.

Both in the past and in the contemporary world, there are several instances where improvements in agriculture have not preceded an accelerated growth in the industrial sector. This has been true in Japan, where agriculture experienced massive changes in its labour productivity during the take-off stage rather than before it. What is even more significant to note is that in Japan the accretionary process of capital formation in agriculture was set in by those institutional reforms which made the release of agricultural surpluses increasingly possible.[26]

[25]Japan is a good example, where, although its economic development proceeded much in contrast to the evolutionary growth in most western countries, it did not prove to be as cataclysmic as it did in some instances of communist countries. Among others, on Japan, see: W. W. LOCKWOOD, *The Economic Development of Japan*, (Princeton, New Jersey: Princeton University Press, 1954).

[26]Again the case of Japan is very illustrative on this point, as is given in: FAO, World Food Congress, *Agricultural Development in Modern Japan*, (Washington, D.C., 1963), p. 3. (Mimeographed).

In India, if one accepts, even though reluctantly, ROSTOW's remark about the beginning of her take-off in 1952, there is so far no evidence of any significant change in agricultural labour productivity even after the take-off began; instead, India's food sub-sector has remained more or less stagnant during the last three decades. Then, if ROSTOW's categorisation is correct, India is in fact still preparing for the eventual take-off as far the agricultural sector is concerned. However, there has been, especially after Independence, an appreciable development of social overhead capital in the country. This again has not preceded by very much the accelerated growth of industrial activity in India.

In China, there seems to be occurring of late an increase in the agricultural labour productivity, and so her infrastructure is also being speedily developed during the period of take-off which, according to ROSTOW, also began in 1952.

In the beginning the social overhead capital is usually very limited, both because of the lack of resources and the extreme apathy or even aversion to economic progress, and it is often economically ineffectual in exploiting the economies of scale. Since accelerated economic growth in itself is a basic symptom of the take-off, the establishment of the strategic and large-size infrastructure accompanies rather than precedes the take-off stage. This is well demonstrated by historical evidence in several countries.[27]

Thus, in conclusion, it must be said that in many economies there is hardly any evidence to suggest a necessary increase in agricultural productivity and a massive development of social overhead capital as preconditions to the take-off. Or as HABAKKUK puts it: 'In many cases the increase in agricultural output and the creation of overhead social capital are not conditions whose pre-existence explains the acceleration of growth; they are part of the acceleration which needs to be explained'.[28]

1.5.3.2 *The Take-off Stage*

As to the characteristics of the take-off, ROSTOW sounds quite unambiguous. He isolates a relatively short period during which, 'for the first time' in the economy, 'one or more modern industrial sectors take hold, with high rates of growth, bringing in not merely new production functions but backward and lateral spreading effects on a substantial scale'; and further, 'the economy must demonstrate the capacity to exploit the forward linkages as well, so that new leading sectors emerge as the older ones decelerate'.[29] Thus, according to ROSTOW, the crucial test 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'.[30]

[27]To give but two examples, HABAKKUK cites England and China to substantiate this argument HABAKKUK, *op. cit.*, p. 602. (*fn.* 14)
[28]*Ibid.*
[29]ROSTOW, *The Economics, op. cit.*, p. 8. (*fn.* 13)
[30]*Ibid.*

About the need to attribute a certain period for the take-off, ROSTOW goes on to assert that the above 'functional requirement has determined that the take-off be defined as embracing, say, a 20-year interval'. Justifying further this period he has this to say: 'Some such substantial period is necessary to demonstrate that a society is capable of overcoming the structural crisis which the initial surge of growth is likely to bring and is capable of introducing the changing flow of technology upon which sustained growth depends'.[31] He proposes some tentative dates of the take-off in the economic history of thirteen countries.[32]

From the standpoint of selecting an analytical frame-work for this study, the first thing is to disregard the durational aspect of the take-off and then to dwell upon the characteristics which mark this *substantial* period. Its substantial nature must therefore be viewed by the intensity with which many strategic variables will change in the economy. In other words, it is the rate of change which at once becomes the central issue. During this period not only do the growth-inducing variables such as capital, sectoral and total output increase faster than ever before, but so too are such growth-depressing variables as population likely to multiply at increasingly higher rates. In so far as a few selected characteristics obtain during this stage, they provide a frame-work in which many structural changes in an economy can be analysed meaningfully.

1.6 A Suggested Analytical Frame-work for the Process of Economic Development

While accepting in part ROSTOW's essential characterisation of the take-off stage, which was given in the former section, a more crucial test to its validity will be suggested, depending of course upon the characteristics of the economy under consideration here. The present approach, however, deviates in a major point from his schema, as it also attempts to demonstrate the limited applicability of the suggested frame-work.

At the outset a few comments on the validity of the notion of prerequisites of the take-off must be made. To suggest that there are some omnibus preconditions, which an economy must fulfil before it can embark upon accelerated development, is a misleading generalisation. Must every economy exhibit more or less similar preconditions?[33] The acceptance of some concrete categories of prerequisites presupposes their universality. But in reality the notion of prerequisites can at best be viewed as an ideal construct in which, given the state of a society, certain existing obstacles must be removed and other forces propitious to industrialisation created. Once this double-edged criterion is accepted, there is no need to be dogmatic about its characterisation in a

[31] *Ibid.*, p. 9.

[32] ROSTOW, *The Process, op. cit.*, p. 282. (*fn.* 13)

[33] For an interesting discussion on this subject, see: A. GERSCHENKRON, "Reflections on the Concept of 'Prerequisites' of Modern Industrialization," *L'industria*, No. 2, 1957, pp. 357–72. On more or less similar lines is the essay by H. J. HABAKKUK, "The Historical Experience on the Basic Conditions of Economic Progress," in: L. H. DUPRIEZ (ed.), *Economic Progress*, (Louvain, 1955), pp. 146–69.

given socio-economic order. The choice of detailed selection should in fact be left to individual analysis.

In keeping with this view of preconditions, one assumption underlying the present study should now be stated explicitly. The process of economic development has to be considered primarily as an induced phenomenon. In other words, it is assumed that there exists *a priori* an effective national government, which is both willing and capable of determining and executing those essentials which are conducive to sustained economic development.

The case of this prerequisite needs no defence, for in the words of LOCKWOOD: 'The truth is that 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'.[34]

This means that many economic and non-economic forces operating within a society must be amenable to discreet manipulation by a legal machine – as it must because it manifests the desires, aspirations and power of the élite controlling almost all the nerve centres of policy making and execution – which is also committed to economic progress as its ultimate objective, not of a small and particular group but of the whole society. Thus, initially, the hegemony of one or few power groups averse to economic development will lead nowhere. For instance, the presence of a unicentral power group, such as the feudal landlords, may often preclude the possibility of a change in the existing socio-economic structure of a society. Barring exceptions, under such circumstances an increase in agricultural productivity, capital formation and investment, and the emergence of the industrial sector appear only as secondary objectives to this group.

1.6.1 The Conditions of a Successful Take-off

Now the stage is set to envisage a frame-work in which the development process can be represented. ROSTOW's characterisation of the take-off provides essentially only two elements in the transformation process, namely, an increase in capital formation and the establishment of one or more 'leading' sectors, the latter being usually manufacturing with high rates of growth. Since he takes the ability of agriculture to expand its output as a precondition to the take-off stage, in the present study the point of departure is this: that the agricultural sector must exhibit a once-for-all change in its production functions not necessarily preceding the take-off but accompanying it. Thus the following three elements, in addition to the two conditions laid down by ROSTOW, should form an integral part of the characteristics of the take-off.

[34]LOCKWOOD, *op. cit.*, p. 499. (*fn.* 25)

a. Agricultural productivity, especially of land, must begin to show substantial improvement so that economic development does not suffer from acute shortages of agricultural products in general, and of food commodities in particular.
b. The initial state of underemployment of the agricultural labour force, if it exists in a chronic form, must begin to disappear by a simultaneous transfer of the redundant labour force from the agricultural sector to the newly emerging industrial sector and by the application of techniques within agriculture which favour the intensification of labour input.
c. The end of the take-off stage, the moment when the integration of the economy is more or less completed, must clearly indicate that, on the one hand, the surplus agricultural labour in its initial form is exhausted and, on the other, the labour force engaged in the agricultural sector begins to decline absolutely.

Since in this study the major interest is to analyse the problems and role of the agricultural sector in this phase of economic development, the increase in agricultural productivity will be more thoroughly discussed in the next chapter. Therefore, in the rest of this chapter, an attempt will be made to demonstrate the role of the industrial sector in attaining high rates of growth of total output and in absorbing the reallocated agricultural labour force. Of course, during this period, if agricultural productivity increases substantially, an increasing proportion of the redundant agricultural labour force could well be absorbed within the agricultural sector itself. But again this rapid increase in agricultural productivity will to a large extent depend on the rate of growth of industrial output and the speed with which the redundant agricultural labour force could be given productive employment, which in itself will help to increase the over all output of the economy.

1.6.2 The Expansion of the Industrial Sector and the Critical Minimum Effort Criterion

The expansion of the industrial sector, with initially high rates of growth of output and employment of labour, depends largely on the interaction of the strength of capital accumulation and technical progress, and the rate of population growth. This means that the greater the combined effect of the rates of capital accumulation and technical progress, the faster can be the transformation process, or the more rapidly the take-off will result into self-sustained growth. But, since during this initial period the rate of population growth may assume unprecedented levels, it is necessary to increase very rapidly the output per capita.

Thus it is rightly suggested that the increase in the total output must be made with a certain minimum effort which is also capable of sustaining further these initial increases. In other words, 'it is necessary... to make a large initial effort to increase output and do so early in the development attempt. If the initial or early effort does not reach a critical minimum, then it is likely that the country will revert back to its former under-

developed stage'.[35] The 'critical minimum effort criterion' is embodied in the proposition that the combined effect of capital accumulation and technical progress must be able to yield in the industrial sector a rate of absorption of the labour force in excess of the rate of population growth.[36] In as much as this condition is more or less consistently maintained during the transformation process, the critical minimum effort is regarded as successful. Therefore, to establish this criterion more formally, population growth can be regarded as neither autonomous nor exogenous. This is the more so when the population explosion is alleged to occur more or less simultaneously.

The population 'explodes' as a consequence of a rapid decline in mortality (especially the infant mortality), chiefly as a result of improved medical care,[37] whereas fertility remains constant or declines only at a very slow pace. This development has to be considered as a part of the period of accelerated economic development.[38]

The rate of expansion of the industrial sector will thus depend, *inter alia*, upon the result of the competition of twin forces: the rates of capital accumulation and technical progress on the one hand, and the rate of population growth on the other. Industrialisation means not only that the aggregate output be expanded at successively increasing rates but also that the product-mix of the economy be diversified. It has rightly been pointed out that the mechanism of industrial expansion, at least in the initial phase of economic development, rests on the phenomenon of increasing returns: that with the increasing volume and scale of industrial output each successive increase in the total output will proceed with the increase in the marginal productivity of capital. The specific elements which are responsible for increasing returns to scale are embodied in changes in the following set of four parameters:[39]

a. organisation of industry;
b. supplies of complementary factors;
c. the structure of demand;
d. the 'state of the arts'.

In fact, it is in these changes that the key to external economies, which are not only cost-reducing types (technological) but also of the investment-inducing types (pecu-

[35]W. GALENSON and H. LEIBENSTEIN, "Investment Criteria, Productivity, and Economic Development," *The Quarterly Journal of Economics*, Vol. 69, No. 3, 1955, p. 366.

[36]FEI and RANIS, *op. cit.*, pp. 120–24. (*fn.* 3)

[37]For some empirical evidence, see: K. DAVIS, "The Amazing Decline of Mortality in Underdeveloped Areas," *The American Economic Review*, Vol. 46, No. 2, 1956, pp. 306–14, and A. J. COALE and E. M. HOOVER, *Population Growth and Economic Development in Low-Income Countries*, (Princeton, New Jersey: Princeton University Press, 1958), p. 14.

[38]F. W. NOTESTEIN, "Population – The Long View," in: T. W. SCHULTZ (ed.), *Food for World*, (Chicago, 1945), pp. 40–41.

[39]M. ABRAMOVITZ, "Economics of Growth," in: B. F. HALEY (ed.), *A Survey of Contemporary Economics*, (Homewood, Illinois: Richard D. Irwin, Inc., 1952), Vol. 2, pp. 154–56. The effect of these changes is elaborated further by H. W. ARNDT, "External Economies in Economic Growth," *The Economic Record*, Vol. 31, No. 61, 1955, pp. 198–209.

niary), is to be found.[40] But external economies, which bring about increasing returns, cannot very well be accrued without the expansion of the industrial sector.

The external economy effect in the development effort is closely linked with at least three kinds of 'indivisibilities': in fact it is the extent of these indivisibilities that determines the initial 'minimum effort' to fulfil the criterion of success. They are:[41]

a. Indivisibility in the production function, especially the lumpiness of capital with regard to the supply of social overhead capital.
b. Indivisibility of demand, or the complementarity of demand.
c. Indivisibility of the supply of saving.

The above three sets of indivisibilities, giving rise to external economies (hence increasing returns), demand that for the expansion of the industrial sector in the early period of the process of economic development there should be a 'big push': a large enough initial minimum effort which helps in generating those development-inducing forces (investment and technical progress) which override the development-depressing forces (population growth).[42] Of course this strategy of the big push implies that once the vicious circle of low production-low saving capacity-low investment-low production is broken initially by raising the level of marginal savings (being higher than average savings) the process of industrial expansion will become self-sustained.

The magnitude of this required effort seems to outstrip the most imaginative capacity of most underdeveloped economies, especially if it is also assumed that they are closed economies. However, one redeeming feature of the criterion of critical minimum effort is that the choice of techniques in these economics, characterised as they are by the relative 'elastic' supplies of labour, could be one which is biased towards capital saving. Thus the exponents of this criterion contend that the nature of technical progress in these economies could be one which, on the one hand, utilises rather liberally the redundant factor labour and, on the other, increases the marginal productivity of capital. The latter means that, at least in the initial phase of development, the rate of growth of industrial output could be maximised simultaneously with the maximisation of the rate of labour employment in the industrial sector, which rate should in general exceed the rate of growth of the total population.[43]

However, it seems quite fair to adjudge this contention with some scepticism, because the intensity with which labour could be substituted for capital in the industrial sector depends, among other things, largely on the continuity of the production function. Furthermore, it is not always justified, even in those economics where a significant proportion of the labour force in the agricultural sector is supposedly in surplus,

[40]A. A. YOUNG, "Increasing Returns and Economic Progress," *The Economic Journal*, Vol. 38, No. 152, 1928, pp. 527–42, and P. N. ROSENSTEIN-RODAN, "Problems of Industrialisation of Eastern and South-Eastern Europe," *The Economic Journal*, Vol. 53, Nos. 210–11, 1943, pp. 206–9.

[41]P. N. ROSENSTEIN-RODAN, "Notes on the Theory of 'Big Push'," (Cambridge, Massachusetts: M.I.T., 1957), pp. 5–14. (Mimeographed)

[42]This criterion is also referred to in the writings of H. LEIBENSTEIN, *Economic Backwardness and Economic Growth*, (New York: John Wiley & Sons, Inc., 1957).

[43]FEI and RANIS, *op. cit.*, pp. 120–24. (*fn.* 3)

to say that it is cheaply available. Therefore, it would be more fruitful to emphasise the role of capital accumulation and techical progress independently of the inevitability of an 'unlimited' supply of labour. In other words, the validity of the criterion of critical minimum effort should rest on the creation of external economies and increasing returns as the new sectors of industry emerge to take hold.

2 The Expansion of Agricultural Production and the Transformation of the Agricultural Sector

2.1 Introduction

The process of economic development, as conceived within the frame-work outlined in the foregoing chapter, entails the simultaneous expansion of the agricultural and non-agricultural (industrial) sectors. Even when in the long run this process involves gradual yet distinct structural changes in the economic system, the fact remains that before sustained growth becomes a built-in characteristic of the erstwhile underdeveloped economy, the industrial sector is more heavily dependant on the prospects of the development of the agricultural sector.

In this chapter an attempt will be made to present a general strategy for the expansion of agricultural production, or for increasing agricultural factor productivity, during the take-off stage, of course giving full consideration to the initial conditions obtaining in the agricultural sector of an underdeveloped economy. However, it will not be out of place to start with a few introductory remarks about the significance of the interdependence of the agricultural and industrial sectors.

2.2 The Interdependence of the Agricultural and Industrial Sectors

As soon as an underdeveloped economy begins to experience industrial expansion of a significant magnitude, it tends to feel the following effects almost immediately:

a. The process of industrialisation increases the demand for wage goods, especially the food commodities. Hence, with population growth, it generates a heavy pressure on food supply, and this pressure tends to create a more favourable market situation which might eventually break down the vicious circle of subsistence agricultural production, thus stimulating diversification and specialisation in agriculture.

b. Industrialisation offers to the agricultural population a wider range of consumer goods, besides contributing capital goods for further agricultural production.

c. The expansion of the non-agricultural sectors creates more productive employment opportunities, thus giving a pull effect to the redundant agricultural labour force which is undoubtedly beneficial both to those who leave the agricultural sector and those who are left behind. In this way, industrial development creates those conditions in the economy which encourage reorganisation of the agricultural sector.

d. The industrial-urban development tends to create an intellectual atmosphere – the

urban milieu being less tradition-bound – which, on the one hand, permits a faster growth of technology, entrepreneurial skills and capital formation, and on the other, tends to break down traditional attitudes to life. Therefore, such a development is likely, sooner or later, to contribute directly and/or indirectly to the transformation of the agricultural sector.

From the foregoing it follows that for sustained industrial progress, the transformation of agriculture – manifest in increasing agricultural productivity – is a *conditio sine qua non.*

Rising agricultural productivity supports industrialisation in several ways:

a. It enables the increasing food requirements of the non-agricultural population to be met, besides also fulfilling the needs of its own increasing population. In other words, it is able to achieve an equilibrium between supply and demand while avoiding inflationary pressures on the economic system and adverse terms of trade against the bourgeoning industrial sector. Further, it lays the foundation of steady industrialisation by also providing the raw materials needed by new industries.

b. It allows the agricultural sector to release an increasing proportion of its labour force for industrial employment, especially during the early period when a substantial percentage of the agricultural labour force might be disguisedly unemployed or underemployed. This also helps, indirectly, the efforts to meet the criterion of critical minimum effort in the non-agricultural sectors. This is especially true when some of the redundant workers can create capital at almost no cost by helping in the infrastructural activities.

c. By raising agricultural incomes, on the one hand, rural purchasing power is expanded thus stimulating industrial production and, on the other, since most of the national product originates in agriculture, attention has inevitably to be focussed on this sector as the main lender of capital needed for the development of the rest of the economy. At the same time capital formation is required for the improvement of the productive capacity of the agricultural sector itself. A considerable share of the gains accruing to the farmers, through rising agricultural output and productivity, has to be transferred to the non-agricultural sectors. In fact, in the initial stage of economic development, the surplus value derived from the agricultural sector is often considered as one of the major sources of capital for the entire economy.[44]

2.3 The Main Attributes of Traditional Agriculture and Its Transformation

In order that economic development may begin, the moot question is how to induce 'traditional agriculture' to produce more. Obviously there is no clear-cut formula for

[44]On the role of the agricultural sector in the transformation of a dual economy, see: W. H. NICHOLLS, "The Place of Agriculture in Economic Development," in: K. BERRILL (ed.), *Economic Development: With Special Reference to East Asia,* (London: Macmillan and Co., Ltd., 1964), pp. 336–71, and FAO, *Monthly Bulletin of Agricultural Economics and Statistics,* Vol. 13, No. 2, 1964, pp. 1–14.

attaining this objective. Many factors must be considered. Perhaps the most fundamental one is related to the type of the underdeveloped economy under consideration. In other words, a more precise characterisation of an individual economy is required.

While in reality no economy, however primitive in its economic and social organisation, can possibly be characterised categorically, it is nevertheless necessary to identify a few basic features. In so doing some simplified abstractions cannot be avoided, hence the caution here. Since, initially at least, most underdeveloped economies are predominantly agricultural, the present discussion will be restricted to the basic attributes obtaining in this sector alone.

If the agricultural sector were to be described in one word, it would be called traditional in the sense that almost all farming practices are based predominantly (if not wholly) on a few production factors which have been employed by the farmers in these areas for generations without substantial change.[45]

In economic terminology, and following SCHULTZ, traditional agriculture must be viewed as a particular type of 'equilibrium', in which (a) 'the state of the arts remains constant', (b) '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 viewedas an investment in permanent income streams and with net savings approaching zero'.[46]

Underlying this economic concept of traditional agriculture, besides the change in time, there are two basic variables, namely, the stock of material factors of production (reproducible and nonreproducible) and the total labour force. In many of the underdeveloped economies this equilibrium of traditional agriculture embodies in itself a structural disequilibrium among the stock of material factors and the labour force, thus giving rise to the much discussed concepts of disguised unemployment and underemployment of the labour force. Thus, before resuming the discussion of the abovementioned three critical conditions of equilibrium, it is essential to analyse the implications of the 'structural disequilibrium at the factor level' with resultant phenomena of disguised unemployment and underemployment in the agricultural sector.[47]

2.4 The Phenomenon of Disguised Unemployment in the Agricultural Sector

In many of the contemporary underdeveloped peasant economies, it is believed that the factor labour is engaged rather superfluously, largely because of the critical short-

[45]T. W. SCHULTZ, *Transforming Traditional Agriculture*, (New Haven, Connecticut: Yale University Press, 1964), pp. 3–4.

[46]*Ibid.*, p. 30.

[47]To these problems a reference has also been made in the works of LEWIS and FEI-RANIS. In fact, these two models are fundamentally based on the assumption of surplus labour in agriculture. (*fn.* 3)

age of a set of such crucial production factors as capital and entrepreneurial skills and the increasing pressure of population on the existing land resources. This is the more so when in such economies there are not many alternative employment opportunities and, even when they do exist, either they are very limited by the fact that the non-agricultural sectors are just bourgeoning or the mobility of labour is negligible because of economic and social forces inherent in a rural milieu. In recent economic literature, this particular situation has been described under such terms as 'disguised unemployment' and 'underemployment'.

Since in this study the subject of the analysis is just such an economy, it is essential to discuss the nature of this phenomenon, its causes and, in case its presence results in what is popularly known as 'surplus labour', its measurement as well.

As to the *nature of the phenomenon of disguised unemployment*, there is a general agreement among economists on two issues which are basic to identifying it. The first refers to its chronic nature, as distinguished from such types of unemployment as occurring in most types of economies: (a) seasonal, in almost every agricultural sector, (b) frictional, in shifting from a superior to an inferior occupation, and (c) technological, resulting from a change in techniques. The nature of the disguised unemployment under discussion is chronic; it does not result from the lack of effective demand but from a 'structural disequilibrium at the factor level'.[48]

Nevertheless some points of disagreement remain, mainly caused by the variation in definition of disguised unemployment. Most protagonists of this term follow more or less this line of argument: That in many peasant economies, at the given level of their techniques of agricultural production, it is possible to discern the presence of a substantial number of economically active members of the agricultural population who, though ostensibly engaged in the production process, can in fact be removed without affecting the current level of total agricultural output. In other words, the marginal productivity of these workers, *ceteris paribus*, is *zero*.[49] But it is often hastily added that these disguisedly unemployed workers can only be withdrawn (while keeping the volume of total output constant) when some reorganisation in the agricultural sector is allowed for. What must be the true nature of this reorganisation is not always clearly put forward.[50]

The situation, at least *prima facie*, is indeed anomalous: some workers, though superficially employed, are contributing nothing and yet their personal wage is positive. If, however, the strict assumption of zero marginal productivity is dropped and instead it is assumed that over a wide range the productivity of some workers in agri-

[48]The concept, as originally posited by KINDLEBERGER and DESPRES, is explained in the following terms: "Disequilibrium at the factor level may arise either because a single factor receives different returns in different uses or because the price relationships among factors are out of line with factor availabilities." C. P. KINDLEBERGER and E. DESPRES, "The Mechanism for Adjustment in International Payments – The Lessons of Postwar Experience," *The American Economic Review*, Vol. 42, No. 2 1952, p. 338.

[49]This is a recurring theme in recent discussions.

culture is very low, then the contradiction seems to be resolved by the fact that the individual earnings of these workers are also abysmally low. But, then, once it is conceded that the marginal productivity of some workers is *not* zero (while at the same time they earn a positive wage), the charm of those theories which are built around the concept of surplus labour would certainly be debased without any further argument.[51]

Thus the heat of the whole controversy resides in the supposition that while some workers' marginal productivity in the agricultural sector is zero, their individual remuneration is positive. To resolve this apparent contradiction, it is essential to know firstly the conditions which may justify the existence of disguised unemployment. But to do this is to search for the causes. Postponing the explanation of these causes to the following section, here the concept of disguised unemployment will first of all be established definitionally.

Strictly speaking, the definition of disguised unemployment is that the marginal productivity of labour, over a wide range, is zero, with the result that a substantial part of this labour can be withdrawn without a loss of output even if no change in the techniques of production or use of other productive resources occurs. Following SEN, it is essential to distinguish between the terms, labour and labourer: according to him, the right answer is 'not that too much labour is being spent in the production process, but that too many labourers are spending it'.[52]

Thus, it is labourers who are abundant and not the labour-time. Figure 1 helps to bring out this difference quite clearly. In this figure, while keeping capital, land area

[50]Those who consider that some measure of reorganisation is necessary are led by NURKSE who maintained that: "We may have to allow for changes (excluding technological advance, more equipment, mechanisation, better seeds, improvements in irrigation and drainage, etc.) in the manner and organization of work, including possibly a consolidation of scattered strips and plots of land." NURSKE, *op. cit.*, p. 33. (*fn.* 4) Brackets in this quotation are not original.

The same point has been stressed by B. KENADJIAN, "Disguised Unemployment in Underdeveloped Countries" (unpublished Ph.D. dissertation, Harvard University, 1957), pp. 5–6, and by N. A. MAJUMDAR, *Some Problems of Underemployment*, (Bombay: Popular Book Depot, 1961), p. 39. While these two authors, following NURKSE, refer to such terms as "routine reorganisation" and "a measure of reorganisation", they do not explain their contents.

But, in a more recent study, PEPELASIS and YOTOPOULOS clearly assert that a strict specification of the term *ceteris paribus* should accompany any definition of disguised unemployment. Therefore, they maintain that under static conditions "output could be maintained only if the workers worked harder for a part of the season." A. A. PEPELASIS and P. A. YOTOPOULOS, *Surplus Labor in Greek Agriculture, 1953–60*, Research Monograph Series 2, (Athens: The Center of Economic Research, 1962), pp. 29–31.

It may not be out of place to mention that in one of the earliest studies dealing with disguised unemployment in underdeveloped countries there is no place for an *ex poste* reorganisation as has been allowed for by the above-mentioned authors. United Nations, Department of Economic Affairs, *Measures for the Economic Development of Under-developed Countries*, (New York, 1951).

[51]See, for instance, the discussion on capital formation by NURKSE, and on industrialisation by MANDELBAUM. NURKSE, *op. cit.* (*fn.* 4), and K. MANDELBAUM, *The Industrialisation of Backward Areas*, (Oxford: Basil Blackwell, 1955).

[52]SEN, *op. cit.*, pp. 14–15. (*fn.* 6)

and production techniques constant, the total agricultural output curve, NN′, is shown as a function of labour input in terms of labour-time. The number of labourers is shown on the vertical axis due south from O. The marginal product of labour becomes zero at labour-time OL, hence, *ceteris paribus*, labour cannot be used after this point. Now, assuming that with the given population of workers, OW_1, tan α represents normal working hours per worker ($\tan \alpha = \frac{OL}{OW_1}$), any addition of workers after this point will result only in reducing the number of hours per worker.[53] Thus, if in the present situation, the working population in agriculture is OW_2, each of these workers puts in less than normal working hours ($\tan \beta < \tan \alpha$). In other words, W_1W_2 range of workers could only be described as surplus. Or, while the marginal product of labour is zero at point L only, that of the workers is zero in the range of W_1W_2.

From the point of view of agricultural production, if each of the workers, between W_1 and W_2, puts less than normal labour-time (as represented by tan α), then the same total product can be produced by fewer workers working normal hours. This means that, although each worker will have to work more hours if the smaller number of workers is to keep the level of total product constant, this does not entail a reorganisation of production through a change in production techniques or an increased supply of another factor; it only means some sacrifice of leisure, be it voluntary or forced.

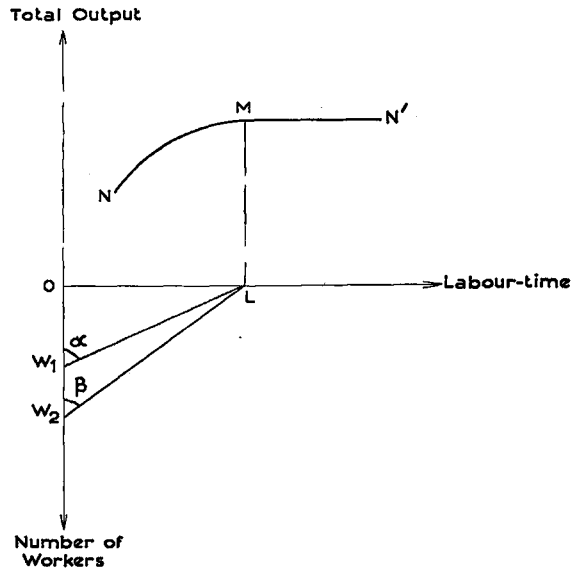


Figure 1. The phenomenon of disguised unemployment.

[53]The term "normal working hours" should in fact be defined according to the given agricultural production system. In most underdeveloped countries such norms are very difficult to define precisely. However, for empirical work, a certain number of work-hours during one man-year will have to be assumed, if not actually worked out in detail.

The *causes of disguised unemployment* can be grouped into two classes, namely, the social or institutional causes, and the economic causes.

In most underdeveloped agrarian economies, there are usually two types of land tenure systems: the owner-operator system, and the landlord-tenant system.

In the owner-operator system, peasant agriculture is usually family-based and the total output contains both wages and rents. The head of the family takes the maximisation of the total output as his ultimate objective, especially when almost all the output is consumed *in situ*. Under such a system, in the absence of alternative employment opportunities, with all the economically active population working together on the given piece(s) of land, the total output is divided among all the members of the family, irrespective of work performance. Consequently, with limited means of production and often fragmented economic holdings, additional workers – resulting from population growth – do not contribute any extra labour; they can only share in the total labour-time which can maximally be put into the work. The phenomenon of disguised unemployment is thus characteristically present in such an institutional arrangement.

In the landlord-tenant system, as it exists in many of these agrarian economies, its effect is the same. Within the tenant families, after giving away the traditionally determined share to the landlord, the share of output is similarly distributed among all working members.

Irrespective of the above-mentioned institutional arrangements, the following are the main economic factors responsible for the existence of disguised unemployment:[54] (a) inappropriate factor endowment; (b) limited opportunities for technical substitution of factors or, in the words of ECKAUS, there are several technological restraints; and (c) market imperfections both for factors of production and output in the agricultural sector. Since these three sets of economic causes have been thoroughly discussed in recent literature, there is no need to elaborate their effects any further.

As to the *measurement of surplus labour*, it is often unclear what is being measured. Is it the number of those agricultural labourers which could be withdrawn from the production process *permanently* without at the same time affecting the current volume of the agricultural output, given the exact specification of *ceteris paribus*? Or is it merely the computation of the number of (gross or net) man-days or man-hours in which a part of the agricultural labour force remains idle?

To answer this question, the basic consideration in the measurement of surplus labour is the determination of the time unit involved. Thus, to begin with, surplus labour could be approached in the following three ways:[55]

a. A crude estimate supplies the difference of labour available and labour required in terms of a full year; this could be defined as *average annual surplus labour*. Obviously

[54]Since the economic causes of structural disequilibrium have been quite thoroughly discussed by ECKAUS, they may only be mentioned here. R. S. ECKAUS, "The Factor Proportions Problem in Underdeveloped Areas," *The American Economic Review*, Vol. 45, No. 4, 1955, pp. 53–65.

[55]PEPELASIS and YOTOPOULOS, *op. cit.*, pp. 27–29. (*fn.* 50)

this measurement does not lend itself to an appropriate assessment of the actual number of agricultural labourers which could be withdrawn without diminishing the annual agricultural output. In fact, it conceals a large proportion of the unemployed (or underemployed) labour-time due to the seasonal nature of agriculture, because it does not take into account the peaks and troughs of the annual production cycle.

b. The second approach would be to distribute the labour available and labour required over the various seasons (the number of which depends upon the agricultural cycle in a particular place or region) during the year. This will result in what has been termed as the *seasonal surplus labour*. Since, by definition, this surplus contributes to the output for a part of the year, it can be withdrawn from this sector only intermittently.

c. The third approach, which is better adapted to the central problem of the permanent withdrawal of a part of the agricultural labour force without affecting the volume of a year's output, would be to compute the difference between the peak season actual employment and the full employment level. The resultant difference is referred to as the *chronic surplus labour*.

The foregoing three types of surplus labour could be measured by two broad methods as suggested by ROSENSTEIN-RODAN, as the direct method and the indirect method.[56]

The direct method is essentially a micro-approach based on samples covering areas, taking into account different types of cultivation, different sizes and forms of farming, the age and sex composition of the labour force, and the utilisation of the labour-time as supplied and required. This type of detailed inquiry can provide a reliable estimate of the true permanently withdrawable surplus as well as the volume of temporarily removable surplus. In other words, it can answer the questions about disguised unemployment and underemployment rather precisely.

In the indirect method, three variants have been suggested, namely:[57]

a. According to some time norm the labour-hours required to produce a given output are substracted from the number of labour-hours available to the active agricultural population.

b. The density of population which is thought to be desirable for a given type of cultivation is subtracted from the actual density in the given area. Sometimes, in order to take into account the different grades of soils, conversion coefficients of arable equivalents are applied.

c. The last method is based on a concept either of standard income or of standard holding. In the first, the number of acres of land required under a given system of cultivation to provide one person with a standard income is contrasted with the number of acres per head actually available. The difference thus computed may represent those

[56]P. N. ROSENSTEIN-RODAN, "Disguised Unemployment and Underemployment in Agriculture," FAO, *Monthly Bulletin of Agricultural Economics and Statistics*, Vol. 6, Nos. 7/8, 1957, pp. 2–5.

[57]The indirect methods have been the most commonly used ones in determining the volume of surplus labour in many parts of the world, of which a good survey is given by KENADJIAN, *op. cit.*, Part 2. (*fn.* 50)

people for whom there is no land available and who are, therefore, to be regarded as surplus. The other way could be by determining the work norm of the agricultural labour force with the help of a standard holding which is sufficient to absorb, with given conditions of technique and type of farming, the labour of an average farm family working with such assistance as is customary in agricultural operations.

Comparing the underlying assumptions in the direct and indirect methods, the former method is preferable in so far as such terms as 'labour required' and 'labour available' are clearly stated. ROSENSTEIN-RODAN explains in detail the frame-work of assumptions required for the measurement of surplus labour with the help of the direct method.[58] However the micro-disaggregative method gives rise to many tedious and elaborate calculations of labour available and labour required. But this method can be used to test the validity of the results so often adduced from global estimates of removable and non-removable surplus labour in a given underdeveloped economy.

So far in most areas of the world where attempts have been made to estimate surplus labour, they have relied entirely upon one of the variants of the indirect method. It is only very recently that a few steps have been taken to measure the volume of surplus labour with the help of disaggregative methods.[59] Even in areas where elaborate surveys of the rural employment situation have been available, the problem of the measurement of surplus labour is not tackled by using the rigorous tools as indicated in the direct method, thus leaving many questions about the state of disguised unemployment and underemployment at best unanswered or at worst in greater confusion.[60]

2.5 The Analysis of the Three Critical Conditions of Equilibrium in Traditional Agriculture

The classical assumption that the state of the arts remains constant over a fairly long period of time seems quite valid because the farmers continually apply those agricultural techniques and factors which have been passed on to them by their predecessors. The knowledge embodied in these factors and methods is taken as authentic, hence no need is felt for change. And, since there is hardly any change, no new elements of risk and uncertainty come into the picture. In this situation, when techniques are well established by custom, the motives and preferences of farmers are also constant during the same period, and thus the marginal productivity of investment in additional factors continues to decline. In fact, a point is reached, during this equilibrium process, when the rate of return on all agricultural factors is so low that there is hardly any incentive to make additional savings and investment.

That an equilibrium seems to exist, in so far as the demand for and supply of agricul-

[58]ROSENSTEIN-RODAN, *op. cit.*, pp. 2–5. (*fn.* 56)

[59]To cite only two examples, the surveys in Italy and Greece, as reported by ROSENSTEIN-RODAN and PEPELASIS and YOTOPOULOS respectively, are based on direct method.

[60]A good example of such an analysis is the study by MAJUMDAR, *op. cit.* (*fn.* 50)

tural factors are concerned, indicates also the stability in preferences and motives of the farmers underlying their demand for additional sources of income. SCHULTZ thus summarises the vicious circle of traditional agriculture as follows:

'There is at best little opportunity for growth from traditional agriculture because farmers have exhausted the profitable production possibilities of the state of the arts at their disposal. Better resource allocation and more savings and investment restricted to the factors of production they are employing will not do much for growth. Despite all that has been written on how to improve the mix of factors in poor communities, the increases in real income to be had from better allocation of the existing factors are small...

They are high-priced sources of additional income, and for this reason they provide little opportunity for growth. What this means is that agriculture will remain niggardly under such circumstances... The relation between costs and return to investment in the factors of production is the basic reason why there is not sufficient inducement for people in these communities to save larger proportion of their income to invest in such factors. The rate of return simply does not warrant the additional investment.'[61]

From this description of the state of traditional agriculture it can easily be deduced that, to initiate economic growth, it is essential to transform the existing situation. The key to this transformation must be sought in a change in the state of the arts. This means that modern agriculture can best be initiated by technological changes: the introduction of new methods of production and improved inputs at relatively 'low prices'.

In fact, technological change is a generic term, in which some specific elements are responsible for the qualitative transformation of the traditional organisation of production and at the same time of the change in the quantitative combination of the factors of production. In order to understand this transformation more precisely, each of these elements must be sorted out and ways found to making them available and acceptable to farmers who are tradition-bound in their farming methods. 'Once this has been done, it will be clear that the suppliers of these particular factors of production, and farmers in their role as demanders of them, hold the center of the stage'.[62]

This supply and demand approach to the 'low-priced' sources of additional income for traditional farmers must be examined a little further. Thus the first task is to analyse the term technological change itself. It is a mistake to treat it as a factor in itself other than one embodied in the traditionally known factors of production. On the contrary, as SCHULTZ rightly asserts, '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'.[63]

In current aggregate economic growth models the use of the term technological change as a 'residual', which is intended to explain the major part of the story of modern economic growth, does not quite come to grips with its exact specification: what is it which is still the measure of our ignorance? Is it only because mathematically-

[61]SCHULTZ, *op. cit.*, pp. 131–32. (*fn.* 45)
[62]*Ibid.*, p. 104.
[63]*Ibid.*, p. 132.

oriented economics can explain economic growth as a shift in the production curve from one position to another higher position? Even for theoretical discussions it does not seem to provide an analytical tool. What is even more important is the fact that, for empirical investigations, it is not at all adequate to lump all output increases, otherwise not explained by additional inputs of land, labour and capital goods, as accruing to technological change. Once it is accepted that each new technology is embodied in the traditional factors of production in agriculture, the measurement of each factor's contribution to additional output is often underestimated. Thus, once it is recognised that technological change is a major variable in explaining modern economic growth, it is essential to decompose, however arbitrarily, this compound.

From the foregoing discussion the following can be readily deduced: That in order to generate economic growth, the dependency of farmers on traditional agriculture should be broken by somehow making farmers learn, accept and adopt effectively the new set of profitable factors, the more detailed explanation of which implies the examination of a strategy for agricultural development.

2.6 A Brief Outline of the General Strategy for Increasing Agricultural Output and Productivity

2.6.1 General Remarks

While there is a great degree of agreement about the crucial role of agriculture in the early stages of economic development, there is hardly any concensus on the most appropriate strategy for securing increased agricultural output and productivity of factors employed. Obviously there cannot be one formula; the strategy will depend on a host of factors. On one point, however, there cannot be two opinions: the desired increase must be achieved at minimum cost.

Following the demand and supply approach to agricultural transformation, the rates of increase of agricultural output and factor productivity seem to be influenced by the interaction of many forces on each side.

On the demand side, there are those factors which indicate the many productive decisions by an individual farm-operator regarding the acceptance and adoption of new productive agents. These factors are collectively termed: 'proximate factors'. On the supply side, there is another set of factors which are mainly socially determined; they are termed: 'conditioning factors'.[64] Before some of these factors are more systematically presented, it will not be out of place to say a few words about the demanders and suppliers of non-traditional factors of agricultural production.

In traditional agriculture it is meaningless to suggest that the farmers would by themselves be the demanders of the new and non-traditional factors. They have to be convin-

[64]B. F. JOHNSTON, "The Choice of Measures for Increasing Agricultural Productivity: A Survey of Possibilities in East Africa," *Tropical Agriculture*, Vol. 41, No. 2, 1964, p. 92.

ced by the suppliers to adopt new techniques and other productive agents. What is probably even more important, however, is the effectiveness with which these factors can be provided with a calculation of cost and return which the farmers can understand. Therefore, besides of course the farmers' socio-cultural milieu, the most relevant element within the economic frame-work is the margin of absolute profitability in accepting each new technique or a new factor. In fact, in many tradition-bound agricultural communities, the lag in acceptance can be satisfactorily explained by this element. Profitability, however, cannot be shown by merely demonstrating other cases; it will depend on the farmer's own calculation of each new factor's price and yield.[65]

The learning may in itself depend on the way it is obtained: by trial and error, on-the-job training, and schooling. If the farmers are left to learn by brute experience alone, traditional agriculture can hardly be transformed in a generation or two. It cannot be avoided in many cases, but the major role in this respect has to be played by on-the-job training, especially in the immediate future, until the right type of schooling can be substantially imparted to the new generation. Whatever the most appropriate combination of these three, imparting new skills to the farmers must be regarded as one of the basic investments in any programme of agricultural development.[66]

Now turning to the supply side, since agricultural transformation depends predominantly upon the availability and price of non-traditional agricultural factors, the suppliers of these factors are obviously central to the present discussion. As SCHULTZ puts it: 'When they 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'.[67] Therefore, two leading questions must be investigated: (a) Who are these suppliers? (b) What do they supply? The second question must be answered first.

As already noted before, the main sources of higher productivity in agriculture are in fact reproducible ones. They can be grouped into two classes: material inputs, and skills and capabilities for utilising these inputs in the most appropriate manner.

The material inputs are not invariably readily available in the form best suited to all farming conditions. They must, therefore, be adapted to (if they have been produced elsewhere) or produced for particular conditions. For instance, in the realm of biological sciences, new varieties of seeds and crops, new breeds of cattle, etc.; in physical and chemical sciences the same is true of fertilisers, insecticides, pesticides, certain types of farm machinery and hand tools, etc. What is, however, more readily accessible is the stock of knowledge about the principles underlying almost all these new inputs. Given then this store of basic techno-scientific knowledge, most new agricultural factors must be so evolved and produced as to suit a particular situation in traditional agriculture.

Since in this production and development process the producer (or more appropria-

[65]SCHULTZ quotes the study of hybrid corn by ZVI GRILICHES. *Op. cit.*, p. 163.
[66]SCHULTZ, *op. cit.*, p. 174. (*fn.* 45)
[67]*Ibid.*, p. 145.

tely SCHUMPETER's celebrated entrepreneur) cannot always reap all the benefits generated by immediate increases in income flows, most fundamental and applied research and production have to be socialised. For one thing, since the profit-seeking entrepreneurs cannot get substantial margins, in fact none in most cases, there is hardly any obvious reason which should induce them to invest in this huge venture. The other, and perhaps the more important, consideration in most underdeveloped agrarian societies is the almost complete absence of individual entrepreneurship.

There is yet another factor which tends to favour the case for the socialisation of the supply of modern agricultural inputs: the many indivisibilities inherent in the application of scientific knowledge. For any system of production to be efficient, the scale of organisation has to have a certain optimal size, of course depending upon the particular obstacles and needs of a given community. Thus it seems that in this field, as in many others, the leading role has to be played by public, and usually nonprofit-making, agencies. In most underdeveloped countries this can best be done within the organisational frame-work of the State. (It must, however, be added that in certain cases where private entrepreneurship of any consequence does already exist, it should be so utilised as to result in maximum returns to the community).

Besides this production aspect on the supply side, the distribution has also to be considered. This function could be performed both by private profit-making and public agencies. While it is a theoretical possibility that private firms could enter into performing this function, their profits in practice are restricted by two simple considerations: one, the costs of entry and, two, the size of the market. Distribution of the new factors in traditional agriculture has the disadvantages both of involving considerable costs of entry (adaptation, information, demonstration and education) and the restricted market. Thus, once again, it could be argued that, at least in the initial stages of agricultural transformation, public nonprofit-making agencies must be the torch bearers. All extension-education activities must, in fact, be regarded as an investment which does not always result in immediate profits to the distributing agency. Therefore, considering the fact that there is a great dearth of all such strategic elements as reproducible inputs, entrepreneurial skills, organised markets, etc., the oft-repeated argument for planning is all the more strengthened.

From the foregoing discussion one thing becomes very clear: the forces, both of demand and supply, underlying the process of agricultural transformation in an underdeveloped country are extremely intricate. Hence to formulate a comprehensive yet precise programme is out of question, unless each given situation is understood in all its details. However, accepting the general approach as proposed above, some strategic elements can further be examined.[68]

[68]JOHNSTON, *op. cit.*, p. 98. (*fn.* 64) These factors have also been discussed by B. F. JOHNSTON and J. W. MELLOR in an earlier article: "The Nature of Agriculture's Contribution to Economic Development," *The American Economic Review*, Vol. 51, No. 4, 1961, pp. 566–93.

2.6.2 The Proximate Factors for Agricultural Development

It has been argued that, given the state of traditional agriculture, additional incomes can be generated only at a very high cost. This, for one thing, is because the already employed factors of production have in general very low marginal productivity. In order to increase the rate of return on each of these factors, the 'state of the arts' must be changed once and for all. To achieve this, the farmers must be able to see the profitability through price-yield calculus of the non-traditional factors.

While this task, as has already been pointed out, has to be performed by the suppliers of new factor inputs, the ultimate result will depend mainly upon the decisions taken by the farmers themselves. These decisions can be categorised as follows:

acceptance and use of new and/or improved farm inputs
adoption of new and improved farm practices
introduction and assimilation of managerial innovations

In practice all these are interdependent, and quite often overlapping. However, when they are further broken into finer components, their interdependence can be seen clearly. As a word of introduction it must be said, that underlying the acceptance and adoption of each element in these three major categories, each farmer's own capability of understanding is a major variable. Of course, this will be to a large extent be influenced by the socially determined factors on the supply side.

2.6.2.1 *Acceptance and Use of New and/or Improved Farm Inputs*

In principle under this category the existing inputs such as land, capital (fixed and current) and labour should be included in so far as their qualitative differentiation is specified.

a. The *increase in land input* is not always possible for several social and technical reasons. However, wherever possible, the expansion of the cultivated area can be had not only by bringing under plough the culturable waste lands but also by intensifying efforts on the under-utilised patches of land which each farmer owns. This effort will need, of course, complementary inputs and practices like irrigation, fertilisers, crop rotation, mixed cropping, etc.
b. The *increase in capital input* does not result solely from the application of larger quantities of capital goods than those existing (machinery, fertilisers, etc.), but also from an improvement in their quality. Among these changes, the following may be noted:
   (i) The use of chemical fertilisers is perhaps one of the most land-saving and yield-increasing forms of capital. Yield response to fertilisers is not always well established. Therefore, the farmers do not adopt the use of commercial fertilisers easily. It is often observed that, even in those places where farmers have begun using them in substantial quantities, usually the application is restricted to cash crops. Application to food crops is equally important.

(ii) The use of pesticides and insecticides is another valuable investment which must go with other new capital inputs.

(iii) Such improved seeds, plant varieties and livestock breeds must be adopted which, besides being resistant to many local diseases, should be capable of giving more yield per unit.

(iv) Improved farm machinery and other implements are not always capital-intensive; in fact, many a time, a slight readjustment in the existing tools can affect the efficiency of work very substantially. For instance, the attachment of a seed drill to the existing plough or a new type of mouldboard plough itself are improvements which can greatly increase the effectiveness of farm investment.

c. The *increase in labour input*, or more exactly the increase in the use of available effective man-hours, can contribute to increase farm income. This addition in labour input can in fact be more appropriately utilised if work programmes are so designed which, on the one hand, can save much waste of labour and, on the other, increase the skills of those directly engaged in farming.

2.6.2.2 *Adoption of New and Improved Farm Practices*

It is not so much the additional input, or the change in the quality of the existing one, which would help increasing farm output and factor productivity, but farm yields can be increased manifold by improved farm practices. These practices form those essential complementary elements without which the farmer cannot utilise economically his factor inputs. They, in fact, increase the transformation rates of each individual input to output. The following may be mentioned:

a. *Seed-bed preparation:* This requires deeper ploughing, better levelling and dressing of each unit of land to be cultivated.

b. *Planting time:* Crop calendars should be so prepared as to allow more appropriate use of rainfall, irrigation facilities, the susceptility of a crop to disease, the sowing and harvesting times of other crops, etc.

c. *Row planting:* Instead of the simple broadcasting method of sowing, row planting permits proper spacing, hence optimum plant growth. It also helps to save labour from unnecessary and often difficult weeding and other cultural practices.

d. *Change in irrigation methods:* In many places, where flooding of fields is a common practice, there is an obvious need to economise on water, which also prevents damage to a crop, especially in its early period of growth. To utilise water optimally, careful preparation of the land is often a prerequisite. For instance, in the case of several crops, mainly because of their root systems and the soil conditions they require, ridging helps to conserve water. In areas where seasonal rainfall is the only source of water to crops such practices are all the more useful.

e. *Double cropping and appropriate rotations:* Where a single crop is as yet the rule, in many cases double cropping could be introduced. A good combination of different crops is often complementary, though in other cases the two crops sown together may prove to be competitive both for soil nutrients and other reproducible inputs like

capital and labour. Double cropping also lessens the risks and uncertainties inherent in the cultivation of one crop. Furthermore, a rotation of two to four crops, depending upon soil and climatic conditions, helps to retain soil fertility and increase the crop yield per acre.

2.6.2.3 *Introduction and Assimilation of Managerial Innovations*

While the adoption of new farm practices represent an entrepreneurial function, the fact remains that rational programming of individual farm plans and management by some expert in this field offer to the farmer great opportunities to increase farm produce and factor productivity.

Managerial innovations include, among other things, the substitution of lower-value farm enterprises by higher-value ones. For instance, in cases where the farmers depend solely upon the cultivation of subsistence food crops, it is better if they add cash crops, or combine the food crops with livestock enterprises. The resulting market-oriented behaviour of the farmers will induce them to adopt new and improved farm practices. In many instances, by the mere substitution of crops and other such farm enterprises, the farmers are able to increase the transformation rates of new factor inputs. This then leads to specialisation.

Perhaps yet another field of managerial innovations lies in the mutual co-operation which the farmers can lend to each other. Eventually this may lead to production co-operatives, be they for the purpose of land consolidation, or for the provision of extra and improved factor inputs, or for the demonstration of better farm practices.

While the foregoing proximate factors are essential, they are not in themselves a sufficient condition for increasing farm output. In many agrarian societies, it is hard to see if individual entrepreneurship can develop by itself in such a short space of time as would be required for economic development. This may be precluded by the existence of such institutional arrangements which do not provide incentives for individual peasants to undertake new farm enterprises. Thus, to generate self-sustaining economic growth within agriculture, a congenial frame-work of socially determined factors is indeed crucial.

2.6.3 The Socially Determined Factors for Agricultural Development

The following broad categories of conditioning factors seem to hold the key not only to supply the various factor inputs but also to determine the general socio-economic environment of an underdeveloped country.[69]

a. The *institutional arrangements* include: (i) the land tenure system; (ii) the agricultural infrastructure, which includes roads, transport facilities, markets, irrigation projects, etc.; and (iii) the supply of such improved factor inputs as fertilisers, seeds, insecticides, etc.

[69]See also: JOHNSTON, *op. cit.*

b. The *agricultural research and extension programme* includes: (i) research on the development and adaptation of improved production techniques and other possibilities; (ii) extension services which carry the knowledge and understanding of improved techniques and inputs to the doorstep of the farmer; it also includes the feeding-back of farmers' problems to research agencies; and (iii) general education and other such programmes which help develop human resources and create attitudes favourable to rural progress.
c. The *financial incentives* and other measures include: (i) the availability of credit facilities; (ii) subsidies on the cost of factor inputs; and (iii) the level of prices of farmers' produce.

In a preceding section the influence of some of these factors, especially of the land tenure system and other complementary measures, was mentioned in passing. In the same context, it was also pointed out that most of these conditioning factors cannot be supplied by any existing agency other than the State itself. While it seems that to narrate the role of each of these factors and the problems involved in the effective execution of these measures would amount to needless repetition, for so much has lately been written by others on this subject, it must nevertheless be asserted that there are two essential functions embodied in this approach:[70] firstly, to convince the farmers of the value of new inputs and improved techniques and, secondly, to provide the incentive system which can stimulate them to undertake new methods of agricultural production even though in so doing the farmers have to take greater risks than before. The role of incentives can hardly be overemphasised. Two instances can be given to illustrate this point.

The first example is of a change in land tenure arrangements. It has been said that 'the tenure arrangements under which productive resources are held and used will affect farm firm and farm family patterns of expenditures, savings, and investment in the following ways:'[71]

a. By their influence upon the operator's time preference for money income.
b. By their influence, over time, upon allocation of expenditures between the farm firm and the farm household.
c. By their influence upon the allocation of expenditures within the farm household as between goods and services for direct consumption and expenditures upon the family residence.
d. By their influence upon disposition of the total available labour time of the farm family.
e. By their influence upon attitudes toward and uses made of credit.

The second example is of marketing. In many areas the opening up of a new road system, where none existed before, or the provision of an organised market – providing

[70]Some specific points have been described in detail in the following studies: FAO, *The State of Food and Agriculture, 1963*, (Rome, 1964), pp. 95–125; P. RAUP, "The Contribution of Land Reforms to Agricultural Development," *Economic Development and Cultural Change*, Vol. 12, No. 1, 1963, pp. 1–21; and I. ARNON, "The Role of Agricultural Research in Developing Countries," *World Crops*, Vol. 16, No. 3, 1964, pp. 20–23.
[71]RAUP, *op. cit.*, pp. 8–9.

cash exchange – can eventually break the circle of a subsistence economy. Introduction of money may prove to be a singular cause of rural progress in terms of economic development, for it may succeed in changing the 'state of motives and preferences'. Seepage of industrial commodities, especially consumer goods, from outside the village economy may exert a great pull effect on increasing the agricultural production and its eventual commercialisation.

These two examples do not in any way exhaust the discussion about incentives; they do, however, indicate their importance. Hence, in formulating any agricultural development programme, the role of incentives and profitability of the adoption of new factor inputs and improved production techniques must evidently be illustrated to the farmers. In the final analysis, perhaps, it is to these forces that traditional agriculture will succumb.

3 General Features of the Economy of Pakistan

3.1 Introduction

No study of the Pakistan economy could be regarded as adequate without taking into consideration the division of the country into two economically almost independent units, East and West Pakistan. While both supply an example of the contemporary underdeveloped economies of Asia, the inter-regional differences between them give the country in many respects a unique place in to-day's world. These differences are not confined to one or a few aspects, nor are they entirely of degree: they range in kind between climate, vegetation, physical conditions of land and other resources, land utilisation, cropping patterns, consumption habits, etc. The differences of degree can be found, for instance, in the extent and pattern of industrialisation, capital formation, role of private and public entrepreneurship, literacy levels and educational achievements, rural-urban distribution of the population, labour force participation both by age groups and sex in various occupations, etc.

While it is true that in some other countries, especially those larger in area, such regional differences have existed in the past, as they do even at present, the case of Pakistan is without a parallel. With East and West Pakistan separated physically by a not very friendly territory, both resource and factor mobility between the two units is very limited. In fact, the only transfer of output and production factors taking place between the two, as incorporated in their inter-zonal trade, is either by sea or by air. At present, East Pakistan is the less fortunate partner as far as Pakistan's economic achievements are concerned.[72]

From the foregoing it is clear that the problems of the economic development of Pakistan have to be viewed from two angles. The major problem both in East and West Pakistan is one of transforming a predominantly agricultural and archaic economic structure into an increasingly diversified yet integrated whole. The other is the problem of regional disparities, which is further accentuated by the limited factor mobility between the two units. Thus, while in itself the problem of the economic deve-

[72]Of late the problem of economic disparities between East and West Pakistan has become a subject of serious study. To give but few examples, see: M. N. HUDA, "Development of Underdeveloped Regions of Pakistan," in: A. M. GHOUSE (ed.), *Studies in Economic Development: With Special Reference to Pakistan*, (Lahore: Ferozsons Ltd., 1962), pp. 173–79; M. HAQ, *The Strategy of Economic Planning: A Case Study of Pakistan*, (Karachi: Oxford University Press, 1963); and Pakistan, Planning Commission, *The Third Five Year Plan (1965–70)*, (Karachi, 1965). (Mimeographed). In fact, HUDA even uses the terms "under-developed East Pakistan" and "developed West Pakistan". (p. 176)

lopment of Pakistan is very difficult, the inter-wing economic disparities face the student with an even more complex and arduous task. Furthermore, in an infant State like Pakistan, where national cohesion is far from complete, a problem such as that of economic disparities tends not only to be politically charged but also potentially capable of endangering the very existence of the State itself.

Keeping in view the two basic considerations mentioned above, this chapter presents some leading economic indicators reflecting the general nature of the economy of Pakistan, the demographic features, the extent and direction of industrialisation in recent years, the general state of agricultural production, and rural food consumption.

3.2 Some Leading Economic Indicators

The fact that Pakistan economy is still basically agricultural can well be gauged by the contribution of the agricultural sector to the national income and the employment of the labour force. Table 1 shows the share of the agricultural sector (including major and minor crops, livestock, fisheries and forestry) in Pakistan's national income: 53.5% in 1960–61 as against 60.4% in 1950–51.[73] In Table 2, the percentage of the total labour force engaged in agriculture was estimated to be 64.9 in 1960 as against 73.5

Table 1. Absolute and percentage shares of the major sectors in the national income of Pakistan at factor cost of 1959–60 (in million Rupees)

Sector	1950–51	1955–56	1960–61
Agriculture[1]	14,357 (60.4)	14,379 (55.3)	16,420 (53.5)
Manufacturing[2]	1,440 (6.1)	2,258 (8.7)	2,921 (9.5)
Trade[3]	2,960 (12.4)	3,186 (12.3)	3,815 (12.4)
Services[4]	2,927 (12.3)	3,770 (14.5)	4,844 (15.8)
Ownership of dwellings	1,048 (4.4)	1,183 (4.5)	1,334 (4.3)
Public administration and defence	1,052 (4.4)	1,222 (4.7)	1,298 (4.2)
Mining and quarrying	35 (–)	48 (–)	79 (0.3)
National income (net national product) at factor cost, 1959–60	23,819(100.0)	26,046(100.0)	30,711(100.0)

Source: Pakistan, Central Statistical Office, *Statistical Bulletin*, Vol. 13, No. 4, 1965, Table 27, pp. 936–37

[1]The agricultural sector includes major and minor crops, livestock, fishing and forestry.
[2]The manufacturing sector includes both large and small-scale industries.
[3]Trade includes wholesaling and retailing.
[4]Services include construction, electricity, gas, water, and sanitary services, transportation and communications, banking and insurance and all other services.

[73]According to the latest estimates, the share of agriculture in the national income was 49.1% in 1964–65. *The Third Five Year Plan (1965–70)*, *op. cit.*, Table 3, p. I–4.

Table 2. Percentage of labour force employment by major sectors in Pakistan and its two Provinces

Sector	1950			1955			1960		
	East Pak.	West Pak.	Pakistan	East Pak.	West Pak.	Pakistan	East Pak.	West Pak.	Pakistan
Agriculture	79.2	67.1	73.5	77.1	62.6	70.1	72.9	56.4	64.9
Manufacturing	4.3	8.9	6.5	5.6	12.4	8.9	7.1	14.7	10.8
Trade	4.3	7.2	5.7	4.4	7.4	5.9	5.1	7.7	6.3
Construction	4.2	5.3	4.8	4.5	5.7	5.1	5.1	6.9	6.0
Transport	3.5	2.6	3.1	3.5	2.7	3.1	4.3	3.1	3.4
Other services	4.3	9.2	6.6	4.8	9.1	6.9	6.2	11.1	8.6
Mining	–	–	–	–	–	–	–	–	–
All sectors	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Pakistan, Planning Commission, Harvard Advisory Group, *Long-Term Perspectives for the Pakistan Economy, 1965–1985: A First Approach*, (Karachi, 1964), Annex. 4, Table 1. (Mimeographed).

All these percentages have been derived from absolute figures of the 'active labour force' as divided amongst different sectors. The figures for the labour force in the agricultural sector exclude those who are considered as 'underemployed'. The non-agricultural labour force excludes those who reported 'unemployed'.

in 1950. Here again there were great differences between East and West Pakistan: for according to one estimate, of the regional income of East Pakistan in 1959–60, 65.8% was contributed by the agricultural sector as compared with 45.1% in West Pakistan.[74] As to the percentage of the labour force working in agriculture, 72.9% was reported to be engaged in this sector in 1960 in East Pakistan as against 56.4% in West Pakistan.

As is evident from Table 3, agriculture also continues to be the dominant component in Pakistan's exports, notwithstanding the fact that, during the decade 1951–61, the composition of its exports altered considerably. Thus, while in 1951 primary products (mainly agricultural raw material and food commodities) formed about 91% of the total exports, their proportion had diminished to less than 71% by 1961.[75] Most of this change can be attributed to the expansion of jute and cotton manufactures, and to severe shortages of food (especially foodgrains) at home. On the side of imports, the change in the composition has been even more striking, demonstrating in general the pattern of the needs of a developing economy. Therefore, in Table 4, in 1951 most imports consisted of consumer goods (thanks largely to the lavish import policy of the government in the wake of the Korean economic boom), raw materials and fuels: more than 63% of these imports were consumer goods as against about 9% and 28%

[74]HAQ, *op. cit.*, Table B–I, pp. 252–53. (*fn.* 72)

[75]Pakistan, Ministry of Finance, *Economic Survey of Pakistan, 1961–62*, (Rawalpindi, 1962), p. 88.

Table 3. Exports and imports in relation to the national income of Pakistan for selected years

Year	National income (million Rupees)	Exports (million Rupees)	Percentage of national income	Imports (million Rupees)	Percentage of national income
1950–51	18,575	2,554	13.7	1,620	8.7
1955–56	19,586	1,784	9.1	1,325	6.8
1960–61	22,943	1,799	7.8	3,188	13.9

Source: Pakistan, Ministry of Finance, *Economic Survey of Pakistan, 1961–62*, (Rawalpindi, 1962), p. 88.

capital goods and industrial raw material, respectively. But in 1961 the proportion of capital goods in the total imports had increased to over 20%; of industrial raw material to 40%; the proportion of consumer goods had slided down to about 40%. Of course, import substitution has been a determining factor in the diminished proportion of consumer goods in the total imports of Pakistan.

Table 4. The composition of imports into Pakistan in 1951 and 1961

Class of goods	1951		1961	
	Imports (million Rupees)	Percentage of total	Imports (million Rupees)	Percentage of total
Capital goods	140.8	8.98	631.0	20.65
Industrial raw material	436.0	27.80	1,217.6	39.83
Consumer goods	991.8	63.22	1,207.7	39.52
All goods	1,568.6	100.00	3,056.3	100.00

Source: See Table 3; *op. cit.*, p. 88.

Returning to the domestic scene, the growth of the national income in Pakistan has not been spectacular. Largely because of a decade or more of almost stagnant agriculture (despite the rapidly bourgeoning industrial sector), the rate of growth of national income per annum has been fluctuating just above the rate of growth of population by a narrow margin. However, of late (since 1960–61) the position has improved quite considerably. Thus, while the rate of population growth in Pakistan increased from about 1.8% in 1948–49 to about 2.3% in 1960–61, the rates of growth of national income were estimated to be 4.0% in 1958–59, 3.6% in 1959–60 and 5.0% in 1960–61.[76]

[76]Pakistan, Central Statistical Office, *Statistical Bulletin*, Vol. 12, No. 8, 1964, Table 25, pp. 1654–55. In fact, the growth rate of the GNP during 1960–65 has been estimated to be 5.2% per annum.

As for the income per capita in the country, the following figures have been disclosed:[77]

1949–50: Rs.311 1959–60: Rs.318 1964–65: Rs.360

But it has been pointed out that the income per capita in East Pakistan in 1960 was 60% less than that in West Pakistan.[78]

From these income figures, which by any standard are very low, it is obvious that the saving capacity of the people must also be very limited. Nevertheless, the average saving has been increasing rather impressively, especially over the last few years.[79] As to the marginal savings rate, it reached 12.4% in 1961 and 19% in 1964–65. Of course this increase conceals the contribution of the public sector and foreign aid, which two have been of growing importance to the economy of Pakistan.

As in their incomes per capita, East and West Pakistan show differences in their saving and investment rates. For instance, East Pakistan had a gross domestic saving rate of 8% in 1959–60 as compared with less than 5% in West Pakistan; but in gross investment the rate was higher in West Pakistan during the same year.[80] The fact that West Pakistan should have a higher investment rate can be explained by (a) its bigger industrial sector, with small- and large-scale industries more diffused, (b) its higher income per capita, and (c) the greater range of income distribution. But it is surprising, at least *prima facie*, that the western wing should have a lower rate of marginal savings than its eastern counterpart. It can be argued with some confidence that this is certainly not because of some basic institutional differences between the two wings.

3.3 The Demographic Features

In the context of this study, the total population and its distribution according to age and sex groups with the vital rates (fertility and mortality) are of major importance to the economy of Pakistan. Moreover, the rural-urban distribution of the labour force and its participation in the production process according to age, sex and professions play an important role. These four factors will be treated below in separate sections.

3.3.1 The Total Population and Its Distribution According to Age and Sex Groups

The total population of Pakistan was 98.66 million in 1961: 55.21 million in East Pakistan and 43.45 million in West Pakistan.[81] This amounts to an average density in Pakistan of 104 persons per square kilometer, in East and West Pakistan it is 387 and

[77] *The Third Five Year Plan (1965–70)*, *op. cit.*, Table 12, p. I–14. (*fn.* 72)

[78] HAQ, *op. cit.*, p. 94. (*fn.* 72)

[79] For the period 1949–50 to 1964–65, the average savings rate increased from the very low figure of 4.6% to 9.7%. *The Third Five Year Plan (1965–70)*, *op. cit.*, Table 7, p. I–8. (*fn.* 72)

[80] HAQ, *op. cit.*, p. 112. (*fn.* 72)

[81] See next page.

54 persons, respectively. However, within each wing, the range of population density in West Pakistan is much larger than in East Pakistan. Table 5 shows some more detailed data.[82]

Table 5. Man/land ratios in East and West Pakistan in 1961

Ratio	E. Pakistan	W. Pakistan
Persons per acre of available land	1.564	0.218
Persons per acre of farm area	2.539	0.887
Persons per acre of cultivated area	2.882	1.165

The age structure of a given population is a function of fertility, mortality and migration trends in the preceding periods. Of these three factors, fertility is the most important one. These demographic elements are, in turn, influenced by various socio-economic circumstances.

Since, for the purpose of this study, some adjustments had to be made in the population statistics as revealed by the 1961 Census, Table 6 gives entirely new estimates.[83] From Chart 1 (see p. 48), one can deduce the most striking feature: that the age pyramid has a distinctly flat base. In other words, the population of Pakistan is very young. The percentage of children under 15 years is 46.02 for both sexes (44.74 for males, 47.37 for females). These are claimed to be one of the highest in the world.[84] It is even more interesting to note that, between East and West Pakistan, the percentage of children under 15 years is relatively higher in the former province. But in both cases the percentage of the females is higher than that of the males.

It may also be mentioned that, over the inter-censal period 1951–61, the proportion of all children under 15 (and especially of the 0–4 age group) has increased quite markedly. Although many irregularities in age reporting have been found in both censuses, especially among the younger age groups, the enlargement of the base during this period, which has been more marked in West Pakistan, is due largely to the past trend of fertility. Unless these enlargements were highly age-selective, mortality would ac-

[81]The difference between these figures and those revealed by the 1961 Population Census of Pakistan is explained by the fact that, in the first place, these figures do not include the tribal population of North-West Pakistan and the non-Pakistanis and that, secondly, they have been adjusted according to the suggestions of KROTKI. See: K. J. KROTKI, "Population Size, Growth and Age Distribution: Fourth Release from the 1961 Census of Pakistan," *The Pakistan Development Review*, Vol. 3, No. 2, 1963, pp. 279–305.

[82]These ratios have been derived from the population figures given in Table 6 and the acreage figures given in Table 21.

[83]See footnote 81.

[84]S. S. HASHMI, *Main Features of the Demographic Conditions in Pakistan*, Pakistan, Central Statistical Office, (Karachi, 1963), p. 32. (Mimeographed)

Table 6. Absolute (in millions) and percentage distribution of population by sex in 1961

Age group	Males			Females		
	East Pakistan	West Pakistan	Pakistan	East Pakistan	West Pakistan	Pakistan
All ages	28.28	22.52	50.80	26.93	20.93	47.86
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)
0–9	10.28	7.51	17.79	10.25	7.48	17.73
	(36.38)	(33.41)	(35.06)	(38.04)	(35.74)	(37.03)
10–59	16.54	13.45	29.99	15.49	12.29	27.78
	(58.46)	(59.65)	(58.99)	(57.53)	(58.72)	(58.05)
60 and over	1.46	1.56	3.02	1.19	1.16	2.35
	(5.16)	(6.94)	(5.95)	(4.43)	(5.54)	(4.92)
0–9 + 60 and over	11.74	9.07	20.81	11.44	8.64	20.08
	(41.54)	(40.35)	(41.01)	(42.47)	(41.28)	(41.95)

Source: Pakistan, Ministry of Home and Kashmir Affairs, *Population Census of Pakistan, 1961*, Census Bulletin No. 3, (Karachi, 1962), Table 1.

count for very little in these drastic changes.[85] However, it seems quite probable that for these younger age groups, the enlargement differential between East and West Pakistan, being greater in the latter province, has been due to a high but constant fertility rate in both the provinces but a more rapidly declining infant mortality in West Pakistan. This can also be deduced from the higher survival ratios as documented by HASHMI in a recent study.[86]

During the same inter-censal period two other changes in the age structure of Pakistan's population are equally important. Firstly, among the 10–59 age group, from which most of the working population is drawn, there was a corresponding decrease: for both sexes in Pakistan this age group declined from 66.67% to 58.53% of the total population. In both the provinces the decline in the percentages has been more or less of the same magnitude. Secondly, there was an increase in the proportion of the population of 60 years and over: from 4.97% in 1951 to 5.45% in 1961 for the entire country. Again in both the provinces the increase in the proportion was more or less the same.[87] Thus, as will be discussed later in this section, the increased proportion of children under 15 and the decreased proportion of 10–59 age groups and an increased percentage of persons over 60 have definitely affected, on the one hand, the composition of the economically productive age groups and, on the other, the burden of dependency.

[85] *Ibid.*, p. 47.
[86] *Ibid.*
[87] For 1951 percentages, see: Pakistan, Ministry of Finance, *Economic Survey of Pakistan, 1963–64*, (Rawalpindi, 1964), Table 4, p. 7.

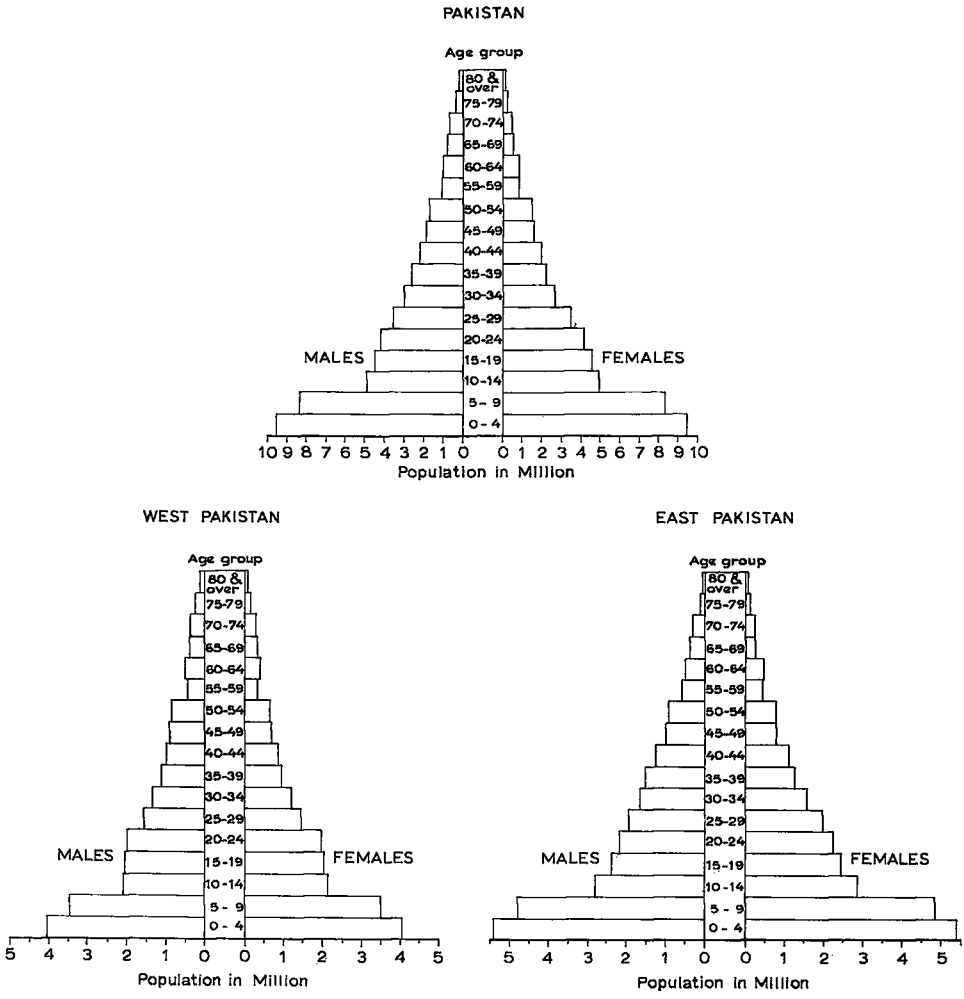


Chart 1. Population distribution by sex and age, 1961.

Now turning to the sex distribution of the population of Pakistan, according to the 1961 Census figures, the masculinity ratio could be regarded as one of the highest in the world. But when the 1961 Census figures are adjusted, as has been done in Table 6, the masculinity ratios do not appear to show any exceptional feature. However, as can be seen in Table 7, there are two noteworthy features: that over the decade 1951–61 the masculinity ratios have declined in both the provinces, and that they are higher in West Pakistan.

For the exceptionally high masculinity ratios, especially in West Pakistan, as revealed by the 1961 Census, several reasons could be held responsible, e.g., (a) females have a somewhat higher mortality level than males, (b) females are likely to be under-

Table 7. Masculinity ratios in Pakistan and its two provinces

Area	1951 Census (1)	1961 Census (1)	Adjusted 1961 figures (2)
East Pakistan	110	108	105
West Pakistan	117	116	107
Pakistan	113	111	106

Source: 1. S. S. HASHMI, *Main Features of the Demographic Conditions in Pakistan*, Pakistan Central Statistical Office, (Karachi, 1963), Table III. 8, p. 48.
2. These figures are from Table 6.

enumerated, especially in the predominantly *purdah*-observing society of West Pakistan, (c) males have been over-enumerated, and (d) higher masculinity ratio at birth.[88] After discussing in some detail the effect of these probable causes, HASHMI concludes that 'the over-all high masculinity ratio in Pakistan stems not from one but several factors and some of the main ones are higher mortality level of females and higher under-enumeration of females than those of males'.[89] Thus, considering these two factors and also the anomalies in age reported in both the 1951 and 1961 Censuses in Pakistan, the masculinity ratios revealed by the adjusted 1961 figures seem to be nearer to reality.

3.3.2 The Vital Rates: Fertility and Mortality

In Pakistan neither the two Censuses of 1951 and 1961 nor the available vital-registration system have given reliable information about the birth and death rates. More recently, however, some more information has been made available through the analysis of intercensal differences in age distribution and the Cross-sectional Survey and Longitudinal Registration.[90] In this study the discussion on these two vital events is based mainly on these sources.

While *birth rates* determine the age distribution in a given population, they themselves are largely influenced by the number of females in the child-bearing age groups (15–44) in the total population and the marital status of the population. In Table 8, recently estimated crude birth rates for Pakistan and its two provinces are given as based on different sources.

For Pakistan and its two provinces the crude *death rates*, as given in Table 9, have been suggested, depending upon the source of estimation. There are two important

[88]HASHMI, *op. cit.*, p. 49. (*fn.* 84)
[89]*Ibid.*, p. 54.
[90]The first source is KROTKI, *op. cit.* (*fn.* 81), and the second one is HASHMI, *op. cit.* (*fn.* 84)

Table 8. Average birth rates of the population of Pakistan and its two provinces

Area	1962 population growth estimation adjusted (1)	KROTKI 1961 (2)	1961 (1)
East Pakistan	44.9	53–60 (58)	46.3
West Pakistan	43.6	47–54 (51)	44.8
Pakistan	44.3	–	45.7

Source: 1. See Table 7; *op. cit.*, Table V. 1, p. 121. (*fn.* 1)
2. K. J. KROTKI, 'Population Size, Growth and Age Distribution: Fourth Release from the 1961 Census of Pakistan,' *The Pakistan Development Review*, Vol. 3, No. 2, 1963, p. 302.

features to note in this table. First, KROTKI's estimates of the crude death rates in East and West Pakistan are much higher than those of the 'Population Growth Estimation'. Second, while KROTKI's estimates show a wide difference between the two provinces (higher in East Pakistan), those of the PGE show a slightly higher rate for West Pakistan. Both of these points are puzzling. Further, HASHMI, after computing the age-specific death rates from the PGE data, gives the standardised death rates for East and West Pakistan males and females separately and jointly (Table 10).

Table 9. Average death rates of the population of Pakistan and its two provinces

Area	1962 PGE adjusted	KROTKI 1961
East Pakistan	16.3	32
West Pakistan	17.1	25
Pakistan	16.7	–

Source: See Table 7; *op. cit.*, Table V. 4, p. 129. (*fn.* 1)

Table 10. Adjusted standardised death rates of East and West Pakistan populations

Area	Males	Females	Both sexes
East Pakistan	16.8	17.4	17.1
West Pakistan	16.2	18.2	17.2

Source: See Table 7; *op. cit.*, p. 137. (*fn.* 1)

In this table it is clear that for both sexes the mortality rate in East Pakistan and West Pakistan is almost the same, but in the case of females of West Pakistan it is higher. HASHMI thinks that the PGE data, from which he has derived the standardised death rates, depict the real situation. He posits the first general argument in the following terms:

'In the highly dense East Pakistan, more persons are likely to be served by health facilities than in sparsely populated West Pakistan. Thus, it seems that the effectiveness of health facilities in East Pakistan is levelling off the mortality differences.'[91]

Proceeding further, he concludes that, from the age-specific death rates given in Table 10, infant mortality in both provinces is quite high, but it is higher in West Pakistan when compared with East Pakistan; and as between sexes, the infant mortality in males is higher than in females in both provinces. Finally, HASHMI presents the following three reasons to justify the death rates computed by him.[92]

a. Males of West Pakistan are in general experiencing lower mortality than those of East Pakistan.
b. Females of West Pakistan are experiencing higher mortality than those of East Pakistan.
c. Males in both the provinces have lower mortality than females.

KROTKI, on the other hand, defends his high estimates of crude death rates in East Pakistan in the following words:

'There are strong reasons why mortality in East Pakistan should still be higher than in the western province: lower standard of living, greater humidity, higher morbidity, slower progress of health campaigns, fewer public health measures.'[93]

While at this juncture it is very difficult to support either of these two authors, a brief discussion on the two vital rates will be given in the last chapter, in which the future trends of the population of Pakistan will be presented. For the present it is interesting to note that, despite the wide differences in the above two estimates regarding fertility and mortality rates, the rate of natural increase of population in the two provinces of Pakistan does not differ very greatly, as can be seen in Table 11.

Table 11. Average annual rates of growth of population in East and West Pakistan, in percentages

Area	HASHMI	KROTKI
East Pakistan	2.82	2.60
West Pakistan	2.76	2.60

[91]HASHMI, *op. cit.*, p. 133.
[92]*Ibid.*, p. 139.
[93]KROTKI, *op. cit.*, p. 302. (*fn.* 81)

If the two rates of population growth per annum given in this table are taken to be close to the real situation, then the population of the country as a whole will double itself in 25 to 30 years. Further, it can be safely asserted that, if current fertility rates do not decline in the near future and mortality rates continue to decrease progressively, the average annual rate of growth of population may reach a level somewhere between 3.0 to 3.5%, which obviously has serious implications for the prospects of the economic and social development of Pakistan.

3.3.3 Rural-urban Distribution

In Table 12, a general picture of the rural-urban distribution of the population of East and West Pakistan is given. From this table, it is clear that East Pakistan, besides being more densely populated, is less urbanised than West Pakistan, or in other words: East Pakistan is more dependent on agriculture.

Table 12. Rural and urban distribution of both sexes in Pakistan and its two Provinces

Area	Rural		Urban		Total in millions
	number in millions	%	number in millions	%	
East Pakistan	52.21	94.6	2.97	5.4	55.18
West Pakistan	32.28	74.4	11.13	25.6	43.41
Pakistan	84.49	85.7	14.10	14.3	98.59

Source: Pakistan, Ministry of Home and Kashmir Affairs, *Census of Pakistan Population, 1961*, Vol. 1, (Karachi, 1963), Statement 2.14, p. II–16.

The difference between the figures given in this table and those in the above publication are only slight, notwithstanding the adjustments.

Although it is difficult to make any precise comparison between the rural-ruban figures of the 1951 and 1961 Censuses, thanks to the difference in the definitions of the terms in them, it has been estimated that the decennial increase in the urban population of Pakistan has been 54.3%, which seems to have no precedence in the past decades.[94] It has also been estimated that during the same decade the growth of the urban population of Pakistan was thrice that of the rural population.

There have been two main sources for the increase of urban population in Pakistan: (a) the increase in the number of urban places (either due to the change of status or net immigration from the rural areas), and (b) the reproductive change in the urban areas.

[94]HASHMI, *op. cit.*, Table II.4, p. 16. (*fn.* 84)

As to the first cause, it has been estimated that during 1951–61 the 'net gain through addition of new areas which became urban during the decade accounted for 26.5 per cent of the total growth of the urban population for Pakistan'.[95] However, although the percentage growth of urban areas due to changes in status (of rural areas to urban places) in both the provinces is almost the same, the absolute addition due to this change is about five times higher in West Pakistan.[96] Also during this period the movement of population towards large cities in both provinces has been quite significant, but again this has been greater in West Pakistan. Further, it is probably most interesting to note that, while over a quarter of the growth of urban population during 1951–61 has been due to the addition of new areas (not classified as urban in 1951), about three-fourths of this growth is due to the net migration of people from rural to urban areas and reproductive change within the urban areas themselves.[97]

3.3.4 Labour Force Participation According to Age, Sex and Professions

In the three broad age groups (0–14, 15–64, 65 and over) the 'potential dependency burden' is constituted by children below 15 years and persons of 65 and over. It is the 15–64 age groups which have to carry this load. However, in reality, the numerator and the denominator are not necessarily the actual dependents and supporters, for there are always some children below 15 and persons above 65 who are not dependents, and likewise among the working-age groups of 15–64 there are always some who are not supporters.

In Pakistan, the 'potential dependency rate', was found to be 99 in 1961. This burden was higher in East Pakistan (102) than that in West Pakistan (94). As to the 'actual dependency rate', defined as the ratio of all non-working persons plus dependents under 10 years of age to the total civilian labour force, it was found to be 187 for Pakistan, but it was higher in West Pakistan (225) than in East Pakistan (197). The large discrepancy between these two ratios is indicative of the existence of surplus labour, especially in East Pakistan where child and old-age labour forms a significant proportion of the total civilian labour force.

Now, coming to the 'economically active persons', or the civilian labour force, the greatest problem in a rural economy, such as that of Pakistan, is of correct identification. While taking into consideration the limitations of enumeration, the Census of 1961 includes all persons aged 10 years and over, who work (or are looking for work) for profits, wages or salary or help any member of the family in agriculture, trade or any other profession. The persons thus excluded from this class are students, housewives, pensioners and rent receivers, inmates of jails, mental asylums and beggars.[98]

[95] *Ibid.*, p. 20.
[96] *Ibid.*
[97] *Ibid.*, p. 23.
[98] See: Pakistan, Ministry of Home and Kashmir Affairs, *Population Census of Pakistan 1961*, Census Bulletin No. 5, (Karachi, 1963).

In Tables 13 and 14, general and specific labour force participation rates, based on age and sex, for Pakistan and its two provinces are given. In Table 13, the overall labour participation rates can be seen. For Pakistan as a whole, 32.34% of the population (54.77 per cent of the males and 8.55 of the females) was found to be in the civilian labour force in 1961. However, it is important to note that both the male and female participation rates were higher in East Pakistan than in West Pakistan.

Table 13. Economic characteristics of the population of East and West Pakistan, 1961, in percentages

Particulars	All areas				Rural areas			
	males		females		males		females	
	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.
Population over 10 years	63.62	66.59	61.96	64.26	63.35	66.53	61.85	65.22
Civilian Labour Force	55.52	53.83	10.66	5.83	55.72	55.84	10.92	6.99
Dependents below 10 years	36.38	33.41	38.04	35.74	36.65	33.47	38.15	34.78

Source: See Table 12; *op. cit.*, Statement 6.2, p. V–9.

Since in the 1961 Census it is the 10 years and over age groups from which the civilian labour force is drawn, it is more interesting to note the age- and sex-specific participation rates among these ages. Thus, in Table 14, the percentage of population in the age groups of 10 years and over in Pakistan is 63.98 for both sexes (64.94% among males and 62.97% among females). However, between East and West Pakistan, the percentage of these age groups in the total population of each province is greater in the latter. While the percentage of persons in the age groups of 10 years and over is higher in West Pakistan, the proportion of the civilian labour force is higher in East Pakistan.

As for the age-specific participation rates, there are two striking characteristics in Pakistan. Firstly, the proportion of children (10–14 years) registered in the labour force is relatively high: about 29.4% (49.7 of the males, 9.29 of the females). Thus children constitute more than 9% of the total labour force. Secondly, old people (60 years and over) also show a rather high participation rate: 51.8% (83.3% of the males, 10.6% of the females).

With regard to the participation rates by sex, it must be said that Pakistan has one of the lowest female participation rates in the world. Partly this could be attributed to the social system of the predominantly Muslim society, and partly it may have resulted from underestimation, either because the women shy away from registering themselves as earning members of the family, or there is no correct identification of their work.

Table 14. Proportion of civilian labour force in the population of Pakistan and its two provinces by selected age groups, 1961, in percentages

Age group	Males			Females			Both sexes		
	East Pak.	West Pak.	Pakistan	East Pak.	West Pak.	Pakistan	East Pak.	West Pak.	Pakistan
10–14	58.0	38.6	49.7	12.7	4.7	9.3	35.2	21.6	29.4
15–19	81.0	72.0	76.8	16.9	7.7	12.7	48.6	39.9	44.6
20–24	91.9	88.1	90.1	17.4	9.7	13.8	54.5	49.7	52.3
25–34	97.0	93.5	95.5	19.2	10.5	15.5	58.9	53.9	56.8
35–44	96.4	94.5	95.6	19.5	11.5	16.0	61.3	56.5	59.2
45–54	97.4	94.0	95.9	20.6	11.5	16.5	62.9	57.7	60.6
55–59	95.1	91.1	93.4	16.3	11.1	13.9	62.5	55.6	59.5
60 & over	87.7	80.1	83.8	13.4	7.8	10.6	54.3	49.3	51.8
All ages over 10	87.3	80.8	84.3	17.2	9.1	13.6	53.5	46.9	50.5

Source: Pakistan, Ministry of Home and Kashmir Affairs, *Population Census of Pakistan, 1961*, Census Bulletin No. 5, (Karachi, 1963), Table 3.

From Table 14 it is evident that, while the above-described characteristics represent Pakistan as a whole, there are several differences between its two provinces with respect to the age- and sex-specific labour force participation ratios. As was indicated earlier, although the proportion of persons of 10 years and over in the total population is greater in West Pakistan, the labour force proportions are higher in East Pakistan. There are at least two factors which seem to have contributed to this situation: the greater proportion of child labour and the greater female participation ratios in East Pakistan. These discrepancies between the two provinces may be attributed to differences in the level of their economic development and socio-psychological attitudes towards work. That there is a greater proportion of the population in the labour force of East Pakistan, especially among the younger age groups, is an indication of its lower level of economic development. It seems to result from inadequate educational facilities, a large reservoir of unpaid and underemployed family members in the agricultural sector, and the relative scarcity of non-farm job opportunities.

Since the distribution of the total civilian labour force has not yet been divided into various categories of professions, only the proportion of agricultural to non-agricultural labour force could be analysed.

Table 15 shows some interesting features. About 74.53 % of the total labour force in the country is agricultural; for East and West Pakistan these data are 85.46 and 59.31, respectively. This indicates the higher level of industrialisation in the latter province. Moreover, in both provinces the proportion of the female labour force in the agricultural sector is higher than that of males, but the corresponding ratio of female labour-participation is higher in East Pakistan than in West Pakistan.

Table 15. Percentage distribution of the agricultural labour force in Pakistan and its two provinces, 1961

Age group	Males			Females		
	East Pak.	West Pak.	Pakistan	East Pak.	West Pak.	Pakistan
10–14	90.88	71.60	84.02	91.59	70.00	86.95
15–19	85.64	59.06	74.20	93.50	75.00	89.65
20–24	79.55	51.39	66.58	93.38	73.68	87.93
25–34	81.57	53.85	69.57	92.65	75.00	87.51
35–44	82.66	55.61	71.01	89.13	66.67	82.09
45–54	84.82	59.24	73.27	90.91	66.67	83.33
55–59	89.66	63.42	78.79	85.71	75.00	81.82
60 and over	89.06	68.00	78.66	87.50	66.67	80.00
All ages (10 and over)	84.26	58.10	72.86	91.99	71.31	85.82

Source: See Table 14; *op. cit.*, Statement 9 and Table 3.

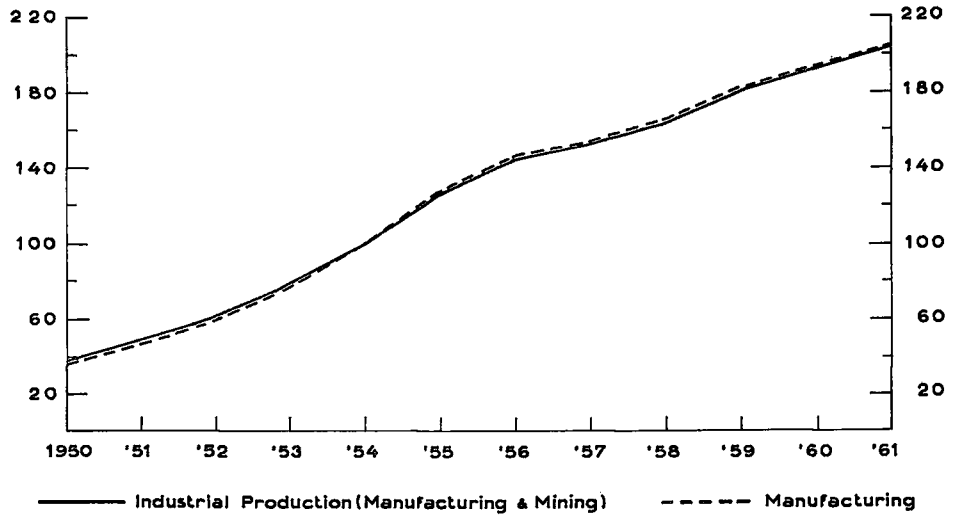
While it is a well-known fact that in many predominantly agrarian economies open and disguised unemployment is widely spread, in Pakistan, surprisingly enough, only about 1 % of the labour force was reported as unemployed in the 1961 Census: 0.5 % in East Pakistan and 1.7 % in West Pakistan. These are definitely very low and hence unrepresentative figures for a country like Pakistan. The various reasons for their distorted character have been dealt with by HASHMI and others.[99]

3.4 The Extent and Direction of Industrialisation

As to industrialisation in Pakistan, it presents a picture of a limited yet varied number of forms and methods of organisation. Viewed against the fact that, at the time of her birth Pakistan had almost no industrial base, in the decade or so until 1961 the industrial sector certainly made impressive progress. Thus the index of industrial production, especially of the large-scale manufacturing industry, increased from the very low figure of 39.5 in 1950 to 203.2 in 1961 (1954 = 100); see Graph I. Of late, and especially since 1959, the yearly percentage increase in industrial production has risen from 7.0 to 10.5 in 1961–62. This annual rate of growth has been achieved largely because of the establishment of new industrial capacity and better utilisation of the capacity already installed.

A dominating characteristic of industrial growth in Pakistan is that most industrial establishments belong to the light category, which are also relatively less capital inten-

[99] *Ibid.*, and HASHMI, *op. cit.*, p. 98. (*fn.* 84)



Source: Pakistan, Ministry of Finance, *Economic Survey of Pakistan, 1961–62*, (Rawalpindi, 1962), p. 34.

Graph 1. Index of industrial production in Pakistan, 1950 to 1961 (Base: 1954 = 100)

sive and require simple technology. This is partly because of historical reasons. What is now Pakistan, in the pre-partition days, comprised areas which traditionally supplied food commodities and agricultural raw materials – wheat and cotton from the Punjab and Sind regions of West Pakistan, rice and jute from East Pakistan – to other areas of the Indian sub-continent. Not only was no industrial base laid in these areas before 1947 for the utilisation of their own raw materials, but such other raw materials as bamboo, grass and straw for the paper industry, gypsum for fertilisers and virginia tobacco for cigarettes remained almost unexploited. It was only after the inception of Pakistan that these industries could be established and multiplied. Thus at present in Pakistan most light but large-scale industries depend mainly on the local raw material; cotton, jute and paper are good examples. However, there are other light industries, such as woollen mills, safety-match factories and cigarettes, which depend partly upon imported raw materials.

More recently, and chiefly because of the rapidly growing domestic industrial market for heavy and basic industries, there has been a general yet slow realisation of the need to establish such industrial enterprises in the country. Thus, especially after 1960, after the discovery of sizable deposits of natural gas in West Pakistan and its potential in East Pakistan with some iron ore, industries like steel, fertilisers and chemical plants are being established.

From the industrial development of Pakistan during 1948–61, two conclusions can be drawn. Firstly, the use of local raw materials, mainly jute and cotton, has been of great consequence in determining the pattern and structure of large-scale industries. Secondly, the industrial development in Pakistan has shown a firm bias in the domestic

market for consumer goods, with the major exception of jute manufactures. Thus the first line of development has been towards import substitution in consumer goods followed by export promotion. Of course, in the process of import substitution, efficiency and cost considerations have not always been overriding. Besides the emergence of large-scale manufacturing industries, Pakistan economy has traditionally been dependent on small- and medium-scale cottage and other industries, which are mostly located in or near small urban centres or on the fringes of rural areas.

According to the 1959–60 Census of Manufacturing Industries, it can be seen in Table 16 that small-scale industries in Pakistan formed 38.7% of the total industrial establishments; they provided 4.4% of the average daily employment and 3.6% of the total value added.

In Table 16, it can also be seen that West Pakistan possesses more than 79% of the total industrial establishments in the country; it provides 69% of the country's average daily employment, and its industrial value added amounts to 74% of the country's total. It is interesting to note that this imbalance between the two wings is further increased if defence establishments and railway workshops were added: a very large part of them is located in West Pakistan.

In order of importance, the industrial establishments have been classified as follows: textile manufactures (cotton, silk, wool and jute); cotton ginning, jute pressing, plas-

Table 16. Number of industrial establishments in Pakistan and its two provinces: their average daily employment and value added[1]

Area and type of establishment	Number of establishments	Average daily employment	Value added (in thousand Rupees)
EAST PAKISTAN			
All industries	707	139,010	392,604
Small-scale industries	263	3,870	10,244
	(37.2)	(2.8)	(2.6)
WEST PAKISTAN			
All industries	2,758	310,932	1,152,111
Small-scale industries	1,078	15,848	44,229
	(42.7)	(5.1)	(3.8)
PAKISTAN			
All industries	3,465	449,942	1,544,715
Small-scale industries	1,341	19,718	55,490
	(38.7)	(4.4)	(3.6)

Source: Pakistan, Central Statistical Office, *Census of Manufacturing Industries, 1959–60*, (Karachi, 1962), p. 51.

[1]Figures in parentheses are the percentages of all industries in the area mentioned.
[2]West Pakistan figures include Karachi.

tics and ice; metals; food processing and beverages; and sixteen other categories. However, as to their location by type, there are striking differences between East and West Pakistan.

From Table 17, it is evident that in all cases of industrial establishments the western wing is in the lead. As to the pattern of location of each of these categories of industrial enterprises, it is determined by, among other things, the availability of raw material, capital and entrepreneurship. Thus, for instance, in textile manufactures, all jute manufacturing is done in East Pakistan, while others like cotton, silk and woollen textiles are concentrated mainly in West Pakistan. It may not be out of place to point out that within West Pakistan itself the distribution of large-scale manufacturing industries is very uneven; most of them are located in relatively few places, of which Karachi is a good example.

Table 17. Number of manufacturing establishments by major types in Pakistan and its two provinces

Type of manufacturing establishment	East Pakistan	West Pakistan	Pakistan
Textiles (cotton, jute, silk, wool, thread and ballmaking, dyeing, printing, etc.)	84	640	724
Miscellaneous manufactures (cotton ginning and pressing, jute pressing, ice, plastics, etc.)	79	433	512
Metal products (excluding machinery and transport equipment)	80	345	425
Food manufactures (excluding beverages)	171	246	417
Others (16 broad types)	293	1,094	1,387
All types	707	2,758	3,465

Source: See Table 16; *op. cit.*, pp. 32–46.

The present differences in the extent of industrialisation in East and West Pakistan are due to many causes, the more notable ones are:[100]

a. Agriculture in East Pakistan has always been less developed, so that (apart from jute) it produced only small quantities of raw materials for industrial production. Even jute, before partition, was either directly exported or processed in West Bengal.
b. Though West Pakistan itself could not be considered an industrial region, the organisation of small- and medium-scale industries has been more diffused.
c. Communications and transport in general have been better in West Pakistan.
d. After the birth of Pakistan, the influx of Muslim refugees was mostly directed to

[100]The following works give a good account of these factors: HAQ, *op. cit.*, pp. 92–111. (*fn.* 72); GHOUSE, *op. cit.*, pp. 17–43. (*fn.* 72); N. ISLAM, "Some Aspects of Interwing Trade and Terms of Trade in Pakistan," *The Pakistan Development Review*, Vol. 3, No. 1, 1963, pp. 1–36; and Pakistan, Planning Commission, *Outline of the Third Five Year Plan (1965–70)*, (Karachi, 1964), pp. 77–81.

West Pakistan. They brought with them substantial entrepreneurship. Some of them could even transfer capital from India. The *Khojas, Bohras, Memons* and others were able to establish medium- and large-scale industries; the petty artisans and craftsmen among the refugees could contribute in their own way. In East Pakistan the exodus of Hindus (who comprised the entrepreneurial class) was not matched by the arrival of Muslims from India. It is only recently that some West Pakistani private entrepreneurship has gone to East Pakistan.

e. Besides the benefits accruing from the location of most defence and almost all Central Government establishments in West Pakistan, there has been until recently a net transfer of resources from East Pakistan.[101] Even the inter-wing trade figures, as given in Table 18, show the unfavourable position of East Pakistan.

f. The allocation of public expenditure, financed both from domestic and foreign sources, was not always directed towards redressing inter-wing disparities. Even in the First Five Year Plan (1955–60) the investment in West Pakistan was twice that in East Pakistan.[102] It is only recently that this situation has changed.[103]

From the foregoing it seems obvious that in Pakistan the extent and direction of industrialisation will to a large extent depend on how both private and public investments are allocated between East and West Pakistan. In fact, the growth of the industrial sector, especially in East Pakistan, will have to rest on the initiative of the State.

Table 18. Inter-zonal trade of Pakistan for selected years: from 1948–49 to 1960–61, in million Rupees

Year	Imports into West Pakistan from East Pakistan			Imports into East Pakistan from West Pakistan		
	Pakistan merchandize	foreign merchandize	total	Pakistan merchandize	foreign merchandize	total
1948–49	18.8	1.0	19.8	137.6	2.7	140.3
1950–51	46.0	16.9	62.9	210.8	61.7	272.5
1954–55	180.7	17.5	198.2	293.0	12.0	305.0
1957–58	264.0	5.5	269.5	690.2	12.2	702.4
1960–61	361.0	7.5	368.5	798.7	25.2	823.9

Source: Pakistan, Ministry of Finance, *Economic Survey of Pakistan, 1963–64*, (Rawalpindi, 1964), Statistical Section, Table 34, p. 55.

[101] ISLAM, *op. cit.*, p. 8.

[102] N. ISLAM, "The Economic System of Pakistan," in: C. B. HOOVER (ed.), *Economic Systems of the Commonwealth*, (Durham, North Carolina: Duke University Press, 1962), p. 424.

[103] This has been stressed by the Central Government in the *Outline of the Third Five Year Plan (1965–70)*, *op. cit.*, p. 23, and pp. 77–81. (*fn.* 100)

3.5 The General State of Agricultural Production

Perhaps no statement about the predicament of agriculture in Pakistan could be as meaningful as that contained in the famous REVELLE Report: 'Pakistan presents the disheartening picture of an agricultural nation that cannot feed itself'.[104] While an unwary person might argue that not every country can (and should) necessarily be self-sufficient in food production, this certainly is inapplicable to Pakistan. On the contrary, it can be argued that Pakistan possesses sufficient real and potential agricultural resources not only to feed her own growing population at higher levels of consumption, but also to export some valuable processed food commodities and agricultural raw material. In fact, to put it bluntly: *the ultimate test of economic development in Pakistan lies in the capability of her agriculture to respond to the challenge with which it is confronted at present.*

3.5.1 Crop Production

In general terms, during the years 1950–61, the average annual growth rate of agricultural production in Pakistan fluctuated between 1.0 to 2.0%. That the production of crops in general has not increased significantly over the years can be deduced from the data on acreage and production of the two main groups of crops usually cultivated in East and West Pakistan. In Table 19, the acreage and production of food and cash crops by three five-year averages for the two provinces are given separately. Two interesting features of Pakistan agriculture, among others, can be noted in Table 19. First, food to cash crop acreage ratios between East and West Pakistan differ greatly. Although in both provinces the area under food crops dominated throughout the period under consideration, in East Pakistan the percentage of food crops in the total acreage varied from 85.6 to 88.0, whereas in West Pakistan this percentage varied from 73.7 to 76.5. This in a way goes to show that East Pakistan depends relatively more on the area given to the cultivation of food crops. Second, the possibilities of expanding the cropped area is very limited in East Pakistan, while in West Pakistan this margin of extension is considerable. In fact, as will become clear later on, while land is a critical factor in East Pakistan, it is water which is crucial in West Pakistan.

Crop production in Pakistan is characterised by low yields per acre. Moreover, as can be seen in Table 20, both in East and West Pakistan it has shown almost no tendency to rise over the years.

These very low levels of yield per acre of almost all important cash and food crops, but especially of food crops, coupled with the fact that about 75.0% of the country's total labour force is engaged in agriculture, give to Pakistan agriculture yet another

[104]United States, The White House, Department of the Interior, Panel on Waterlogging and Salinity in West Pakistan, *Report on Land and Water Development in the Indus Plain*, (Washington, D.C., 1964), p. 49. This report will hereinafter be referred to as the *Revelle Report*.

Table 19. Acreage and production of food and cash crops in East and West Pakistan for selected years

Province and group of crops	Acreage in thousand acres			Production in thousand tons		
	average 1947–48 to 1951–52	average 1952–53 to 1956–57	average 1957–58 to 1961–62	average 1947–48 to 1951–52	average 1952–53 to 1956–57	average 1957–58 to 1961–62
EAST PAKISTAN						
Food crops[1]	20,043	21,124	21,123	7,322	7,641	8,480
Cash crops[2]	2,890	2,568	2,783	4,485	4,984	5,133
All crops	22,933	23,692	23,906	11,807	12,625	13,613
WEST PAKISTAN						
Food crops[1]	19,794	20,949	22,345	6,055	5,736	6,521
Cash crops[2]	4,649	5,390	5,868	6,638	8,864	12,491
All crops	24,443	26,339	28,213	12,693	14,600	19,012

Source: See Table 18; *op. cit.*, Statistical Section, pp. 15–32.

[1]Food crops include rice, wheat, maize, barley, sorghum, millet and gram. While in East Pakistan rice accounts for over 90% of the provincial acreage of food crops, in West Pakistan it is wheat which covers on average about 50% of the food acreage. Rice in West Pakistan covers about 10% of the area, and the rest is under gram, sorghum and millet in that order. In East Pakistan, sorghum, millet and maize are of hardly any importance.

[2]Cash crops include jute, cotton, sugar-cane, rape and mustard, sesamum, tabacco and tea. Jute and tea are grown exclusively in East Pakistan. Thus, in East Pakistan, jute covers more than 50% of the cash crop acreage; then come rape and mustard. In West Pakistan, cotton claims more than 50% of the cash crop acreage and about 25% is given to rape and mustard.

significant feature, namely, its subsistence character. It is also partly due to the traditionally determined cropping pattern in the country. Thus, according to a recent sample survey in Pakistan, it was estimated that about 98% of foodgrains produced in East Pakistan were consumed by farm families, as against 67% in West Pakistan. This survey also reveals that the utilisation of food crops varies according to tenurial arrangement and the size of farm. For instance, in West Pakistan owner-operators sold about 21.2% of their foodgrains and share-croppers only 9.5%. The share of landlords in the share-croppers' total foodgrain production was estimated to be about 41%; in the case of cash crops, like cotton and sugar-cane, the share of landlords was found to be even greater. On the other hand, though in general a similar pattern exists in East Pakistan, share-croppers are fewer in number. As to the size of farms, East Pakistan has a greater proportion of small-size farms than West Pakistan, thus in the former province the percentage of food crops retained with the owners is also greater.[105]

[105]Pakistan, Department of Marketing Intelligence and Agricultural Statistics, *Survey Report on Utilization of Agricultural Commodities in Pakistan*, SS. III, (Rawalpindi, 1962), Tables 6 and 28, p. 27 and p. 67.

Table 20. Yield per acre of selected crops in East and West Pakistan, in kilogrammes

Crop	East Pakistan			West Pakistan		
	average 1947–48 to 1951–52	average 1952–53 to 1956–57	average 1957–58 to 1961–62	average 1947–48 to 1951–52	average 1952–53 to 1956–57	average 1957–58 to 1961–62
Rice (cleaned)	373.24	369.51	409.07	350.85	358.31	360.55
Wheat	231.41	235.14	230.66	354.58	306.06	325.46
Sorghum *(Jowar)*	–	–	–	197.82	186.62	195.58
Millet *(Bajra)*	–	–	–	156.76	156.76	162.74
Maize	242.61	272.47	286.65	403.10	403.10	408.32
Barley	197.82	209.01	218.72	283.66	242.61	281.42
Gram	250.07	265.00	253.06	246.34	205.28	212.75
Jute	563.59	683.03	662.12	–	–	–
Cotton	55.99	55.99	63.34	74.65	85.85	88.83
Sugar-cane	14,869.88	15,198.33	14,813.15	12,962.63	11,798.12	11,978.02
Rape and Mustard	186.62	201.55	173.18	164.23	149.30	175.42
Tobacco	347.11	376.97	301.58	567.32	649.44	594.94
Sesamum	190.35	197.82	186.62	123.17	100.77	100.78
Tea	235.14	324.72	299.34	–	–	–

Source: See Table 18; *op cit.*, Statistical Section, pp. 15–32.

From the same survey yet another important feature could be noted: the greater the importance of a crop to farmers' own consumption, like rice in East Pakistan and wheat in West Pakistan, the smaller tends to be the proportion of the crop for sale. As to the cash crops, very little is retained at the farm level, except for local (*Desi*) cotton in West Pakistan.[106]

Crop production in Pakistan does not only suffer from the fact that yields per acre of most crops are low, but also from a farming pattern which is traditionally biased towards the production of foodgrains. Thus tradition and inadequacy of such physical inputs as irrigation, fertilisers and improved seeds have forced the farmer to concentrate primarily on his own needs.

So far in the foregoing only the very broad features of crop production in Pakistan have been presented. To understand more fully the actual place of crop production in the overall agriculture of the country, it is important to bring into sharper relief the pattern of cropping. It depends to a large extent on the climatic and soil conditions in a given country or agricultural region. However, since the subject of climate and soils lies outside the scope of the present discussion, in what follows an attempt will be

[106] *Ibid.*

made to present the land utilisation and cropping patterns in Pakistan, highlighting of course the peculiarities obtaining in its two wings.[107]

3.5.1.1 *Land Utilisation and Cropping Intensities*

The land utilisation pattern in a country is the base on which the production of crops stands: it indicates, when related to economic and social variables, the present limitations and future prospects of agriculture. In a country like Pakistan, its study is all the more important if differences between East and West Pakistan are fully taken into consideration.

Table 21. General classification of the available land area of Pakistan and its two provinces, 1959–60, in million acres

Province	Total area	Area reported								
		Total area reported (4+5+6+9)	Not available for cultivation	Other uncultivated land excluding current fallow	Forest area	Cultivated land area			Area sown more than once	Total cropped area (7+10)	Area not reported
						Net sown area	current fallows	Total cultivated area (7+8)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
East Pakistan	35.3	34.7	5.6	1.9	5.5	20.3	1.3	21.7	5.6	25.8	0.6
West Pakistan	198.7	114.6	50.3	19.9	3.3	31.9	9.2	41.1	3.9	35.8	84.0
Pakistan	233.9	149.3	56.0	21.8	8.8	52.2	10.5	62.8	9.5	61.8	84.6

Source: Pakistan, Ministry of Agriculture and Works, *Land and Crop Statistics*, (Rawalpindi, 1962), Tables 1, 2 and 3, pp. 3–4.

Table 21 shows that the total land area of Pakistan is 233.9 million acres, of which about 15% belongs to East Pakistan (35.3 million acres) and the rest to West Pakistan (198.6 million acres). From the agricultural point of view, it is interesting to note that, in official statistics, of the total land area of Pakistan about 36% (84.6 million acres) is reported to have no records available, thus classified as 'not reported'. This does not mean that this area knows no agriculture, but that the government has as yet not succeeded in bringing it on official records. Most of this area is located in West Pakistan: it has no records for about 42% of its surface; in East Pakistan this percentage is only 1.8. The fact that West Pakistan has such a high percentage of non-reported area is well

[107]For climatic and soil conditions of East and West Pakistan, references may be made in: N. AHMED, *An Economic Geography of East Pakistan*, (London: Oxford University Press, 1958), pp. 40–57, and S. M. AKHTAR, *Economics of Pakistan*, Vol. 1, (Lahore: Publishers United, 1963), pp. 4–6.

borne out by the existence of large tracts of unsettled agriculture in most parts of the tribal territories of north, north-west and western Baluchistan and in the eastern parts of Bahawalpur.[108] Thus to assess in general the present land use in Pakistan, only the 'reported' statistics are relevant.

In the country, of the reported area of 149.3 million acres, about 62.8 million acres are cultivated: 41.1 million acres in West Pakistan and 21.7 million acres in East Pakistan. This means that while in East Pakistan, of its total reported area, about 62.5% is under cultivation, in West Pakistan only about 35.8% is cultivated. Among other things, this indicates that there is definitely a greater scope for extending the margin of cultivation in West Pakistan. But the significance of this potential should not be overestimated: because in West Pakistan, of the area not under cultivation (73.5 million acres), about 69% consists of rocky and barren land which may never be cultivated at all. However, the area which can be brought under cultivation, after varying degrees of improvement, is about 19.9 million acres.

In East Pakistan the situation is quite different: of the total uncultivated area, an estimated 48% is unsuitable for agriculture, thus leaving about 1.93 million acres which may be cultivated after improvements. Forests in Pakistan, which are classified as uncultivated area, form only 3.7% of the total land area of the country and about 5.8% of the area reported. Of the total forest area of the country, more than 62% is in East Pakistan: in fact, in West Pakistan forests cover only about 2.9% of the reported area of the province as against 15.8% in East Pakistan.

While the foregoing description of the general land use pattern in Pakistan is only a bare outline, it is interesting to discuss the availability of the total farm area in the two wings and its utilisation. According to the Agricultural Census of 1960, East and West Pakistan were reported to have a farm area of about 21.7 and 48.9 million acres, respectively.[109] With regard to the utilisation of these areas some interesting relationships can be observed.

First, in East Pakistan a greater percentage of the farm area is cultivated than in West Pakistan: 88% against 76%.

Second, of the cultivated area in East Pakistan, about 98% is utilised for crop production in one year and the rest is left fallow; but in West Pakistan, about 86% is cultivated and the rest is left fallow. The higher percentage of cultivated area in East Pakistan could be atrributed to at least two factors: the greater scarcity of land, and a cropping pattern which allows for a greater intensity of cropping, which in itself is greatly influenced by the availability of water.

Third, of the uncultivated area, the percentage of unculturable waste land in East

[108]Pakistan, Ministry of Agriculture and Works, *Land and Crop Statistics of Pakistan*, FSS III, (Rawalpindi, 1962), Tables 8, 14 and 18, p. 7, p. 9, and p. 11. Peshawar Division: 65%; Bahawalpur Division: 46%; and Kalat Division: 79%.

[109]Pakistan, Ministry of Food and Agriculture, *1960 Pakistan Census of Agriculture: A Summary of East and West Pakistan Data*, Two Volumes, (Karachi, 1963), p. 20 and p. 22.

Pakistan is 35 as against 62 in West Pakistan. Also in West Pakistan, the culturable waste farm area (which is fit for cultivation but is not being cultivated at present) is about 61% as against 18% in East Pakistan. These differences reflect that the amount of land available for further cultivation in East Pakistan is relatively limited.

Fourth, forest area in East Pakistan accounts for 20% of the total uncultivated farm area of the province as against only 2% in West Pakistan. But, of the total farm area in East Pakistan, forests cover about 2% as compared with only 1% in West Pakistan. These figures do not include vast areas of government-owned forests in both provinces, which again are greater in percentage in East Pakistan.

Finally, the intensity of land use – which means the ratio expressed as a percentage between the 'net sown' and 'total culturable' area (total culturable area is the sum of cultivated and culturable waste land) – is higher in the eastern wing as compared to its western counterpart: the ratio being 96% in East Pakistan and 72% in West Pakistan.

Yet another measure of land use in Pakistan is to compare the cropping intensity between the two provinces. The cropping intensity is the ratio expressed in percentages between the total cropped area during a year and the net sown area: in simpler terms, it indicates the number of crops raised on the cultivated area in the course of one agricultural year. In 1960, the cropping intensities in East and West Pakistan were 148 and 120%, respectively. In other words, in East Pakistan every acre of cropped land was sown on an average 1.5 times in one agricultural year; but in West Pakistan it was only 1.2. Of course, these two average cropping intensities do not reveal the wide variations within each of the two provinces, especially in West Pakistan.[110]

3.5.1.2 *Cropping Patterns*

A host of factors determine the cropping pattern in a given agricultural area, the chief among them being: the physical and ecological setting, the availability of irrigation water where natural precipitation is both inadequate and uncertain, the structure of the peasant economy with regard to its own food requirements and the extent to which it is market-oriented. Although many agricultural regions could be described in Pakistan, each with its peculiar cropping patterns, the differences between East and West Pakistan are again very striking.

Both in East and West Pakistan there are two main field crop seasons: *Kharif* (summer season) and *Rabi* (winter season). In addition, in East Pakistan there is the pre-monsoon season called *Aus*. Although the characterisation of these two seasons in both the provinces is almost the same, the proportion of area devoted to different crops in each season differs greatly: according to the 1960 Agricultural Census, 80% of the cropped area in East Pakistan is commanded by *Kharif* crops against 42% in West

[110]According to a national sample survey, the cropping intensities for East and West Pakistan were found to be 134 and 84%, respectively. See: Pakistan, Ministry of Food and Agriculture, *Survey Report on Cropping Pattern and Cropping Intensities in Selected Districts of Pakistan*, SS II, (Rawalpindi, 1962), Tables 4 and 12, p. 8 and p. 17.

Pakistan. The most important reason for this wide difference between the two provinces can be accounted for by the distribution of rainfall in East Pakistan and the availability of irrigation in West Pakistan. It has been observed that in East Pakistan not only the *Kharif* season crops dominate, due largely to the monsoon rains, but that double cropping is also common during this season; *Rabi* crops in East Pakistan are grown only in those areas where some kind of irrigation can be had, which is indeed very limited. In West Pakistan, being largely an arid zone, the type of irrigation has a great influence on the cropping pattern. This influence is particularly marked in those areas of the province where rainfall is extremely low and its distribution very uncertain. Thus in most irrigated areas of West Pakistan, canals being the predominant source of irrigation water, the proportion of *Rabi* crops is even larger than the average indicated above.[111]

The major *Kharif* season crops in East Pakistan are: rice (*Aus*, pre-monsoon, and *Aman*, monsoon), jute, sugar-cane, sunhemp; in West Pakistan they are: cotton, rice, sugar-cane, maize and millet. The major *Rabi* season crops in East Pakistan are: wheat, groundnuts, mustard and rice (*Boro*); in West Pakistan they are: wheat, gram, mustard, barley and rapeseed. It is important to note that jute and tea are not grown in West Pakistan, and in East Pakistan crops like millet, maize, barley, wheat and cotton form a negligible part of the total crop acreage. Both provinces grow almost all varieties of pulses.

The more pronounced differences in the cropping patterns of the two provinces should also be noted. In East Pakistan, rice covers about 76% of the cropped area, in which *Aman* rice accounts for about 60% because it is the main monsoon (summer) crop, followed by *Aus* rice and lastly the *Boro* rice. In West Pakistan, wheat occupies more than one-third of the total crop acreage, followed by fodder crops, cotton, rice, gram, millet, oilseeds, sugar-cane and others.

To complete the picture of crop production in Pakistan, it is essential to describe the place that such crops as pulses, fodders, fruits and vegetables occupy in the cropping pattern of East and West Pakistan.

There are six major types of pulses grown in both the provinces: *gram*, *masoor*, *arhar*, *khesari* or *mattar*, *mash* and *moong*. The first four are *Rabi* season crops and the last two are *Kharif* crops. While all of these pulses are grown in varying quantities in East and West Pakistan, there are two or three special features which must be noted with regard to their distribution. Firstly, over the years, an average of more than three-fourth of the country's acreage under pulses has been confined to West Pakistan. Further, while there has been some slight increase in pulse acreage in West Pakistan, the decline in East Pakistan during the same period has been almost equal. Secondly, on the side of production, thanks largely to a significant decline in East Pakistan as a consequence of low and stable yield per acre and the diminution in total acreage, there has been a slight but steady decline in the country as a whole. There is hardly any room for further expansion in their acreage, thus the constraint, especially in East Pakistan, is quite clear. In addition, over the years the yield per acre has shown no tendency to in-

[111] *Ibid.*, pp. 12–13.

crease. There are several reasons for this, the chief among them being that, since most of these pulses are *Rabi* season crops and depend largely on natural precipitation, additional water through irrigation is limited during their growing period as it is in great demand for the cultivation of such crops as wheat, especially in West Pakistan.

With regard to the distribution of area under various pulses in the two wings, *gram* alone covers more than one-half of the total and is grown mostly in West Pakistan. Among other pulses, the differences between East and West Pakistan are not very significant, except that after *gram*, *mattar* occupies the largest area in both provinces.

Regarding the cultivation of fodders, most farmers in Pakistan have to devote some part of their cultivable land to them for their draft and milk animals. In doing so, especially owning relatively small farms, they are not always able to allocate an adequate area for fodder growing because their cropping pattern is oriented primarily to the cultivation of staple food crops. This is the more important problem in East Pakistan where the man/land ratio is definitely more unfavourable than in most areas of West-Pakistan. Thus, according to the 1960 Agricultural Census, only about 1 % of the total cropped area in East Pakistan was covered by fodder crops and only about 9 % of all farms in the province reported any fodder crop. On the other hand, in West Pakistan, about 12 % of the total cropped area was reported to be under fodder crops and about 41 % of the farms cultivated them. Further, it was found that while in East Pakistan fodder crops were confined mostly to large farms (above 40 acres), in West Pakistan they were grown on medium- and large-size farms. However, between the two wings, it is the *Rabi* season fodders which dominated: about 92 % of the total fodder area in East Pakistan and over 57 % in West Pakistan.

The chief fodder crops grown in the country are: *berseem*, lucerne, *jowar*, *bajra*, maize and *guara*. *Berseem*, which is grown mainly during the *Rabi* season, is the most important fodder crop in West Pakistan. *Berseem* and lucerne give more than two cuttings during one year and they are often combined as fodder and green manuring crops in most crop rotations followed by the farmers in West Pakistan. As for the use of *jowar*, *bajra* and maize as fodder crops, they are fed to the cattle both as green and dry fodder. In addition to these fodder crops, there are several grasses which, over large areas in the northern and north-western parts of West Pakistan, form grazing grounds for sheep and other livestock.

Finally, a few words about the cultivation of fruits and vegetables. Although many types of fruits are grown in the country, there is as yet no organised fruit culture and industry.

In East Pakistan, where climatic and soil conditions are less varied, a major part of the total fruit acreage is given to a limited number of tropical and sub-tropical fruits; but in West Pakistan, where both climatic and soil conditions present greater regional diversities, the range of fruit types is much larger. Nevertheless the total fruit acreage in East Pakistan is much larger than in West Pakistan: according to the 1960 Agricultural Census, about 2 % of the total cropped area of East Pakistan was covered by compact fruit orchards as against 1 % in West Pakistan. Besides these fruit orchards, however, there are also a substantial number of fruit trees scattered all over the two provinces.

Fruit growing in Pakistan still remains a traditionally determined vocation, except for the limited number of reasonably good orchards in some parts of East Pakistan and the former provinces of the Punjab, Sind and North-Western Frontier (N.W.F.) in West Pakistan. Generally speaking, therefore, fruit growing is not well integrated into the general cropping pattern of most farmers; it is only among the larger farms that compact areas for fruits are utilised.

Not only has there been no large-scale organised fruit culture in Pakistan, but also the existing fruit industry is only very limited. Although some orchard-grown fruits like mangoes, bananas, lemons and oranges are of commendable quality, they usually are available solely in fresh form. Thus during the harvest season and immediately afterwards fruit may be plentiful and cheap in the market, but at other times it is expensive if at all obtainable. The fruit preservation and canning industry is still in its nascent form, thus jeopardising the interests of both the producers and consumers. In a country like Pakistan, where there is a great potential for high quality fruit, and present fruit consumption in the country itself is at a very low level, there is a great scope for a successful fruit culture and industry.[112]

With regard to the cultivation of vegetables in Pakistan, the conditions are no better. Commercial vegetable growing in the country is restricted to the vicinity of large cities and other urban localities. In rural areas, vegetables are grown mainly as cash crops or as by-products of a cash crop. Thus it is even more difficult to assess the real position of the acreage and production of vegetables in the country. However, one thing is clear: just as with fruits, East Pakistan devotes about three times the acreage of West Pakistan to the cultivation of different types of vegetables. Perhaps the most important reason for this difference lies in the fact that, unlike most ordinary farm crops, vegetables require an assured and regular supply of water which is definitely a critical factor in most areas of West Pakistan. Hence, while the demand for vegetables is increasing rather rapidly, partly because of the flow of population from the rural areas to the towns, and partly also because the rural people are becoming increasingly conscious of the value of vegetables as an important part of human diet, vegetables have been continually imported into the western wing from East Pakistan.

3.5.2 Livestock

The importance of livestock in an agricultural economy, such as that of Pakistan, cannot be over-emphasised. They all serve one or more of the following purposes:

a. to provide protective food such as meat, milk and eggs to the population;
b. to provide almost all the motive power for agricultural operations;
c. to provide such other by-products as hides, skins, wool, hair, bones and manures.

Since the birth of Pakistan two livestock Censuses have been taken, one in 1955, the

[112]For an account of this subject, see: "Survey Report on Fruits of Pakistan," *Pakistan Trade*, Vol. 10, No. 3, 1959, pp. 14–23.

other in 1960. The discrepancies between the figures of the two Censuses are so wide that no comparison can be made. However, in Table 22, livestock data from the 1960 Agricultural Census of Pakistan and the FAO are given; the latter are based on the 1955 livestock Census. In the case of almost every major class of livestock the FAO estimates are lower than those revealed by the 1960 Agricultural Census. But the most striking discrepancies relate to the numbers of oxen and poultry: while the 1960 Census shows the oxen population to be 33.53 millions in that year, the FAO estimates for the same year are 24.06 millions; in the case of poultry, the figures for 1960–61 are 30.12 and 13.90 millions, respectively. These wide differences seem to result from some underestimation in the case of FAO figures, especially of work animals among the oxen and chicken among the poultry. For the present study, the 1960 Agricultural Census figures will perhaps be the most dependable, if not entirely reliable.

Table 22. Livestock statistics of Pakistan, 1960 and 1961, in millions

Species	Agricultural Census of 1960			FAO statistics[1]
	East Pak.	West Pak.	Pakistan	Pakistan
Oxen	18.96	14.57	33.53	24.06
Cows	6.86	4.20	11.06	10.05
Bullocks, bulls and others	12.10	10.37	22.47	14.01
Buffaloes	00.46	7.95	8.41	6.32
Milch	00.05	5.06	5.11	–
Others	00.41	2.89	3.30	–
Sheep	00.48	9.79	10.27	8.10
Goats	5.66	7.26	12.92	9.59
Horses, donkeys, camels and others	00.05	n.a.	n.a.	2.06[2]
Poultry	20.10	10.02	30.12	13.90

Source: 1. Pakistan, Ministry of Food and Agriculture, *1960 Pakistan Census of Agriculture*, Vols. 1 and 2, Tables 39 to 43 and 42 to 45, respectively.
2. FAO, *Production Yearbook, 1963*, Vol. 17, Tables 71–79.

[1]Almost all the FAO statistics are based on the 1945 and 1955 livestock Censuses in former British India and in Pakistan.
[2]Of these about 47% are donkeys, about 26% camels and about 24% horses.

3.5.2.1 *Cattle (Oxen and Buffaloes)*

The total cattle population of Pakistan in 1960 was about 41.94 million head (22.52 millions in West Pakistan, 19.42 millions in East Pakistan). While in East Pakistan more oxen were reported, thanks largely to their use as work animals, buffaloes are confined mostly to West Pakistan. Of the oxen, about two-thirds in both the provinces were regarded as work animals. While in East Pakistan 38% of all holdings reported

milch animals (both cows and buffaloes), in West Pakistan the percentage was 64. Of these milch animals, in East Pakistan there were about 99% cows, but in West Pakistan 55% were buffaloes and 45% cows. However, all milch animals in both the provinces consisted of 50% in milk, the rest being dry. The distribution of work animals in both the provinces was more or less the same: 63% of the holdings in East Pakistan and 61% in West Pakistan reported these animals.

The cattle population at present is inadequate both in quantity and quality due to the following reasons:

a. insufficient and unsuitable composition of food, due mainly to the pressure on land for foodgrain production;
b. indiscriminate breeding, with the result that even some very good breeds are kept in the form of scrub stock;
c. high mortality due to the wide prevalence of diseases, of which controls are only too poor;
d. indiscriminate slaughter.

All the above factors, individually and collectively, adversely affect the milk and draft quality of cattle and also reflect the shortage of work animals in the field. It is widely believed that in Pakistan there is a growing shortage of work animals, especially in West Pakistan where an increasing area of land is being brought under cultivation through irrigation. The fact that the cattle wealth of Pakistan is inadequate both in number and efficiency can only be judged by the indirect evidence of the availability of good quality products. For instance, it has been estimated that on an average a cow in Pakistan yields about 1200 to 1400 lbs. of milk per lactation, and a buffalo about 1700 to 1900 lbs. The fat percentage in both cases varies from less than 3.0 to 6.0. Meat output is also very low, largely because the animals are often slaughtered in hide-bound conditions. Thus the gap between the supply of and demand for such products seems to be widening: milk and its products are becoming increasingly dearer even in the rural areas, to say nothing of the urban areas; as for meat, Pakistanis have to go without it by decree of the government for two days in the week.

Despite these general features which the two provinces have in common, there are wide differences between them. In West Pakistan there are six major breeds of oxen: Red *Sindhi*, *Sahiwal* (milch breeds), the *Thari* (dual-purpose breed) and the *Bhagnari*, *Dhanni* and *Lohani*, which are draft breeds. Each of these possesses its own peculiar characteristics and is suited to the different regions of the province. But in East Pakistan there is no pure breed, although two distinct types, a grey in the west and a red in the east, are recognised. Among the buffaloes too the situation in East Pakistan is different. While in West Pakistan there are at least three distinct breeds, namely, *Ravi*, *Nilli* and *Kundi*, there are hardly any such breeds in East Pakistan. Moreover, there seems to be a general aversion to buffaloes in East Pakistan and preference is given to oxen.

The greater neglect of cattle wealth in East Pakistan is due primarily to the inadequate feeds and fodder supply. While commercial cattle rearing is not common in either of the provinces, one does find pockets of such stock in West Pakistan, whereas

in East Pakistan they are very limited. Hence the task of cattle improvement in East Pakistan requires not only the orthodox remedies such as better feeding and control of common diseases, but also selective breeding through the imported stock of oxen and buffalo breeds from West Pakistan which can well adapt to the local conditions.

3.5.2.2 *Sheep and Goats*

In Table 22, it can be seen that in 1960 there were about 10.27 million sheep and about 12.92 million goats in Pakistan. Of the sheep population, over 95% were confined to West Pakistan; the population of goats was quite evenly distributed between the two wings: about 56% in West Pakistan and about 44% in East Pakistan. The relative importance of these animals differs from East to West Pakistan: with most of the sheep population in the western wing, it is there that the important breeds of sheep are found. The province has large tracts of land which are either too arid or too steep and rocky for farming but provide good ground for range grazing. Thus in West Pakistan sheep have shown great promise, especially when reared scientifically in the range areas of the province. But, due largely to the absence of organised sheep farms and the poor living conditions, even the most promising breeds do not provide a satisfactory output of wool and mutton. Further, the insatiated demand for meat in most areas has given rise to indiscriminate slaughter, thus more often than not depriving the animal's value for wool as well.

The position of goats is no better. In fact, it can well be argued that unwarranted alarm against goats in West Pakistan has not always been justifiable, especially in the areas where irrigated farming is commonly practised. Even in the range areas it is not due entirely to the nature of goats themselves that denudation of vegetation occurs, but it is more often the neglect with which they are left to find their own grazing. In East Pakistan, where goats seem to play a significant role in the village economy and offer many advantages, the neglect is perhaps equally great. In fact, of all the livestock, goats require the least care as to their feeding, for they can always thrive rather well on succulent fodders and other crop stalks, of which the supply is definitely critical in East Pakistan.

3.5.2.3 *Poultry*

The population of poultry in Pakistan, which includes chickens, ducks and turkeys, was estimated at 30.12 millions in 1960, of which two-thirds were in East Pakistan. Of these, chickens form the majority, especially in West Pakistan where ducks and turkeys are rather limited in number. In East Pakistan, however, ducks form about 20% of the poultry population and provide about one-third of the total egg production of the province. As with cattle, sheep and goats, there are no large-scale farms for poultry alone in the country, except for a few near two or three cities.

Poultry in Pakistan suffers acutely because of two basic problems: one is the wide-spread occurrence of diseases which cannot easily be controlled by most poultry

keepers, and the other is the lack of appropriate feeding. All poultry birds are relatively very sensitive to health and feeding, thus their laying capacity is indeed very low and so is their meat output. In fact, even in the case of high-laying hens, like White Leghorns and Rhode Islands, their laying capacity is low.

Although, through the years, the demand for eggs and poultry meat has been increasing rapidly, especially in the urban localities, the lack of transport and the absence of organised markets add to the factors mentioned above in preventing a fast development of poultry enterprise.

3.5.2.4 *The Prospects of the Livestock Industry*

In order that livestock industry in Pakistan plays an increasingly vital role in not only providing more and cheaper protective food but also in exporting valuable foreign exchange earners, livestock farming has to become specialised. In other words, where at present small- and medium-size farms raise livestock in a disorganised manner, they must form some kind of co-operatives to make the livestock enterprise a paying concern. It seems that there are two basic problems to be considered for the future development of the livestock industry in Pakistan.

Firstly, there is a clear need to change the existing organisation of production, which can partly be based on co-operative lines and partly aided by the government for individual needs for better breeding, improved feeding and disease control.

Secondly, the establishment of regulated markets and provision of adequate transport facilities must be attended to. These two will help not only in providing such marketing functions as credit, storage, grading and standardisation, but also make demand more articulate by more stable prices, especially for milk and its products, meat and eggs.

3.5.3 Fisheries

It is well-known that fish is an excellent source of proteins. This is the more so in a country like Pakistan, where the average diet is deficient in proteins.

East Pakistan is claimed to have vast resources of fish, and fish is very popular here as a food, their exploitation is still in a poor state. According to some surveys, the following estimates of water areas have been made:[113]

Natural depressions (*bheel*) and ox-bow lakes	724,000 acres
Brackish water ponds	39,000 acres
Homestead tanks	189,000 acres
Rivers, canals and estuarine creeks	4,000 miles

[113]A. R. K. Zobairi, "Development of Inland Fisheries in East Pakistan," *Agriculture Pakistan*, Vol. 13, No. 2, 1962, p. 245.

Table 23. Fish production in Pakistan and its two provinces, 1954–55 and 1959–60, in thousand tons

Area	1954–55 Production			1959–60 Production		
	marine	inland	total	marine	inland	total
East Pakistan	23	170	193	37	186	223
West Pakistan	48	15	63	51	16	67
Pakistan	71	185	256	88	202	290

Source: Pakistan, Planning Commission, *The Second Five Year Plan (1960–65)*, (Karachi, 1960), Table 12, p. 170.

Though in West Pakistan (with the exception of the former Sind province) fish is not as important a component of the human diet as it is in East Pakistan, there are extensive areas of inland fish culture and also along the coast.

Table 23 gives some rough estimates of fish production in Pakistan for the years 1954–55 and 1959–60. The data show that about 70% of the total production in the country originated from East Pakistan and that over the years it increased at a higher rate than in West Pakistan. It may, however be noted, that marine production has been higher in West Pakistan.

Both marine and inland fisheries in Pakistan face several problems. In marine fishing so far both exploration and exploitation have been meagre. Their intensification would require the extension of mechanised fishing material, the increase in the number of harbours and the improvement in marketing facilities. Many improvements in all these areas have already been made with the active participation of the government. On the organisational level, it has been encouraging private initiative in the production and preservation of marine fish. Since most fishermen on the two coasts have meagre capital for the mechanisation or modernisation of their equipment and are also unable to transport, store and market their fish efficiently, the most effective way has been found through a co-operative effort in which the government plays a leading role.

With regard to inland fisheries, it seem that resources are more limited and an increase in output is even more difficult to obtain than in the case of marine fish. But again the conditions between the two wings differ rather widely. In East Pakistan, where inland fishing is extensive, the main problem is to improve the quality of fish. On the other hand, in West Pakistan the primary task is to extend the areas devoted to fishing. Thus, in East Pakistan, where a greater domestic market already exists and fish has been an export commodity – in 1960 alone it was estimated that exports from East Pakistan earned about Rs. 35 million – the government undertook the implementation of about 35 schemes costing about Rs. 37.7 million under the Second Five Year Plan.[114] A similar programme for the extension of the fishing area and the improve-

[114] *Ibid.*, p. 246.

ment of existing production and distribution conditions was undertaken in West Pakistan. However, in both the provinces the basic problem in inland fishing is the disorganised manner in which many hundred thousands of fishermen work almost independently with very little capital.

3.6 Rural Food Consumption

While referring to the subject of food consumption in Pakistan, however briefly it is touched upon, it is necessary to retain the broad perspective of the nature of the agricultural sector. Besides, theoretically speaking, per caput food consumption depends on the level of income per capita and its distribution; the tastes and habits of a people (which are an outcome of a particular tradition and geographic setting); the size of the population and its distribution by age and sex; and the availability of the various food commodities, which is determined mainly by the volume of production and price structure. Thus the level and composition of the food consumption of a given population at a given time must show differences, depending upon which of the several criteria are chosen: by age composition, by rural and urban distribution, income groups, geographic location, etc.

The present discussion will be limited to some basic features of food consumption in Pakistan in general and its rural areas in particular. While recognising the fact that in a country like Pakistan there are quite significant differences between rural and urban food consumption patterns, the intention here is not to probe into them any further. The immediate purpose here is to show the interdependence of rural food consumption and agricultural production, both of which seem to have given to Pakistan agriculture its present structure.

The people of Pakistan in general are both under- and mal-nourished, the former term signifying the sub-standard content of calories available per person per day and the latter indicating the inadequacy of protective food or proteins in general. However, this statement cannot be substantiated quantitatively with great precision. For one thing, no nutritional surveys have so far been conducted in Pakistan; besides, the available information, indirect as it is, leaves many points which can be contested.

In Table 24, the net supply of different food materials per capita is given for Pakistan and six other countries. Some interesting features can be noted in this table. Firstly, taking Pakistan alone, the calorie content of the diet per caput per day is about 1,980 and the total protein content is about 45 grams per day. Of the ten broad categories of foods, cereals alone provide more than 75% of the calories to a person. The position of protective foods, such as meat, eggs, milk, fish, is by any nutritional standard very poor. These distressing features of the diet in Pakistan seem all the more unsatisfactory when they are compared with other industrialising and industrialised countries.

With the exception of India and Ceylon, where the diet per caput exhibits a more or less similar deficiency of calories and proteins, all other countries enjoy an incomparably better diet per caput than that of Pakistan. In fact, except for Japan, in the three

Table 24. Net annual food supply per capita in Pakistan and other selected countries in recent years

Food item	Pakistan		India		Ceylon		Japan		Australia		Netherlands		U.S.A.	
	kg. per year	cal. per day	kg. per year	cal. per day	kg. per year	cal. per day	kg. per year	cal. per day	kg. per year	cal. per day	kg. per year	cal. per day	kg. per year	cal. per day
Cereals	155	1,516	139	1,346	127	1,252	149	1,398	84	831	82	786	66	657
Potatoes and other starchy food	4	9	11	28	34	95	71	157	44	87	98	187	47	92
Sugar	13	138	18	184	19	197	16	172	50	570	42	488	41	498
Pulses and nuts	5	50	22	210	30	316	17	163	4	57	4	53	7	73
Vegetables and fruits	16	55	–	26	42	45	85	100	64	139	70	116	94	178
Meat	4	18	2	6	2	9	8	26	109	693	48	246	96	590
Eggs	–	2	–	1	1	4	6	27	12	47	12	47	19	75
Fish	2	5	1	3	6	39	27	87	5	18	5	15	5	21
Milk (fat)	2		3		1		1		7		8		8	
Milk (protein)	2	89	2	108	1	33	1	41	7	346	9	394	9	409
Fats and oils	4	96	4	91	4	88	5	116	14	356	28	683	21	506
Total calories per day		1,980		2,000		2,080		2,290		3,140		3,020		3,100
Total proteins in grams per day		45		52		44		70		90		81		92

Source: See Table 22; *op. cit.*, Tables 97 and 98, pp. 247–55. (*fn.* 1)

industrialised countries referred to in Table 24, cereals do not provide more than 25% of the total calories per person per day. While in these countries the diet per caput contains not less than 3,000 calories per day, most of these calories are derived from other foods. Thus not only is the calorie content of these diets much higher than that of Pakistan, but also the protein content is about double of what is available to an average Pakistani.

What is even more disheartening is that over the years the net food supply per caput in Pakistan has been on the decline. For instance, according to the FAO estimates, while the daily food supply per caput in 1949/50 had a total calorie content of about 2,010, it fell to 2,000 in 1951/53, to 1,990 in 1954/56 and finally to 1,980 in 1961/62.[115] This apparently declining trend also reflects the magnitude of food shortages experienced in the period 1952 and later.

Before proceeding further, a word of caution must be added lest the above figures are taken as almost literally true. These estimates are related not to the actual consumption per capita but to the net supply of food per caput; the latter is derived from the food balance sheets. These sheets provide data on such items as the domestic production of various food commodities, their utilisation and waste for purposes other than human consumption, and their import and export balance during the same period. Thus, at best, they give an approximate estimate of the net food supply at the retail level. To arrive at per capita figures in a country, the total net supply is divided by the population figure; the latter is either based on a recent census or derived from other estimates for the period under reference. From all this it is clear that, in arriving at any estimates of the net food supply, no consideration is given to the pattern of distribution of food consumption in a country. And, even if one were to ignore the distribution aspect altogether, the estimates of food production and its utilisation within a country and its total population at a point of time are usually no more than intelligent guesses in countries like Pakistan.[116]

Taking into consideration the limitations inherent in the use of such global estimates, the obvious choice falls on nutritional surveys. But, in the absence of such surveys in Pakistan, the only recourse for the present analysis is to depend on family budget surveys. Although since 1959 such national sample surveys in Pakistan have become a regular annual feature, they are mostly restricted to the rural areas. No comparable surveys for the urban areas, except those of 1956–57 for some urban localities and the 1960–61 survey of only one urban locality (Rawalpindi), are available. But, since in this chapter the main theme is related to the production and consumption situation in the agricultural sector of Pakistan, only some leading features of the levels and composition of diets in the rural areas will be highlighted.

First of all a few remarks about the differences in the household and per capita income levels between East and West Pakistan. The common belief that the eastern wing

[115]FAO, *Production Yearbook, 1963*, Vol. 17, Tables 97 and 98, pp. 247–55.

[116]For the estimation of population and food requirements, there are several conceptual and empirical problems. These are discussed in detail in many of the FAO publications.

Table 25. Average monthly income per rural household and per capita in East and West Pakistan in 1961

Income groups (Rupees)	Percentage distribution of households		Average income per household (in Rupees)		Income per capita (in Rupees)	
	East Pakistan	West Pakistan	East Pakistan	West Pakistan	East Pakistan	West Pakistan
Under 25	1.06	0.63	23.40	21.00	11.20	6.50
25–49	9.26	2.35	49.80	39.50	20.30	16.60
50–74	15.68	10.09	60.40	59.50	16.90	18.80
75–99	14.92	14.12	83.70	83.70	19.30	21.60
100–124	13.61	16.11	107.80	112.20	21.90	23.20
125–149	10.93	14.25	130.10	138.10	23.10	25.20
150–199	14.01	17.01	170.50	173.00	28.60	27.00
200–249	5.97	9.37	221.40	221.90	28.60	32.30
250–299	4.65	5.97	271.00	268.00	37.30	36.00
300–399	4.86	4.89	325.60	336.40	38.10	40.80
400–500	2.18	2.17	446.50	445.40	49.20	49.60
Over 500	2.88	3.03	781.10	820.70	63.80	84.90
Total	100.00	100.00	153.40	173.90	28.40	31.00

Source: Pakistan, Central Statistical Office, *National Sample Survey (Third Round) 1961*, (Karachi, 1963), Table 6.1, p. 36.

The total number of households in the samples of East and West Pakistan was 1,977 and 2,210, respectively.

of Pakistan has a lower per capita income than its western counterpart is well substantiated by the average per capita income figures in the rural areas as revealed by the National Sample Surveys of 1959, 1960 and 1961. Thus, for instance, in Table 25, the average monthly per capita income in rural East Pakistan was Rs. 28.40 as against Rs. 31.00 in rural West Pakistan in 1961. In the same table it can be seen that the two provinces differed as to the distribution of their rural incomes: while in East Pakistan about 78% of the households surveyed fell in the income range of Rs. 25.00 to Rs. 199.00, in West Pakistan about 81% of the households were in the range of Rs. 50.00 to Rs. 249.00. Further, it is also clear that there was a higher percentage of households falling in higher income groups in West Pakistan than in East Pakistan. However, in both the provinces the predominance of low-income rural households is a distinct feature, indicating in general the low standard of living in the rural areas. This common characteristic gives a better representation of the general level and composition of food consumption throughout the country.

Regarding the pattern of expenditure of rural incomes, Table 26 shows that an average household in rural Pakistan spent more than 60% of its income on food. But, comparing East and West Pakistan, the percentage of expenditure on food in the former province was 67 (though it was about 71 in 1960) as against 63 in the latter pro-

Table 26. Monthly income and consumer expenditure per rural household and par capita in East and West Pakistan, 1960 and 1961

Income and expenditure by items	East Pakistan		West Pakistan	
	1960	1961	1960	1961
AVERAGE INCOME PER MONTH (in Rupees)				
per household	131.10	153.40	142.10	173.90
per capita	24.80	28.40	25.30	31.00
TOTAL EXPENDITURE (in Rupees)				
per household	121.90	152.70	143.80	162.40
per capita	23.00	28.30	25.70	29.00
PERCENTAGE DISTRIBUTION OF EXPENDITURE PER CAPITA				
Food	71.30	67.00	67.50	62.50
Clothing and footwear	5.20	6.30	9.20	10.70
Housing	11.50	14.50	9.00	11.20
Miscellaneous	12.00	12.30	14.20	15.70

Source: See Table 25; *op. cit.*, Table 6.3, p. 39.

vince (it was 68 in 1960). Among the various food items taken separately, again there were differences in the distribution of food expenditure per household in the two wings of the country.

In Table 27, while in East Pakistan cereals alone – rice being the main component – claimed over 57% of the total food expenditure, in West Pakistan the percentage of cereals was just under 44. As to the other food items, the differences in expenditure seem to be even greater, thus indicating, on the one hand, the different food habits and, on the other, the availability of each food item in the two wings separately. For instance, an average rural household in West Pakistan spent 28.5% of its food expenditure on milk and its products; its counterpart in East Pakistan spent only 4.7%. In the case of oils and fats (other than those originating from milk), the rural household in East Pakistan spent about four times the percentage in West Pakistan. Similar examples can also be given for other food items.[117]

While the above estimates regarding the distribution of food expenditure in rural East and West Pakistan provide only indirect evidence of the actual levels and composition of diet in general, in Table 28 an attempt has been made to show the actual supply of different food items to a person. This table also shows the calorie and protein contents of rural diets in East and West Pakistan. The most interesting feature of this table is that, while the actual supply of different items per caput per day differs between the two provinces, the total calorie content and proteins of the two diets are almost the

[117]These expenditure figures for the two provinces conceal the effect of price differentials.

Table 27. Percentage distribution of average monthly expenditure on food in East and West Pakistan in 1961: by items per household

Food items	East Pakistan	West Pakistan
Cereals: total	57.10	43.50
Wheat and wheat flour	0.40	31.80
Rice	56.20	6.70
Sorghum, millet, maize and gram	0.02	4.20
Other cereals	0.50	0.80
Baked products	0.90	0.40
Pulses	3.60	2.80
Milk and its products: total	4.70	28.50
Milk	3.90	12.80
Butter and cooked butter (Ghee)	0.40	14.20
Curd and other products	0.40	1.50
Edible oils and fats	4.20	0.90
Meat, poultry and fish: total	10.50	4.60
Mutton	0.80	1.90
Beef	0.90	1.30
Chicken	1.40	0.70
Eggs	0.40	0.40
Fish	7.00	0.30
Fruit and vegetables	6.70	3.80
Condiments and spices	4.10	2.80
Sugar and sugar products	2.80	7.30
Miscellaneous food items	0.70	1.30
Other food, drinks and tobacco	4.70	4.10

Source: See Table 25; *op. cit.*, Table 6.4, pp. 41–43.

The average size of the household in East and West Pakistan was 5.4 and 5.6 persons, respectively.

same, except that the West Pakistani diet contains more animal protein than that in East Pakistan.

Notwithstanding the rather cursory nature of the evidence posited so far regarding the level and composition of diets in East and West Pakistan, there are at least three striking conclusions. First, in general, Pakistanis are suffering from under- and mal-nutri-

Table 28. Per caput food supply in the rural areas of East and West Pakistan, 1961

Food item	Quantity of food (in grams)		Calories		Proteins (in grams)	
	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.
Cereals	525	502	1,848	1,767	43.05	41.16
Pulses	24	20	74	62	4.56	3.80
Milk and its products	38	163	32	135	1.37	5.87
Oils and fats	9	2	79	18	–	–
Meat	10	12	15	18	1.20	1.44
Fish	28	2	16	1	2.38	0.17
Eggs	2	1	2	1	0.20	0.10
Fruit and vegetables	70	25	27	10	0.70	0.25
Sugar	18	41	63	144	0.22	0.49
Total calories	–	–	2,156	2,156	–	–
Total proteins	–	–	–	–	53.68	53.28
Animal proteins	–	–	–	–	5.15	7.58
Vegetable proteins	–	–	–	–	48.53	45.70

tion, of which the preponderence of cereals is a good indicator. Second, the level of nutrition in the two provinces is not dissimilar in as much as the calorie and protein contents of rural diets are almost equally low. Third, there are some very distinct characteristics in the food habits of the two provinces, and the West Pakistani rural households seem to be spending less on food than those in East Pakistan.

4 Some Causes of the Poor State of Agriculture in Pakistan

4.1 Introduction

In the foregoing chapter an attempt was made to outline the basic structure of the economy of Pakistan and describe in some detail the state and organisation of the agricultural sector. It was concluded that agriculture plays a preponderant role in the economy, but that its state and organisation still suffer from some very deep-seated problems as is evident from the following facts:

a. that the cropping pattern in most areas of Pakistan is basically oriented to the production of food crops, hence it is not much diversified and specialised, and the cultivation of fruit and vegetables and the rearing of livestock occupy only a secondary place;
b. that the yields per acre of almost all crops, but especially of food crops, are very low and that, over the years, they have not shown any tendency to rise consistently; the same holds true for other agricultural products.

In fact, the poor level of agricultural production in Pakistan could be ascribed to many causes. First of all, it could be said that the cultivated area per capita is small, especially in East Pakistan. Even in West Pakistan, where the pressure of population on land is not so great, there is a definite limit to the possibilities of expanding the cultivable area, either because of the quality of the land or because of the extent to which water may be available. For the low yields of crops, livestock and fisheries, a host of factors seems to be responsible, either individually or collectively. For crop production the following are the prominent causes of the low yields per acre:

a. Adverse land tenure arrangements and the problem of land fragmentation.
b. Problems of labour utilisation.
c. Problems of capital: inadequate credit facilities for productive purposes and a high incidence of farm indebtedness.
d. The inadequacy and irregularity of rainfall; prevalence of waterlogging, salinity and soil erosion; lack of irrigation, drainage and flood control and, finally, the inappropriate methods of field irrigation.
e. High incidence of pests and diseases and the inadequate measures against them.
f. Lack of improved crop seeds and insufficient use of manures and fertilisers.
g. Primitive methods of crop production.
h. Markets and marketing problems, both structural and functional.
i. Attitudes of the farmers towards new incentives and social organisation in the rural areas.

None of the above-mentioned causes can be given a unique place, nor could any of them be called only a causative element. In fact, all of them are so intertwined that the overall picture of agriculture appears to be one of 'vicious circles', where on closer examination the *prima facie* causes turn out to be the effects and vice versa. Nevertheless, in the present chapter an attempt will be made to show the nature of the relationship between the low levels of agricultural production and their underlying causes.

4.2 The Adverse Land Tenurial Arrangements

The importance of land tenure systems in a society cannot be over-emphasised: they determine the size and unit of ownership, thus directly or indirectly affecting the techniques of farming through a socio-economic lever of incentives or disincentives; they settle the share of the actual tiller of the soil in its total produce, hence they not only affect the volume of agricultural production, but also determine the distribution of the produce among the parties involved.

While postponing the discussion on the general features of the various tenure systems in Pakistan to the next chapter, some of the major problems arising from them will be pointed out here. Two major types of farms can be distinguished: the landlord-tenant farms and the owner-operator farms. There is still a third category of farms in which some owner-operators rent part of their land to other share-croppers, but it is of negligible importance. Each of these types has its own peculiarities and problems, but from the point of view of this study there are four major problems which must be treated in some detail. The first three problems, namely, the concentration of land-ownership in a few hands, absentee landlordism and the exploitation of tenants, are to be found in the landlord-tenant system prevailing in most parts of West Pakistan. The last problem relates to the size of cultivation units and their fragmentation; it refers both to the owner-operator types of farms and to the landlord-tenant system, but especially to the former in East Pakistan. Each of these problems will be discussed in turn.

The landlord-tenant systems in East and West Pakistan have not been similar. In East Pakistan the percentage of owner-operator farms has been higher than in West Pakistan. Further, the extent of ownership concentration and landlord-tenant relations have also been less feudalistic in East Pakistan.[118]

4.2.1 Concentration of Land-ownership

Whatever good one could say about the *zamindari* and *jagirdari* systems, for all feudalism is at best paternalistic, the fact remains that in Pakistan their social and economic effects have proved largely to be detrimental to progress in rural society. There is per-

[118]For differences in the land-ownership pattern in East and West Pakistan, see: *1960 Pakistan Census of Agriculture*, Vols. 1 and 2, *op. cit.* (*fn.* 109)

haps hardly any need to go into details to defend this contention, for even the most cursory survey of the extent of concentration of land-ownership (concomitantly the social prestige and political power) in a few hands and the relationship of landlords and their tenants in most parts of Pakistan will make it amply clear.

Though it is very difficult to give precise documentation of the extent of concentration, due again to the paucity of data, there are some broad figures which are quite suggestive.

According to one estimate, in West Pakistan about 3.3 million people (or about 60% of the owners) had at one time only about 7.4 million acres of land (or about 15% of the total area) in holdings not exceeding 5 acres each as against about 60,000 people (or about 0.1% of the owners) occupying as much as 7.5 million acres in estates of not less than 500 acres each.[119] The situation was even worse in the former province of Sind: before the promulgation of the 1959 West Pakistan Land Reforms Act, it was estimated that about 1% of the owners possessed as much as 30% of the land in holdings of more than 500 acres each; and, against this, about 60% of the owners possessed only about 12% of the area in parcels of not more than 15 acres each.[120] In the former province of N.W.F., a similar condition could be seen: about 0.1% of the owners had about 12% of the area in estates of not less than 500 acres each.

4.2.2 Absentee Landlordism

The emergence of absentee landlordism, especially in West Pakistan, is the result of the concentration of land in the hands of a limited number of land-owners with large estates and varying degree of property rights. This absentee landlordism has been both physical and functional : in the physical sense it implies that the landlord lives away from the land and leaves the overall management of his estate in the hands of his functionaries; in the functional sense, it means that even if the landlord is present on the land he performs little or no productive function.

In addition to the concentration of land in a few hands, coupled with the high proportion of farm area cultivated by the tenants usually given to them in tiny parcels with varying degrees of security and charged to them at rates both legal and illegal – most of the *zamindar* and *jagirdar* supplied neither capital nor ready management nor any other significant assistance to promote the productivity of their land or of the labour engaged on it. Due to his socio-political influence, rather well-established historically, the landlord was interested primarily in the collection of his share in the produce through his functionaries. More often than not he enjoyed a luxurious life either in the towns or at his country-house, and there he could afford to spare enough time

[119]Pakistan, *Report of the Land Reforms Commission, 1959*, (Lahore: Government of West Pakistan Printing Press, 1961), pp. 13–14, and Appendix 1.

[120]*Ibid.*, and: Pakistan, Planning Board, *Draft of the First Five Year Plan, 1955–60*, Vol. 2, (Karachi, 1956), p. 117.

and resources for his many hobbies, political adventures and local intrigues often being the most likely ones.

The peculiar social and economic consequences of such tenurial arrangements determined the attitudes of landlords and their tenants towards agricultural progress. This has been summed up rather well by the West Pakistan Land Reforms Commission in the following words:

'There is nothing inherently wrong with the institution of tenancy but if there is no proper adjustment in the terms of tenancy, production incentives are adversely affected; landlords and tenants do not generally look upon each other as partners in a joint enterprise and neither of them is prepared to do anything which in his judgement is likely to benefit the other more than will it benefit him. The tenant may be conservative and ignorant and he often is, but he is nevertheless a shrewd judge of his own interest... The result is that the tenant can simply see no object in adopting new techniques or applying more intensively such techniques that he may know already in order to improve his productivity'.[121]

4.2.3 The Exploitation of the Tenants

Turning to the landlord-tenant relationship, there are two types of tenants, namely, occupancy tenants and tenants-at-will.

The occupancy tenants are those who have a more or less permanent, heritable and transferable right to land so long as they continue to pay the fixed rent to their landlord. It was observed, in the former provinces of the Punjab and N.W.F., that they enjoyed most of the privileges that the owner-operators had.

The tenants-at-will had their tenancies fixed from year to year. Their share and rent were usually determined by custom or more often by the dictates of their landlord. These tenants could be ejected, as their name implies, by the landlord at his will, and often their dependence on the landlord was complete, not only for food but also for shelter. Most tenants in the former Sind province were in this category; in the former Punjab about 50% of the area at one time was cultivated by these tenants; the same was more or less true in the former province of N.W.F.[122]

That in a landlord-tenant situation, as it existed in most parts of Pakistan, the tenants were a genuinely aggrieved party can be ascribed to several reasons, the more important of them being: the socio-political influence of the landlords, the poverty and ignorance of the tenants, and the lack of alternative avenues of employment. Exploitation of tenants took many forms and its degree varied from place to place. High rents and other charges, not justified on any legal grounds, personal services without payment and other social exactions were quite common. Rack-renting among the tenants of West Pakistan and the *burgardar* of East Pakistan have even be officially admitted from time to time. Quite understandably, then, the effects on the tiller of the soil and on the productivity of land itself have been detrimental.

[121] *Report of the Land Reforms Commission, 1959, op. cit.*, pp. 15–16. (*fn.* 119)
[122] *Draft of the First Five Year Plan, 1955–60, op. cit.*, pp. 117–18. (*fn.* 120)

4.2.4 The Units of Cultivation: Their Size and Fragmentation

In almost all areas of Pakistan, but specially in East Pakistan, most farms are below the economic size for agricultural production (Table 29). Even more characteristic is the high percentage of vary small farms, especially among the owner-operators, tenants and *burgardar*. These features are most apparent in East Pakistan.[123] In addition, the holdings are often fragmentated, particularly among the owner-operated farms. To this the only exceptions are the canal colonies and some other recently colonised areas in West Pakistan. Table 30 supplies some recent data on the extent and nature of land fragmentation in the country.

Table 29. Percentage distribution of farms by size in East and West Pakistan, 1960

Size of the farm	East Pakistan	West Pakistan
Small[1]	51	49
Medium[2]	45	43
Large[3]	4	8

Source: See Table 22; *op. cit.*, Vol. 1, p. 10, and Vol. 2, p. 12. (*fn.* 1)

[1]Small-size farm: East Pakistan, under 2.5 acres; West Pakistan, under 5 acres.
[2]Medium-size farm: East Pakistan, 2.5 to 12.5 acres; West Pakistan, 5 to 25 acres.
[3]Large-size farm: East Pakistan, 12.5 acres and above; West Pakistan, 25 acres and above.

Agriculture in Pakistan is not only confronted with adverse land tenure systems (especially in West Pakistan) which permit the concentration of land in a few hands with all its consequences, but it is also characterised by uneconomic units of cultivation (especially in East Pakistan). Perhaps the problems of small-size farms and their excessive fragmentation are the most critical ones. While these two problems in themselves have proved to be a great obstacle in improving agricultural production, they have arisen due largely to the growth of population, inadequate avenues of alternative employment outside agriculture, and the law of inheritance which requires the division of the holding of a deceased peasant among all his sons and daughters.

4.3 The Problem of Labour Utilisation

The pattern of labour utilisation in the agricultural sector of an economy like that of Pakistan, depends mainly on:

[123]For the owner and tenant farms in East Pakistan, the percentages of the small-size farms were 62 and 61, respectively.

Table 30. Farm classification by number of fragments and size of farms in East and West Pakistan, 1960

Size of farms (in acres)	Total number of farms ('000')		Percentage of non-fragmented farms		Percentage of fragmented farms									
					total		2 to 3		4 to 5		6 to 9		10 and over	
	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.
Size A	803	742	47	77	53	23	44	21	7	2	2	–	–	–
Size B	690	855	12	55	88	45	49	34	26	8	11	3	2	–
Size C	1,677	806	5	37	95	63	22	37	28	14	31	9	14	3
Size D	1,615	581	3	32	97	68	10	35	16	15	32	12	39	6
Size E	698	759	3	26	97	74	6	36	10	15	23	13	58	10
Size F	442	729	2	21	98	79	4	35	8	17	17	14	69	13
Size G	188	286	2	14	98	86	3	29	6	21	13	19	76	17
Size H	21	88	3	9	97	91	3	19	5	19	8	24	81	29
Size I	5	14	5	6	95	94	5	15	5	15	7	15	78	55
All size	6,139	4,860	10	39	90	61	21	33	17	12	23	9	29	7

Source: See Table 22; *op. cit.*, Vol. 1, p. 86, and Vol. 2, p. 159. (*fn.* 1)

Since the farm sizes differ in East and West Pakistan, the sizes indicated in this table represent those given in the original tables of the Census.

a. the total available agricultural labour force;
b. the composition of this labour force as per age and sex, and their participation rates;
c. the tenure system;
d. the nature and pattern of agricultural operations;
e. the availability of other forms of factor inputs and their relationship with labour;
f. the level of techniques;
g. the extent to which labour can move out of agriculture either temporarily or permanently for other employment;
h. the type of social organisation to which labour is traditionally bound.

While all these factors, both individually and collectively, affect the pattern of labour utilisation, the latter in turn affects the productivity of labour. No detailed and reliable data on the pattern of labour utilisation in Pakistan agriculture are as yet available, which means that the effect of the above factors could not easily be discerned on the pattern of labour utilisation, nor could labour productivity be measured directly. The discussion here will therefore have to be confined to those aspects of this problem which can be adduced indirectly from the available information.

As was shown in Table 15 in the foregoing chapter, the total agricultural labour force of Pakistan in 1961 was about 23.76 million persons (20.25 million males and 3.51 million females), of which 15.86 million persons (13.22 million males and 2.64 million females) were reported working in East Pakistan and 7.90 million persons (7.03 million males and 0.87 million females) in West Pakistan. Thus the fact that in East Pakistan over 85% of the total labour force was engaged in agriculture and also that the amount of the available cultivable area is much smaller than that of West Pakistan obviously has serious implications for the utilisation of the agricultural labour force in that province.

Of the total agricultural labour force, 97% are cultivators, but not all of them are self-employed. A quite substantial number of this category of workers finds part-time employment in some other work. Besides, there are also some workers in the agricultural sector who are landless and are hired either permanently or temporarily by other farmers. The percentage distribution of all classes of cultivators is given in Table 31.

Table 31. Percentage distribution of cultivators (10 years and over) by land tenure in Pakistan and its two provinces, 1961

Class of cultivators	East Pakistan	West Pakistan	Pakistan
Owning all land tilled	35.33	25.62	32.13
Tilling land partly owned and partly rented	9.37	9.39	9.37
Renting all land tilled	1.28	28.32	10.20
Unpaid family help	33.02	28.62	31.57
Share-croppers	3.55	–	2.38
Landless agricultural labourers	17.45	8.05	14.35
All cultivators	100.0	100.0	100.0

Source: See Table 12; *op. cit.*, Statement 6.14, p. V–27.

First of all a few remarks must be made about the landless agricultural labourers. According to the 1951 Census, these labourers comprised about 10% of the total agricultural labour force in Pakistan: 14.3% in East Pakistan and 2.3% in West Pakistan. If consideration is given to the inter-censal growth of population in East Pakistan, the limited rate of absorption of the labour force in the non-agricultural sectors and the process of fragmentation of holdings without any substantial increase in the total cultivated area, then it can safely be concluded that the percentage of landless labourers must have increased significantly. But, in West Pakistan, although there has been a four-fold increase in this percentage, the problem of landless labourers does not seem to be a major one.

It is among the predominantly self-employed workers, i.e. in the classes of owner-operatores and tenants, that the phenomena of underemployment and disguised un-

employment can be found. However, the extent of self-employment, and thus the two types of unemployment, among these workers depends to a large extent upon the size of the individual holdings. Thus, for instance, in East Pakistan alone it has been observed that among the small cultivators there is always a substantial proportion of workers who seek employment either on others' farms or outside the agricultural sector itself.[124]

As to the real employment situation in the agricultural sector in Pakistan, no country-wide estimates are as yet available.[125] However, from some recent area studies, limited as they are in their scope and objectives, some tentative conclusions can be drawn on the nature and extent of unemployment among the agricultural labour force, especially among the owner-cultivators and tenants. Table 32, therefore, gives a global estimate of the unemployed agricultural labour force in East and West Pakistan. Since these estimates rely upon an indirect method, some of the major limitations of this method must at once be clearly pointed out.

a. The figures of the total agricultural labour force include all types of workers, the landless, the owner-operators and the tenants. This aggregation, despite the fact that the last two categories of workers predominate, affects the composition and identification of the type of unemployment.
b. Although the labour force here includes children (10–14) and women, the extent to which they are employed in family labour is not clear.
c. Two norms have been assumed for East and West Pakistan separately: the first one is related to the available number of hours per man-year and the second to the requirements of hours per man-year for livestock rearing and all other agricultural work, the latter including not only the agricultural operations directly concerned with the production of crops, but also their disposal. But these norms are not based on any actual field investigations of the techniques and pattern of crop production in the country in general and in various agricultural regions of the two provinces in particular.
d. In this method, the overall pattern of labour utilisation of the total man-days supplied by the agricultural labour force, which in Pakistan are available not only for work on one's own holding or as hired labourers but also for various non-agricultural activities, is not indicated. As it happens, even when the members of a household remain idle for a large part of a day or a longer period, they may not feel that they are actually unemployed hence they may not look for additional employment. These factors further aggravate the problem of identification of rural unemployment.

[124]N. ISLAM, "Concepts and Measurement of Unemployment and Underemployment in Developing Economies," *International Labour Review*, Vol. 89, No. 3, 1964, pp. 240–56.

[125]Only the following three studies about the various aspects of agricultural labour utilisation in East Pakistan are available so far: Dacca University, Socio-Economic Survey Board, *Report on the Survey of Rural Credit and Rural Unemployment in East Pakistan, 1956*, (Dacca, 1958); Dacca University, Bureau of Economic Research, *The Pattern of Agricultural Unemployment: A Case Study of an East Pakistan Village*, (Dacca, 1962); and Rajshahi University, Socio-Economic Research Board, *The Pattern of a Peasant Economy – Puthia, A Case Study*, (Rajshahi, 1963).

e. These estimates indicate only the total volume (as a percentage of the total hours per man-year available) of the unutilised labour force, *ceteris paribus* given the norms. Thus they do not really show the proportion of underemployed to disguisedly unemployed workers over the whole year. This means, in other words, that no exact conclusion can be drawn about the existence of surplus labour either in permanent or in seasonal form.

Returning now to Table 32, it can be seen that about 37% of the available hours per

Table 32. Estimates of unemployment in the agricultural sectors of East and West Pakistan, 1961

Particulars	East Pak.	West Pak.
1. Total agricultural labour force, in thousands[1]	15,860	7,900
2. Approximate number of available hours per man-year[2]	2,200	2,600
3. Total number of livestock units, in thousands[3]	22,670	26,920
4. Livestock units per agricultural worker (3÷1)	1.42	3.40
5. Number of working hours required for one livestock unit per year[4]	300	300
6. Number of working hours required for all livestock units per worker per year (4 × 5)	426	1,020
7. Number of hours available per man-year for other agricultural work (2–6)	1,774	1,580
8. Total cropped area, in thousand acres[5]	25,800	35,800
9. Average number of hours required per cropped acre per year[6]	600	300
10. Average number of hours per worker per acre for full employment in other agricultural work (7÷9)	2.96	5.27
11. Cropped area per worker, in acres (8÷1)	1.62	4.53
12. Percentage of time occupied in other agricultural work per worker [(11÷10) × 100]	55	86
13. Percentage of time per worker unoccupied in other agricultural work	45	14
14. Number of unoccupied hours per worker per year [(13 × 7)÷100]	798	221
15. Unoccupied hours as a percentage of the total number of hours available per man-year [(14÷2) × 100]	37	8.5
16. Unemployed number of hours as converted to unemployed labour force, in thousands [(15÷100) × item 1]	5,868	679
17. Real employment of the agricultural labour force, in thousands (1–16)	9,992	7,228

[1]See Source in Table 2; Annex 4, Table 1.
[2]ILO, *Manpower Survey of Pakistan, 1956*, p. 17 and p. 24.
[3]See source in Table 22; (*fn.* 1). To arrive at these 'livestock units', the following conversions have been made: each head of cattle (oxen and buffaloes) is equal to one livestock unit; five sheep and goats are equal to one livestock unit; ten heads of poultry are regarded as equal to one livestock unit.
[4]See source in Table 2; Annex 4, p. 4.
[5]See source in Table 21.
[6]The present figures are different from those given by the source in Table 2. These are based on some area studies on cropping pattern, intensities and other relevant factors.

man-year in East Pakistan and about 8.5% in West Pakistan could be regarded as unoccupied. Converting these unoccupied hours into unoccupied workers, about 5,868,000 workers in East Pakistan and about 679,000 workers in West Pakistan could be called as unemployed.

It seems that in East Pakistan, where some area studies corroborate this contention, most of these unemployed agricultural workers are in fact underemployed, or that the permanent removal of these workers from the agricultural sector will necessitate special measures to meet the excess requirement of labour during the peak seasons.[126] Even among the small-size farms, where the productivity of labour is very low because of population pressure and the inadequacy of other factor inputs, there is no indication of chronic surplus labour. From the national point of view, this means that the withdrawal of such workers can take place only for a certain period of time, for they are either seasonally unemployed or underemployed at all times of the year, unless a total reorganisation of the cropping pattern, the addition of capital and other such productive inputs takes place.

In West Pakistan, of which no area studies are available and where the conditions cannot be described with any justice if only because of their diversity, unemployment in agriculture seems also to be of a seasonal nature. Disguised unemployment does not seem to exist in this province, with perhaps a few exceptional and limited areas where only a single cropping pattern dominates on small-size farms and other avenues of employment are not available. The fact that some workers' productivity may be very low, or that these workers may be underemployed throughout the whole year, can at best be justified by the inadequacy of other factors and excessive land fragmentation.

Thus, on the whole, it may safely be assumed that the problem of labour utilisation in the agricultural sector in Pakistan does not amount to what has been called the 'permanently withdrawable surplus labour'. The problem, especially in East Pakistan, is rather one of underemployment, which is manifest both in the seasonal unemployment of a significant proportion of the agricultural workers and in the low average labour productivity in general. The fact that in East Pakistan the percentage of unoccupied workers in the agricultural labour force is over four times that of West Pakistan can well be substantiated by, among other things, the rate at which casual labour employment is offered for non-farm jobs.[127]

4.4 The Problem of Agricultural Financing

In fact, the vicious circle of poverty in Pakistan agriculture originates from the fact that the low level of agricultural production does not leave most farmers, and especial-

[126] ISLAM, *op. cit.*, p. 255. (*fn.* 124)

[127] A recent example of the effective utilisation of underemployed agricultural labour force in East Pakistan is of the rural works programme. See: R. V. GILBERT, "The Works Programme in East Pakistan," *International Labour Review*, Vol. 89, No. 3, 1964, pp. 213–26.

ly those farmers whose farms are not only small in size but are also fragmented, with any savings which could be ploughed back as investment for additional and improved factor inputs. The meagre amount of capital which most of these farmers possess is embodied in the stock of traditional capital: ploughs, hoes, harrows, draft animals and other such minimal assets. In cases where there is any saving potential it is often spent on satisfying such social obligations as do not contribute to the output on the farm. Thus, thanks to the subsistence level of agricultural production, most farmers in Pakistan are almost always in debt. While indebtedness in itself is no sign of the backwardness of the agricultural enterprise (for borrowing for productive purposes is often a necessity), the fact is that in Pakistan indebtedness is usually the result of borrowing for non-productive purposes. The problem of indebtedness is aggravated further by the type of agencies which cater to such non-productive needs of the farmers.

The extent of rural indebtedness in East and West Pakistan, as revealed by the 1960 Agricultural Census, is given in Tables 33 and 34. In Table 33 it can be seen that in East Pakistan about 49% of the farms reported indebtedness; in West Pakistan (Table 34) this percentage was about 29. It seems that in East Pakistan the average burden of debt is highest among the medium-size farms, but in West Pakistan it increases with the size of the farm. Further, it can also be noted that the smaller the size of the debt the greater is the percentage of small-size farms reporting debt; but again these percentages are higher in East Pakistan. From all this it is quite clear that the burden of indebtedness depends upon, among other things, the size of the farm in general.

In order to put this problem of Pakistan agriculture in its proper perspective, it is

Table 33. Farm indebtedness in East Pakistan by size of farms and debts, 1960

Size of farm (in acres)	Number of farms (in '000')	Percentage of farms reporting debts						
		All farms	Rs. 1 to Rs. 99	Rs. 100 to Rs. 249	Rs. 250 to Rs. 499	Rs. 500 to Rs. 999	Rs. 1,000 to Rs. 1,999	Rs. 2,000 and over
under 0.5	803	37	46	36	11	5	1	0.3
0.5–1.0	690	45	38	38	14	8	1	0.3
1.0–2.5	1,677	50	32	40	18	8	2	0.4
2.5–5.0	1,615	54	26	40	20	10	3	1
5.0–7.5	698	53	21	37	22	14	5	1
7.5–12.5	442	50	15	33	23	19	7	3
12.5–25.0	188	47	11	27	22	22	12	6
25.0–40.0	21	45	6	17	14	24	18	21
40.0 and over	5	43	7	11	14	21	24	23
All size	6,139	49	29	38	19	10	3	1

Source: See Table 22; *op. cit.*, Vol. 1, Table 34, p. 245. (*fn.* 1)

Table 34. Farm indebtedness in West Pakistan by size of farms and debts, 1960

Size of farm (in acres)	Number of farms (in '000')	Percentage of farms reporting debts in Rupees							
		All farms	1 to 249	250 to 499	500 to 999	1,000 to 1,999	2,000 to 3,499	3,500 to 4,999	5,000 and over
under 1.0	742	21	34	22	24	13	5	1	1
1.0– 2.5	856	25	35	23	24	12	5	1	1
2.5– 5.0	806	29	34	23	24	12	5	1	1
5.0– 7.5	581	32	33	23	25	12	5	1	1
7.5– 12.5	759	34	29	24	26	13	5	1	1
12.5– 25.0	729	35	25	22	27	15	8	1	2
25.0– 50.0	286	35	20	20	27	18	9	2	4
50.0–150.0	88	35	20	15	25	18	10	4	8
150.0 and over	14	41	26	14	18	8	16	4	14
All size	4,860	29	30	23	25	13	6	1	2

Source: See Table 22; *op. cit.*, Vol. 2, Table 37, p. 606. (*fn.* 1)

necessary to mention in some detail the purpose for which debts are incurred and the various agencies which extend credit to the farmers. The fact that most of the rural indebtedness has resulted from borrowing for non-productive purposes can well be judged from the cross-sectional evidence in Table 35.[128] From this table it can readily be adduced that the highest percentage of indebtedness results from the need of the farmers to meet family expenditure: on average about 67% in East and about 55% in West Pakistan. Only then comes the expenditure which the farmers undertake for agricultural production: about 19% in East Pakistan and about 32% in West Pakistan. It seems that in East Pakistan a substantial amount of indebtedness has been caused by non-productive expenditure; but in West Pakistan, although the percentage of debts incurred through non-productive expenditure is not insignificant, the farmers do undertake a substantial expenditure for direct productive purposes.

Now turning to the agencies which help farmers meet their credit needs, it appears that both in East and West Pakistan it is the non-institutional agencies which provide the major part of the credit. Thus, according to some cross-sectional surveys, as given in Table 36, among the non-institutional agencies the largest proportion of credit comes from relatives and friends. But, again, there are differences between East and West Pakistan: while in East Pakistan about 90% of the non-institutional credit is

[128]As is evident from this table, these figures are neither upto-date, nor are they representative of the entire country. However, in the absence of any recent and comprehensive study, they do reflect in general the present situation in Pakistan.

Table 35. Causes of rural indebtedness in some selected areas of East and West Pakistan, in percentage

Purpose	West Pakistan		(3) East Pakistan			
	(1) Former Punjab	(2) Former Punjab	Narayan-ganj	Rangpur	Rajbari	Feni
Capital expenditure in farming[1]	29.9	19.6	8.1	12.5	8.3	8.4
Current expenditure in farming[2]	3.7	12.0	9.8	8.5	13.4	12.3
Total expenditure in farming	33.6	31.6	17.9	21.1	21.7	20.7
Non-farm business expenditure[3]	13.5	1.2	11.9	3.0	10.1	6.4
Family expenditure[4]	51.4	62.0	67.4	74.7	63.5	69.6
Repayment of debts	1.3	3.2	1.8	1.2	4.3	2.8
Miscellaneous purposes	0.2	2.0	1.0	–	0.4	0.5

Source: 1. Punjab Board of Economic Inquiry, *Report on the Need and Supply of Credit in the Rural Areas of the Punjab*, Publication No. 101, (Lahore, 1951).
2. Punjab University, Socio-Economic Research Project, *Agricultural Credit Enquiry in Six Villages of Lahore District.*
3. Dacca University, Socio-Economic Survey Board, *Report on the Survey of Rural Credit and Rural Unemployment in East Pakistan, 1956*, (Dacca, 1958).

[1]Including purchase of land, farm equipment and livestock, construction of fencing, and other capital expenses.
[2]Including purchase of seeds, manures and fertilisers, hire of labour and equipment, payment of rents, and other current expenses.
[3]Including capital and current expenditure for non-farm purposes,
[4]Including expenses for family consumption, residential construction, social ceremonies, education, and medical care.

Table 36. Percentage distribution of various sources of farm credit in East and West Pakistan

Source of farm credit	West Pakistan		(3) East Pakistan			
	(1) Former Punjab	(2) Former Punjab	Narayan-ganj	Rangpur	Rajbari	Feni
Relatives and friends	63.2	62.8	59.52	58.64	53.87	41.27
Landlords and other well-to-do people	16.9	0.2	17.85	23.26	13.73	31.58
Co-operatives	13.2	14.3	0.39	–	1.41	0.42
Government	2.9	13.4	0.32	5.99	5.28	5.68
Village shopkeepers	2.5	0.4	12.75	4.49	17.26	10.25
Beopari, Faria, etc.	–	4.7	2.19	5.17	2.11	0.97
Money-lenders	1.3	1.1	3.92	1.36	2.82	8.86
Others	–	3.1	3.06	1.09	3.52	0.97

Source: See Table 35; *op. cit.* (*fn.* 1, 2, 3)

given by relatives, friends, landlords, village shopkeepers, etc., in West Pakistan only 75% of this credit comes from these sources. Since, of the institutional agencies, the co-operatives and the government are the only two major sources of credit, East Pakistani farmers do not benefit from them as well as their counterparts in West Pakistan do.

The most striking feature of the non-institutional sources of credit is that, although the traditional money-lender disappeared from the rural scene after the birth of Pakistan, 'those who have replaced him cannot be said to be operating on lines substantially different from him'. Hence the 'price for money lent is, as a rule, extortionate and their contribution to the development of agriculture or to the well-being of the farmer is in no way better than that of the departed money-lender'.[129] The economic and social consequences of a system of credit can be well imagined, when most of it comes from unorganised sources which do not make any distinction between the 'legitimate' (productive) and 'illegitimate' (non-productive) needs of the farmers. On the other hand, there are many reasons why the institutional agencies, co-operatives and government, do not yet provide any significant portion of the total credit to the farmers.[130]

To discourage non-productive borrowing in general by the farmer, it is essential, first of all, to know what and how much the productive requirements of the farmers are. There are no two similar estimates of these credit requirements in Pakistan.[131]: they vary from Rs. 2,000 to Rs. 3,000 million.[132]

Credit requirements for agricultural production in Pakistan can also be classified on the basis of time: (a) long-term, for five years and over, (b) medium-term, for one to five years, and (c) short-term, for less than one year. The first category of credit is usually required for permanent improvements to the land, sinking of tube-wells, construction of embankments and such other overhead investments. The second type of credit is usually needed for the purchase of livestock, more expensive farm implements, and sometimes also for the construction of farm buildings. The third category of credit is required for such current expenditure as the purchase of seeds, fertilisers, feeds for livestock, etc.

It has been observed time and again that, even in cases where the non-institutional agencies do provide credit for productive purposes to the farmers, it is often for their short-term needs and at quite unreasonable terms. Not only is the rate of interest often disproportionate to the size and duration of loans, but the security required for ac-

[129]State Bank of Pakistan, Agricultural Credit Department, *Agricultural Credit in Pakistan*, (Karachi, 1962), p. 21.

[130]The reasons are given in some detail in: Pakistan, *Credit Enquiry Commission Report, 1959*, (Karachi, 1959), pp. 14–37.

[131]There are two major sources in which this disagreement can be seen: M. I. KHAN, "The Development of Institutional Credit in Pakistan," *The Pakistan Development Review*, Vol. 3, No. 1, 1963, Table 1, p. 73, and the *Credit Enquiry Commission Report, 1959, op. cit.*, p. 7.

[132]The low estimates, which represent the average for the period 1960–61 to 1964–65, are given by KHAN, *op. cit.* They are equal to about 15% of the annual output flow from agriculture. The higher estimates are given by the *Credit Enquiry Commission Report, 1959, op. cit.* These are equal to about 25% of the output flow from agriculture.

quiring these loans compels small farmers to mortgage their land and/or other property. Thus, while the disadvantages of private non-institutional lending have been very detrimental to most farmers, the supply of credit by the institutional agencies and its conditions have also not been very encouraging; although of late, through various debt legislations, the government have made concerted efforts to strengthen all the existing institutional agencies and discourage the exploitation of farmers by the private moneylenders.

As was stated a little earlier, there are two major institutional sources of rural credit in Pakistan, the government and the co-operatives. In the case of the government, loans have been given to the farmers either directly by the revenue department or by the more recently established statutory bodies. In the case of the co-operatives, the farmers have been getting credit either at the primary level through their own co-operative societies or at the secondary level through the co-operative banks. Each of these agencies has its own peculiar features and problems.[133] Save for the co-operatives, these institutional agencies have so far played only a very limited role in fulfilling the credit requirements of the farmers. This can well be judged by the following two aspects.

Firstly, it has been estimated that, during the period 1948–60, institutional credit covered only about 8.5% of all farmers in Pakistan: about 6.8% in East and 13.2% in West Pakistan.[134] Secondly, during the same period, only Rs. 230 million as an average annual amount of credit was received by the farmers as against the estimated minimum requirement of about Rs 1,682 million. However, in fact when it is realised that the co-operative banks (which usually lend to the existing marketing intermediaries and not to all farmers directly) have alone given on average about 80.4% of all institutional credit in the country, then even the sum of Rs. 230 million overstates the amount actually received by the agriculturists.[135]

What is even more interesting to note is the inter-wing disparity in the flow of institutional credit over the period in reference. Of the estimated average annual Rs.230 million as stated above, about Rs. 216 million (or 94%) went to West Pakistan and only about Rs. 13.7 million (or 6%) to East Pakistan.[136] This wide difference can be explained largely by the successful growth of co-operatives in West Pakistan and their rapid decline in East Pakistan. The share of co-operatives in agricultural credit in West Pakistan has been about 93.1% as against 41.3% in East Pakistan during the same period. However, the government, on the other hand, have provided only 3.5% in West Pakistan as against 39.8% in East Pakistan.

The annual flow of institutional credit over the years has not been smooth. While the direct government credit has shown the greatest year-to-year fluctuation in the two pro-

[133]These peculiarities and problems are given in detail in *Agricultural Credit in Pakistan, op. cit.* (*fn.* 129)
[134]KHAN, *op. cit.*, Table 9, p. 93. (*fn.* 131)
[135]*Ibid.*, Table 3, p. 78.
[136]*Ibid.*, Table 4, p. 82.

vinces, the credit provided by the primary co-operative societies has been steadily rising in West Pakistan and constantly declining in East Pakistan. The flow of credit from the statutory bodies, starting from a very low base, has risen rapidly in both the provinces during this period.[137]

Before closing this discussion, it may be of some interest to mention briefly the role of co-operatives in providing agricultural credit for the farmers in Pakistan. The co-operative movement in the Indo-Pakistan sub-continent was initiated at the behest of the government in the beginning of this century with the primary objective of providing credit for the rural masses at reasonable terms so as to afford relief from indebtedness to the private and unorganised money-lenders. However, even the most optimistic stock-taking of this movement in Pakistan would indicate its spectacular failure in arousing the farmers' enthusiasm for benefiting from their own co-operative efforts. Thus, with the exception of a few areas in West Pakistan, the movement was largely inactive at the birth of Pakistan, especially at the primary level in East Pakistan which it was designed to help the most.[138] For the numerative distribution of the primary agricultural and non-agricultural co-operative societies see Table 37.

The co-operative credit structure in Pakistan has not been uniform: in the former province of the Punjab and East Pakistan there is a three-tier system, with the Provincial Co-operative Bank at the top, the Central Union or the Central Multi-purpose

Table 37. Numerative distribution of co-operative societies in Pakistan and its two provinces in selected years

Type of co-operative society	1948–49			1955–56			1959–60		
	East Pak.	West Pak.	Pak.	East Pak.	West Pak.	Pak.	East Pak.	West Pak.	Pak.
Credit societies: total	27,850	9,698	37,548	6,903	11,421	18,324	4,311	12,886	17,197
Agricultural	27,514	9,047	36,561	6,679	10,597	17,276	4,000	11,871	15,871
Non-agricultural	336	651	987	224	824	1,048	311	1,015	1,326
Non-credit societies: total	4,503	5,921	10,424	1,753	8,474	10,227	1,124	9,703	10,827
Agricultural	1,599	2,453	4,052	237	3,519	3,756	56	4,245	4,301
Non-agricultural	2,904	3,468	6,372	1,516	4,955	6,471	1,068	5,458	6,526
All societies	32,353	15,619	47,972	8,656	19,895	28,551	5,435	22,589	28,024

Source: State Bank of Pakistan, Agricultural Credit Department, *Agricultural Credit in Pakistan*, (Karachi, 1962), p. 44.

[137] *Ibid.*, Tables 4 and 5, p. 82 and p. 84.

[138] *Credit Enquiry Commission Report, 1959, op. cit.*, p. 25. (*fn.* 130)

Society at the intermediate level and the Primary Credit Co-operative Society at the base. But, in the former provinces of Sind and N.W.F., a two-tier system exists, with the Apex Banks directly linked with the Primary Societies. Between the Primary Co-operative Societies, which are the foundation of this credit system in the country, there are differences in organisation too: while in East Pakistan most primary societies are of the multi-purpose type, in West Pakistan only the single-purpose societies are found. However, following the recommendations of the Credit Enquiry Commission of 1959, an effort is being made to organise almost all primary societies in East Pakistan on the same lines as those in West Pakistan.

Viewed against the dismal background of the organisation and working of co-operatives in East Pakistan, it has been recognised that the most suitable medium of rural development in general and the extension of rural credit in particular is the primary co-operative society. In consequence, the Food and Agriculture Commission of 1960 called for 'a display by Government of its conviction that the development of genuine and successful co-operatives is one of the cardinal points of its farm policy'.[139] This Commission thus made some bold recommendations for the rejuvenation of the entire co-operative credit structure of the country. The implementation of these recommendations, however, has only just begun.[140]

4.5 Soil and Water Problems

The hazards and uncertainties to which most farmers in Pakistan are exposed are not all of their own creation. But, undoubtedly, their poverty and ignorance often contribute to strengthening the dictates of Nature's niggardliness. The problems arising from the mismanagement of soil and water have thus assumed such proportions that only the collective ingenuity of the entire population of Pakistan may in the long run be able to achieve any significant degree of relief.

The soil and water problems in Pakistan can be divided into two groups: soil erosion, and the problems of irrigation, drainage and flood control.

4.5.1 The Problem of Soil Erosion

Soil erosion is caused both by wind and water, but this menace is essentially restricted

[139]Pakistan, Ministry of Food and Agriculture, *Report of the Food and Agriculture Commission, 1960*, (Karachi, 1960), pp. 181–82.

[140]The role of co-operatives at the primary level in Pakistan agriculture can hardly be overemphasised. The field of 'co-operative farming' offers a great scope for the development of agriculture. Co-operative farming experiments, both in the former Punjab in West Pakistan and in the Comilla *Thana* of East Pakistan, have shown very encouraging results. See, for example: O. SCHILLER, *Individual Farming on Co-operative Lines*, (Lahore: The Punjab Co-operative Union, 1956), and the various publications of the Pakistan Academy for Rural Development, Comilla, East Pakistan.

to the arid and range areas of West Pakistan.[141]

With regard to the erosion by wind, in East Pakistan there is complete protection because the land remains moist during the greater part of the year. In West Pakistan, however, in the eastern deserts of the Bahawalpur and Hyderabad divisions and also in some parts of the Quetta and Kalat divisions wind erosion is very active. Most of these areas, being sandy, are used chiefly for seasonal grazing, some parts also being used for occasional cultivation of crops in years of timely and adequate rainfall. The result is that the land, denuded of its vegetation, is left open to the free and fierce action of the wind which very often blows away the top layer of the soil leaving coarse sand to form sand dunes and floating monds.

One of the major causes of this unhappy situation is the misuse of land by the cultivators. Often the farmers in these areas do not take appropriate measures to contain this menace and protect the soil. Indeed they aggravate the problem by their profane farming practices, like bringing land under the plough which has been under permanent vegetation and leaving it fallow over a long period, allowing indiscriminate grazing, cutting the trees, and improper tillage practices without any regard to the possibility of terrace farming. Consequently, in an agriculture where soil is being so ruthlessly robbed of its natural properties, the yields of crops cannot but be abysmally low. This is the more so in view of the poor humus and nitrogen content of these soils and also because of the still limited use of organic manures and fertilisers.

Turning to the problem of soil erosion caused by water, in East Pakistan again this is not a serious one, for most of the plain areas are fairly level and covered with vegetation. Moreover, the major crops are rice and jute which require impounding of water. Therefore, only certain parts of the river banks and hilly tracts of the eastern side suffer from erosion by water. In all other areas of the province, which in fact form the basis of crop production, field embankments (if properly constructed on the contour) are very useful in protecting the soil.

In West Pakistan, waters of the hill torrents sweep away the soil from the hills and adjoining land, while heavy gales often blow away the fertile soil of the arid plains. Among the areas seriously affected by this kind of erosion are the Peshawar and Rawalpindi divisions. Here, gulleying has ruined the fertile land to the extent that there is hardly any chance of reclaiming the land economically. In other areas, such as the ranges of Quetta, Kalat and Peshawar divisions, goat and sheep rearing leave hardly 5% of the land for crop production. Thus continuous grazing over long periods has destroyed most of the natural vegetation cover of these ranges and their foot-hills, exposing vast areas of land to erosion.

[141]Although no accurate statistics of the area affected by erosion and the extent of its damage are available, in West Pakistan alone it was estimated that about 160 million acres of land suffered from varying degrees of wind and water erosion. See: Pakistan, Planning Commission, *The Second Five Year Plan (1960–65)*, (Karachi, 1960), p. 168.

4.5.2 The Problems of Irrigation, Drainage and Floods

East Pakistan is mainly a lowland plain built by the delta-forming activities of the three main rivers (Ganges, Brahmaputra and Megna). It is typically characterised by heavy rainfall in summer accompanied by high floods followed by a rather long period of drought in winter. This highly seasonal pattern of precipitation and the frequent occurrence of flooding over most of the cultivated areas have therefore made it necessary to adjust agricultural practices to the rhythm of Nature. Low yields and periodic partial or total failure of crops are usually the result of flood and drought in this province.

It has been observed that the climate of East Pakistan is suitable for growing three crops a year. However, not even a substantial proportion of the cultivated area is double-cropped in practice. According to one author if 'floods could be controlled and irrigation facilities provided, the area under crops could be increased by 6.5 million acres in the *Aus* season, 5.0 million acres in the *Aman* season and 16.7 million acres in the *Rabi* season'.[142] In other words, the present cultivated area of about 21.6 million acres could be increased to about 28.2 million acres.

The extent of flooding in East Pakistan is about 8 to 9 million acres, especially following the monsoon rains, thus leaving about 13 million acres uninundated during any year. The areas inundated are not usually cultivated during this period; only rice is grown when the water recedes. During the *Rabi* season much of the area remains unsown because of insufficient moisture, and even when some crops, like *Boro* rice, some vegetables and pulses and wheat, are grown during this season they give rather poor yields.

Irrigation, even when flooding can be controlled, cannot possibly be provided by canals; it has to depend on several methods, like pumping, storage and diversion of flood water and extensive drainage systems. In 1960–61, only about 3% of the total cropped area of East Pakistan was being irrigated.

It is quite obvious that the magnitude of the problem of annual flooding and the need for extensive irrigation are beyond the means of most farmers even collectively, though some local control against flooding and the use of stored water for irrigation during winter are not by any means completely absent. But water problems are so acute that even at the national level an extensive flood control system cannot be completed for a long time, despite the resolute efforts in planning and implementing such a programme.[143]

Even the relatively easier task of providing adequate irrigation and drainage facilities in most areas of this province has begun only recently under the auspices of the Water and Power Development Authority. At present, four major irrigation projects are being carried out: (a) canal irrigation in the Ganges-Kobadak area, (b) tube-wells

[142]G. MOHAMMAD, "Some Strategic Problems in Agricultural Development in Pakistan," *The Pakistan Development Review*, Vol. 4, No. 2, 1964, p. 244.
[143]*Ibid.*, p. 245.

in the northern area, (c) low-lift power pump irrigation in Dacca-Mymensingh-Sylhet plains, and (d) small tube-wells in the Comilla area.[144]

Crop production in West Pakistan is dependent largely on irrigation, as the rainfall over most areas of this province is neither sufficient nor evenly distributed to fulfil the water requirements of most field crops. According to the 1960 Census of Agriculture, it was found that in West Pakistan about 68% of the cultivated area was artificially irrigated: about 25 million out of about 37 million acres of cultivated area. The rest, i.e. 32% of the cultivated area, was fed by rainfall and flood water: 24% rain-fed and 8% flooded.[145]

Since artificial irrigation forms the basis of most crop production in West Pakistan, the present discussion will be limited to problems arising from it. Artificial irrigation is provided by two major sources: the first is the main river and tributory storage of water, and the other is ground water. Canals are the carriers of the first type of irrigation water, and wells, tube-wells, pumps and other such lifts are the menas for utilising ground water. The broad division of the total irrigated area of the province according to these sources of water supply is given in Table 38.

Table 38. Percentage distribution of the means of irrigation water in West Pakistan, 1960

Means of irrigation water supply	Percentage of irrigated area covered
Canals	78.0
Canals/wells	8.0
Wells	7.0
Other means	7.0

Source: See Table 22; *op. cit*, Vol 2, p. 292. (*fn.* 1)

Though some combination of all the various means of irrigation supply is used in varying degrees in West Pakistan, it is the extensive use of canal irrigation, particularly in the Indus basin, which creates problems for agriculture. There are two types of canals, namely inundation and perennial canals. Inundation canals are mere cuts running parallel to the rivers in the flood plains. They fill with water when the rivers rise, otherwise they remain dry. Thus they may very often fail to provide water when it is most needed. The perennial canals, on the other hand, are fed by an elaborate headwork commanding large areas.[146]

[144]*Ibid.*, pp. 245–49. The author gives an interesting appraisal of these schemes.
[145]*1960 Pakistan Census of Agriculture*, Vol. 2, *op. cit.*, Table 17, p. 292. (*fn.* 109)
[146]P. E. NAYLOR, "Control of Waterlogging and Salinity in West Pakistan," *International Journal of Agrarian Affairs*, Vol. 4, No. 1, 1963, pp. 1–12.

While the perennial canals usually provide an even flow of water, they have nevertheless given rise to two very serious problems. Firstly, the headwork obstructs the flow of silt into the fields which then gets trapped in the canal system. Secondly, inadequate drainage and improper regulation of water from these canals have created the twin problem of waterlogging and salinity. In fact, over most of the canal-irrigated areas in the Indus basin, the productivity of land has been deteriorating because of the detrimental effects of the high water-tables of the canals and the excessive concentration of injurious salts in the fields. It has been estimated that in these areas about 12 million acres of land (or about 40% of the total irrigated area) have already been affected, and about 3 million acres of the cultivated area had been rendered uncultivable up until 1960–61. Further, about 100,000 acres of cultivated land go out of cultivation every year.[147]

The problem of waterlogging and salinity in West Pakistan is of comparatively recent origin, and has mainly arisen because of the increasing intensification of irrigation through the perennial canal system. As long as the summer irrigation from inundation canals was the main source of water supply to crops, no general waterlogging problem existed. But, with the advent of barrage irrigation in the Indus basin, the rate at which water could be discharged from the acquifer was too slow to remove additional deep percolation resulting from seepage of the new canals, thanks to the absence of a drainage system, and from the water used to irrigate the new lands. As a result the water-tables have been rising ever since the barrage-controlled irrigation system began to operate on an extensive scale throughout the Indus basin.[148]

Coupled with the loss of water, which occurs between the canals' headwork and the fields (estimated at 50%), the uneconomic use of water in the fields only adds to the gravity of the situation. Thus it has been observed that one cusec of water is generally supplied for 333 acres as compared with 100 acres in arid areas of the U.S.A. with similar climatic conditions. Water thus supplied is often less than the evapotranspiration requirements of the crops, hence the water does not wash down much beneath the root-zones, leaving the injurious salts accumulated in the surface layer of the soil. The obvious result is that, on the one hand, most crops suffer from an inadequate water supply and, on the other hand, waterlogging and salt accumulation damage soil fertility and crop growth.

Although in the past some piecemeal attempts were made to tackle these problems by some kind of land reclamation and water management practices, it was not until 1954 that a national effort was made.[149] The various measures tried in some areas on a limited scale before included the lining of selected reaches of the canals, lowering of the

[147] *Revelle Report, op. cit.*, and S. M. AKHTAR, *op. cit.*, p. 12. (*fns.* 104 and 107)

[148] It is estimated that in general the water-table has risen to about 10 feet below the ground level. See: G. MOHAMMAD, "Waterlogging and Salinity in the Indus Plain: A Critical Analysis of Some of the Major Conclusions of the Revelle Report." *The Pakistan Development Review*, Vol. 4, No. 3, 1964, p. 358.

[149] *Ibid.*, p. 359.

water level in the canals, closure of canals in winter and construction of drains. But, with the establishment of the Water and Power Development Authority in 1954, these efforts were stepped up, and by 1959 this Authority had prepared a comprehensive programme of salinity control and land reclamation for the former province of the Punjab. This was subsequently extended to other areas of the Indus basin, and eventually a Master Plan was drawn up in the middle of 1961. This Plan called for the construction of 31,000 tube-wells, 7,500 miles of major drain-canals and 25,000 miles of supplementary drains at a total cost of Rs. 5,900 million.[150] Since all these plans will obviously require a long period of time before their real effects become fully operative, in most areas of the Indus basin the farmers will have to fight hard.

4.6 Incidence of Plant Diseases and Pests

It has been estimated that every year 5 to 15% of the standing crops in Pakistan are lost due to the damage caused by various plant diseases and pests. In cases of serious outbreaks, such as of locusts, rusts and caterpillars, the losses to a particular crop may extend from 50 to 100% in many areas. What is even more distressing is that the incidence of plant diseases is not restricted to the crops when they are standing in the field, but that many of them are carried through the seasons or damage the stored grains.

Table 39. Acreage covered by various plant protection measures in Pakistan (in thousand acres)

Year	Area covered by seed treated against plant diseases			Area covered by plant protection methods		
	East Pak.	West Pak.	Pakistan	East Pak.	West Pak.	Pakistan
1955–56	–	239	239	–	36	36
1958–59	34	2,008	2,042	422	714	1,136
1960–61	71	2,573	2,644	746	1,242	1,988

Source: Pakistan, Planning Commission, *Handbook of Agricultural Statistics*, (Karachi, 1964), Table 55 and 56, pp. 117–18.

Most farmers in Pakistan neither have any knowledge of detecting the disease organisms and the damage caused by them, nor do they possess adequate means to prevent and combat them. Some of the diseases are transferred to the soil right after the sowing of infected seeds; the farmers hardly ever treat them. During the various stages of plant growth, the attack of insects and micro-organisms further aggravate the healthy growth of the crops. Thus, at harvest time, the farmers have to content themselves

[150] *Ibid.*

with whatever produce is left by the courtesy of their foes. Even when some farmers do take measures against the high incidence of diseases, they are either insufficient in themselves or rendered ineffective because the other farmers provide a good source of infection. To add to all this, the cultural practices carried out by most farmers are only too conducive to the occurrence of some diseases in a recurrent fashion.

In such circumstances, the need for a national effort to save the crops cannot be over-emphasised. Thus, at the behest of the government, plant protection measures in Pakistan have been more widely applied as can be seen in Table 39. From this table it is clear that a very insignificant part of the total cultivated area, especially in East Pakistan, has been covered by such measures, and that it is only recently that the efforts have been enhanced to come to grips with this formidable problem.

4.7 The Use of Improved Crop Seeds and Fertilisers

It need hardly be emphasised that in countries where crop production has attained a high level this is largely due to the use of good quality seed, manures and above all artificial fertilisers. In Pakistan, however, at present not only is the number of farmers who use improved seed and apply fertilisers very limited, but the quantities used of these inputs are also very meagre.

4.7.1 The Production and Distribution of Quality Seed

The use of improved crop seeds means essentially the use of superior varieties of crops, especially well-adapted to particular soil and climate conditions. In Pakistan, while many good varieties of most crop plants, such as rice, wheat, cotton, jute and sugarcane, are available, their breeding and distribution to the farmers fall very short of the minimum requirements. In fact, the great majority of the farmers continue to use crop seeds irrespective of their trueness to variety and germinating quality. This applies to almost all types of crops, whether field crops or vegetables and fruits. In general, the farmer contents himself with the sowing of the seed which he may have either stored after the preceding harvest or bought from the local market or his neighbours. Similarly, in the case of vegetables and fruits, most of the stock remains the same from year to year.

The organisation of seed production and distribution in Pakistan is largely in the hands of the government, for only a very few private or co-operative agencies deal in the movement of seeds from the time they leave the producer to the time they arrive at the farm. In this organisation, there are usually three stages at which the government and private growers participate: most improved seed is produced on government research farms, where it forms the nucleus stock for multiplication; multiplication is done both on the government auxiliary farms and on the farms of 'registered growers', but it is mostly concentrated on the former types; finally, this seed is distributed to the farmers

through private agencies, particularly through the registered growers. Although seed production on government farms has increased quite considerably over the years, especially of the leading food and cash crops, it has been estimated that in 1961 these farms covered only about 9,724 acres in East Pakistan and about 44,073 acres in West Pakistan.[151] After the evaluation of this organisation, the Food and Agriculture Commission of 1960 found it rather inefficient and recommended that the newly established Agricultural Development Corporations should gradually take over the entire work and run it in co-operation with private enterprise in a business-like manner. The Commission also emphasised the need to regulate and control the standardisation of all improved seed. For the distribution of improved seed to the farmers the role of co-operatives was specially stressed.

4.7.2 The Application of Fertilisers

All crops continually remove from the soil the nutrients which are essential to their healthy growth. The most important elements of plant growth in the soil are nitrogen, phosphorus and potassium. In order to maintain soil fertility, and so provide a sound basis for continued plant growth, these nutrients must be replaced in the soil. Thus, unless the plant nutrient balance in the soil is adequate for the optimum growth of crops, other factors conducive to increasing agricultural production, such as better seeds, water and improved land preparation, can hardly be of any avail in bringing about the desired results. Therefore, it is essential that organic manures and artificial fertilisers should be regarded as a prime factor for better crop production.

In the absence of any detailed information about the use of manures and fertilisers in Pakistan, it is indeed very difficult to document precisely the extent and pattern of their utilisation by the farmers. However, thanks to the 1960 Census of Agriculture, some idea can be formed from the figures given in Table 40. Some salient features of this table may be noted here.

About 39% of the farms reported the use of some type of manures (artificial and organic): in East Pakistan the percentage is 45 and in West Pakistan 33. It is interesting to note that in both the provinces a proportionately higher percentage among the medium-size farms reported the use of these manures. As to the area manured, about 16% of the net sown area of the country was covered in that year: 23% in East Pakistan and 11% in West Pakistan. The higher figures for East Pakistan seem to be a result of the greater use made of farmyard and other organic manures in that province. This can be verified by the quantities of fertilisers used and the area covered by them: 4% of the farms in East Pakistan reported their use, as against 6% of the farms in West Pakistan; and the quantities of these artificial manures used in East Pakistan were incomparably smaller than those in West Pakistan.

[151]Pakistan, Planning Commission, *Handbook of Agricultural Statistics*, (Karachi, 1964), Table 59, p. 123.

Table 40. Use of manures, classified by size of farm, in East and West Pakistan, 1960

Size of farm (in acres)	Number of all farms (in thousands)		Net area sown (thousand acres)		All manures: percentage of all farms		All manures: percentage of net area sown		Chemical manures: percentage of all farms		Chemical manures: quantity used (tons)	
	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.
Size A	803	742	138	239	26	16	28	58	1	2	186	5,643
Size B	690	856	399	1,030	39	25	30	30	3	4	609	14,647
Size C	1,677	806	2,450	2,282	46	32	27	19	4	6	3,269	19,861
Size D	1,615	581	5,098	2,823	50	37	24	15	5	7	4,852	17,547
Size E	698	759	3,726	5,842	51	41	22	13	5	9	2,629	30,303
Size F	442	729	3,651	9,524	51	44	21	10	6	10	2,246	39,481
Size G	188	286	2,623	6,317	50	41	19	8	7	9	1,385	21,089
Size H	21	87	519	3,054	47	26	18	5	9	7	250	10,264
Size I	5	14	244	900	43	14	25	5	13	7	586	3,889
All size	6,139	4,860	18,848	32,011	45	33	23	11	4	6	16,012	162,724

Source: See Table 22; *op cit.*, Vol. 1, Table 19, p. 150, and Vol. 2, Table 33, p. 546. (*fn.* 1)

For the different sizes of farms, see Table 30.

In Pakistan, farmyard manure and compost have traditionally been the two main sources of organic matter and nitrogen in the soil. But although organic manure is usually prepared on the farm, almost all urine and a good part of the dung do not find their way to the field. Firstly, about 13 to 15% of the dung in the country is used for fuel. Secondly, even the remainder is not preserved properly with the result that plant nutrients are either leached away or oxidised. This is largely due to the fact that most livestock (especially the cattle) is not stall-fed, and also that the farmer does not properly look after the preparation of compost.

According to a survey, which was conducted in 1959–60, of the farmers reporting the use of organic manures on their farms, especially farmyard manure, on an average only 25 to 30% of their usual requirements were met.[152] This, in other words, means that not even the most essential elements of soil fertility are being replenished in any significant quantity. Further, the cropping patterns in most areas of East and West Pakistan do not properly incorporate the practice of green manuring. The practice of green manuring appears to be uneconomical to most farmers, and especially to small farmers, because the growing of a crop for harvest may have to be sacrificed.

From the foregoing it is evident that, to maintain soil fertility and increase the presently poor yields of most crops in Pakistan, the use of fertilisers must assume along with other crucial inputs a leading place on the farm. In Table 41, the distribution of fertilisers in East and West Pakistan for selected years is shown in equivalent of three nutrients: nitrogen, phosphorus and potassium. When these figures are viewed against the available cultivated and net sown area, the consumption of fertilisers per acre is one of the lowest in the world. For instance, in East Pakistan in 1960–61 only about 1.08 and 1.17 kg., per acre, respectively; for West Pakistan, the corresponding figures worked out to be 0.77 and 1.0 kg.

Table 41. Distribution of fertilisers in East and West Pakistan in selected years (in thousand tons)

Year	Nitrogen		Phosphorus		Potassium		All nutrients	
	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.	East Pak.	West Pak.
1952–53	1.8	1.0	–	–	–	–	2.8	2.8
1954–55	3.5	14.1	–	–	–	–	3.5	14.1
1956–57	5.1	9.0	–	–	–	–	5.1	9.0
1959–60	10.3	19.3	0.9	0.1	–	–	11.2	19.4
1960–61	19.7	31.1	3.6	0.4	–	–	23.4	31.5

Source: See Table 39; *op. cit.*, Table 57, pp. 120–21.

[152]Pakistan, Ministry of Food and Agriculture, *Survey Report on Use of Fertilizer in Pakistan*, S.S. 1, (Rawalpindi, 1961).

Around 1952–53 a very limited quantity of fertilisers was imported into Pakistan, and that too mostly for the tea estates in East Pakistan. It was not until 1956–57 that fertiliser consumption, mostly of ammonium sulphate and urea, began to show a consistent increase, especially in West Pakistan. Although extensive research work on the suitability of various types of fertilisers in East and West Pakistan has already been done, especially on some selected cash and food crops and fruits, so far the use of nitrogenous fertilisers has been the most popularised.

While there is an obvious need to increase the consumption of fertilisers in Pakistan, and of late the response of the farmers in general has been very encouraging, there are several problems which the farmers and government are facing. There are three major factors which influence the use of fertilisers by the farmers, namely: (a) cost considerations and credit facilities, (b) the distribution of fertilisers, and (c) the lack of adequate knowledge of the amount of each fertiliser, or a combination of more than one, needed for a particular crop and the methods of application. From the government's point of view, the problems include: the need to organise research; the expansion of extension services for demonstrating the application of fertilisers in the farmer's fields; and the production and distribution of cheap and most appropriate fertilisers. It is important to note that, realising the encouraging response of the farmers, the government in Pakistan has been subsidising the sale of fertilisers to the extent of 50%, and more recently it has adopted new methods of distribution of fertilisers through privately or co-operatively organised agencies. Further, since the continuous and increasing imports of fertilisers have formed a serious drain on the foreign exchange resources, some production plants have already been established and more are under construction.

4.8 Techniques of Crop Cultivation

A corollary of insufficient financial resources and the traditional state of crop production in Pakistan is the inadequate use of appropriate farm implements for various farm operations and the wasteful methods of crop cultivation. The techniques of cultivation, as meant here, include the preparation of land for seed, sowing, inter-culturing operations and the harvesting of crops.

Proper preparatory treatment of land is an essential factor in crop production, and improved tillage assumes increased importance if new varieties of crops, improved soil fertility treatment and water management are to produce the maximum effect on the yields of crops. Timely ploughing and sowing are the two basic factors conducive to good yields; late sowing reduces the yield of all crops. While almost every cultivator in Pakistan, however meagre his means of production are, realises the rationale of these elements, he is very often handicapped in carrying them out in time, thanks to the adverse effects of such factors as the absence of water either because of untimely rains or because of the absence of irrigation facilities. Further, he is often inadequately equipped with the required power and implements.

In Pakistan, almost all draft power on the farm is either derived from animals, espe-

cially bullocks, or dependent upon the manual labour of the farmers themselves, and the success or failure of a crop may often depend upon the plough, the way it is operated and the power with which it is pulled. Bullock power, especially in East Pakistan and also in some parts of West Pakistan, is poor. Not only is the animal power weak, but it is also often misused by yoking it to unsuitable types of farm implements besides the traditional plough.

A farmer in Pakistan normally ploughs his land five to eight times before putting the seed into the soil, depending on the type of crop and soil and the availability of water. Since the use of improved furrow-turning ploughs is very limited, it is often only the upper crust of the land which the farmer is able to break. Seed-bed preparation is not only inadequate because of the absence of the right type of implements, like ploughs, clod crushers and levellers, but also because the farmer has no concept of rational and judicious management of soil and water. Although extensive experiments in Pakistan have clearly demonstrated the advantages of line sowing, it is more often the broadcasting method which the farmer follows. In so doing, not only is the seed wasted, but is also not sown at the proper depth. Yet another defect of the broadcasting method is the difficulty which it creates for inter-culturing operations, like weeding, irrigation, application of fertilisers, thus adversely affecting the optimum growth of crops.

With regard to the inter-culturing practices, of which weed control is of utmost importance, they are wasteful both in terms of labour and time, for they demand hard and long hand operations and are costly if carried out with the help of primitive tools. The harvesting and post-harvesting operations, like threshing and winnowing, also suffer largely because of the use of improper implements and tools, thus resulting not only in great waste of the farm produce but also in the deterioration of its quality.

What is known today as mechanised agriculture in the more industrialised countries is conspicuously absent in Pakistan agriculture. This can be attributed to many causes, as for example: a critical shortage of financial resources among the farmers; fragmented holdings; the presence of a large proportion of the labour force working in agriculture, a substantial portion of which may be underemployed; and the almost complete absence of production and maintenance facilities for agricultural machinery. Thus, machine-driven implements are confined to either large private or government farms. The use of tractors, with attendent implements, and bulldozers has been restricted mainly to such large-scale operations as land reclamation, new irrigation projects, and the opening up of new agricultural land.

The only implements which could be called mechanised yet not entirely dependent on the use of machine-driven draft power, are the mould-board ploughs, water lifts like the Persian wheel, sugar-cane crushers, threshers, etc. In fact, it is this area of semi-mechanised agriculture which has the maximum scope for expansion, as it is relatively less costly to operate, maintain and is quite well-adapted to the genius of most farmers and to the size of farms and existing labour conditions. The government has begun only recently its popularisation on a significant scale. Thus, mechanisation in the sence of heavy dependence on machine-driven implements and tools, which are not only

costly but often also labour-replacing type, has been limited to the following operations which are undertaken either by the government or sometimes by a few well-to-do farmers and landlords:[153]

a. reclamation of derelict areas, especially in East Pakistan, and of culturable waste land in West Pakistan;
b. development of land in newly irrigated areas, e.g., recent projects in West Pakistan;
c. anti-erosion measures in West Pakistan and flood-control work in East Pakistan;
d. dry farming and moisture conservation work in West Pakistan, as is at present being done by the government.

4.9 Marketing Problems

The marketing of agricultural products in Pakistan presents a host of problems. Since most of the farmers have small and often fragmented holdings and their farm production is characterised by their heavy dependence on the cultivation of food crops, the extent of marketable surpluses of these commodities depends largely on the immediate needs of the farming community. In the case of most food products, since more than 84.0% of the country's population lives in villages, marketing more often assumes the simplest form of disposal in that the crops and other farm products are sold directly by the individual farmers in the market of the village. This process does not involve any specialised marketing functions and the prices of the commodities are determined by haggling and bargaining. Even in the case of cash crops, of which a variable yet small proportion is retained by the farmer, prices are determined in a similar way either at the grower's door-step, where itinerant dealers go around to buy in small lots, or in the primary market in the village.

Beyond the village markets, since most farmers have hardly any waiting capacity owing to the lack of credit and storage facilities, the bargaining position of the farmers vis-à-vis the intermediaries is further weakened by the inadequate transport and communication facilities. Thus in meeting the demand of the urban population for food commodities and in disposing of the cash crops for industrial purposes either at home or abroad, marketing becomes a very complicated process. It involves a chain of middlemen who, even without really performing any specific function, are in a position to exploit the producer (farmer in this case) on the one hand, and on the other, multiply the costs of marketing which adversely affect the consumer in the distant urban localities. The existence of too many superfluous middlemen in Pakistan can be ascribed to several reasons, the most important being 'inadequate financial resources of the

[153]For an interesting discussion on the subject of agricultural mechanisation, see: Pakistan, *Report of the Pakistan Agricultural Inquiry Committee, 1951–52*, (Karachi, 1952), pp. 10–22; *Draft of the First Five Year Plan, 1955–60, op. cit.*, pp. 38–42. (*fn.* 120); Pakistan, Ministry of Food and Agriculture, *Agriculture in Pakistan*, (Karachi, 1959), pp. 18–26; and *Report of the Food and Agriculture Commission, 1960, op. cit.*, pp. 106–10. (*fn.* 139)

producers and their low standard of education, unsatisfactory communications, absence of properly regulated markets and co-operative effort amongst the producers'.[154]

While the foregoing remarks reflect in general the weaknesses of the marketing system in Pakistan, there are several specific features which vary from one type of agricultural product to another, depending on its place in the rural sector and exports and the extent of participation of the government in regulating and enforcing various measures at different stages of the marketing process. In order to bring the problems of agricultural marketing in Pakistan into sharper focus, a detailed discussion of the following six broad categories of problems will be given here to reflect the nature and extent of the defects with which marketing is plagued:

a. The indifferent quality of the agricultural produce brought into the market
b. The lack of storage and warehousing facilities
c. Inadequate transport and communications
d. Multiplicity of the middlemen
c. The absence of properly regulated markets
f. The absence of co-operative marketing

4.9.1 The Indifferent Quality of the Produce

Efficient marketing requires a sophisticated degree of uniformity and differentiation in farm products, attributes which cannot always be achieved successfully after the produce leaves the farm. In Pakistan the low quality of almost all agricultural products in the first stage results from many factors, the chief being (a) haphazard selection of crop seeds and livestock breeds, (b) methods of crop production and livestock raising which very often leave grains and other products mixed with dirt, straw, blemishes, etc., (c) natural calamities adversely affecting the standing crops and livestock health, (d) inadequate storage at the farm, (e) almost complete absence of grading and standardisation, and (f) deliberate spoilage of the produce through adulteration, dumping, etc.

Not only does the produce leave the farm without much or any systematic grading, but even at the later stages of marketing, either within the village or in distant markets, it is not properly regulated. While in some areas there is some kind of voluntary grading of such products as wool, butter and mustard oil according to certain set standards, there is hardly any systematic grading. It is only recently that, at the secondary level markets, the government is encouraging grading of at least those products which are important foreign exchange earners. The most unhealthy consequence of the absence of grading in Pakistan is adulteration of almost all food commodities. The regulation of standardisation and grading of agricultural products is made specially difficult by the absence of co-operative marketing at the primary level, where in fact individual growers sell their produce in the form which they can most readily dispose of.

[154] *Report of the Pakistan Agricultural Inquiry Committee, 1951–52, op. cit.*, p. 45.

4.9.2 The Lack of Storage and Warehousing Facilities

Because of the absence of waiting capacity on the part of most farmers and of their need to satisfy their own basic requirements, most of the agricultural products are sold within a very short time after harvesting. While in general this is true of food as well as of cash crops, most foodgrains are stored for self-consumption and seed requirements for the next sowing season. Only the very well-to-do farmers are able to store their produce for sale over a longer period of time. The storage facilities which most farmers have are often poor and cheap, and until there is a very large quantity of produce the cultivators do not consider it worthwhile to store it. The storage of foodgrains is thus the only common practice at farm level; the other products (both perishable and non-perishable) are sold immediately at the door-step or carried to the nearest market. The result of improvised storage at farm level is a loss, especially in foodgrains, which can vary from 5 to 10% of the total volume of the produce.

It is true that in the assembling markets storage facilities are sometimes provided by the dealers and other merchants, but their costs are often prohibitive to the farmers; the common use of gunny bags not only adds to the costs but also to the risk of spoilage against which the farmers have no security. While obviously the need for cold storage for fruits, vegetables, meat, fish and seed potatoes is very great, there is hardly any in existence either at production or consumption centres.

The warehousing facilities are all the more precarious and limited. In practice, in the large assembling markets, the merchants, commission agents and even some joint stock banks do perform some of the functions of warehousemen, but only to the extent that they hold the produce belonging to their clients as security against cash advances. The produce is held at the risk of the client, or the producer in this case. Consequently, the costs are heavy and storage losses in quantity as well as in quality are also great, especially because of the absence of licensed warehouses. These improvised warehouses also result in the congestion of produce at consuming centres and ports.

4.9.3 Inadequate Transport and Communications

Limited and inefficient transport facilities are very often responsible for the continuation of self-sufficient farming. Likewise, defective communication facilities limit the range of marketing and confine the disposal of farm surpluses either to one of the itinerant dealers at the farmer's door-step or to the local village market.

In East Pakistan the land is largely flat and often broken up by a network of river channels, streams and backwaters, and thus road development has so far been very limited. It has been observed that in this province the farmers experience great difficulties in gaining ready access to markets in neighbouring villages or district centres, for more than one half of the villages are situated at a distance of more than 11 miles from any metalled road. Nearly all the fair-weather roads are impassable during the monsoon (June/July to September/October) and also for varying periods after the

heavy rains. Thus road development programmes in East Pakistan have been given top priority not only by the government at the provincial level, but also at the local level by the farmers themselves through the rural works programmes. The internal waterways present their own problems: excessive silting and the growth of water weeds often make them impassable.

In West Pakistan, where road communication is by far the most important means of carrying the farm produce to the distant market, road development programmes in the past have in general been far more extensive and successful than those in East Pakistan. However, even in this province, except in the areas of the former provinces of the Punjab and N.W.F., only 61 % of the villages are situated at a distance of 5 miles or less from any metalled road.[155] Arterial roads, especially in the areas of the former provinces of Sind and Baluchistan and other hilly tracts, are negligible or completely absent over a wide area. The construction and upkeep of fair-weather roads around the villages through the joint efforts of the villagers, as in East Pakistan, is only of recent origin.

With regard to the means of transport, bullock carts in West Pakistan and rowing boats in East Pakistan are the two major (and also) customary means of carrying the farm produce from the village to the assembling market. Sometimes, especially in West Pakistan, only pack animals may be used for this purpose. Road truck transport is rather limited because at this level most trade is in the hands of unorganised small farmers. But, at the secondary level, products like fruit and vegetables are often carried by trucks from the assembling markets to the distributing centres; the same applies to cash crops. However, in the case of milk and its products, supply to the urban areas is still made mostly by means of bullock cart and/or head-load. Since trucking of farm produce is usually beyond the means of an individual farmer or even an itinerant dealer, and no co-operative organisation exists for this purpose, only the very well-to-do merchants handle this means of transport, hence the high cost of transportation.

Transportation of products, especially the perishable ones, by the railways also suffers from many problems; the following are but the most important ones:[156]

a. the location of stations at distant places from the villages and assembling markets;
b. inadequate covered storage at pivotal stations and limited cold storage facilities;
c. lack of rail express services;
d. inordinate delays in transit and a good deal of spoilage and pilferage of products during transit.

4.9.4 The Multiplicity of Middlemen

In the assembly and distribution of most marketable farm products in Pakistan, a number of middlemen have emerged. The accompanying chart depicts a general pic-

[155]Pakistan, Central Statistical Office, *National Sample Survey (Third Round), 1961*, (Karachi, 1963), p. 8.

[156]*Report of the Pakistan Agricultural Inquiry Committee, 1951–52, op. cit.*, p. 49. (*fn.* 153)

ture of these middlemen and their relationship with each other and the farmer. This chart also shows that agricultural markets in Pakistan can roughly be divided into three main categories: village or primary markets, assembling or secondary markets, and distributing or terminal markets.

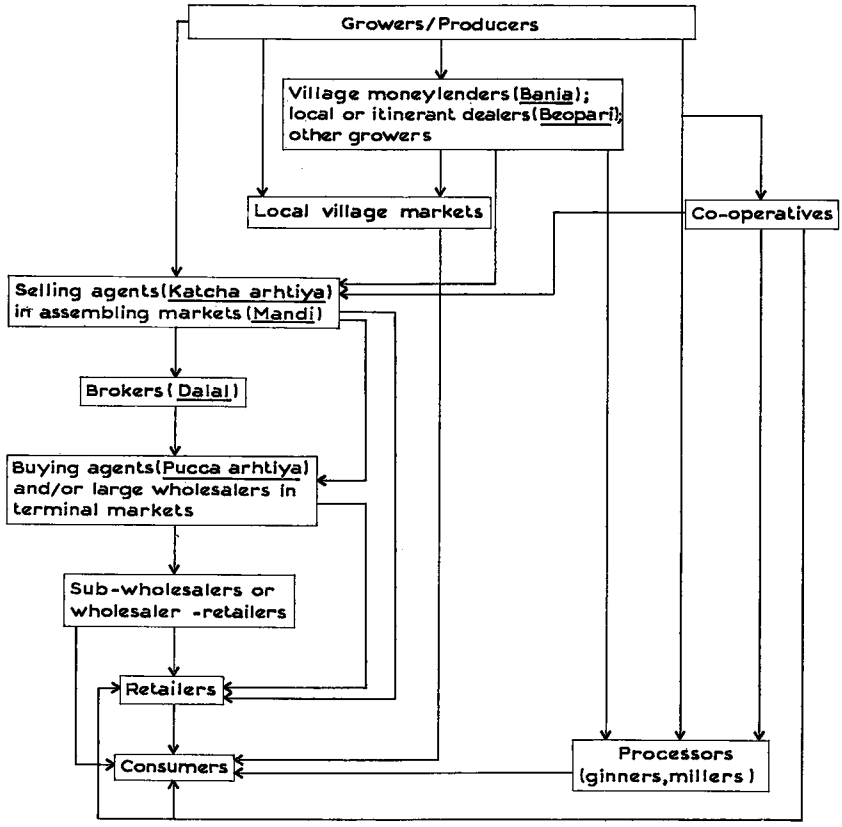


Chart 2. Marketing channels for agricultural products in Pakistan.

Since no comprehensive marketing survey has ever been conducted in Pakistan, it is almost impossible to say anything precise about the volume of each or all of the agricultural products which these middlemen handle and also the extent of the role of the three markets. Not all agricultural products, or even only crops, necessarily pass through all these channels to the same extent. It has often been observed that in the case of most foodgrains and some exportable cash crops the chain of middlemen at the lowest level is very large. But, in the case of most perishable commodities, the sales are usually made in local markets without any significant assembly at any level.

In general, the transactions starting at the farm level could take any of the following

forms: a grower or producer may take his produce directly to the village market, which is often a permanent place; he may have to pledge the bulk of his standing crop to the village itinerant dealer or money-lender, who forms the first link in the chain of middlemen; he may take his produce to the selling agents in the assembling market at some district centre if easy means of transport is available; he may deliver his produce directly to the processors; in some cases where co-operative marketing societies do exist at the village level, he may hand over his produce to them for further disposal.

In Pakistan it has been observed that, in the case of many bulky food and cash crops, the largest share is taken by the itinerant dealers and/or money-lenders, and the least goes to the co-operatives. Direct sales in the local village markets or assembling markets depend largely upon the distances, the means of transport and the extent of demand for a particular product. Where standing crops are pledged, the grower gets loans at interest rates which may vary from 20 to 75%, and the itinerant dealers and other middlemen make profit not only because of this interest but also because of the opportunity of selling the crop in the assembling market.

The key merchants or dealers in the assembling markets, the *mandi*, are the selling agents, or *katcha arhtiya* as they are usually called. The growers or the petty village merchants hand over the produce to these agents, who may sell the crop either immediately and pay the seller at once, or sell later and pay whenever it has been agreed upon. In many cases, these agents advance a proportion in cash even before concluding their sales in the *mandi*. After taking the delivery of the produce, these agents normally negotiate its sale on behalf of the grower or petty merchant who continues to retain the title to the produce until it is sold in the *mandi* by *katcha arhtiya*. The price this produce brings, less transportation charges, the advance, the interest on this advance and a commission for the sale of the produce, is remitted to the client. Interest and commission are the two important sources of income for the selling agents. Quite often these agents may also finance the village merchants and itinerant dealers who trade with them, even before taking for physical possession of the produce from the farmer. There are several methods in which these agents may sell the produce. All these methods usually result in varying degrees of abuse at the expense of the illiterate farmer. In the assembling market, where these sales are often carried out through auctions, the influence of these agents is indeed very great.

Brokers, or *dalal* as they are commonly known, mediate between the selling agents (*katcha arhtiya*) and the buying agents (*pucca arhtiya*); the latter may be large wholesalers as well. These brokers have no other function than selling information to the buyers. They often exact their fees from both the parties.

The buying agents (and the wholesalers) in the distributing market may sell the produce to sub-wholesalers or wholesaler-retailers and help finance them until they are finally able to sell the produce at the retail level. These agents, like the selling agents are also commission agents, but they conduct a much larger business. They may have their offices at various buying centres and may act on behalf of the wholesaler-retailers and exporting agencies. The charges of their business are very often not as indiscreet as those of the selling agents in the assembling market.

The position of the wholesaler-retailers is that they generally service the local retailers, to whom they may give credit as well. The difference between the large wholesalers and these agents in practice is in the pricing technique, that is, while 'the former "buy cheap and sell dear" and the latter generally sell at purchase price plus fixed markup'.[157]

There seems to be a consensus of opinion against the existence of so many types of middlemen, because there is no economic justification for their functions which very often overlap and, because of the exorbitant costs of these functions, the price formation in the market is always subject to their dictates. For instance, it has been alleged that such middlemen as the village itinerant dealers, money-lenders, brokers and selling agents are superfluous. But, as was alluded to before, their emergence has been due largely to the absence of co-operative effort on the part of the farmers themselves and also because of the lack of sufficient regulated markets in the country. These problems will now be discussed in detail.

4.9.5 The Absence of Regulated Markets

In Pakistan, village or primary markets are fairly widespread. However, since they have evolved in various localities under different circumstances, they often vary in size, character and organisation. A great majority of these markets consists of open spaces where buyers and sellers carry on their transactions. Their character may differ: for example, in West Pakistan most of them are permanent, but in East Pakistan these markets, locally called as *hatt*, are temporary and are generally held at a central place for a small number of villages on some fixed day(s) of the week. The market place may belong to either a local authority or individuals; in all cases a certain charge for the use of the place is collected.

Wholesale markets, or *mandi*, are fewer in number, and they usually perform special functions besides enabling the buyers and sellers to undertake transactions on the spot. However, most of these markets operate under unregulated conditions: they are often unorganised as to the conduct of auctions, the use of legal weights and measures, the charges on various functions, etc. Settlement of prices 'under cover' by the commission agents, extortion of a variety of charges without any service to the ignorant farmer are some of the common abuses.

At the secondary level, regulated markets have emerged only in the former Punjab, and there too their number is very limited both in area and volume of transactions covered. Although in some other areas of West Pakistan similar attempts have also been made, the effect has not been significant. It is only recently that the government has awoken to take a strong initiative in both the provinces in establishing regulated markets, where not only the practices in the market could be rationalised according to

[157]L. V. HIRSCH, "Wholesaling in India," in: R. BARTELS (ed.), *Comparative Marketing*, (Homewood, Illinois: Richard D. Irwin, Inc., 1963), p. 135. Since most wholesaling in Pakistan is similar to that in in India, Chart 2 in this chapter has been adopted from HIRSCH, but with some modifications.

certain rules, but better market information could also be provided to all the parties involved.[158]

4.9.6 The Absence of Co-operative Marketing

The co-operative effort of the farmers in marketing, as in the production process, has so far been negligible. In fact, such marketing societies at the primary level have only to a limited extent been successful in the former province of the Punjab in West Pakistan. In other areas, where multi-purpose societies have been in existence (as in East Pakistan), some of them have also participated in marketing the products of their members.

Realising the importance of co-operative action, both at the primary and secondary levels, the West Pakistan Co-operative Enquiry Committee of 1955 proposed the establishment of a system of marketing in which 'the primary society will deal with the marketing of the produce in the villages' and the 'secondary institutions will be formed and the primary societies of all those villages which are served by a particular *mandi* will be affiliated to the secondary institutions in that *mandi*'. For the 'final disposal of the produce a tertiary organisation at the provincial level would be necessary'.[159] This scheme, although originally proposed for West Pakistan only, was later endorsed in full by the government in the Second Five Year Plan for the entire country. In fact, as only time will show, such a scheme, if carried out in earnest, will be of immense help to all those farmers who have small-size farms and whose waiting capacity is anything but strong.

4.10 The Attitudes of the Farmers Towards New Incentives and Social Organisation in the Rural Areas

It seems that in Pakistan there are two distinct types of social problems in its rural milieu. Firstly, on the production side, in agriculture the great problem is of replacing the inefficient and tradition-bound methods of farming by efficient and improved methods and inputs, the profitability of which can clearly be demonstrated in economic terms. Secondly, the social organisation in rural Pakistan does not permit most farmers to channelise their saved incomes or borrowed capital into economically productive ventures. Each of these problems will now be discussed in turn.

Although in recent years the network of rural extension programmes has increased rapidly, there are as yet no systematic studies to demonstrate the effectiveness with which the farmers have started accepting and adopting new inputs and techniques on

[158]It has been reported that, just before the launching of the Second Five Year Plan in 1960, only about 85 regulated markets were in operation, and almost all of which were in the former Punjab.
[159]West Pakistan, *Report of the West Pakistan Co-operative Committee (1955)*, (Lahore, 1956), p. 68.

their farms. However, from whatever little research has been done in this field in Pakistan, some generalisations do emerge rather clearly.[160] Thus it has been found out that, within the given socio-economic frame-work of the rural Muslim society of Pakistan, the adoption and diffusion of new and improved agricultural practices are largely dependent upon the following factors:[161]

a. the personality of the individual farmer: his educational and social status and his motivations;
b. the availability of land and other physical means of production;
c. the degree of demonstration effect of the profitability of new inputs and practices; and,
d. the time element which may be involved from the stage of 'awareness' of the new inputs and practices to their final 'adoption'.

While all the above-mentioned factors are closely bound together, the motivations for economic betterment are often weak if only because of the risks involved. They are, *ceteris paribus*, often inversely proportional to the degree of risks involved in adopting a new venture. In this sense, the Pakistani peasantry is no more exceptional than any other peasant society. But, sociologically speaking, these motivations for material advance, if that is what economic progress signifies, are more basically affected by the goal-orientation of a particular society. This leads to the discussion of the second and perhaps more important area of social problems which seem to have proved a great impediment to economic progress in rural Pakistan, and in which the role of capital accumulation is central.

In Pakistan, as in many other contemporary tradition-bound agrarian societies, even if some farmers do adopt such improved agricultural practices as they regard economically profitable, their marginal savings are in fact disinvested rather than invested into the economic system. Not only do the additional earnings go to meet social needs, but even the borrowed capital is channelised towards the same end. Often such expenditure as is made on feasts, fairs and festivals, leaves most rural families in a hand-to-mouth condition, if they have somehow managed to save themselves from perpetual-indebtedness. These social 'needs' of the rural community, the degree of their fulfilment being perhaps the only criterion of happiness, are deep-rooted in the value system of the society.

The foregoing general remarks can be well substantiated by the type of social milieu which exists in rural Pakistan. Not many detailed studies on the various aspects of this problem are at present available in the country; HUSAIN's pioneering work in East Pakistan does, however, reflect the kind of social organisation of the predominantly Muslim population of Pakistan.[162] His work, as of some others elsewhere under similar

[160]For a good study in Pakistan, see: S. A. RAHIM, *Diffusion and Adoption of Agricultural Practices: A Study in a Village in East Pakistan*, Pakistan Academy for Village Development, (Comilla, 1961).
[161]*Ibid.*, pp. 2–3.
[162]A. F. A. HUSAIN, *Human and Social Impact of Technological Change in Pakistan*, Two Volumes, (Dacca: Oxford University Press, 1958).

circumstances, clearly demonstrates that a great majority of peasants would work hard and long if only to make greater 'investments' to meet their social obligations in religious and/or cultural rituals. Their number seems to be larger in the more integrated communities.[163] To those who see investment as the act of ploughing back one's marginal earnings into the productive system of the economy, these social expenditures represent merely a waste of capital, resulting in that familiar vicious circle of poverty. But, to the majority of the rural people in Pakistan whose goal-orientation is what some sociologists have called 'multi-directional', the channelisation of capital into these 'wasteful ventures' is often the true measure of happiness.[164]

Even though, with the introduction of technological change, the old economic relations in traditional agriculture are tending to break down slowly, there is definitely a time lag in readjusting social relations. Thus the impact of changes in the production system is not always readily followed by the dissolution of the existing value system, or for that matter of the social organisation itself. And, in a society such as that of rural Pakistan, where social cohesion is provided by the extended family system and almost all rituals are given the sanction of religious and cultural values, the resistance to change is understandably great. Nor is this all. Even among those of the Pakistanis who have shifted to an industrial-urban milieu, as HUSAIN clearly points out in his study, the inviolability of the old values and rituals epitomising their significance dies hard.[165]

[163] *Ibid.*, pp. 63–101. Another study of social customs and structure in the former Punjab is also very interesting: Z. EGLAR, *A Punjabi Village in Pakistan*, (New York: Columbia University Press, 1960).
[164] B. F. HOSELITZ (ed.), *Industrialization and Society*, (The Hague: Mouton & Co., 1963), p. 12.
[165] HUSAIN, *op. cit.*, pp. 140–212. (*fn.* 162)

5 The Role of the State in the Economic Life of Pakistan: With Special Reference to the Agricultural Sector

5.1 Introduction

The role of the government in the organisation and regulation of economic activities has invariably evoked acrimonious controversies. On the one side there are those who would assign to the State, besides its traditional duties of maintaining law and order, only a very restricted control of the economy; on the other side are those who would defend tooth and nail the active and almost total participation by the State in nearly all economic and social affairs. While no country can be free from such apparently irreconcilable controversies, it is generally agreed that the State in contemporary underdeveloped economies has to assume a special place. This is the more so when development planning in some form has become an essential tool of State participation.[166]

The role of the government in the economic life of Pakistan 'extends from the regulation and control of private enterprises in trade, industry, and agriculture to a direct participation in certain specific fields'.[167] However, it is interesting to note that in Pakistan the pattern and extent of government participation in the economy is not based primarily on any doctrinaire considerations as is well demonstrated by the 'peaceful co-existence' of private and public enterprise. Nevertheless, thanks to the commitment of the national government to planned economic development, all short- and long-term government policies in the economic sphere are often geared to the broad objectives and strategy of national economic plans. As an indication of the pragmatic nature of the approach to planning, it is worth while to quote from a recent statement of the President of Pakistan:

'Our approach to economic planning has been pragmatic all along. It has been the constant endeavour of the government to mobilise the creative energies of the nation and to give all possible incentives for the stimulation of private initiative. The government has limited its own role to providing a suitable frame-work for the private sector and to the creation of those facilities which the private sector had neither the ability nor the willingness to develop. There have been no grand experiments in nationalisation, no fancy slogans about socialism, no undue intervention in the private sector. In fact, the

[166]Over the years, a consistent body of opinion has been building up in favour of economic planning in underdeveloped countries, and many persuasive writings could be quoted in this regard. However, two recent references will suffice here: E. E. HAGEN (ed.), *Planning Economic Development*, (Homewood, Illinois: Richard D. Irwin, Inc., 1963), Chapters 1, 11 and 12; and United Nations, Department of Economic and Social Affairs, *Planning for Economic Development*, (New York, 1963).

[167]ISLAM, *op. cit.*, p. 430. (*fn.* 102)

government has gradually removed most of the administrative and bureaucratic controls which hampered progress of the private sector.'[168]

The above statement may betray a fair amount of complacency, and indeed the fact is that this planning recipe has had its own weaknesses: on the one hand, it has not been able to satisfy the appetite of many ideologues among the intelligentsia and, on the other, it has not yet succeeded to enthuse the masses with an adequate spirit of participation. Further, what appears to be more distressing is that when references are made to such terms as 'Islamic Socialism' and 'Welfare State', the two being used almost synonymously, their substance remains at best only ill-defined. After all, these slogans will in the long run have to be justified by, among other things, their substance and not by their evocative power, however fanciful and strong it may appear.

Since the main purpose of this chapter is not to analyse and evaluate in detail all the ramifications of the role of the State, the discussion will be limited firstly to the process of investment allocation in general and to the agricultural sector in particular, with special reference to the share of the public sector in these allocations. Then, within this frame of reference, the role of the government in the organisation of the agricultural sector or in the activities relevant to this sector and its development will be presented.[169]

5.2 The Allocation of Investments to the Agricultural Sector

As was alluded to before, the agricultural sector still dominates the economic scene of Pakistan. While it is true that its expansion has not been satisfactory over the years, it has attained of late an annual rate of growth which cannot by any means be regarded as an unenviable achievement. Based on recent estimates by the government of Pakistan, Table 42 presents the annual rates of growth of the three major sectors of the economy, all of which show an increase over the years.

The impressive increase in the annual rate of growth of the agricultural sector, as also of the other sectors, has been due mainly to a significant increase in total investment as a percentage of the GNP, and in which the government through the public sector have demonstrated their keen and determinedly increased participation in the national effort. To form a general idea about the overall and sector-wise investments (private and public), Table 43 shows the increased allocation as a percentage of the GNP. Besides the increase in total investment as a percentage of the GNP, from 4.6% in 1949–50 to 16.6% in 1964–65, the most significant fact in this table is the increase of the share of the public sector in total investment: in increased from about 28% in 1949–50 to about 49% in 1964–65. However, it must be mentioned that this increased share of the public investment has not been at the cost of private investment, for while public investment grew at an annual compound rate of over 17% during 1949–50 to

[168]*The Third Five Year Plan (1965–70)*, *op. cit.*, Foreword, without page number. (*fn.* 72)

[169]For a detailed discussion on the role of the State in Pakistan, see: ISLAM, *op. cit.*, pp. 430–59, (*fn.* 102); HAQ, *op. cit.*, (*fn.* 72); and C. Wilcox, "Pakistan," in: HAGEN, *op. cit.*, pp. 52–79. (*fn.* 166)

Table 42. The average annual rate of growth of the three major sectors of the economy of Pakistan

Sector	Annual compound rate of growth (%)	
	1949–50 to 1959–60	1959–60 to 1964–65
Agriculture	1.3	3.5
Manufacturing	7.4	8.6
Services	3.5	6.7
All sectors	2.5	5.2

Source: Pakistan, Planning Commission, *The Third Five Year Plan (1965–70)*, (Karachi, 1965), Table 2, p I–2. (Mimeographed).

Table 43. Gross investment as a percentage of the GNP and the relative shares of public and private investment (million Rupees; 1959–60 prices)

Type of investment	1949–50	1954–55	1959–60	1964–65	Annual compound growth rate (%)
Total investment	1,120	2,200	3,430	6,710	12.7
Public	310	610	1,710	3,310	17.1
Private	810	1,590	1,720	3,400	10.0
Total investment as a percentage of the GNP	4.6	7.9	10.9	16.6	

Source: See Table 42; *op. cit.*, Table 4, p. I–5, and Table 5, p. I–6.

1964–65, private investment grew at an annual compound rate of 10% during the same period.

The importance of the agricultural sector in the economic development of Pakistan may also be judged from the fact that, although the manufacturing sector grew at a very rapid rate from 1949–50 to 1964–65, it hardly influenced the annual overall rate of growth of the economy, because of the large weight of the agricultural sector in the national output and its low rate of growth. In the words of the Pakistani planners, this slow rate of growth of agriculture 'limited the availability of exportable surpluses of agricultural raw materials and tended to dampen the demand for industrial products since purchasing power in the rural areas was not increasing at a fast enough rate'.[170] Thus these 'widely divergent growth rates in agriculture and industry during these 15 years made economic progress less harmonious than it should have been and exercised an adverse influence on the over-all rate of growth'.[171]

[170] *The Third Five Year Plan (1965–70)*, *op. cit.*, p. I–3. (*fn.* 72)
[171] *Ibid.*

With an increased investment effort in Pakistan over the years, as was indicated above, and the explicit recognition of the thwarting effect of the slow rate of growth of the agricultural sector on the development of the economy, there has fortunately been an increasing allocation of investment outlays in this sector within the development plans as can be seen in Table 44.

Table 44. Percentage distribution of total development expenditure by economic sectors in Pakistan

Development sector	Pre-plan 1950–55	First plan 1955–60	Second plan 1960–65	Third plan 1965–70 (proposed)
Agriculture	6	7	13	15
Water and power	13	17	19	15
Rural works programme	–	–	3	5
Industry, fuels and minerals	36	31	28	26
Transport and communications	14	17	17	18
Physical planning and housing	22	20	15	13
Education	5	6	4	5
Health	3	2	1	2
Manpower and social welfare	1	–	–	1
All sectors	100	100	100	100

Source: See Table 42, *op. cit.*, Table 7, p. IV–11.

However, what is even more important to note is that, for the overall development of agriculture, the proportions of the total investment in such sectors as the 'water and power' and the 'rural works programme' are also of considerable value. When the percentage increases in these three sectors are taken together, the investment allocation rose from 19% in 1950–55 to 35% in 1960–65. For the Third Five Year Plan period, 1965–70, the same percentage of investment is proposed as was allocated during 1960–65.

The increasing share of the public sector in the total investment, i.e. 60%, has mainly been provided for the provision of infrastructure. Further, largely because of the relative weakness of the private sector in East Pakistan in almost all development spheres, the public sector there has assumed a more important role over the years. It has been estimated that the public sector investment in East Pakistan has been increasing on an average annual rate of 23.5% during the period 1949–50 to 1964–65 as against 17.5% in West Pakistan during the same period.[172]

[172] *Ibid.*, Table 13, p. I–15.

5.3 The Role of the Government in the Organisation and Development of the Agricultural Sector

Speaking in general terms, there are three major areas in which the State in Pakistan has been either participating directly or influencing indirectly the structure and organisation of the agricultural sector in the country. These areas are:

a. The improvement of the already existing rural economic and social infrastructure and the creation of new ones, such as irrigation systems, road- and waterway transport, schools and hospitals, and the provision of such direct inputs to the farmers as may be essential to help increasing agricultural production.
b. The institutional reforms on the land, which relate to such matters as the regulation of the terms of land-ownership and the consolidation of fragmented holdings.
c. The collection of land revenue and other State charges which help to transfer capital resources from the agricultural sector to the rest of the economy and also the investment programme within this sector itself; the regulation of markets with a view to helping stabilise prices of various agricultural commodities and also influencing the acreage and production of the leading food and cash crops.

In sections 5.3.1 to 5.3.3 the above-mentioned roles of the State will be discussed in detail.

5.3.1 General Agricultural Development

As was stated in the introductory section, the government in Pakistan has committed itself to planning economic development. It is within the national plan that priorities of development in the major sectors during a specific plan period are fixed. The expenditures involved are in addition to those which the government has to undertake from year to year for the maintenance of a large number of the so-called nation-building departments, both at the centre and in the two provinces. However, it must be said in all fairness that not all the efforts of the government in the rural sector are, and by the nature of this sector's private organisation cannot be, directed towards the supplanting of the existing local private initiative and entrepreneurship. In general, therefore, the governmental agencies aim at improving the existing facilities where they appear to be inadequate and creating those which could not otherwise be undertaken or completed by the farmers themselves.

Thus the role of the State in this sphere ranges from the establishment and improvement of such infrastructure as irrigation barrages, dams and canals, rural accessory roads, health centres, primary and secondary schools, etc., to the provision of those factors which are required for enhancing directly or indirectly the productive effort of the farmers, such as farm credit, fertilisers, seeds, plant protection measures, etc. In covering such a large area of activities, with limitated resources and personnel, the government has always been in a state of departmental reorganisation. This has usually been due either to the inherent defects in the existing departmental organisation or

to the lack of adequate co-ordination at almost all levels. The fact that there has traditionally been a tremendous multiplicity of departments handling the subjects which affect the farmers was well taken by the Food and Agriculture Commission in its report in 1960.[173]

Since a formal evaluation of the activities of various government departments functioning in the agricultural sector lies outside the purview of the present study, it is sufficient to mention here some important activities of the State in the development of the rural sector. In water and power development and the rural works programmes the government has relied mainly upon autonomous bodies; but for the supply of various agricultural inputs and advisory work the services have been channeled through the agricultural department. However, of late the last two tasks have also been assigned to independent public agencies outside the frame-work of the traditional government organisation.

5.3.1.1 *The Rural Works Programme*

Realising the multitude of problems in the rural areas of Pakistan, the government initiated in 1953 a comprehensive programme of community development through a new organisation called the Village Agricultural and Industrial Development or the Village-AID in short. This body was given a more or less independent status outside the general frame-work of the then existing departments. While the objectives which it was designed to meet were in themselves multifarious and quite often unclear, the Village-AID organisation suffered very badly over the years from the duplicity of work arising from insufficient co-ordination among the various government agencies, the extension service of the agriculture department being the best example. Thus after a period of heart-searching and re-assessment of the Village-AID programme, the government abolished the organisation in 1960, and with it most of the cliché of 'community development'.

During the same period the country was also undergoing a process of far-reaching constitutional changes, with the result that a new political tier system under the name of 'Basic Democracies' was created. In this system, the rural and also the urban areas were to have effective local self-government through the elected Union Councils. The system was meant to use the people's elected representatives in any rural development programme which the government might propose to start in a given area or in the country as a whole.

Within the new system, the erstwhile Village-AID programme was transformed into what is now called the Rural Works Programme. This programme, being less ambitious than the Village-AID, was based on the successful experience of a pilot project conducted in Comilla *Thana* in East Pakistan during the year 1960–61. Almost all of this programme consisted of building and repairing such infrastructure as irrigation channels, drainage networks, roads, etc. Not surprisingly, through the active and willing partici-

[173] *Report of the Food and Agriculture Commission, 1960, op. cit.*, pp. 504–5. (*fn.* 139)

pation of the people's representatives at the local level, the confidence of most farmers in this area was readily gained. The results of this project were so promising that the government initiated a province-wide programme of this nature in East and West Pakistan. The rural works programme has now become an integrated part of the national economic plans. This programme has four major objectives, namely, (a) the effective utilisation of any surplus rural manpower, (b) the development of rural economic and social infrastructure, (c) strengthening local self-government, and (d) planning from below.[174]

The growing importance of the rural works programme can well be judged by the increased allocation of funds. They amounted to: Rs. 100 million in 1962–63 for East Pakistan alone; Rs. 300 million in 1963–64 for both the provinces; and Rs. 400 million in 1964–65. However, while all these expenditures were undertaken outside the scope of the Second Five Year Plan, the new allocation of Rs. 2,500 million has been made within the frame-work of the Third Five Year Plan (1965–70), representing about 5% of the total investment in the plan period.[175]

The rural works programme under the Third Five Year Plan is expected to cover such self-help projects as minor irrigation works, flood control, rural communications and transport, supply of drinking water, community houses, dispensaries, schools, markets, etc. In addition to the funds allocated by the government as a part of its contribution to this programme, each Union Council in the rural areas is expected to mobilise additional resources either from local taxes or through the utilisation of voluntary labour.

5.3.1.2 *The Development and Control of Water Resources*

As was stated earlier, for increasing agricultural production, water occupies a central place in Pakistan: in West Pakistan the most crucial factor is the extent of the availability of irrigation water, and in East Pakistan it is the control of river waters which is of paramount importance.

The large-scale infrastructural activities necessary for the realisation of the plans in these fields cannot be developed without the active leadership of the State. Hence, with a view to harnessing such water resources on the national level and also to saving the land and people from untold misery each year, the government has created a special agency, the Water and Power Development Authority (WAPDA for short), which works independently of the other government departments. The WAPDA has its field staff in one autonomous office in each of the two wings of the country. This organisation not only undertakes large-scale irrigation, drainage and flood control schemes, but also helps individual farmers in getting irrigation water for their land by the construction of tube-wells. Besides the work of water development, the WAPDA undertakes the work of rural electrification throughout the country.

[174] *Outline of the Third Five Year Plan (1965–70)*, *op. cit.*, pp. 232–34. (*fn.* 100)
[175] *The Third Five Year Plan (1965–70)*, *op. cit.*, p. IV–16. (*fn.* 72)

5.3.1.3 *The Provision of Farm Inputs, Advisory Service, Research and Education*

Until 1960–61, all agricultural extension work, including the supply of improved seeds, fertilisers, plant protection material and advisory work (except the care of livestock health), was being done by the provincial agriculture departments. But, following the recommendations of the Food and Agriculture Commission of 1960, the government established an entirely new organisation which to begin with would concentrate on providing the farmers in some selected areas of the country with those inputs which they may benefit from. This body was named the Agricultural Development Corporation, with an independent status outside the general frame-work of the existing departments of agriculture, animal husbandry, co-operatives and the like. However, while this Corporation, with an autonomous office and organisation in each wing, was initially intended to cater for the needs of extension and supply work in the proposed project areas (16 in West Pakistan and 11 in East Pakistan), the rest of the country will continue to be served by a reorganised agricultural extension service and other such governmental agencies.

Although great hopes have been attached rather prematurely to the success of the Corporation in bringing about the desired changes in the country's agricultural scene, it is as yet too early to say anything about its real prospects and the form it might eventually take. In the meantime, however, it is more than likely that the transitionary period may prove to be more arduous and uncertain both to the government and the farmer. This shift from one system to another is apt to create, at least for some time, confusion about the function of the government, not to mention the inter-departmental jealousies and tensions. Perhaps the farmer may also have to contend with a greater number of government functionaries and advisors than previously. Thus, in the task of providing the farmer with the wherewithal for improving his own lot on the one hand, and increasing the volume and quality of the agricultural produce in the country on the other, the critical test of the effective role of the State in Pakistan seems to reside in the simplicity with which the farmer can be approached and the speed with which he may be made to accept and adopt new and improved farm inputs and methods of production.

The role of the government is equally important in the organisation and administration of agricultural research and education. Thus, keeping in view the increasing significance of applied agricultural research on soils, crop husbandry and protection, livestock breeding, feeding and management, forest development and the utilisation and exploration of fish wealth, the government has attempted to bring research work as close as possible to the basic needs of those who are engaged in agriculture as an industry. However, in the field of crop and livestock production alone, the most important problem has been one of establishing the most effective and harmonious relationship between the research organisations and the agricultural extension service. Much too often it is claimed, and not without supporting evidence, that agricultural research in Pakistan is at best misdirected. From an economist's point of view, a more distress-

ing fact is that few, if any, farm economics studies have been carried out in Pakistan, hence economising on farm enterprise remains at best a sophisticated game of gambling. Although some farm management studies have been initiated of late at the behest of the government, their results and analyses will provide only a modest beginning which in a country like Pakistan should have started much earlier, as was done in India.

Since it was earnestly realised that a wide gap existed between research work and the farmer's immediate problems, the Food and Agriculture Commission recommended a closer contact between applied research and the extension staff. For instance, it was emphasised in the Commission's report that the Agricultural Development Corporation should in most cases draw upon basic research through demonstrations in the field, of course with the help of the existing research bodies. This would mean that it is the farmers' door-step which must be the ultimate market for the innovational activity of the government.

5.3.2 The Reforms of the Land Tenure Systems

5.3.2.1 *General Background*

The problem of land tenure in Pakistan was one of the major national issues which the government had to face right after the birth of the country. This was the more urgent because there was no uniformity in the then existing land tenure systems. Not only were there some basic differences in those of East and West Pakistan, but while East Pakistan had inherited a uniform system, the tenurial arrangements in West Pakistan presented a variety of forms, all with their own concomitant problems. The origin of these different tenurial systems on the land could be traced to the specific socio-political circumstances of each region just before and during the British *raj* in undivided India.

While it is quite difficult to state in cut and dried form the exact nature of the land tenure systems which have existed in Pakistan, the following three groupings indicate rather clearly their broad forms:[176]

a. Large landed estates owned by landlords, usually cultivated by tenants (occupancy tenants and tenants-at-will). The landlords are referred to as either *zamindar* or *jagirdar*: these terms relate to the mode in which land has come into their ownership. At the inception of Pakistan this system prevailed in both the wings of the country, but in East Pakistan, after the promulgation of the *1950 East Bengal State Acquisition and Tenancy Act*, it was gradually liquidated. In West Pakistan, as will be pointed out later, though this system continues to exist, it has been greatly modified since the promulgation of the *Martial Law Regulation No. 64* in 1959.
b. Then there are the peasant-proprietors, who own and cultivate their own areas. The

[176] *Draft of the First Five Year Plan, 1955–60, op. cit.*, p. 116. (*fn.* 120). See also, AKHTAR, *op. cit.*, pp. 148–59. (*fn.* 107)

cultivation is done with the help of either the family members and/or hired labour. These types of owners usually live in compact village communities.

c. Finally, there is the system in which the State is the actual owner of the land and the farmers cultivate it on a tenancy basis with security of tenure fully guaranteed, known locally as the *ryotwari* system. The occupant is quite free to leave his land and not pay the land revenue. The occupant also enjoys full heritable and transferable rights. This system prevails now in East Pakistan and also in many parts of the former province of Sind in West Pakistan.

In fact, before the advent of the British *raj* in India, there was only a very vague conception of the right of individual ownership of land. Thus, in what is now East Pakistan (formerly a part of the province of Bengal), in the pre-British days the landlords of Bengal were only intermediaries who worked for the State in collecting land revenue. But the British, during the last part of the 18th and early part of the 19th centuries, conferred upon these land revenue collectors the permanent right of ownership, and thus created a landlord class. The landlords in West Pakistan, on the other hand, are the descendants of those who occupied large areas of land at the time of the British conquest of this part of undivided India. These people had come to own large estates in several ways. While these types of landlords, both the *zamindar* and *jagirdar*, were to be found in the former provinces of the Punjab and N.W.F., such a system did not exist in the former province of Sind. However, in Sind also since the occupants often belonged to the established political hierarchy, they acquired the status of large land-owners. Consequently, almost 80% of the land in this region was at one time owned by a relatively small number of landlords who, though legally the occupancy tenants of the State, got their land cultivated by tenants-at-will (locally known as *hari*). Besides the *zamindar*, who pay land revenue to the government, the other class of big land-owners in West Pakistan are the *jagirdar*, who have inherited their land as grant from the State and they are exempted from the payment of land revenue. Like the *zamindar*, the *jagirdar* emerged from the peculiar historical circumstances in the Indian sub-continent.[177]

With this rather sketchy background of the various land tenure systems in Pakistan, an attempt will be made in the following sections to show the role of the government in effectively legislating land reforms in the country. Since the two provinces have differed greatly in the pattern of land-ownership and since East Pakistan has been ahead of West Pakistan in its earnestness to adopt land reform measures, it is necessary to discuss them separately.

5.3.2.2 *Land Reforms in East Pakistan*

The economic and social evils of the *zamindari* system in East Pakistan, as it evolved during the British period in undivided Bengal, were recognised even before the inception of Pakistan. For the first time, the task of abolishing the *zamindari*, and more par-

[177]See: AKHTAR, *op. cit.* (*fn.* 107)

ticularly the system of 'Permanent Settlement', was taken up by the government in 1940. Since it was the State which had the ultimate claim to the ownership of all land in that part of India, the main object of the task was to remove all intermediaries and the State had therefore to re-establish its relations directly with the actual cultivators of the land. However, despite the further emphasis laid by other official committees on this problem, the final decision by the provincial legislature of Bengal, as it was then, was delayed until the time of partition of the Indian sub-continent. Following the birth of Pakistan, this urgent matter was taken up once again by the East Bengal (as East Pakistan was then called) government, culminating in the adoption of *The East Bengal State Acquisition and Tenancy Act, 1950*. The salient features of this *Act* are the following:[178]

a. The acquisition by the State of all rent-receiving interests through the removal of the intermediaries between the actual cultivator-tenant and the State itself.
b. The large *zamindari* estates were to be acquired immediately by the government if reasonably reliable rent collection papers were available. The other rent-receiving interests were to be acquired by the State under a more comprehensive system, according to which the records of the rights had either to be prepared afresh or completed by revision based on surveys.
c. The out-going rent receivers had the right to compensation according to the rates prescribed under the *Act*.
d. The actual tillers of land were to become the direct tenants of the State paying land rent directly to the government, as soon as the intermediaries had been removed. These tenants, or *ryot*, were to be given permanent, heritable and transferable rights to their land.
e. The land rents, fixed under the new system, were to be fair and equitable. These rents were not to be enhanced before a period of thirty years had lapsed after the fixation of the first tables of rent.
f. No sub-letting was to be allowed under this *Act*, and restrictions were put on the sub-division of holdings with provision for the consolidation of fragmented holdings under certain conditions.

While the above features pertain to the abolition of the *zamindari* system as such, the *Act* also made provisions for the owner-operated areas. The following are the main features:

a. There was to be a ceiling on all self-cultivated, or *khud-kasht* or *khas*, lands, which had to be either 100 standard *bigha* – 1 *bigha* equalling about 0.33 acres – or 10 *bigha* per member of the family, whichever of the two units was the greater, plus 10 *bigha* for the homestead. These limits could be relaxed only in exceptional cases.
b. The land in excess of the above ceiling was to be acquired by the government, in return for due compensation, and was to be distributed among the cultivating families who owned uneconomic holdings and other landless agriculturists.

It may be mentioned, *en passant*, that though in essence this act called for radical changes in the then existing land tenure systems in East Pakistan, it suffered from one initial weakness: it did not provide any protection for the class of cultivators called *burgardar*, those share-croppers who were not recognised as tenants. According to one estimate, at one time the *burgardar* cultivated from 10 to 19% of the agricultural land

[178] *Ibid.*, and the *Draft of the First Five Year Plan, 1955–60, op. cit.* (*fn.* 120)

of East Pakistan.[179] Therefore, the Planning Board of Pakistan later recommended that these share-croppers be granted the legal protection their status demanded.

As to the implementation of the above *Act*, its speed was very slow largely because of the many administrative and legal problems which arose from time to time in the course of acquisition and redistribution. Thus, with difficulties arising from such questions as the payment of compensation, rent fixation and the collection of revenue, the provincial government had to appoint (in 1958) yet another body, the Revenue Commission, to re-examine the entire land tenure situation in East Pakistan. This Commission submitted its recommendations to the government in 1959. The most important being:

a. To increase the individual ceiling on land from 100 *bigha* to 300 *bigha*, and even up to 400 *bigha* in some special cases of mixed and cattle farming.
b. To prevent the fragmentation of individual holdings, no single piece of land was to be divided below 3 acres or 10 *bigha*.
c. To readjust the mode of payment of compensation.
d. To reorganise the method of revenue collection.
e. Finally, the Commission recommended that all cultivators, who were in 1958 *de jure* direct tenants of the State, should be declared the owners of their land, thus requiring them to pay only revenue and not land rent to the government.

Though most of the above-mentioned recommendations of the Revenue Commission were accepted by the government, nothing was done about the question of the ultimate ownership of land. However, late in 1960 the Food and Agriculture Commission also emphasised this last recommendation.[180] Further, this Commission urged the government to make the land revenue system of the entire country uniform, thus ensuring the spirit of an earlier declaration of the government that 'the aim must be to build a rural society largely consisting of self-reliant peasant-propietors'.[181]

5.3.2.3 *Land Reforms in West Pakistan*

The nature and extent of land reforms attempted by the government in West Pakistan from time to time have been quite different for at least two reasons. Firstly, before the administrative integration of the various provinces and states into 'One Unit' in 1955, each of the three major provinces – Sind, Punjab and N.W.F. – had its own peculiar land tenure systems. Secondly, before the promulgation of Martial Law in Pakistan in 1958 – as a consequence of the army take-over – the governments in each of these provinces had made half-hearted attempts to reorganise the existing land tenure systems.[182] Besides these three major areas comprising the 'One Unit', nowhere else in West Pa-

[179] *Ibid.*, p. 165.
[180] *Report of the Food and Agriculture Commission, 1960, op. cit.*, p. 285. (*fn.* 139)
[181] *Draft of the First Five Year Plan, 1955–60, op. cit.*, p. 124. (*fn.* 120)
[182] *Ibid.*, and AKHTAR, *op. cit.* (*fn.* 107)

kistan were tenancy reforms ever attempted, though the former states of Khairpur and Bahawalpur had more or less similar land tenure systems as the former provinces of Sind and Punjab, respectively.

Without going into the details of all the efforts towards land reforms in West Pakistan prior to 1959, it is sufficient to mention that, even in areas where tenancy reforms were started by the then provincial governments, the twin problems of concentration and fragmentation of holdings were not touched upon in any significant way. In fact, these attempts, instead of providing tenurial security to the mass of insecure tenants, only succeeded in creating an atmosphere of uncertainty among the tenants and an almost unmasked animosity between them and the landlords. Consequently, it was usually the tenant, especially the *hari* in the former province of Sind, who had to depend so much on the benevolence of the landlord that, in the absence of an honest and well-integrated approach on the part of the government, he just could not afford to incur his obvious displeasure. Further, there was no reason to believe that the provincial governments, composed as they were of the vested interests of the landed gentry, could have earnestly undertaken any measures directed towards the erosion of their own socio-political power.

Even after the integration of the erstwhile provinces and states into one administrative unit in 1955, no attempt was made to use this excellent opportunity to give West Pakistan a uniform basis of land tenure system and other related matters. In retrospect, it is somewhat difficult to say categorically whether this ineptness on the part of the government was due entirely to the pressure of the landlords, or whether their residence in or around the centre of political power in the province did not allow them to give any consideration to this crucial question. Perhaps it was the combined effect of both these considerations which deprived the tiller of the soil of his rightful share and the country of its much needed agricultural progress.

How crucial the role of the State in bringing about such institutional reforms can be is well illustrated by the imposition of Martial Law in Pakistan in October, 1958. The coup d'état, staged by the armed forces, was to prove almost a blessing in disguise. Among other tasks of national importance, the military *junta* addressed itself first to the problem of land tenures in West Pakistan. A nine-man Land Reforms Commission was installed to consider problems relating to the ownership and tenancy of agricultural land and to recommend measures for ensuring' better production and social justice as well as the security of tenure for those engaged in cultivation'.[183] This Commission submitted its report to the government in the very short time of four months, outlining first the characteristic features of the various land tenure arrangements then existing in West Pakistan and its recommendations on eight vital points relating to the subject of land reforms.[184]

Keeping in consideration the cardinal points, and on each of them the members of the Commission gave their individual and collective views, the Land Reforms Commis-

[183] *Report of the Land Reforms Commission, 1959, op. cit.*, p. 21. (*fn.* 119)
[184] *Ibid.*, pp. 21–23.

sion submitted its major recommendations to the army regime. The proposals were scrutinized again by the central cabinet and its decisions were made public by the end of January 1959. These decisions were incorporated in the *Martial Law Regulation No. 64* already referred to above, with amendments in Regulations 64-A and 64-B. The following are the salient features of this Regulation:[185]

a. Ceiling on individual land-holdings: no person was permitted, as from 8th October, 1958, to retain more than 500 acres of irrigated or more than 1,000 acres of non-irrigated land. However, some exceptions were added to this rule. For instance, according to a formula arrived at by the Land Reforms Commission, an owner was allowed to keep, in addition to the limits already prescribed, such other area as would bring his total area to the equivalent of 36,000 produce index units;[186] universities, other institutions of learning, religious and charity bodies were also allowed additional areas; livestock or stud farms in some cases were also permitted to keep additional areas; an individual land-owner was allowed to keep an additional area not exceeding 150 acres for orchards.

The persons whose present holdings exceeded these specified limits were given an option to select compact blocks of land not less than the size of an 'economic holding', which was clearly defined. All excess land thus resumed by the government had to be redistributed according to the rules laid down. For the purpose of resumption and redistribution of such land and also for the implementation of other regulations a Land Commission was established immediately.

b. Compensation to the land-owners, whose land had been resumed by the government, was to be paid with interest-bearing bonds, which were redeemable in 25 years. The detailed method of the payment of compensation was also described in clear terms.

c. The land resumed by the government was to be sold, in the first instance, to those tenants already cultivating the land at reasonable terms of payment extending over a period of 25 years.

d. All occupancy tenants were to become the owners of the land which they had been cultivating, as was already being done in the former provinces of the Punjab and N.W.F.

e. All other tenants, the tenants-at-will or the *hari* of Sind, were to be given legal security against ejection by the landlord.

f. The apportionment of the produce of land was to be based on the already existing system of fifty-fifty share of the landlord and tenant. However, except in special circumstances, the landlord was debarred from increasing his rent share or the share of the tenant in government dues.

g. The landlord was also debarred from demanding any other illegal exactions from his tenants, either in service or in kind or in cash.

h. To avoid further fragmentation of holdings and help the consolidation of existing ones, two concepts were laid down. First, a 'subsistence holding' was defined as a land area in block of 16 acres in the former Sind and Khairpur areas and half a square or half a rectangle or $12\frac{1}{2}$ acres, whichever of these was the greater, in other areas of the province. Second, an 'economic holding' was defined as a compact area of 64 acres in the former Sind and Khairpur areas and two squares or rectangles or 50 acres, whichever of these was the greater, in other areas of the province. Thus, on the basis of these two concepts, it was stated that no holding, if it was less in area than that of an economic holding, could be fragmented below the size of a subsistence holding; and, in cases where a holding was greater than an economic holding in size, it was not to be fragmented below the size of the economic holding. These, in brief, were the criteria of impartibility of individual holdings.

i. All *jagir*, areas held by the *jagirdar*, were to be abolished without the payment of any compensation to the *jagirdar*. All other intermediary interests on the land, as may have existed in some parts of the province, were also to be abolished forthwith.

[185]West Pakistan, Land Commission, *Land Reforms in West Pakistan*, Vol. 1, (Lahore, 1960), Chapter 1.

[186]*Report of the Land Reforms Commission, 1959, op. cit.*, Appendix 2. (*fn.* 119)

Besides the above-mentioned major clauses, the government emphasised that adequate facilities were to be given to the new owners for their immediate needs for credit to purchase farm inputs. It was also stated that the Land Commission should make the necessary arrangements for upgrading the holdings at least to the size of a subsistence holding, and for a compulsory consolidation scheme for the entire province. Finally, to demonstrate the seriousness of this Regulation, the government warned all parties involved of the likelihood of punishments in case of non-compliance with any of the clauses stated therein.

From the foregoing description it is clear that these reform measures embodied both short- and long-term provisions. Such provisions as the determination of individual holding, abolition of *jagir*, resumption of land, redistribution of resumed land to the cultivating tenants are relatively short-term measures. But consolidation of holdings, development of resumed cultivable waste land, provision of many needs for the new owners will obviously take a relatively longer time. With a view to achieving these objectives the Land Commission has been made an independent and powerful body. The first report of this Commission was published at the end of 1960, stating that the work of the determination of individual holdings was by then almost complete.[187]

In concluding this section on land reforms in Pakistan, two comments seem to be relevant. First, as far as the present conditions of land tenure in the country are concerned, they must be regarded as only transitory. The success of such reforms, however modest or conservative they may have been, will eventually depend on, among other things, the boldness and ingenuity of the various State agencies involved in this task. Second, the most important and arduous task which the government in Pakistan in general, but in East Pakistan in particular, must resolutely face is the consolidation of fragmented holdings.

5.3.3 The Control and Regulation of Other National Policies Affecting the Agricultural Sector

Finally, in other areas of national policies affecting the agricultural sector, the role of the State has been even more direct and assertive, especially in the collection of land revenue and such other claims of the government outstanding against the farming community. The government has also been intervening in the market to regulate and stabilise the prices of various agricultural commodities, especially of foodgrains.

5.3.3.1 *The Collection of Land Revenue*

In countries like Pakistan, where the agricultural sector is the back-bone of the economy, the revenue receipts of the State from agriculture must form a major source of its

[187] *Land Reforms in West Pakistan, op. cit.*, pp. 222–23. (*fn.* 185)

current and development expenditure. However, it has been felt that agricultural taxation in Pakistan has not been increasing correspondingly with increases in other taxes; nor has the system of agricultural taxation been uniform throughout the country.

Table 45. Land revenue as a percentage of principal revenue receipts of the governments of East and West Pakistan, 1950–51 to 1960–61

Particulars	'50–51	'54–55	'55–56	'56–57	'57–58	'58–59	'59–60	'60–61
EAST PAKISTAN								
Total principal revenues (in million rupees)	155.5	198.5	232.4	233.9	262.2	409.8	330.3	367.5
Land revenue (in million rupees)	22.4	50.2	50.8	51.5	67.5	130.5	93.5	108.3
Land revenue as a % of total principal revenue	14.4	25.3	21.9	22.0	25.7	31.8	28.3	29.5
WEST PAKISTAN								
Total principal revenues (in million rupees)	147.0	205.5	262.7	344.1	360.6	522.7	425.1	502.3
Land revenue (in million rupees)	32.8	44.0	75.5	117.5	119.5	178.5	138.6	133.6
Land revenue as a % of total principal revenue	22.3	21.4	28.7	34.1	33.1	34.1	32.6	26.6

Source: See Table 18; *op. cit.*, Statistical Section, Tables 75 and 76, pp. 140–41.

From Table 45 it can be adduced that land revenue, as a percentage of the total revenue receipts of the governments of East and West Pakistan, though increasing initially from 1950–51 to 1954–55, has been fluctuating in an irregular manner during 1950–51 to 1960–61. Another important conclusion from this table is that, on the average, land revenue as a percentage of the total revenue receipts has been higher in West Pakistan than in East Pakistan.

In fact, in Pakistan the burden of taxation on the economy has not so far exceeded 9% of the GNP. However, there has been a clear improvement during the Second Five Year Plan period (1960–65) in that taxation increased from 6% in 1959–60 to 9% in 1964–65. In order to meet the development expenditure during the Third Five Year Plan period (1965–70), the planners have proposed to levy additional taxes so that by 1969–70 the total tax receipts of the government would be 10% of the GNP.[188] Although the planners have not mentioned in any detail the exact methods by which this target would be achieved, for this exercise is being done by the Commission on Taxa-

[188] *The Third Five Year Plan (1965–70)*, *op. cit.*, Table 8, p. V–10. (*fn.* 72)

tion and Tariffs, they have suggested to the government that, *inter alia*, ways and means must be found to capture some of the expected increase in agricultural production in the form of additional taxation on agricultural incomes.

While at present it is very difficult to assert that the taxable capacity of agriculture in the country is greater than what the government has been able to take in the form of land revenue, it can safely be presumed that, with a change in the existing variety of land taxation systems and the expected increase in agricultural production during the following years, the taxable potential will be increased rather appreciably. However, in the enthusiasm to transfer capital resources from the agricultural to non-agricultural sectors, the weight of this argument could easily be exaggerated, resulting in adverse consequences on the growth of the agricultural sector itself.

The variety of land tax systems in Pakistan are only a natural outgrowth of the different types of land tenure systems outlined earlier. Thus, for instance, until recently in East Pakistan land revenue assessment was based on a system of permanent settlement. But, with the change in the land tenure system there, whereby all intermediary interests between the State and the actual tiller of the soil have been abolished, action is being taken to refix the revenue assessment at rates per acre according to the productivity of land. In fact, the Revenue Commission in 1959 recommended the fixing of fair and equitable rents with a maximum of 10% of the annual gross product of the farm.

In West Pakistan, land taxation has not been uniform, here again because of historical reasons. There have been two major systems of land revenue collection: one was followed in the former provinces of the Punjab and N.W.F., and the other was in vogue in the former province of Sind. The Food and Agriculture Commission in 1960 was of the opinion that the existing systems of land taxation had been designed originally not with the specific purpose of development and increasing agricultural production but were in fact meant to collect land revenue for the rulers. Hence it was observed that uncropped land was not liable for land tax, with the result that large areas of cultivable land were lying unused even though something could have been done with them. And conversely, it was also true that if a farmer used capital and other inputs to improve an area of land, he was liable to be assessed at a higher rate at the time of next settlement. Thus, the Commission concluded that, since both of 'these conditions militate against development', they ought to be changed. Consequently, the Commission made some specific recommendations as follows:[189]

a. A uniform system of land taxation should be adopted throughout the country.
b. The land-owners everywhere should pay a fixed rate of taxation per acre of land irrespective of whether the area under consideration was cropped or not.
c. The tax rate should be fixed according to the present agricultural value of land.
d. The tax rate should, therefore, differ from zone to zone and not from one plot to another as had been the practice in the past.
e. Tax reductions should be given for some years to those of the cultivators who bring new land under cultivation.
f. Concessions should be granted also in cases where small farmers combine either in co-operative

[189] *Report of the Food and Agriculture Commission, 1960, op. cit.*, pp. 283–84. (*fn.* 139)

farming units or in some other manner which has the advantages of large-scale operations.

g. Finally, in future, as and when new industries have developed significantly and the financial conditions of the country improved, consideration should also be given to reducing the burden of taxation on very small holdings.

While realising the immediate need to re-structure the entire tax system of the country, the central government has appointed a Commission on Taxation and Tariffs to examine in detail the present situation and recommend such changes as may be necessary in the structure and rates of taxation in the various sectors of the economy. Perhaps, from the point of view of agricultural development in Pakistan, the need for immediate reforms in agricultural taxation is second only to land reforms. It is being hoped that, in the predominantly non-monetised agriculture of Pakistan, the taxation system will be so devised as to suit this feature of the economy at least at this stage of economic development in Pakistan.

5.3.3.2 *Intervention in the Market*

The following are the three major areas in which the State in Pakistan has been intervening in the market both on an *ad hoc* and permanent basis:

a. From time to time the government takes direct measures to control and regulate the production of such cash crops as jute, tea, sugar-cane, cotton and tobacco. In most cases this is done through acreage specifications. The government has also been participating a great deal in the marketing of these crops.

b. The intervention of the government has been most extensive in the distribution of foodgrains, which have been in short supply to the urban areas for some years. The methods adopted by the government in handling the foodgrain situation, at least from 1953 to 1960–61, have also affected the domestic production. These methods have included direct State trading, through the procurement of grains in some surplus areas, and the distribution of these grains under a rationing system. Further, by putting a ceiling on prices of wheat and rice procured from the farmers during lean years, the government has tried to safeguard a small class of urban consumers.

But, in 1960, the government abolished both the compulsory rationing and procurement of wheat in West Pakistan, thus giving way to private trading. However, it continues to undertake open market operations in order to stabilise prices within certain upper and lower limits. These limits have been so determined as to provide adequate incentives to the farmers for increased agricultural production and avoid undue hardships to most classes of consumers.

The government has been building a 'buffer stock' of wheat and rice, both through imports and domestic production, to help avoid price increases and short supplies in case of unforeseen crop failures. In the case of rice, especially in East Pakistan, rationing and procurement are only partial. However, because of the inadequate reserve stocks of rice in East Pakistan, it has often been difficult for the government to adopt an effective policy for price stabilisation. But, of late, thanks to the improved rice situation, the government has been able to loosen further its direct control.

c. Finally, the regulation and control over trade and distribution by the government extends considerably beyond its direct intervention in the marketing of agricultural products at home. Both internal and external trade, but the latter to a greater extent, are subject to various regulations both of short- and long-term nature.

Before concluding this chapter, a few final remarks may not be out of place. Realising that Pakistan is making its first real strides towards sustained economic development, and also appreciating that its economy is as yet basically agricultural, the role of the State becomes at once central and problematic. It is central because it is the State which must facilitate and often provide an institutional frame-work congenial to economic development; it must very often also play the role of an entrepreneur where individual or collective initiative for change is either non-existent or weak; it must provide in many instances ready capital in the form of credit to the farmers, if it is inadequate or the saving capacity of the people is too limited; it must help to improve and often initiate on its own the building of an infrastructure conducive to economic development; and, finally, it must act as the watch-dog of the overall economic life of the country by using such short- and long-term policies which help rather than impede economic development. In short: the State seems to be involved, as it were, in almost everything.

And yet, while the role of the State is central, it raises several problems, conceptual and organisational. This is the more so when the leadership, as was indicated earlier, is not committed to any doctrinaire predilections regarding the overall organisation of the economic system. Thus, being mixed as it is, the economy demands a development strategy which is pragmatic and yet consistent over a reasonably long period of time. Further, the problems of development planning are multiplied, on the one hand, by the many limitations on the side of the government and, on the other, by the variety of semi-educated and often ignorantly individualistic attitudes of the people in general and of the peasantry in particular.

6 The Prospects and Problems of Sustained Economic Growth in Pakistan

6.1 Introduction

Notwithstanding the many formidable problems besetting the economy of Pakistan, especially the agricultural sector which is still its back-bone, it has shown definite signs in recent years of breaking out from a semi-stagnant phase. These initial strides, as illustrated by the increasing growth rates of various economic indicators, have been made with the active participation of the State. With the launching of the Third Five Year Plan in 1965, the economy can be said to have entered the take-off stage. Its more explicit expression is now contained in the Perspective Plan covering the period from 1965 to 1985.

Although the Perspective Plan is as yet only a tentative frame-work of the likely changes which the economy may experience during this period, it does purport to indicate the nature and magnitude of the expected changes. Of course the tentative nature of the Plan is mainly due to the shortcomings which are quite natural at this stage of plan programming in Pakistan.[190] However, in the words of the planners, 'the Perspecitve Plan reflects in many ways the growing confidence of the country in its future', hence 'it is, in fact, a realistic statement of the goals to be achieved' and it 'gives a sense of direction to the current economic policies'.[191]

In this chapter an attempt will be made, firstly, to present the major objectives of the Plan and the structural changes projected for the period 1965–85. Then some basic similarities between these changes and those required for a successful take-off, as outlined in Chapter 1, will be pointed out. Then a critical appraisal of the changes proposed in the Plan and their underlying assumptions will be made. In so doing, the major emphasis will be laid on employment and its inter-sectoral distribution, with special reference to the role of agriculture. This exercise will, however, be limited to analysing the fundamental weaknesses of the Plan, especially with regard to the rate of growth of agricultural labour productivity. Finally, it will be demonstrated that, during the Plan period, the population of Pakistan will most likely attain an unprecedented growth rate, thus frustrating almost all the objectives of the Plan under consideration.

[190]For a detailed discussion on the limited applicability of long-term projections in the underdeveloped countries, see: United Nations, *Problems of Long-Term Projections: With Special Reference to Economic Planning in Asia and the Far East*, Development Programming Techniques Series No. 3, (New York, 1963), pp. 1–6.

[191]*The Third Five Year Plan (1965–70)*, *op. cit.*, p. II–1. (*fn.* 72)

6.2 The Perspective Plan Within the Frame-work of the Take-off Stage

While the selection of the twenty-year period is 'necessarily arbitrary..., it seems to be, on the one hand, long enough to permit meaningful structural change in the economy and, on the other, not so long as to be without direct interest to the present working generation'.[192] In fact, as will be pointed out in the next section, the kind of structural change envisaged during this period shows, at least apparently, basic similarities with the conditions for the take-off.

The Plan lays down the following objectives:[193]

a. A four-fold increase in the gross national product and more than doubling of the income per capita;
b. provision of near-full employment for the labour force even before the end of the Plan period;
c. elimination of the existing disparity in incomes per capita between East and West Pakistan;
d. achievement of universal literacy;
e. termination of foreign economic aid.

Within the scope of the present analysis the first two objectives are the most relevant to consider.[194] They will be discussed below in detail.

6.2.1 The Growth of the Gross National Product and Its Changing Inter-sectoral Distribution, 1965–85

The most important instrument by which the Plan indicates the development of the economy is embodied in a fast rate of increase of the GNP. Table 46 gives the projected values and average annual compound growth rates of the GNP and its inter-sectoral distribution.

In the basic frame-work of the Plan the underlying key assumptions for projecting the growth of the GNP are the rates of growth of gross investment and the values of gross capital-output ratios. The Plan, however, indicates neither the assumptions about the projected rates of growth of output in the agricultural and non-agricultural sectors, nor does it provide any statement about the required investment allocation in these sectors; nor does it explain the reasons for projecting such impressive rates of growth in sectoral output (5.6% per annum for agriculture and 8.5% per annum for the non-agricultural sectors).[195]

[192] *Ibid.*

[193] *Ibid.*, pp. II–1–2.

[194] The other three objectives, especially the third one, are of no less importance.

[195] The exceptionally high rate of growth of the non-agricultural sectors is due mainly to the growing significance of manufacturing industries, of which the growth rate has so far been much above this average.

Table 46. The growth of the gross national product and its inter-sectoral distribution, 1965–85 in (million Rupees at 1964–65 prices)[1]

	1965	1970	1975	1980	1985	Average annual compound growth rate
Gross national product	43,365	60,886	86,977	123,870	177,176	7.2%
Gross product of the agricultural sector	21,055 (48.5)	27,648 (45.4)	36,306 (41.7)	47,675 (38.5)	62,605 (35.0)	5.6%
Gross product of the non-agricultural sectors	22,310 (51.5)	33,238 (54.6)	50,671 (58.3)	76,195 (61.5)	114,571 (65.0)	8.5%

Source: See Table 42; *op. cit.*, Table 1, p. II–4, and Table 2, p. II–6.

[1]The figures in parentheses are the percentage shares of each sector.

For projecting an overall growth rate of 7.2% per annum, the emphasis has been laid on the increasing rate of gross investment: from 18.5% of the GNP in 1965 to 23.0% by 1985. The basic source of this increase lies in the growing importance of domestic savings, which are projected to increase from 10% of the GNP in 1965 to 22.0% by 1985.[196] As for the other determinant of the projected rate of growth of the GNP, i.e. the gross capital-output ratio, the Plan assumes its value at 3.0 in 1965–70, then increasing by one point during each quinquennium to 3.7 by 1985.

6.2.2 Population Growth, Labour Force and Its Employment and Inter-sectoral Distribution, 1965–85

In projecting a substantial increase in income per capita, the Perspective Plan rightly emphasises the importance of the future size and rate of growth of population. It will also be a crucial determinant of the available labour force in the country. The Plan estimates that the population of Pakistan will increase from 112 million in 1965 to 187 million by 1985: 61 and 104 million in East Pakistan and 51 and 83 million in West Pakistan.[197] Though the Plan does not give details about the underlying assumptions of fertility and mortality rates, except that the present fertility rate may decline by 1975, but it arrives at the following average annual rates of growth for Pakistan:

1965	1970	1975	1980	1985
2.6%	2.7%	2.8%	2.8%	2.6%

[196]*The Third Five Year Plan (1965–70)*, *op. cit.*, Table 1, p. II–4. (*fn.* 72)
[197]*Ibid.*, Table 7, p. II–12.

Table 47. Estimated labour force, its employment and inter-sectoral distribution, 1965–85 (in millions)[1]

	1965	1970	1975	1980	1985
Total labour force	37.25	41.45	46.75	54.00	62.30
Employment: total	29.70	36.20	44.30	51.40	59.70
agricultural	19.30	22.80	26.70	28.20	29.50
	(64.98)	(62.98)	(60.27)	(54.86)	(49.41)
non-agricultural	10.40	13.40	17.60	23.20	30.20
	(35.02)	(37.02)	(39.73)	(45.14)	(50.59)
Unemployment as a percentage of the labour force	20.3	12.7	5.2	4.8	4.2

Source: See Table 42; *op. cit.*, Table 8, p. II–13.

[1]The figures in parentheses are the percentage shares of each sector.

The Plan figures for the estimates of the future labour force and its employment are reproduced in Table 47. Some interesting features of this table may be noted.

The total labour force during 1965–85 is expected to increase by 25.05 million. In projecting this increase, the Plan has assumed a constant participation rate of just over 33.0% for the labour force in the population. On the employment side, it estimates that 30 million new jobs will be created, increasing the employed labour force from 29.70 million in 1965 to 59.70 million in 1985. The Plan emphasises that by providing these jobs the existing unemployment, estimated at 20%, will be reduced to a minimum. Since most of this unemployment occurs in the form of underemployment in the agricultural sector, the fulfilment of this objective will have a great bearing on the growth of agricultural output itself.

The distribution of employment among the agricultural and non-agricultural sectors shows a considerable structural change: the agricultural labour force will be reduced from 65% to 49% of the total employed. This change is brought about by the fact that while the agricultural sector is expected to provide 10.20 million new jobs, the non-agricultural sectors will absorb 20.80 million persons. Again, as in the case of the projected structural change in sectoral output, the Perspective Plan does not indicate the underlying assumptions by which the changes in sectoral employment are expected to occur during this period.

6.3 The Perspective Plan and the Take-off in Pakistan

From the above-mentioned features of economic change envisaged in the Perspective Plan it seems that the Pakistan economy has begun the take-off and that during 1965–85 it will be completed successfully. This apparent conclusion is founded on the basic

similarities which the projected growth rates and structural change share with the conditions required for a successful take-off. Since the latter conditions were laid down in the analytical frame-work of Chapter 1, in the following only the similarities will be described.[198]

6.3.1 The Increase in Investment Rates

One of the fundamental conditions for the take-off is the evidence of an increase in the rate of investment from 5% or less to over 10% of the national income. Of course, any quantitative evidence on the scale of the increase in the rate of investment has to be seen in relation to the rate of population growth during this period. Thus, while ROSTOW may be correct in emphasising the lower limit of the rate of investment in initiating the take-off in an economy where the rate of population growth is between 1 to 1.5% per annum, the same level of investment will not even sustain income per capita if the rate of population growth exceeds this rate. In an economy like that of Pakistan, where the annual rate of growth of population is between 2.6 to 2.8%, for achieving a sustained increase in income per capita the overall rate of investment has to be above 10% at its minimum.

Therefore, given the target of such high average rates of growth of output and per capita income as envisaged in the Perspective Plan, the estimated rate of gross investment and the increase required during 1965–85 indicate the magnitude of the effort for the take-off. In so far as the economy is able to generate such a high rate of investment the essential condition for the take-off should be fulfilled.

6.3.2 The Development of the Leading Sector

As regards the development of one or more substantial manufacturing sectors with a high rate of growth during the take-off stage, the Perspective Plan emphasises the role of the manufacturing sector during 1965–85 in the following terms:

'The manufacturing sector is expected to play a leading role in accelerating the overall growth rate of the economy, supported by the rate of growth in agriculture which is almost unprecedented in the experience of other countries.'[199]

In making the manufacturing sector the *avant-garde* of economic development in Pakistan, with an average annual compound rate of growth of over 10% during 1965–85, the Plan has advanced several reasons. The more important ones are:[200]

[198]The first two conditions are adopted from ROSTOW, and the ones regarding the agricultural sector have been proposed by the author in Chapter 1.

[199]*The Third Five Year Plan (1965–70), op. cit.*, p. II–5.

[200]See next page.

a. On the basis of the past performance of this sector, its average annual growth rate during 1950–65 being over 8%, it has been asserted that it is not impossible to accelerate the growth rate to over 10% per annum.
b. The erstwhile rapid growth of the industrial sector coupled with the declining share of agriculture in the GNP has already reduced the vulnerability of the economy to fluctuations arising from natural hazards. This means that the future strategy of development would be directed to further diversifying the economy on a basis which is not only less vulnerable but also more productive.
c. The third reason lies in the need to increase the rate of saving and investment for fulfilling the projected growth rate of the national product during the Plan period. Since an increasing proportion of the projected rate of investment will have to come from within the economy, the major emphasis had to be laid on the manufacturing sector, in which a relatively higher than average rate of marginal saving is likely to be realised.

6.3.3 The Development of the Agricultural Sector

The fact that the Plan gives to the manufacturing sector a leading role does not in any way alter the primary significance of the development of agriculture in this period. The acceleration of industrialisation only increases the need for a rapid growth of agricultural output, both for supporting the projected growth rate of the economy and for absorbing the increasing labour force in a more effective manner. Further, agricultural expansion at a relatively high rate is required to increase effective demand for industrial goods, both for consumers and producers in the agricultural sector itself. To put all this plainly: *a fast enough growth of the agricultural sector is the basis of the foundation for sustained economic growth in Pakistan after 1985.*

The Perspective Plan's projections about the development of the agricultural sector seem to fulfil the conditions required for the take-off. They may be summarised as follows:

a. With regard to the possibility of achieving substantial increases in agricultural production, or raising factor productivities during 1965–85, the projected average annual rate of 5.6% in agriculture clearly implies the fulfilment of this condition. However, the Plan does not indicate the means by which agricultural output is expected to expand at such an unprecedented rate. In other words, it does not illustrate quantitatively the effects on land and labour productivity of such variables as the expected rate of investment and the overall rate of growth of population.[201]

[200]See K. IKRAM, "The Role of Industry in Long-Term Development Plan (A Case Study of Pakistan)," in R. ROBINSON (ed.), *Industrialisation in Developing Countries*, (Cambridge: Cambridge University Press, 1965), pp. 68–69.

[201]It is only in reference to the strategy of the Third Five Year Plan that the planners have indicated, but only vaguely, the way they expect the agricultural output would be increased. *Op. cit.*, p. VII–4. (*fn.* 72)

b. The projected structural change in agricultural employment during 1965–85 implies the disappearence of underemployment in the agricultural sector. This objective is contained in the assertion that by 1985 the present state of unemployment (estimated at over 20% and existing mostly in the form of underemployment in agriculture) would be reduced to about 4%.

c. The third condition, that after 1985 there would be an absolute decline in the labour force employed in agriculture, follows partly from the second condition and partly from the rate of labour allocation to the non-agricultural sectors during this period. Quantitatively, this can be seen in Table 47: out of the projected total employment of 30 million during 1965–85, the non-agricultural sectors are supposed to absorb 19.80 million workers. Thus, if the figures of additional agricultural employment in each quinquennium are also taken into consideration, there is strong evidence that after 1985 almost all increases in employment will originate in the non-agricultural sectors, thus showing an absolute decline in the country's agricultural labour force.

6.4 A Critical Appraisal of the Perspective Plan

Following the discussion in sections 6.2 and 6.3 one is led to conclude that the Pakistan economy will not only experience the take-off during the next twenty years but it will also enter the stage of self-sustained growth after 1985. However, as will be argued in this section, on closer examination of some strategic factors this conclusion appears to be quite unrealistic. Since the basic purpose of this study is the assessment of the role of agriculture in economic development, the discussion will have to be restricted to the analysis of only such factors as are relevant to this objective.

While the Perspective Plan in its basic frame-work presents the overall increase in investment needed to generate the projected average growth rate of the GNP, it does not give any indication of the sectoral investment requirements. It may be assumed that such an exercise could not be undertaken for various reasons. Thus to find the clue to the projected structural changes in output and employment, or the changing distribution of output and labour allocation between the agricultural and non-agricultural sectors, it is essential to raise questions about the underlying assumption of labour productivity in the two sectors. In fact the entire model on which the validity of the growth rates and structural changes are envisaged in the Perspective Plan hinges on the rates at which labour productivity in the two sectors would increase. From the point of view of agriculture, the spectacular increase in its output and the rate at which labour re-allocation is projected in the Plan, it is all the more essential to examine the assumed rate of increase of labour productivity in this sector.

Since from the available data it is not possible to project the likely values of agricultural labour productivity, here an indirect method will be used. Therefore, following Tables 46 and 47, which give the projected output and employment estimates for the Plan period, the following average sectoral labour productivity figures can be derived:

Sector	Average labour productivity in Rupees					Av. ann. growth rate
	1965	1970	1975	1980	1985	
agricultural sector	1,091	1,213	1,360	1,691	2,122	4.7%
non-agricultural sectors	2,145	2,480	2,879	3,284	3,794	3.8%

There are some interesting features in these figures which may be noted. The fact that average agricultural labour productivity in 1965 is just about one-half of the non-agricultural labour productivity is indicative of the differential in the growth rates and capital intensities of the two sectors. But an average annual growth rate of agricultural labour productivity which works out to be higher than that of non-agricultural sectors and is unprecedented in the experience of Pakistan so far is something unbelievable. It does not even seem to be compatible with the projected rates of growth of sectoral outputs in the Plan.[202]

The doubts on the validity of such a high rate of increase in agricultural productivity can be justified for several reasons. Why should the rate of growth of labour productivity in agriculture be higher than in the non-agricultural sectors? What is that magic-wand which is expected to increase the rate of agricultural labour productivity so rapidly in the next twenty years? These are the obvious questions to which there is no answer in the Plan; nor does the Plan mention any reason for projecting the magnitude of structural change in the labour force employment.

In Pakistan, as the Third Five Year Plan mentions, the rate of increase in agricultural labour productivity during 1950–65 was on average not more than 1.5% per annum. This rate coincides with the state of production and employment in the agricultural sector throughout this period. On the other hand, in the non-agricultural sectors labour productivity increased at a higher rate. This was the more so in the rapidly expanding manufacturing industries. Further, considering the present state of underemployment in agriculture, it is quite unrealistic to suppose that a 5.6% average rate of growth of output will be accompanied by a 4.7% rate of increase in average labour productivity in the agricultural sector. This defies all available evidence.[203]

Since this unrealistic rate of increase in agricultural labour productivity results not from any direct calculation but from the projected structural change in employment, the obvious thing is to reject this change itself. Then the conclusion would be that the labour re-allocation will not be as rapid as indicated in the projections of the Plan. This will instead be determined by the rate of growth of labour productivity and the rate of growth of output in the non-agricultural sectors. On the other hand, agricultural labour productivity will itself be dependent on the rate of growth of capital input, technological progress and the extent of the outflow of labour from the agricultural sector.

[202] This can well be seen in Chapter 7 of the Third Five Year Plan, especially in Table 3, p. VII–8.

[203] These rates are incompatible not only within the context of the Pakistan economy, but are also unrealistic in the light of the available evidence elsewhere. To quote but one example, Japan's case is very illustrative. FAO, *Agricultural Development in Modern Japan, op. cit.*, Table 2, p. 38. (*fn.*26)

The rejection of the projected structural change in employment in no way means that the projected average rate of growth of agricultural output may also be unattainable. Since the projected growth rate of agricultural output may be considered crucial in maintaining the overall rate of growth of the economy, this will depend rather more on the rate of increase in the productivity of the land. This latter rate will be the most crucial variable in fulfilling the output objectives in agriculture.

Given as high a target of the rate of growth of agricultural output as has been projected in the Perspective Plan, and also given the commitment of spreading employment in the agricultural sector itself, the obvious questions should be about the proportion of total national investment or the possibility of agricultural savings to be invested. As was alluded to before, the Plan has not made any attempt to answer these questions. Obviously, both by the very nature of the agricultural production system (based as it is on the decision-making organisation of a multitude of small and individual peasant farms) and the attainment of apparently incompatible goals, such as relatively high rates of growth of output and employment, any detailed exercise would be extremely complicated. However, considering the investment potential as an obvious constraint on the system, the planners have indicated, but only very broadly, the strategy by which it is hoped to maintain a high rate of growth of output in agriculture. The major elements of this approach are:

a. The expansion of the area under cultivation; there is still great potential for this in the country both by bringing new lands under the plough (or improving the culturable waste lands) and by increasing the intensity of cropping.
b. The increase in such vital inputs as irrigation, fertilisers, improved seeds, etc.
c. The integration of livestock farming into the existing farming system.
d. An increasingly effective utilisation of the labour force and its wider distribution for increasing its productivity and the construction of the rural infrastructure.

Even if it is granted that, considering the potential of increasing transformation rates of capital to land, the investment strategy in the agricultural sector will somehow be able to realise the projected rate of growth in its output during 1965–85, there is yet another crucial factor which must be considered at the same time. This is related to the expected population growth rate.

The present size and future rate of growth of population are factors which obviously have great implications for the prospects of sustained economic growth in Pakistan. For one thing, from the point of view of agricultural development alone, with a relatively high growth rate of population food production has not only to be substantially increased but has also to be diversified in order to improve the standard of diet. For another thing, given the constraints on investment potential, it is crucial for determining the employment of the labour force. In fact, the magnitude of the rate of growth of population alone can belie the entire frame-work of the Perspective Plan, its objectives and its saving and investment strategies.

Although the Plan itself emphasises that the projections of per capita income and other such variables rest 'heavily on certain assumptions regarding the growth of population' during 1965–85, it does not demonstrate clearly the assumptions of fertil-

ity and mortality underlying the estimated rate of population growth in Pakistan.[204] In the light of the available evidence about fertility and mortality and the expectation of their future trends, it seems that the Plan has underestimated the rate of population growth. To demonstrate this in the following an attempt has been made to project the future population and its growth rate.

The procedure of estimation and underlying assumptions will be discussed at length in the appendix. The population projections for the period under reference are here based on (a) the corrected age distribution of the East and West Pakistan populations as revealed by the 1961 Census, (b) the two alternative assumed rates of fertility for the two provinces separately, (c) the assumption of a linearly declining mortality rate, and (d) the assumption of the absence of any net gain or loss due to migration.

The summary of these projections, I (High) and II (Moderate), is given in Table 48, which also shows the average annual growth rates for the East and West Pakistan populations from 1961 (or the end of 1960) to 1986 (or the end of 1985). From these figures it is clear that the prospective increases in the population of Pakistan even

Table 48. Population projections and average annual per cent increase of population in East and West Pakistan from 1961 to 1986

Population (in million)	1961	1966	1971	1976	1981	1986
PROJECTION I (HIGH)						
East Pakistan	55.21	64.72	76.56	91.95	110.61	133.21
West Pakistan	43.45	50.86	59.91	71.46	85.31	102.04
Pakistan	98.66	115.58	136.47	163.41	195.92	235.25
PROJECTION II (MODERATE)						
East Pakistan	55.21	62.88	72.67	85.54	100.95	118.85
West Pakistan	43.45	49.35	56.74	66.26	77.54	90.60
Pakistan	98.66	112.23	129.41	151.80	178.49	209.45
Average annual per cent increase		1961–66	1966–71	1971–76	1976–81	1981–86
PROJECTION I (HIGH)						
East Pakistan		3.4	3.6	4.0	4.0	4.0
West Pakistan		3.4	3.5	3.8	3.8	3.9
PROJECTION II (MODERATE)						
East Pakistan		2.8	3.0	3.5	3.6	3.5
West Pakistan		2.7	2.9	3.3	3.4	3.3

[204]It merely says that "one of the basic assumptions of the present projections is that the rate of growth of population will decline after 1975 owing to a decrease in the fertility rate". *Op. cit.*, p. II–12. (*fn.* 72)

during the Perspective Plan period (1965–85) are much greater than those projected in the Plan. The figures given under Projection I may be regarded as unrealistic, since their underlying assumptions about the level of fertility are certainly overstated, the figures under Projection II clearly demonstrate that the population of Pakistan will grow at a rate exceeding 3 % per annum. This is despite the fact that fertility is assumed to decline after 1975.

Obviously this population explosion will not only affect the entire frame-work on which the Perspective Plan has projected improvements in income per capita and savings but it will also mean an increase in the potential labour force. In fact, the adverse effects of such a growth rate of population on the development of the economy cannot be overemphasised.

From all the preceding considerations there is every reason to conclude that the economy of Pakistan will not fulfil the essential conditions required for the completion of the take-off by 1985. This conclusion is well substantiated both by the invalidity of the basic assumptions contained in the Plan and by the inconsistencies inherent in the projections outlined in it.

Nevertheless, it must be said that, if the development strategy in Pakistan during the Perspective Plan period can achieve the projected growth rate of agricultural output and also integrate a vigorous population control policy, self-sustained growth in the country may well be within easy reach by the end of this century.

Appendix to Chapter 6: Population Projections, 1961–86

To arrive at estimates of the future populations of East and West Pakistan, the 1961 Census data as corrected by KROTKI have been taken as the base. The procedure followed here in using the component method for projecting the populations is as under.

a. The 1961 estimates of the populations of East and West Pakistan were tabulated separately by sex and five-year age groups, as can be seen in Tables 49 and 50 which give Projections I and II for the two wings. Since in the 1961 Census only ten-year age intervals for ages 60 and over are given, the five-year age groups for these intervals have been computed by applying NEWTON's formula.[205] For the present study only the age groups below 60 have been shown in five-year age groups, and those above 60 years have been lumped together.

b. The entire period from 1961 to 1986 has been broken into five intervals, each interval comprising five years, thus giving population estimates for the years 1961, 1966, 1971, 1976, 1981 and 1986. Since each of these years represents population estimates for the month of January – the 1961 Census was completed in January – the figures in fact should be taken for the end of each previous year. These five-year intervals were found convenient for using the survival ratios given in the Model Life Tables.

c. The two alternative projections, I and II, for East and West Pakistan give what can be called the *high* and *moderate* estimates of the future populations of the two wings. The results in these two estimates differ mainly because of the assumptions regarding the birth rates, which are higher for the first projection.

d. In following the component method, the following assumptions about the fertility and mortality rates have been used.

Fertility Rates: Since at present there is no consensus of opinion about the exact magnitude of birth rates (both crude and standardised) in East and West Pakistan, except that in the former they are higher, the following birth rates per thousand have been assumed:

	Projection I[206] (High)	Projection II[207] (Moderate)
East Pakistan	58.0	50.0
West Pakistan	55.0	47.0

[205]United Nations, *Methods for Population Projections by Sex and Age: Manual III*, Population Studies No. 25, (New York, 1956).

[206]M. ZELNIK and M. R. KHAN, "An Estimate of the Birth Rate in East and West Pakistan," *The Pakistan Development Review*, Vol. 5, No. 1, 1965, Table I, p. 70.

[207]These rates have been assumed on the basis of the studies of HASHMI and KROTKI as given in Chapter 3 of this study.

In both the projections the above rates are assumed to remain constant until 1976, thereafter falling at the rate of 5% per quinquennium until 1986. This can be seen in Tables 51 and 52. In these tables it can also be noted that, for the calculation of births in the two wings, each of the five-year age groups of females of child-bearing ages (from 15–19 to 40–44) has been assigned a standard weight. These weights are slightly different from those commonly used because of the peculiar circumstances of the demographic situation in Pakistan. In calculating the future births of males and females separately, the following ratios for East and West Pakistan have been assumed:

	Males	Females
East Pakistan	105	100
West Pakistan	107	100

Mortality Rates: In the absence of any concrete information about the age- and sex-specific death rates of the populations of East and West Pakistan, the following levels of life expectancy at birth have been assumed:

	1961		1966		1971		1976		1981	
	m	f	m	f	m	f	m	f	m	f
East Pakistan	42.5	40.0	45.0	42.5	47.5	45.0	50.0	47.5	52.5	50.0
West Pakistan	45.0	42.5	47.5	45.0	50.0	47.5	52.5	50.0	55.0	52.5

There are two notable features in the above figures. Firstly, West Pakistan population, both male and female, has a better life expectancy than that of East Pakistan. Secondly, in both the provinces males have a higher life expectancy than females.

The fact that mortality is assumed to decline over the years is well indicated by an improvement of life expectancy in both sexes: the standard being the increase of 2.5 over each quinquennium. From these levels of life expectancy at birth, for each five-year age group and for children at birth, the levels of survival ratios during each quinquennium have been taken from the Model Life Table.[208] The computations based on these survival ratios are shown in Tables 49 and 50.

[208] *Methods for Population Projections by Sex and Age: Manual III, op. cit.*, Appendix, Table V, pp. 80–81. (*fn.* 205)

Table 49. Population of East and West Pakistan, 1961–1986 (in million): Projection I

Age group	1961		1966		1971		1976		1981		1986	
	male	female	male	female	male	female	male	female	male	female	male	female
EAST PAKISTAN												
0– 4	5.48	5.44	6.84	6.53	8.09	7.73	10.02	9.59	11.84	11.33	13.99	13.38
5– 9	4.80	4.81	5.04	4.95	6.35	6.01	7.58	7.19	9.46	8.99	11.27	10.72
10–14	2.81	2.84	4.68	4.67	4.93	4.82	6.23	5.87	7.45	7.05	9.32	8.84
15–19	2.42	2.48	2.74	2.76	4.58	4.55	4.83	4.71	6.12	5.75	7.34	6.92
20–24	2.23	2.24	2.33	2.38	2.65	2.66	4.45	4.40	4.71	4.57	5.98	5.60
25–29	2.00	2.00	2.14	2.13	2.24	2.27	2.56	2.56	4.31	4.25	4.58	4.43
30–34	1.69	1.54	1.91	1.89	2.09	2.03	2.16	2.17	2.48	2.46	4.19	4.11
35–39	1.56	1.25	1.61	1.45	1.82	1.79	2.01	1.94	2.08	2.08	2.40	2.38
40–44	1.25	1.11	1.47	1.17	1.53	1.37	1.73	1.70	1.93	1.86	2.00	2.00
45–49	1.02	0.80	1.16	1.03	1.37	1.10	1.44	1.29	1.64	1.62	1.84	1.78
50–54	0.95	0.80	0.92	0.73	1.06	0.95	1.26	1.02	1.34	1.21	1.53	1.53
55–59	0.61	0.43	0.83	0.71	0.82	0.66	0.95	0.86	1.14	0.94	1.22	1.12
60 and over	1.46	1.19	1.47	1.18	1.68	1.41	1.87	1.56	2.13	1.87	2.52	2.22
Born before 1961	28.28	26.93	26.30	25.05	24.77	23.61	23.26	22.21	21.76	20.86	20.28	19.57
Born after 1961	–	–	6.84	6.53	14.44	13.74	23.83	22.65	34.87	33.12	47.90	45.46
Total	28.28	26.93	33.14	31.58	39.21	37.35	47.09	44.86	56.63	53.98	68.18	65.03
Both sexes	55.21		64.72		76.56		91.95		110.61		133.21	
WEST PAKISTAN												
0– 4	4.05	4.01	5.36	5.03	6.25	5.86	7.57	7.10	8.82	8.28	10.40	9.76
5– 9	3.46	3.47	3.76	3.69	5.02	4.68	5.90	5.50	7.20	6.72	8.45	7.90
10–14	2.10	2.11	3.39	3.38	3.69	3.61	4.94	4.59	5.82	5.41	7.11	6.62
15–19	2.07	2.07	2.06	2.05	3.32	3.30	3.63	3.53	4.86	4.51	5.74	5.33
20–24	2.03	1.95	2.00	1.99	2.00	1.98	3.23	3.20	3.55	3.44	4.76	4.41
25–29	1.59	1.46	1.95	1.86	1.93	1.91	1.94	1.91	3.14	3.10	3.46	3.35
30–34	1.33	1.20	1.53	1.39	1.88	1.78	1.87	1.84	1.89	1.85	3.06	3.01
35–39	1.13	0.96	1.27	1.14	1.47	1.33	1.81	1.71	1.81	1.78	1.84	1.80
40–44	1.04	0.87	1.07	0.91	1.21	1.08	1.41	1.27	1.74	1.65	1.75	1.72
45–49	0.84	0.67	0.97	0.82	1.01	0.86	1.15	1.03	1.34	1.21	1.67	1.59
50–54	0.83	0.64	0.77	0.62	0.90	0.76	0.94	0.81	1.08	0.97	1.26	1.15
55–59	0.49	0.34	0.74	0.58	0.69	0.57	0.81	0.70	0.86	0.75	0.99	0 90
60 and over	1.56	1.16	1.45	1.08	1.59	1.23	1.69	1.38	1.90	1.63	2.12	1.89
Born before 1961	22.52	20.93	20.96	19.51	19.69	18.41	18.48	17.38	17.31	16.38	16.15	15.41
Born after 1961	–	–	5.36	5.03	11.27	10.54	18.41	17.19	26.70	24.92	36.46	34.02
Total	22.52	20.93	26.32	24.54	30.96	28.95	36.89	34.57	44.01	41.30	52.61	49.43
Both sexes	43.45		50.86		59.91		71.46		85.31		102.04	

Table 50. Population of East and West Pakistan, 1961–1986 (in million): Projection II

Age group	1961		1966		1971		1976		1981		1986	
	male	female	male	female	male	female	male	female	male	female	male	female
EAST PAKISTAN												
0– 4	–	–	5.90	5.63	6.97	6.66	8.64	8.27	10.05	9.62	11.44	10.94
5– 9	–	–	–	–	5.48	5.18	6.53	6.19	8.16	7.76	9.57	9.10
10–14	–	–	–	–	–	–	5.38	5.06	6.42	6.07	8.04	7.63
15–19	–	–	–	–	–	–	–	–	5.29	4.96	6.32	5.96
20–24	–	–	–	–	–	–	–	–	–	–	5.17	4.83
Born before 1961	28.28	26.93	26.30	25.05	24.77	23.61	23.26	22.21	21.76	20.86	20.28	19.57
Born after 1961	–	–	5.90	5.63	12.45	11.84	20.55	19.52	29.92	28.41	40.54	38.46
Total	28.28	26.93	32.20	30.68	37.22	35.45	43.81	41.73	51.68	49.27	60.82	58.03
Both sexes	55.21		62.88		72.67		85.54		100.95		118.85	
WEST PAKISTAN												
0– 4	–	–	4.58	4.30	5.34	5.01	6.46	6.06	7.41	6.96	8.40	7.88
5– 9	–	–	–	–	4.29	4.00	5.04	4.70	6.15	5.73	7.10	6.64
10–14	–	–	–	–	–	–	4.22	3.92	4.97	4.62	6.07	5.65
15–19	–	–	–	–	–	–	–	–	4.16	3.85	4.90	4.55
20–24	–	–	–	–	–	–	–	–	–	–	4.08	3.77
Born before 1961	22.52	20.93	20.96	19.51	19.69	18.41	18.48	17.38	17.31	16.38	16.15	15.41
Born after 1961	–	–	4.58	4.30	9.63	9.01	15.72	14.68	22.69	21.16	30.55	28.49
Total	22.52	20.93	25.54	23.81	29.32	27.42	34.20	32.06	40.00	37.54	46.70	43.90
Both sexes	43.45		49.35		56.74		66.26		77.54		90.60	

Table 51. Calculation of births for East and West Pakistan population, 1961–1986: Projection I

Age in years	Weight	Estimated female population (in million)					
		1961	1966	1971	1976	1981	1986
EAST PAKISTAN							
15–19	4	2.48	2.76	4.55	4.71	5.75	6.92
20–24	7	2.24	2.38	2.66	4.40	4.57	5.60
25–29	7	2.00	2.13	2.27	2.56	4.25	4.43
30–34	6	1.54	1.89	2.03	2.17	2.46	4.11
35–39	4	1.25	1.45	1.79	1.94	2.08	2.38
40–44	1	1.11	1.17	1.37	1.70	1.86	2.00
Weighted sum		54.95	60.92	73.42	90.04	109.68	134.07
Mean weighted sum (intervening periods)			57.94	67.17	81.73	99.86	121.38
Sex-adjusted births							
assumed annual rate			58.00	58.00	58.00	55.10	52.60
quinquennial rate: males			148.54	148.54	148.54	141.11	134.71
females			141.46	141.46	141.46	134.39	128.29
Estimated number of births (in million):							
males			8.61	9.98	12.14	14.09	16.35
females			8.20	9.50	11.56	13.42	15.57
WEST PAKISTAN							
15–19	4	2.07	2.05	3.30	3.53	4.51	5.33
20–24	7	1.95	1.99	1.98	3.20	3.44	4.41
25–29	7	1.46	1.86	1.91	1.91	3.10	3.35
30–34	6	1.20	1.39	1.78	1.84	1.85	3.01
35–39	4	0.96	1.14	1.33	1.71	1.78	1.80
40–44	1	0.87	0.91	1.08	1.27	1.65	1.72
Weighted sum		44.06	48.96	57.51	69.04	83.69	102.62
Mean weighted sum (intervening periods)			46.51	53.24	63.28	76.37	93.16
Sex-adjusted births							
assumed annual rate			55.00	55.00	55.00	52.25	49.64
quinquennial rate: males			142.15	142.15	142.15	135.04	128.30
females			132.85	132.85	132.85	126.21	119.90
Estimated number of births (in million):							
males			6.61	7.57	9.00	10.31	11.95
females			6.18	7.07	8.41	9.64	11.17

Table 52. Calculation of births for East and West Pakistan population, 1961–1986: Projection II

Particulars	Estimated female population (in million)					
	1961	1966	1971	1976	1981	1986
EAST PAKISTAN						
Weighted sum of all child-bearing ages	54.95	60.92	73.42	90.04	106.52	124.84
Mean weighted sum (intervening periods)		57.94	67.17	81.73	98.28	115.68
Sex-adjusted births						
assumed annual rate		50.00	50.00	50.00	47.50	45.13
quinquennial rate:						
males		128.05	128.05	128.05	121.65	115.58
females		121.95	121.95	121.95	115.85	110.07
Estimated number of births (in million):						
males		7.42	8.60	10.47	11.96	13.37
females		7.07	8.19	9.97	11.39	12.73
WEST PAKISTAN						
Weighted sum of all child-bearing ages	44.06	48.96	57.51	69.24	81.05	95.02
Mean weighted sum (intervening periods)		46.51	53.24	63.28	75.15	88.04
Sex-adjusted births						
assumed annual rate		47.00	47.00	47.00	44.65	42.42
quinquennial rate:						
males		121.47	121.47	121.47	115.40	109.64
females		113.53	113.53	113.53	107.85	102.46
Estimated number of births (in million):						
males		5.65	6.47	7.69	8.67	9.65
females		5.28	6.04	7.18	8.10	9.02

Glossary of Some Local Terms

Aman	Rice crop season in East Pakistan – from July/August to November/December
Arhar	*Cajanus cajan*
Aus	Rice crop season in East Pakistan – from March/May to July/September
Bajra	*Pennisetum typhoides*
Berseem	*Trifolium* spp.
Bheel	Natural depression in the field in some parts of East Pakistan, where water makes the land marshy
Bigha	Unit of land measurement = 0.33 acres
Bohras	Business community of a Muslim sect, mainly concentrated in Karachi
Boro	Rice crop season in East Pakistan – from December/January to April/May
Burgardar	Share-cropper in East Pakistan
Gram	*Cicer arietinum*
Guara	*Cyamopsis psoralioides*
Hari	Tenant-at-will in the former Sind province of West Pakistan
Jagir	Awarded land to persons whose loyalty was recognised by the British in India after 1857
Jagirdar	Person who owns a Jagir
Jagirdari	Jagirdar-tenant land tenure system
Jowar	*Sorghum vulgare*
Kharif	Crop season – from April/June to October/December
Khas	Self-sultivated land in East Pakistan
Khesari	*Lathyrus sativus*
Khojas	See Bohras
Khud-kasht	See Khas
Mash	*Phaseolus mungo*
Masoor	*Lens esculenta*
Mattar	See Khesari
Memons	See Bohras
Purdah	Social custom whereby Muslim women keep behind the veil
Rabi	Crop season – from October/November to April/May
Raj	Rule
Ryot	Tenant of the State with all proprietary rights

Ryotwari	Land tenure system in which the tenant pays land revenue directly to the State
Sunhemp	*Crotalaria juncea*
Thana	Police Station or an administrative sub-division of a district in East Pakistan
Zamindar	Land-owner in general, but usually a landlord owning large areas of land
Zamindari	Landlord-tenant system

Index

Samenvatting

Voor een analyse van de rol die de landbouw speelt in de economische ontwikkeling van een land is het in de eerste plaats noodzakelijk het begrip 'ontwikkelingsproces' nader te preciseren. In het raam van deze studie behelst dit proces: (a) de toename van de produktie per hoofd van de bevolking, en (b) de veranderingen in de structuur van de economie in de onderzochte samenleving. Het eerste punt omvat tevens het zo belangrijke distributieve aspect van de opbrengst. De structurele veranderingen in de economie hebben betrekking op de verschuivingen die optreden in de samenstelling van de produktie en de tewerkstelling van de in het produktieproces betrokkenen. Hoewel deze veranderingen wel de ontwikkeling van een economie aangeven, omvatten ze nog geen verklaring ervan; daartoe dienen de oorzaken van de wijzigingen te worden opgespoord.

Het is mogelijk de behandelde stof in tweeën te delen: de voornamelijk theoretische hoofdstukken 1 en 2, en de hoofdstukken 3–6 die nadere (ten dele statistische) gegevens bevatten, speciaal betrekking hebbend op Pakistan.

Het theoretische deel bevat een poging tot het opzetten van een raamwerk voor de analyse van de economische ontwikkeling in het algemeen, waarin de landbouw een centrale plaats wordt gegeven. In het speciale deel wordt aandacht besteed aan de grondleggende kenmerken van de landbouw in Pakistan, de oorzaken van zijn achterblijven in ontwikkeling, de rol van de staat in de pogingen tot vooruitgang, en de problemen en mogelijkheden voor een zichzelf in stand houdende verdere groei voor de landbouw in en na de komende twintig jaar.

Pakistan is typisch een land met de economische structuur van een ontwikkelingsgebied, gekenmerkt door een dualisme waarin de landbouwkundige sector overweegt maar nauwelijks enig teken van verandering vertoont. Deze toestand dient doorbroken te worden door het opwekken van een groei die de negatieve krachten overtreft: op dat moment kan de 'take-off' van de ontwikkeling geplaatst worden. De voorwaarden daarvoor zijn uiteengezet in hoofdstuk 1; aan de hand daarvan is in hoofdstuk 2 een poging gedaan de strategie vast te stellen voor de landbouwontwikkeling gedurende de 'take-off'-periode, uitgaande van enkele factoren die als basis-gevend aangemerkt moeten worden.

De hoofdstukken 3 en 4 geven een gedetailleerde analyse van de structuur van de landbouw in Pakistan, waarbij het dualistisch karakter duidelijk tot uiting komt en waarbij speciaal aandacht is besteed aan die factoren die het achterblijven in ontwikkeling van de landbouw hebben veroorzaakt. De gegevens daarvoor hebben voornamelijk betrekking op de periode na het zelfstandig worden van het land tot 1960/61.

De toenemende inmenging van de staat in de ontwikkeling van de landbouw komt tot uitdrukking in hoofdstuk 5. Daaruit blijkt, dat de staat een leidende rol heeft gespeeld in deze ontwikkeling (en nog steeds speelt) door het opzetten en uitvoeren van twee vijfjaren-plannen, waarin men in redelijke mate van de deelname van de bevolking verzekerd kon zijn. De resultaten ervan komen niet alleen tot uitdrukking in verbeteringen in de infrastructuur van de landbouw en reorganisaties in de belangrijkste sectoren, maar ook in de mate van toename van die factoren die essentieel worden geacht voor een tendens naar een zichzelf in gang houdende ontwikkeling.

Kort geleden heeft de regering een plan doen opstellen voor een verdere economische ontplooiing van het land gedurende de jaren 1965–1985. De lengte van deze periode komt globaal overeen met die welke ondersteld wordt nodig te zijn voor de 'take-off'. Dit plan is beproken in hoofdstuk 6; de belangrijkste conclusie was, dat niet verwacht kan worden dat het gestelde doel binnen deze twintig jaar bereikt zal worden doordat aan enkele wezenlijke voorwaarden en eisen tot verandering niet kan worden voldaan, daar ze irreëel of niet met elkaar verenigbaar zijn.

Enerzijds maakte het gecompliceerde karakter van het proces van economische ontwikkeling het verder noodzakelijk, in het theoretische deel (de hoofdstukken 1 en 2) een passend analytisch raamwerk te zoeken, waarin de analyse van Pakistans groeiproblemen paste, anderzijds dwongen feitelijke omstandigheden tot beperkingen. Ten eerste doordat het aantal beschikbare statistische gegevens onvoldoende was; ten tweede door de geografische scheiding in West en Oost Pakistan.

En tenslotte dient bedacht te worden, dat een analyse van toekomstmogelijkheden altijd met de nodige reserve moet worden bezien.