The place of agricultural development in the economic development of Pakistan

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ABSTRACT.

The topic studied in this thesis seeks to explain that in Pakistan the over all economic growth rate is very much correlated with the agricultural growth rate. Therefore, integrated development efforts necessarily mean the transformation of the massive sector like agriculture.

The first three chapters deal with the basic problems of population growth and per capita supply of food, the problems of capital formation in the agricultural sector and agricultural taxation. The study of these problems reveal that since a check on population is not possible in the short run, the supply of food requires to be boosted to match the population growth rate. To elevate the agricultural sector from desperate poverty two methods have been suggested:
i) use of surplus labour for capital formation; and (ii) increased rate of selective agricultural taxation.

In chapter four the problems of labour redundancy are studied and it is found that land-labour ratio is very low in Pakistan, largely due to disguised unemployment. Under these conditions major technological change is not possible as this would mean a partial replacement of agricultural labour by capital. The labour absorptive capacity of all other sectors is low because of the fact that capital intensity for all other sectors is high compared to the agricultural sector. Therefore, the absorptive capacity of the agricultural sector itself will have to be enlarged by more

intensive cultivation.

In the fifth chapter the dualistic growth model and the impact of agriculture on industrialisation is examined. It is concluded that for an expansion in the industrial sector, the expansion of the agricultural sector is essential. An expanded agricultural sector would not only supply cheap food to the industrial sector, but it may also earn much needed foreign exchange for development imports and increased effective demand would also be forthcoming from this sector.

In the sixth chapter the importance of agricultural sector is studied in the context of previous chapters and it is clear that agriculturalists in Pakistan are quite responsive to technical change and even to prices and profitability. The speedy transformation of the agricultural sector not only requires the building of an adequate infrastructure but also an improvement in the supply factors. In this connection, keeping in view the fact that capital is a scarce factor in underdeveloped countries, a single factor development approach has been suggested.

THE PLACE OF AGRICULTURAL DEVELOPMENT

IN THE

ECONOMIC DEVELOPMENT OF PAKISTAN.

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Preface.

For the completion of this study I am very much indebted to my supervisor, Prof. H. Bowen Jones, who not only lent his guidance, but also helped me a lot by lending his own books and journals. He has been very kind and sympathetic in solving my academic as well as personal problems. I can hardly recall a single instance when he did not accede to my genuine request.

After being enrolled as a member of the Graduate Society my primary concern was to scan all the possible sources for material on the subject I was interested in; and in this connection my hopes were not frustrated. So I would like to express my deep gratitude to all who helped me with necessary material.

Lastly, I am thankful to the Planning Division of the Government of Pakistan and the British Government for providing me with a scholarship which enabled me to carry out a research in the field of development economics with reference to Pakistan.

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INTRODUCTION.

Much of postwar economic thought has become directed to development economics, a trend which is partly evolutionary in character and partly the outcome of the realization that global peace must largely be based on socio-economic justice. This evolution in economic thought was also due to the fact that during this era a number of Asian and African countries won political freedom. So there has been a conscious realization on the part of developed countries that it is necessary to establish how best these underdeveloped countries emerging as free nations can be assisted to attain political stability via economic prosperity. Most of these countries emerging as free nations or created by the giving of a separate political identity had more or less similar inherent characteristics of an underdeveloped economy namely political instability and economic insecurity. Therefore, the problem implicit in achieving the economic prosperity has been challenging and thought provoking. The idea of planning as the sole medium for emancipation of poverty and degradation swept over a number of countries. During the last two decades a number of planning models have been advocated and adopted by the different countries of the world showing tremendous achievements and heartening results. There have also been miserable failures and lapses in planning techniques mostly due to hasty decisions and choosing certain models without looking into the existing social

framework and environmental conditions. A study of such failures would also reveal that usually targets of growth rates were fixed and then the resources were fitted into this framework. Such planning models, adopted without taking into consideration resource availability, have been usually very ambitious. The primary reason of the failures in achieving the targets is the fact that underdeveloped economies are not insulated or resistant against any shock such as the shortage of foreign exchange, meagre aid flow or foreign investible funds. Pakistan and many other countries fall under this category.

A smooth growth path is attainable through planning only when the targets are realistic and all other factors such as domestic saving, the aid pipeline and the production sectors behave properly. Moreover, sometimes the planning decisions and sectoral priorities become biased despite great care and precision. For example, in attempting to give a country a more industrial bias then agriculture becomes relatively neglected. Therefore, high priority is not accorded to the agricultural sector (in terms of really needed outlay) to make it more viable and self sustained. In developing countries the agricultural sector, massive in size and weight and contributing 50 to 60 per cent to GNP, can add substantially to the growth rate, whereas failure in the agricultural sector adversely affects all other sectors especially in a

overpopulated country with a large subsistence sector having intense pressure on land. For a sustained growth rate, a prosperous agricultural sector is essential, and because of the sheer size of this sector even slight improvement in marginal productivity significantly increases the total output.

There is a school of thought, epitomised by Albert Hirschman, Leibenstein and Higgins which gives precedence to industrial development through a 'Big Push'. Higgins is an advocate of public policy designed to make labour scarce in the agricultural sector by simultaneously shifting to a more mechanised and large-scale agriculture and encouraging rapid rate of industrialisation.[1] The other group of economists like Jacob, Viner, Coale, Hoover and W.H. Nicholls advocate giving priority to agriculture because of high demand and great need for additional food or because the highest marginal productivity of capital lies in agriculture.

Under Pakistan conditions, we may agree with the second school of thought in view of the fact that even the advanced countries of the world had a more or less favourable agricultural base before their 'take off' to economic development. While stating his preconditions for 'take off' Rostow also recognizes the

1. W.H. Nicholls "Agricultural Development in Historical Perspective" in "Agriculture in Economic Development" edited by Eicher and Witt McGraw Hill, U.S.A. 1964, p.16.

importance of agriculture:[1] "the creation of the precondition for 'take off' was largely a matter of building social overheads capital - railways, ports and roads - and finding economic settings in which a shift from agriculture and trade to manufacture was profitable, for in the first instance, comparative advantage lay in agriculture and production of food stuff and raw material for export". "A substantial agricultural surplus is a precondition for industrial development" ..... "Not only in Russia but in England and Western Europe (and more recently in Argentina) industrial development was heavily financed by the exploitation of agriculture!" 'Russia started its economic development with per capita income and food output well above, and a degree of population pressure far less than most of the Asian countries face today.[2] Agriculture has also played a vital role in economic development of Japan. The increased productivity, first minimized the use of foreign exchange on food imports. Secondly by keeping down food prices it reduced the inflationary pressure generated by industrialization and kept wage rates favourably low relative to profits thereby encouraging industrial production and exports. Finally it released increasing number of workers needed by the expanding non-agricultural sectors'. The implications for Pakistan

1. W.W. Rostow : 'The stages of Economic Growth" Cambridge University Press 1965 P.17.

2. W.H. Nicholls, op.cit. P.25

of these and other statements will be examined in this thesis but it may be stated here that the writer is in broad agreement with Rostow's chain of thought.

Agriculture has also added substantially to the economic development of China[1] where much greater control over savings was exercised in the 1950's through heavier taxation of agriculture yielding some 60 per cent to total taxes compared with 20 per cent in India and some 12.5 per cent[2] in Pakistan. Similarly heavy land taxes in Japan helped greatly in financing industrial expansion. Among other factors, institutional and structural changes are important and necessary to achieve the desired growth path through planning. But the institutional and structural changes if too rapid, or occurring when the time is not mature, become detrimental to the economy. Since the institutional changes come through an evolutionary process, an allowance of time span for their desirability and acceptability is necessary. Planners usually try to produce certain institutional changes without bothering much about the conditions under which such changes will be feasible. Therefore, a study of the environmental conditions is necessary before embarking on such institutional changes. So also is the case with structural changes which need

1. W.H. Nicholls : op.cit. p.25.

2. See chapter three 'B' P.115. (average 1954-64)

careful treatment while making any such decisions in this direction. The structural changes associated with economic growth have been for example, not wholly sound in India, and this question, in the context of Pakistan's development will also be later examined.

Similarly, rapid structural changes are not always possible, even under Pakistan conditions, due largely to scarce factors like capital, technical know-how etc. Moreover, if the transformation of agriculture is neglected in favour of industrialization no increased effective demand will be forthcoming from this massive sector (being subsistence orientated) and no expansion of the industrial sector can really be worthwhile without an expansion in the base market of the rural sector. Industrialization in the developing countries in the short run is essentially and more assuredly served by this base market. In a developing country like Pakistan, the comparative costs of production being higher, the industrial products need to be protected by tariffs and quotas to enjoy the privileges more or less of a closed economy. Therefore, a broad base market is necessary for any expansion in the industrial sector. Given this it becomes more feasible to give protection to industries until their teething period is over and their products become competitive. Efforts being made to give a country a more industrial bias seem to be justified from the point of view of capital - formation

and possibly for a shift of labour from the agricultural sector. But industrialisation by nature is more capital intensive than is agriculture and domestic resources usually are not enough to bring industrialisation to the point of 'Big Push'.

So let us now examine the position of agriculture in Pakistan's economy. Pakistan, as we know, emerged in 1947 as an independent state and a predominantly agricultural country. The country despite its spectacular growth rate achieved in the industrial sector (10 per cent a year - 1960-65) through planned efforts, is likely to remain an agricultural country for years to come. This is due to the inherent characteristics of the economy which, for reasons which will become apparent, determine that a longer period to create favourable conditions for 'take off' is required. It will be observed that in Pakistan the general growth rate is strongly correlated with activity in agriculture. If growth in this production sector behaves as planned, then overall economic growth rate in all certainty is achieved. But if this key sector fails to come up to expectations (food production, raw materials, exports etc) it gives overall a gloomy look to the economic situation. It has been admitted by the planners that one of the primary reasons for the failure of the First Five-year Plan (1955-56-1959/60) was due to the failure of key sectors such as agriculture. The achievement of the second five-year plan was laudable because the agricultural sector during the Second plan

period manifested relatively a much better growth rate (3.4 per cent per annum compared to 1.3 per cent during the First plan period).[1] The failure of this sector is likely to recur so long as its productivity remains dependent on , and vulnerable to vagaries of nature and is associated with the present pressure on land resources; a failure here will be critical until a more stable and insulated base is provided for the economy by a developing industrial sector which would bridge the gap in G.N.P. arising from shortfalls of the agricultural sector. But this state of economy can hardly be realised rapidly in view of the low rate of capital formation, consumption, saving and investment and the scope of taxation. A massive sector of peasant orientated agriculture has neither any surplus nor saving to mobilize through fiscal measures even if we have a regimented approach to industrialisation as was adopted in Russia or Japan. The weaknesses of the agricultural sector have largely resulted in the fact that industrialisation has been possible only at a modest scale. The contribution of the manufacturing sector to the total G.N.P. increased at a faster rate during the initial period of industrialisation, during which the contribution was 7 per cent in 1950 and 9.3 per cent at the end of the First Plan (1959-60). This rose only to 11.5 per cent at the end of the Second Plan (1964-65). During the last decade the average increase has been of the order of only 0.5 per cent per annum. To put this in

1. Government of Pakistan: Final Evaluation of Second Five Year Plan, Karachi, December 1966. P.1.

perspective, the agricultural sector which contributed 60 per cent to G.N.P. in 1949/50 declined to 53.2 at the end of 1959/60 and to 48.2 per cent[1] at the end of the Second Plan 1964/65. This illustrates the type of structural change which has taken place during the last eighteen years, the total decline of the agricultural contribution being 11.8 per cent, the average rate of decline was 0.6 per cent per annum. The average growth rate clearly indicates the likely tempo of industrialisation, its capacity to use labour force and its overall contribution to G.N.P. in the future.

The capacity of the industrial sector to absorb surplus labour is very limited in Pakistan as will be examined later in this thesis. The major brunt of additional employment needs seems likely to remain in the subsistence sector because the marginal productivity of any additional labour employed by the industrial sector is required to be higher than the wage paid. The scope for increased employment is limited in the industrial sector (especially large scale) which has a high capital output-ratio compared with a low capital-output ratios in agriculture. In terms of this low capital-output ratio in agriculture, resources can be further exploited even with the present state of technology as Professor Lewis has stated: "The present institutional framework is in most underdeveloped countries (but not all) is quite adequate for an enormous advance in productivity by means of the

1. Final Evaluation of the Second Five Year Plan, op.cit. P.7.

introduction of improved technology. Indeed the best hope of raising the standard of living in most of these countries lies in the fact that the backwardness of this agricultural technique makes possible spectacular advances in production at relatively low cost".[1] One of the problems we must consider later is the degree to which this is valid in Pakistan.

Now let us evaluate the structural changes in export trade. The exports originating from agriculture declined from 71 per cent of the total (by value) in 1959/60 to 68 per cent in 1964/65 of the total value of exports. At the same time the contribution of manufacturing sector to export trade was not very spectacular. It was 28.6 per cent of the total export earnings in 1959/60 and rose to only 32.4 per cent in 1964/65.[2] The decline in exports originating from agriculture is understandable because, first, of a proportionate increase in the use of domestically produced raw materials at home and, secondly, the limitations of international market conditions to which primary products are very much susceptible. The export outlets for manufactured goods are also very limited in the sense that the costs of production are not quite competitive and quality and standards remain yet to be ensured. The industrial products howver, enjoy a protected market at home for which, as earlier noted, effectively larger demand can

1. A. Lewis : "Theory of Economic Growth" George Allen and Unwin (London 1955) P.136.

2. Final Evaluation of Second Five Year Plan, op.cit. P.164.

come only from the rural sector of the economy by transforming the subsistence sector into a prosperous sector having a sustained growth rate so that a part of the incremental income may be spent on local manufactures.

We may at the outset outline a basic premiss that the transformation of agricultural sector is vital (i) to absorb the surplus labour and (ii) to provide a stable base for future industrialisation and economic development as a whole. There is the further point that unless the rate of increase in the quantum of food imports can be diminished or even reversed, increased exports will provide little benefit. Increased agricultural production therefore appears essential.

As a subject matter of study we will also discuss the problems of capital formation in the subsistence sector of Pakistan. Planning for development largely depends on availability of capital from external sources in view of the low rate of indigenous capital formation. Therefore, the execution of plans needs aid from the developed countries who in turn consider their own capacities, future outlays and some vested interests of a political as well as economic nature. The decisions on aid commitments take their own time and thus delays in project implementation can retard the momentum gained in a particular sector. This sort of delay also prolongs gestation periods therefore the uncertainty of

aid and a gap in commitments compared to actual requirements lead to a revision of plan targets either downward or upward as the shocurrent situation demands. Any process which diminishes the distortions which arise from aid in the real world is clearly worthwhile exploring.

The thematic approach of the thesis therefore will be economic prosperity via the development of the agricultural sector. Under the given conditions, a prosperous agricultural sector is necessary for economic development of Pakistan.

In brief, we can make the following postulates: agriculture can play a vital and multiple role in economic development of Pakistan. (I) It can provide food for the teeming millions at a relatively adequate level, improving thereby the dietary composition both qualitatively and quantitatively. A better health and nutritional standard will in turn bring about a change in the productivity rate of labour supposedly very low in Pakistan. (II) It can provide more of the necessary raw materials to the manufacturing sector. (III) The foreign exchange saved on food imports may be channelled to other productive sectors or to agriculture itself. (IV) A higher growth rate in the agriculture sector may produce a broader export base and increased foreign exchange earnings to make development programmes more viable and the economy more resistant by reducing the dependability on foreign aid and allowing greater freedom in the use of aid. (V) A prosperous agricultural sector would not only mean a higher

contribution to the G.N.P., saving and investment but also a more balanced growth attainable in sectors such as manufacturing, power, transport and communications and education etc. (VI) It would mean (a) enlargement of market for manufactured goods and intermediary products due to effective demand being created by increased income of the rural sector, (b) the savings of the rural sector could be used by the industrial sector, (c) import substitution might create demand for new investment opportunities, and lastly, (d) a developed agriculture sector would bring increased revenue to the exchequer.

CHAPTER ONE.

FOOD SUPPLY AND POPULATION GROWTH.

Food, the basic need for the preservation of human life, has been a central point of all human activities from prehistoric days to the civilized world of today. It has continued to serve as a basic wage-good and as a fundamental industrial activity. In this chapter we will discuss in outline (I) the importance of the food sector in the economy of Pakistan; (II) the level of food consumption; (III) Food supply and population growth rate; (IV) dietary composition; (V) the land per caput and productivity; (VI) Food imports; (VII) and finally (VIII) the role of food supply in the economic development of Pakistan.

Food Production:

The importance of the food production sector is clear. Food production is a leading sub-sector in the agricultural economy of Pakistan. It commands nearly 84 per cent of the total area sown to all crops. The pressure on land is very intense as the land per caput comes to 0.60[1] acre whereas the production per acre of food grains is as low as 0.33[2] ton. The supply of food per caput from domestic source comes to about 14[3] ounces a day and

1. Calculated on the basis of total area sown to all crops including area sown more than once 68 million acres divided by population 112 million in 1964/65 reference: Government of Pakistan, C.S.O. Statistical Year Book 1964, P.92 and Economic Survey of Pakistan 1965-66, Statistical Appendix P.10.
2. Economic Survey, op.cit. P.13.
3. Weights of foodstuffs quoted in this chapter refer to grains, made up in proportion of wheat and rice 93%, others 7%.

together with the quantum of imports, totals 15 ounces[1] per reference man a day.

Since agriculture is a subsistence sector and partly non-monetized, food plays a very vital and multiple role in the economy of Pakistan: (i) it is used as a wage-good in most of the regions, (ii) its surpluses feed urban areas and people engaged in industrial sector; (iii) it has great earning and saving potential of foreign exchange and (iv) domestic production keeps prices within bounds. The food sub-sector is a depressed sector in the sense that it has a low status for investment but it feeds nearly 112 million people of the country leaving an average yearly deficit of 1 to 1.5 million tons of foodstuff.[2]

The production of major foodgrains includes rice, wheat, maize, bajra, jowar and barley. The staple foods - rice and wheat claim nearly 71 per cent of area sown to all food crops. The production of these two important cereals was 87 per cent by weight of the total foodgrains production in 1954/55 a proportion which rose to 88 per cent in 1964/65. The other cereals accounted for 13 per cent in 1954-55 compared to 12 per cent in 1964-65.

During the same period, the area under rice and wheat increased from 33.6 million acres to 37.3 million acres; 3.7 million acres were in fact added whereas production increased by 3.4

1. 'Economic Survey' op.cit. P.10

2. Ibid. 'Economic Survey', op.cit., P.10. During the fifties it was less than a million ton.

million tons - a pari passu increase in both acreage and production. There was hardly any increase in acreage of other foodgrains but yields showed some improvement. In 1964-65 the average yield of rice per acre showed an increase of 1.8 mounds or 20 per cent over 1954/55 while the average yield of wheat per acre did not show any substantial improvement. It increased by only 0.4 mounds or 3 per cent over 1954/55. Similarly there was an increase of 0.5 mounds per acre in case of all other foodgrains. Table 1.1 gives the acreage and production of cereals in Pakistan whereas Table 1.2 gives the periodical variation in total output.

During the period 1954-55 to 1964-65 the highest output of rice was 10.8 million ton (based on averages) the lowest 8.3, the mean output being 9.16 million tons. The difference between highest and lowest output was of the order of 26 per cent. In case of wheat the highest output was 4.10 million tons the lowest 3.20 and the mean output was 3.64 million tons with a difference of 25 per cent between the highest and the lowest output.

The First Plan had envisaged a net production of 14.1 million tons.[1] of foodgrains at the end of 1959/60; this could not be realized mainly due to drought conditions in West

1. Government of Pakistan (Planning Division): First Five-Year Plan of Pakistan P.219

TABLE : 1.1

Acreage and Production of Major Food Crops, and Cash Crops.

Production: Million Tons. Acreage: Million Acres

Food Grains.	Average 1950-51 to 1954.55				Average 1955-56 to 1959-60.				Average 1960-61 to 1964-65.									
	Pakistan		East Pakistan		West Pakistan		Pakistan		East Pakistan		West Pakistan		Pakistan		East Pakistan		West Pakistan	
	Acre	Prod	Acre	Prod	Acre	Prod	Acre	Prod	Acre	Prod	Acre	Prod	Acre	Prod	Acre	Prod	Acre	Prod
Rice	23.2	8.3	20.9	7.5	2.3	0.80	22.7	8.4	20.1	7.5	2.6	0.90	24.9	10.8	21.9	9.7	3.0	1.1
Wheat	10.4	3.2	0.1	0.02	10.3	3.18	11.7	3.6	0.1	0.02	11.6	3.58	12.4	4.1	0.1	0.03	12.3	4.08
Staple Food	33.6	11.5	21.0	7.52	12.6	3.98	34.4	12.0	20.2	7.52	14.2	4.48	37.3	14.9	22.0	9.73	15.3	5.18
Bajra	2.3	0.34	-	-	2.3	0.34	2.1	0.32	-	-	2.1	0.32	2.0	0.37	-	-	2.0	0.37
Jowar	1.3	0.22	-	-	1.3	0.22	1.2	0.23	-	-	1.2	0.23	1.2	0.25	-	-	1.2	0.24
Maize	1.0	0.38	-	-	1.0	0.38	1.1	0.46	-	-	1.1	0.46	1.2	0.49	-	-	1.2	0.49
Barley	0.5	0.12	-	0.02	0.5	0.10	0.5	0.15	0.10	0.01	0.4	0.14	0.5	0.13	0.1	0.01	0.4	0.12
Gram	2.7	0.58	0.1	0.05	2.6	0.53	3.2	0.67	0.1	0.04	3.1	0.64	3.0	0.66	0.1	0.03	2.9	0.63
Total Foodgrain	41.4	13.14	21.1	7.59	20.3	5.55	42.5	13.83	20.4	7.57	22.1	6.27	45.2	16.80	22.2	9.77	23.0	7.03
Jute	1.5	1.0	1.5	1.0	-	-	1.46	1.10	1.46	1.10	-	-	1.7	1.0	1.7	1.0	-	-
Cotton	3.2	0.27	-	-	3.2	0.27	3.49	0.29	-	-	3.49	0.29	3.5	0.35	-	-	3.5	0.35
Tea	0.07	0.02	0.07	0.02	-	-	0.07	0.02	0.07	0.02	-	-	0.08	0.02	0.08	0.02	-	-
Tobacco	0.20	0.08	0.10	0.04	0.10	0.04	0.2	0.09	0.10	0.04	0.10	0.05	0.02	0.1	0.10	0.03	0.10	0.07
Rape & Mustard	1.70	0.28	0.50	0.10	1.20	0.18	1.9	0.32	0.50	0.10	1.4	0.22	1.7	0.31	0.5	0.10	1.20	0.21
Sugarcane	0.86	10.70	0.25	3.60	0.61	7.10	1.2	13.97	0.20	3.82	1.0	10.15	1.47	20.5	0.3	4.9	1.17	15.6
Cash Crops	7.53	12.35	2.42	4.76	5.11	7.59	8.32	15.79	2.33	5.08	5.99	10.71	8.65	22.28	2.68	6.05	5.97	16.23
Grand Total:	48.93	25.49	23.52	12.35	25.41	13.14	50.82	29.62	22.73	12.65	28.09	16.98	53.85	39.08	24.88	15.82	28.97	23.26

Source: Economic Survey 1965-66, Statistical Appendix, PP.11-12.

TABLE : 1.2

Extent of Periodical Variation in Output of FoodGrains in Pakistan

1954-55 to 1960-65.

(Million Tons)

Commodity	Highest Output	Lowest Output	Difference between (2) and (3)	Mean output	Difference between Highest and Lowest output (4)	Difference between Highest output (2) and mean output (5)	Difference between Lowest output (3) and mean output (5)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rice	10.80	8.30	2.50	9.16	26	13	13
Wheat	4.10	3.20	0.90	3.64	25	13	12
Bajra (Millet)	0.37	0.32	0.05	0.34	15	9	6
Jowar (Sorghum)	0.24	0.22	0.02	0.23	8	4	4
Maize	0.49	0.38	0.11	0.44	25	11	14
Barley	0.15	0.12	0.03	0.13	23	15	8
Total Food Grains	16.15	12.54	3.61	13.94	26	16	10

Source: Calculated on the basis of data as in Table 1.1.

Pakistan and recurrence of floods in East Pakistan. The nett production therefore, fell short of the target by nearly one million tons[1] culminating in a heavy drain on foreign exchange which had to be spent on food imports. The quantum of food imports increased from 0.17 million tons in 1954/55 to 1.35 million tons at the end of the First Plan (1959/60). The Second Plan target of food production was, however, not only realized but exceeded by 0.9 million tons (the target being 15.9 million tons).[2] The harvests during the Second Plan period were generally good. But the quantum of food imports due to a high population growth rate remained the same. The net import in the year 1964/65 was of the order of 1.73 million tons.

Food Consumption:

The correlation of food consumption with income elasticity is very high in Pakistan. It is estimated that 0.6[3] of any income increment is spent on food especially the cereals. The dietary base being limited, higher weight goes to cereal consumption expenditure. One of the reasons for this high weight is low income per capita and the state of the economy. The

1. Excluding gram.

2. Second Five Year Plan, op.cit. P.134 and Final Evaluation of Second Five Year Plan, P.77

3. R.P. Sinha has estimated 0.6 income elasticity of demand for food in India; ref: "Food in India" (Oxford University Press 1961) PP.63-4.

dietary composition of rural population differs widely from that of urban population both quantitatively and qualitatively. Similarly there is a variation in level of consumption in different regions of the country. One such distinct difference is between East and West Pakistan due to disparity of income per capita, growth rate and the rate of urbanisation. The Table 1.3 illustrates such disparities including the consumption of food items in the two regions. In both qualitative and quantitative terms food intake is higher in West Pakistan than in East Pakistan.

In Pakistan, the total calorific intake is estimated at 2,260 per reference man per day, which we know is a little higher in West Pakistan and at least 10 per cent[1] or so lower in East Pakistan. Pakistan ranks 69th in order of calorie intake in the world - the world average being 2,500 calories, the highest calorie intake, in Canada, at 3,000 SNU and the lowest estimated at 2,000 calories.[2] In the absence of a nutrition survey it is not possible to give the regional breakdown of calories intake. The Table 1.4 however provides the figures relating to Pakistan as a whole. Lack of data does not

1. Dr. Gilbert has estimated it at 1,600 calorie intake in the year 1962/63 whereas we may estimate it not more than 2,000 calories per reference man per day in 1966. (International Labour Review, March 1964. P.213.
2. U.N. Statistical Year Book 1966. P. 500

TABLE : 1.3

Regional Income Per Capita and Food Consumption (average 1951-52 to 1959-60).

	East Pakistan	West Pakistan	Difference + - East Pakistan
Per Capita Income[1] (Rs)	265	343	- 78
Food Grains (lbs)[2]	389	399	- 10
Raw Sugar (lbs)	16.1	46.9	- 30.8
Refined Sugar "	2.7	6.8	- 4.1
Tea "	0.1	0.8	- 0.7
Fish "	8.3	3.2	+ 5.1
Salt "	11.6	16.7	- 5.1

(1) relates to 1959-60.

(2) The average per capita consumption for the period for the country as a whole comes to 14 ounces per day or 320 lbs per month. The above estimate is on the high side (Source: Economic Survey op.cit. P.10).

Source: Table 13(a) and Table 14. Strategy of Economic Planning by Dr. M. Haq.

The Table 14 is based on data taken from S.U.Kans', 'A Measure of Economic Growth in East and West Pakistan', Development Review, Autumn, Karachi, 1961.

TABLE : 1.4

Net Food Supplies per Capita

Year	Kilogrammes per year								Calories per day	
	Cereals as flour	Potatoes	Sugar	Pulses	Meat	Milk Fat	Milk Protein	Fat and Oil	Total	Percentage animal origin
1954-56	150	-	14	8	4	3	2	4	1990	9
1957-59	153	4	15	7	4	2	2	3	1980	8
1964-65	167	10	17	6	3	3	3	6	2260	11

Source: U.N. Statistical Year Book - 1966.

permit an elaborate discussion of calorie intake according to age group and sexes. It is however quite commonly known that in the Indo-Pak Subcontinent, Ceylon, Burma and in many other Asian Countries the male members and more especially the bread earners enjoy a privileged position in calorie intake both in quantity and quality. It is also due to the social framework of Pakistan that woman folk take due care in providing a proportionately rich diet to the male members even by sacrificing their own share in meals. The children (male) rank second and the females rank the lowest. The analysis of consumption is in fact possible only in the context of social behaviour, customs and age long traditions. Such a low rank assigned to females in calorie intake is due to the fact that the participation rate of women in the total labour force is very low and hence they are economically more dependent on men than anywhere in Europe or America.

Consumption Habit: Let us now analyse consumption habits. A study of Table 1.5 reveals certain interesting phenomena and characteristics of consumption habits. Cereals, which account for 90 per cent of the calorie intake in Pakistan, were constituted mainly of rice 63 per cent and wheat 20 per cent, rice and wheat together making up 83 per cent in 1954/55, 94 per cent in 1959/60 and 93 per cent in 1964/65. Significantly the rate of cereal consumption especially of rice and wheat is very

TABLE 1.5

A Balance Sheet of Staple Diet and Cereals Consumption in Pakistan.

(Million Tons)

PRODUCTION			Imports			Exports			Consumption minus 10% Seeding feeding and wastage - export + import			Population (million)	Food Per capita per annum (in lbs)			Total	Percentage Consumption			
Year	Rice	Wheat	Total	Rice	Wheat	Total	Rice	Wheat	Total	Rice	Wheat	Total		Rice	Wheat	Other grains	Total	Rice as % of column	Wheat as % of column	Rice & Wheat	Others
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1954-55	8.41	3.16	11.57	-	Negligible	-	0.16	-	0.16	7.41	2.85	10.26	88.2	188	58	51	297	63	20	83	17
1959-60	9.46	3.87	13.33	0.36	0.96	1.32	0.11	-	0.11	8.61	4.81	13.42	98.8	195	107	17	319	61	33	94	6
1964-65	11.66	4.55	16.21	0.05	1.60	1.65	0.18	-	0.18	10.32	5.75	16.07	112.4	204	114	24	342	60	33	93	7

(1) Source: Department of Marketing and Intelligence Statistical Year Book 1964, and Economic Survey 1965-66.

(2) Source: Economic Survey 1965-66, Table No.20

(3) Economic Survey 1965-66. Table No.4

(4) Consumption has been calculated after deducting 10% seeding, feeding and wastage + imports - exports.

(5) Other grains calculated on the basis of residual figure arrived after deducting rice and wheat available per capita from the total availability of food 13 ounces per day in 1954-55, 14 in 1959/60 and 15 ounces in 1964-65.

Source: Economic Survey, 1965-66, Table 4, Column 8.

high. A change in consumption habits is however, noticeable. It will be observed that with a relative decline in consumption of rice and wheat (1 p.c. in 5 years) there has been a relative increase in the consumption of other cereals (like bajra, jowar, maize and barley). It is however, difficult to know whether the change in habit is the result of compulsion or whether a real voluntary change that has ensued. Consumption habits largely depend on income elasticity, availability of food supplies and prices. Shortages in supplies of rice and wheat or a relative price change might affect the consumption habits in favour of grains available for substitution or the prices of which are relatively lower. It has been found that in times of good harvests millet usually goes to animal feed. So the millets are actually the consumption of last resort equivalent to the potatoes of pre-famine Ireland. Keeping in view the population growth rate and production of cereals like rice and wheat, it is economically beneficial if a shift occurs in consumption habits to bring about a change in demand elasticity of major cereals (rice and wheat) and which saves thereby much needed foreign exchange for development imports. But according to Colin Clark "The poorer the diet of the people the more difficult it is to change their habits".[1] Actually any rise in consumption

1. Colin Clark : 'Food Supply and Population Growth' (ed) Royal Statistical Society. (London 1963) P.80.

of cereals of lower nutrition value signifies poverty and growing inelasticity of income. Moreover, consumption habits change only over a time period corresponding with increase or decrease in the level of income. Thus in a developing country like Pakistan any medium or long term change sought in the direction of habits, as for example the consumption of lower nutrition value cereals, will not be possible, as a rise in income per capita would tend to influence the consumption habits more in favour of higher nutrition value diet. It is possible only through a drastic cut in imports of such cereals in the short run. In a static economy (e.g. very much say tradition bound) it is possible to influence the habit in favour of lower nutrition value diet because such a trend would be normal under given increased pressure, but in a developing economy to reverse this is more difficult as any income increment would be spent according to consumers' choice. The remedy therefore, lies in increasing the land carrying capacity in the cases of rice and wheat and through some planned efforts to develop production of food of animal origin, fruit, fish and starchy roots. An upward dietary improvement in supply can ease the situation but it must the whole time be remembered that one is dealing with a subsistence and survival dominated rural population on the one hand and the controls exerted on crop production by environment on the other.

Food Supply and Population Growth:

Pakistan on her inception as a state in 1947 had a total population of 75.28 million. The all-India population growth rate in 1941 had been 1.5 per cent per annum.[1] The first Census of Pakistan conducted in 1951, revealed a meagre growth rate of 0.77 per cent over 1941. The population of East Pakistan remained more or less stationary while there was a net addition of 5.4 million people in West Pakistan. However, since 1951, there has been a considerable rise in population of both East and West Pakistan. The Census of Pakistan 1961 enumerated the population at 93.7 million, an increase of 16 million people over 1951, representing a growth rate of 2.4 per cent.[2] The population of East Pakistan continued to be 10 per cent higher than that of West Pakistan but the latest indications suggest that, with a growth rate 0.59 per cent higher, the population of West Pakistan is likely to outstrip that of East Pakistan in the near future. The rate of population increase is alarmingly high given the low level of incomes. The possibility of a deceleration or an actual decline in this growth rate, as a demographic result of social forces associated with urbanisation and industrialisation, must be

1. S. Chandra Sekhar: 'Hungry People and Empty Lands' George Allen and Unwin, London, 1954. P.154

2. Census of Pakistan 1951 and 1961 Seen in Pakistan Economic Survey 1964-65 Statistical Appendix PP.2-3.

considered as hypothetically possible but the question requires separate consideration later. We may however note here that there has been a tremendous increase in urbanisation in West Pakistan compared to the East Wing where the rate of urbanisation appears to be quite slow due to the lack of infrastructure for industrial growth. But at the end of the Second Plan the position had substantially improved and in the subsequent census a better urban growth rate is likely to be recorded in the case of East Pakistan. The establishment of industrial estates and on the whole an accelerated pace of industrialisation more pronounced during the Second Plan period has immensely helped in giving East Pakistan an industrial bias.

The density of population per square mile in East Pakistan is 922 compared to 138 in West Pakistan[1]. But the difference in density in relation to cultivated land are much smaller (see Tables 1.12 - 1.14). Population presents a formidable problem with a growth rate of 2.6 per cent in 1964/65. But keeping in view the area of the two regions and the land resources the problem is more acute in East than in West Pakistan. Some of the causative factors leading to such a high population growth rate are, higher fertility rate, attainment of puberty at an early age, (especially in East Pakistan), early marriages,

1. Census of Pakistan 1961.

economic dependability of female sex and large size of families (6 in East and 5.4 in West Pakistan). So far as fertility is concerned, a study in fertility differential of undivided India had suggested that it was 0.10 per cent higher among Muslim compared to all other communities during 1931-51[1].

Now let us examine the population growth in relation to food supply which presents a very gloomy picture. During the First Plan period there was a 6 per cent relative change in production over the base period 1954/55. This represented only 1.2 per cent per annum nett addition to domestic production of foodgrains whereas the population increased at the rate of 2.3 per cent per annum. During the Second Plan period the position improved a little - the net addition to domestic production was of the order of roughly 3.4 per cent per annum with the population increase of 2.6 per cent per annum. During the First Plan period, the total import of foodgrains was of the order of 4.87 million tons or one million tons per year whereas during the Second Plan period, the increase in population demanded much larger imports inspite of the increased domestic production. The total import was 7.09 million tons or 1.41 million tons on an

1. First Five Year Plan, op.cit P.190. Whereas Kingsley Davis has estimated 12 per cent higher fertility among Muslims compared to Hindus (The Population of India and Pakistan P.81).

average per annum. Thus the country had to finance the imports of much higher magnitude despite the fact that production of foodgrains increased at a compound rate of 3.4 per cent annually during the Second Plan period. The table 1.6 gives the relative growth rates of food production and population. The cumulative percentage growth has been represented in Figure 1.

Dietary Composition:

The dietary composition in terms of quality is quite poor in Pakistan compared to the highly sophisticated diets and dietary standard of the developed countries. The bulk of diet is mostly composed of rice and wheat supported by a small quantity of fat, vegetables and proteinous diet like meat and fishes. We have already observed that nearly 90 per cent of calorific value is derived from cereals while 10 per cent of calorific value has an animal origin. The supplies of food items such as eggs, fish, meat, vegetables, butter and fruits are not at all adequate.

Land per caput and Productivity:

On the basis of total area under cultivation the land per caput comes to 0.60 acre[1]. The pressure on land is

1. On the basis of Land Utilisation Table 37 of Statistical Year Book 1964 op.cit. PP.92-94.

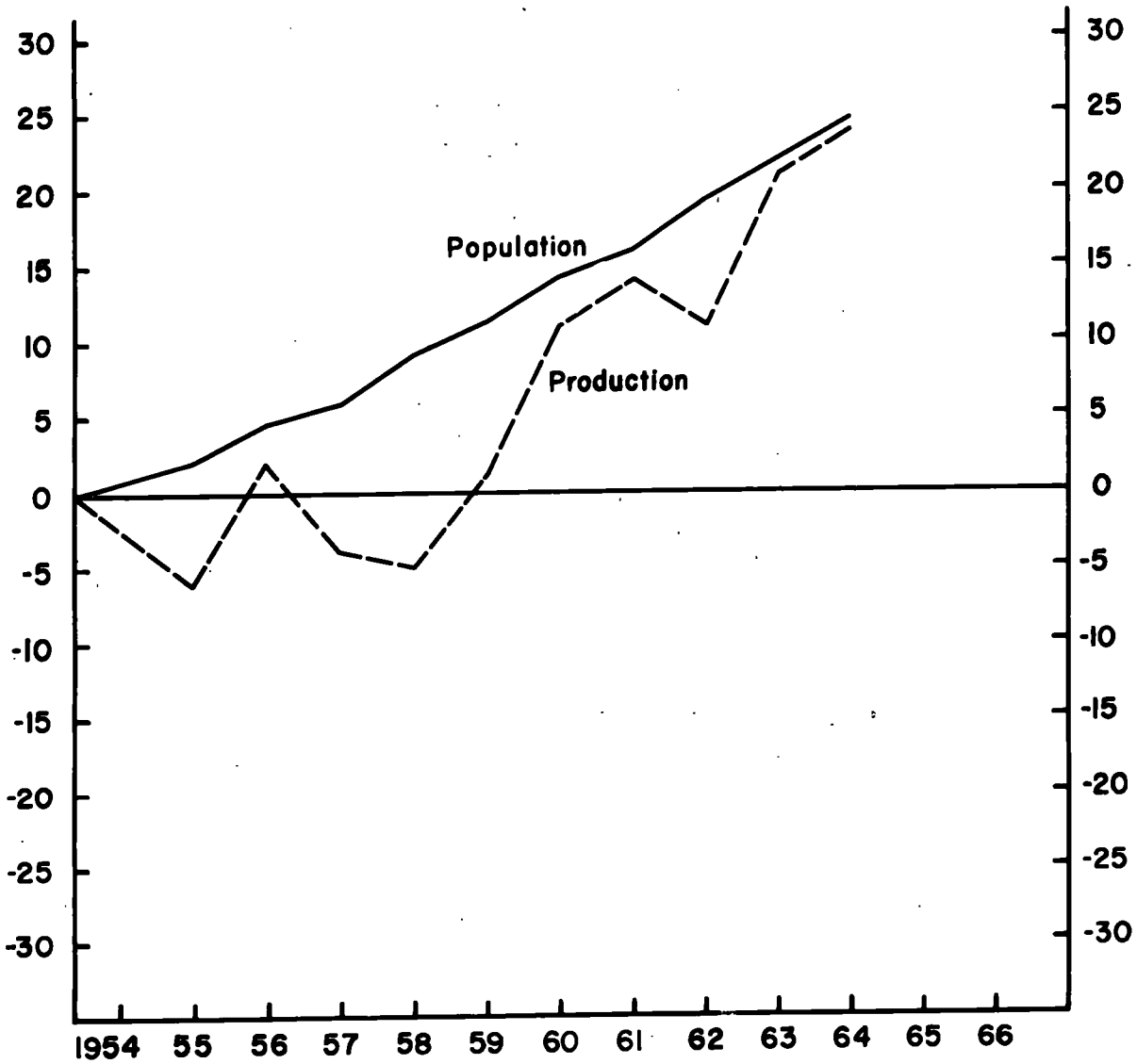

FIG. I Trend Showing Population and Production of Foodstuffs

TABLE : 1.6

Supply of Foodgrains and Population Growth

(In million tons)

Year	Domestic * Production (million tons)	Percentage Increase or decrease. + - *	Cumulative change	Population in (million)	Percentage Increase *	Cumulative growth %
1954-55	11.86	-	-	88.26	-	-
1955-56	11.21	- 6	- 6	90.29	2.3	2.3
1956-57	13.10	8	2	92.37	2.3	4.6
1957-58	12.37	- 6	- 4	94.49	2.3	6.9
1958-59	12.20	- 1	- 5	96.66	2.3	9.2
1959-60	13.61	11	6	98.88	2.3	11.5
1960-61	14.29	5	11	101.45	2.6	14.1
1961-62	14.71	3	14	104.09	2.6	16.7
1962-63	14.26	- 3	11	106.79	2.6	19.3
1963-64	15.72	10	21	109.56	2.6	21.9
1964-65	16.29	3	24	112.41	2.6	24.5

* figures arrived after subtracting 10% seeding, feeding and wastage and exports.

(a) Source: Government of Pakistan (C.S.O). Statistical Year Book. Pp.74-75.

however, very acute in East Pakistan where the per caput land works out at 0.45 compared to 0.80 acre in West Pakistan on the basis of total cropped area. In the case of Pakistan as a whole it has declined from 0.67 acre in 1954/55 to 0.60 acre in 1964/65. The population increase was relatively higher than the increase in area brought under cultivation. The total acreage added in the decade to 1964/65 was nearly 8 million acres whereas the total population increased by 22.2 million. So despite the development efforts during the two plan periods, the net area brought under cultivation was not enough to counterbalance the population pressure on land. The ratio between cash and food crops being 22 and 78 per cent respectively, the land per capita in the case of foodgrains only will be still lower than given above. To catch up with the population growth, Pakistan needed at least an addition of 17 million acres to keep the average land per caput at 1954/55 level. There was a steep decline in the case of East Pakistan in 1959/60 but with the addition of nearly one million acres in 1964/65 the position improved a little as the rate of decline was somewhat arrested. The land per caput in East Pakistan has gone down from 0.57 acre to 0.45 acre in 1964-65. This imbalance was mainly caused by population growth - a net addition of 15 million over 1954-55. In West Pakistan, the position was not as bad where the addition to the total population was 6 million compared with an addition of 4 million acres to the area cropped. (See Table 1.7).

TABLE : 1.7

Land Per caput in Pakistan.

Year	Acreage in million net area sown to all crops. 1.			Population in million 2.			Land Per caput 3		
	E.Pak	W.Pak.	Total	E.Pak	W.Pak	Total	E.Pak	W.Pak	Total
1	2	3	4	5	6	7	8	9	10
1954-55	27.8	32.7	60.5	48.9	41.3	90.2	0.57	0.79	0.67
1959-60	25.2	35.4	60.6	54.1	44.7	98.8	0.47	0.80	0.60
1964-65	28.5	40.2	68.7	63.3	49.1	112.4	0.45	0.80	0.60

Source 1. Economic Survey 1965-66 op.cit. P.11-12 (Statistical appendix).

2. Column 7 Economic Survey 1965-66 regional breakdown taken from Table No.2

This has been possible due to reclamation projects and irrigation schemes implemented during the Second Plan period. In West Pakistan, keeping in view the land resources, there is relatively large scope for adding new areas under cultivation but in East Pakistan there is severe physical limitation to the extension of the cultivated area.

Land Utilization:

The position with regard to land utilization is indicated in Table 1.8. A study of table 1.8 reveals that the most intensive agricultural land utilization is in East Pakistan. Out of a total cultivated area of 27.8 million acres in 1954/55, 6.30 million acres were under double cropping. In the case of West Pakistan, the land use is not so intensive - nearly two-thirds of the area under cultivation was sown to all crops in 1964/65. The area under double cropping is also lower than in East Pakistan whereas the ratio of current fallow to net area sown is ten times higher in West Pakistan.

A similar deterioration in land per caput is noticeable in relation to rural population in East Pakistan and Pakistan as a whole. In West Pakistan, due to a substantial growth in urban population, this land ratio has remarkably improved. The land per caput study in relation to labour force engaged in agriculture shows that in East Pakistan the ratio of

TABLE : 1.8

Land Utilization.

(Million acres)

CLASSIFICATION OF LAND	1954-55			1959-60			1964-65		
	E.Pak.	W.Pak.	Total.	E.Pak.	W.Pak.	Total.	E.Pak.	W.Pak.	Total
Total Area	34.6	198.4	233.0	34.6	198.6	233.2	35.3	198.6	233.9
Forest Area	3.1	3.1	6.2	5.5	3.1	8.6	5.4	4.9	10.3
Not available for cultivation	4.7	51.4	56.1	5.6	32.0	37.6	6.0	47.0	53.0
Other cultivable land (excluding current fallows)	4.4	23.0	27.4	1.9	24.5	26.4	1.8	32.4	34.2
Current fallows	1.4	8.8	10.2	1.8	8.5	10.3	0.9	11.3	12.2
Net Area Sown	20.9	29.2	50.1	19.8	32.3	52.1	21.1	35.3	56.4
Area sown more than once	6.9	3.5	10.4	5.3	3.1	8.4	7.4	5.2	12.6
Total cultivated area	22.3	38.1	60.4	21.6	40.8	61.4	22.1	46.3	68.4
Total cropped area	27.8	32.7	60.5	25.2	35.4	60.6	28.5	40.2	68.7

Source: Statistical Year Book 1965 and 1966. op.cit. P.92-95.

2 acres per agricultural labour in 1954/55 has shrunk to 1.7 acres in 1964/65. In West Pakistan it has on the contrary improved from 3.6 acres to 3.9 acres per worker in 1964/65. Table 1.9 and 1.10 provide the basic data for the problem outlined above.

Food Supply and General Productivity of Labour:

There is a positive relationship between wage and efficiency. This is particularly true in the case of Pakistan where food is also a 'wage-good' in the non-monetized sector of the economy, so any increase in the 'wage-good' is likely to raise labour productivity. In Pakistan the labour productivity is at its lowest ebb[1] one of the reasons being poor dietary standard, living conditions and low wage. The labour force generally suffers from malnutrition. Due largely to better dietary standards, the labour efficiency of West Pakistan is higher than in East Pakistan. The same is also regionally true of the variation in labour efficiency if we take into consideration the dietary composition of the different parts of West Pakistan.

1. U.N. Manpower Survey 1955.

TABLE : 1.9

Land Per caput by Rural Population.

Year	Acreage in million net area sown to all crops.			Rural Population in million.			Acreage Per caput by Rural Population		
	E.Pak	W.Pak	Total	E.Pak	W.Pak.	Total	E.Pak	W.Pak	Total
1	2	3	4	5	6	7	8	9	10
1954-55	27.8	32.7	60.5	46.7	33.9	80.6	0.60	0.90	0.70
1959-60	25.2	35.4	60.6	51.4	35.8	87.2	0.50	0.98	0.70
1960-65	28.5	40.2	68.7	59.6	37.3	96.9	0.50	1.00	0.70

Source: Table 1.8 and Economic Survey 1965-66. op.cit. P.11-12 (Statistical Appendix).

TABLE : 1.10

Land Per caput by Agricultural Labour Force.

Year	Acreage in million net area sown to all crops.			Agricultural Labour force in million*			Land Per caput		
	E.Pak	W.Pak	Total	E.Pak	W.Pak	Total	E.Pak	W.Pak	Total
1	2	3	4	5	6	7	8	9	10
1954-55	27.8	32.7	60.5	14.4	9.0	23.4	2	3.6	2.6
1959-60	25.2	35.4	60.6	14.6	9.4	24.0	1.7	3.7	2.5
1964-65	28.5	40.2	68.7	16.5	10.3	26.8	1.7	3.9	2.6

Source: Third Five Year Plan op.cit. p.153.

Statistical Year Book 1965-66 op.cit. pp. 47-48 and 22.

*Includes unemployed as well.

Dr. Mabhubul Haq[1] has estimated the labour productivity for agricultural and industrial sectors in monetary terms. According to his estimates, the average productivity of labour in the agriculture sector came to Rs 1,040 in 1960 and Rs 1,090 in 1965. In the industrial sector, the average productivity per workers is more or less double than that in agricultural sector. The difference in productivity is largely due to the nature of industrial sector being more capital intensive, is partly due to the higher wages and partly because the efficiency of labour connected with automation is supposed to be higher than that of the manual labour engaged in agriculture.

However, an analysis of labour productivity in terms of 'wage-good' would also be interesting. The average production of staple food like rice (1960-65) was 445 Kg per acre in East Pakistan. Therefore, the average output of all factors combined including labour comes to approximately 756 Kg (on the basis of 1.7 acre per worker) considering the entire labour force in the agricultural sector as employed. Similarly the average production of wheat being 370 Kg in West Pakistan, the total output for all factors combined comes to 370 x 3.1 acre i.e. 1,147 Kg which is nearly double the average output per worker in East Pakistan in terms of grain weight.

1. Dr.Haq: 'Strategy of Economic Planning' Oxford University Press, Karachi 1966 Table A.31 P.250

The analysis gives an impression of the labour productivity and the state of the subsistence sector in Pakistan. The estimate though not suphisticated gives roughly an idea of general productivity even if we consider the entire value to be the product of labour. The average wage good in the case of East Pakistan would work out to 2.0 Kg per day and in the case of West Pakistan it would nearly be double. Let us now consider the 'wage good' alone say 40 per cent paid to each worker. In that case, in East Pakistan the wage good would be 0.8 Kg and in West Pakistan it would be 1.3 Kg per day equivalent to 0.80 x 100 x 2.42 calories[1] and 1.3 x 100 x 2.42 calories respectively.

Let us now assume total agricultural product per worker employed in the subsistence sector. For this purpose attempts have been made by different economists to convert the agricultural output into one grain equivalent. This device of grain equivalent was pioneered by Buck in his study of China.[2] In the case of Pakistan, Colin Clark has estimated the agricultural products converted into economic wheat equivalent at 437 Kg in 1958 per head of the entire population. Since

1. 0.60 Kg x 100 = grams whereas one gram = 2.42 calorie.

2. See Colin Clark "Future Sources of Food Supply: Economic Problems". Food Supplies and Population Growth op.cit. P. 58

approximately 25 per cent of the population is in the agricultural labour force, the per head output in economic wheat equivalent comes to 1,748 Kg or Rs 874 (at current price say Rs 0.50 per Kg). Dr.Haq has estimated the labour productivity at Rs 1,040 in 1960 and Rs 1,090 in 1965 on the basis of actual labour employed in agricultural sector. So both the estimates nearly tally.

The Table 1.11 gives labour productivity as factor input actually employed in monetary terms which is comparable with the wage-good paid to a worker in agricultural sector of Pakistan.

Food Imports:

The import of food was negligible up to 1951-52 but in the following year Pakistan became a nett importer of 0.86 million tons of foodgrains which however, declined in the immediately subsequent years. The quantum of import touched a new peak in 1956-57 and thereafter the average import has continued at not less than one million ton a year. The nett imports up to 1964-65 thus stood at 13.83 million tons over a period of 18 years and after adjustment for exports, the figures come to 12.16 (the nett exports being 1.67 million tons). The main items of import were rice and wheat. In 1964/65, 1.60 million tons of wheat and 0.05 million tons of rice were

TABLE 1.11

Land and Labour Productivity.

	Production (Rs million) value added constant factor cost 1959-60.	Labour force (million)	Labour Productivity net output/ Labour Force (Rs)	Productivity Labour only (1) @ 40 p.c. (Rs)	Total acreage (million)	Per acre Productivity Rs (1 ÷ 5)
	1	2	3	4	5	6
1950-51	15,112	16.25	930	372	58.14	260
1954-55	15,654	16.90	926	370	60.50	258
1960-61	17,285	17.85	970	388	60.60	284
1964-65	19,761	19.30	1,240	496	68.70	300

(1) Schultz has estimated labour share in total production for Pujab @ 37% "Transforming Traditional Agriculture". Yale University Press, New Haven, Conn, 1964, P.100.

Source: Economic Survey 1965-66 op.cit. PP.2-3 (Statistical appendix) and Statistical Year Book 1965-66, op.cit. P.

imported as against 0.96 million tons of wheat and 0.36 million tons of rice in the year 1959-60

The Role of Food Supply in Economic Development:

The basic problem of an underdeveloped country is how to maintain a balance between food production and population growth. Since population growth is an independent variable, a check on population growth rate is hardly possible in the short run. Therefore, food production is required to be boosted to match with the population growth rate obtaining in the country. The food problem has become more a State problem than a problem of the individuals especially in developing countries where the State has assumed the responsibilities of overall economic planning. It would appear that in Pakistan population is a permanent obstacle to economic growth rate and prosperity. The recurring food shortages have been a drain on foreign exchange. Pakistan has so far implemented two Five-Year Plans and during a decade of planning, the size of investment in agricultural sector and that of food imports are given below:-

TABLE : 1.12

(Rs million)

DURING	Public Sector Development Expenditure Agriculture Sector[1]	Food Import P.L.480	Food Import own resource	Total Imports
First Plan (1955-60)	1,350	982	700	1,682
Second Plan (1960-65)	4,508	2,205	828	3,033
Total	5,858	3,187	1,528	4,715

Source: (i) Evaluation of Second Five Year Plan (1960-61 to 1964-65) Planning commission (Karachi Dec 1966) PP.183, 199 and 166. (ii) Strategy of Economic Planning, op.cit. P.156

1. Includes irrigation.

During the First Five Year Plan, the development expenditure in the Public Sector was nearly 50 per cent of the size of expenditure (from own sources) on total food imports whereas during the Second Plan period, it was more than one-fifth of the total expenditure. So the problem implicit has been the financing of the agriculture sector by an additional 30 per cent (expenditure on food imports) to achieve the desired target. The added imports under P.L 480 gives still a more gloomy look to the situation. The value of imports under P.L 480 nearly

doubled at the end of the Second Plan compared to only Rs 982 million in 1959/60. On the whole during a decade of planning, food imports claimed an expenditure of Rs 4,715 million compared to development expenditure of Rs 5,858 million. It meant that an additional 80 per cent investment went to food imports. The per capita development expenditure on agricultural sector thus comes to Rs 14 during the First Plan and Rs 40 during the Second Plan period while the import cost of food per head was Rs 17[1] and Rs 30[1] respectively. The value of imports thus saved, might have doubled the development expenditure in the agricultural sector and a growth rate more than that achieved during the two Plan periods could be possible. So each rupee investment in agriculture sector was balanced by Rs 0.80 for import of food. This gives an idea of the magnitude of food imports in the past and its likely need in the future. So even if we take into consideration the instability of primary products entering international trade, there is one positive factor of development that any growth rate attained in food production will minimize food imports and the saving of foreign exchange would be available for investment in other sectors of the economy. A

1. Calculated on the basis of figures for food imports with own resources only while it can be multiplied by 3 if we take into account the Food imports under P.L 480. The total imports of food under P.L 480 is based on CIF value whereas the freight and insurance components are paid by the importing country.

surplus in agriculture or food only can help substantially the economic development of Pakistan. Moreover, the value of imports saved could improve the balance of payments position of Pakistan if not more than at least to the extent of the level of imports. The table below indicates the value of imports and the size of deficit in the international trade account.

Year	Deficit Imports - Exports (Rs million)	Food Imports (Rs million)
1955-60	- 176.81	700
1960-65	- 932.27	828
Total	-1109.08	1,528

Source: Economic Survey 1965-66. PP.78-80

CHAPTER TWO

The Problems of Capital Formation in Agricultural Sector.

The problem of capital formation and economic growth is the cardinal point of planning in a developing economy which contains a large subsistence sector. The rate of capital formation is low due to desperate poverty, low productivity and income. In the words of Nurkse[1], "A circular relationship exists on both sides of capital formation in the poverty ridden areas of the world !"

On the supply side of capital, the major part of the rural sector under the given conditions has very low saving potential. This stems largely from low income, intense pressure on land and underemployment. The productivity of existing factor inputs is low due to scarcity of capital and poor state of technology.

In Pakistan, the marginal productivity of land is low and that of labour, over a wide range, is in the neighbourhood of zero. The cost of a factor input such as capital, the supply of which is fairly sticky for sociological reasons is high. Therefore, capital cost in the subsistence sector is high because of high

1. Ragnar Nurkse, Problems of Capital Formation in Underdeveloped Countries, Oxford, Basil Blackwell, (1966) P.5

opportunity cost, and risk premium. A relatively high cost of capital is also due to its scarcity in relation to the fairly elastic supply of other co-operant factors, such as labour. The labour productivity as explained by Viner[1] needs that mass of population should be literate, healthy and sufficiently well fed to be strong and energetic. The position in Pakistan is just the opposite - mass illiteracy and malnutrition in the sense of consumption in low standard nutritional unit (S.N.U.) terms. The structure of peasant society is still almost traditional but the society is, however, not opposed to technological change and improvement furthering growth rate. Due to a set of socio-economic reasons this class has got to live within the bounds of age old traditions and therefore partially within some sort of closed economy. To study in detail the problems of capital formation, let us examine the functional relationship of different variables such as income, consumption, savings and investment in agricultural sector.

The Level of Income:

The level of income in Pakistan is perhaps one of the lowest in the world. The national income per capita at the end of the First Plan 1959-60 was Rs 318[2] which rose to Rs 365 at the end of the

1. Jacob Viner "Economics of Development" Agarwala and Singh: Economics of Underdevelopment (ed), (Oxford University Press, 1963), P.17.
2. Constant Factor Cost of 1959-60. Final Evaluation of Second Five Year Plan, op.cit. P.141.

Second Five-Year Plan 1964-65. The agricultural sector despite some structural change over a decade still contributed about 50 per cent to G.N.P. There is, however, a distinct disparity between the incomes of rural and urban sectors and, on a regional basis, between East and West Pakistan. The regional disparity, however, has been much narrowed during the Second Plan period. In the fifties the regional growth rate of East Pakistan from a low of 1.9 per cent only attained a growth rate of 5 per cent whereas West Pakistan from 3.1 per cent rose to a level of 5.5 per cent at the end of 1964-65.[1] This disparity actually manifests the lack of infrastructure during the fifties in East Pakistan, a lack which was subsequently repaired during the Second Plan period. While making a regional comparison of the growth rate, it will have to be borne in mind that from the very outset (inception of Pakistan in August, 1947) West Pakistan had relatively better growth potentials due to its existing infrastructure than East Pakistan. Table 2.1 gives more precisely an idea of the growth rate that has taken place in East and West Pakistan. During the last decade, the development of social overheads immensely helped the production sectors to achieve a higher growth rate.

Let us now study the average personal income in rural areas for which adequate data is not available except those of National Sample Surveys conducted by Central Statistical Office of the

1. 'Final Evaluation of Second Five Year Plan' op.cit. P.7

TABLE : 2.1

National Income Per Capita at constant Factor Cost

1959-60.

(in Rs)

Year	East Pak.	West Pak.	All Pak.	Growth Rate		
				E.Pak	W.Pak.	All Pakistan
1959-60	269	355	318	1.9	3.1	3.5
1963-64	305	388	353	-	-	-
1964-65	-	-	365	5.0	5.5	5.2

Source: Final Evaluation of Second Five Year Plan, op.cit. PP.5-7

Government of Pakistan. So far three rounds of such surveys have been conducted and data has been published. The data of the fourth survey (not yet published) was made available to the Institute of Development Economics, Karachi, which has been extensively used by Bergan,[1] in his analysis of 'Personal income and Savings in Pakistan'. The latest survey includes personal income data for urban areas as well. (See Table 2.2).

1. The author of the article "Personal Income and Savings in Pakistan" published in the 'Pakistan Development Review' volume VII, No.3 Summer 1967, Karachi, Mr.Asbjorn Bergan is Director in the Ministry of Labour and Local Affairs in Norway. He was advisor to the Pakistan Institute of Development Economics, Karachi. Bergan has not only used the quarterly returns of the surveys conducted by C.S.O. but has also used income tax returns and budget documents to be more consistent in computation of his data.

TABLE : 2.2

Personal Income Per Capita - 1963-64 (b) (At 1959/60 Factor Cost)

(Per year in Rs)

Sector	East Pak.	West Pak.	All Pakistan	Percentage[a] disparity in East compared to West Pakistan.
1	2	3	4	5
Rural	305	373	333	18
Urban	509	515	513	1
Combined	316	406	357	22

Source: Bergans' computation op.cit P.169

a. calculated on the basis of data under columns 2 and 3.

b. Differences between the areas with regard to persons per household have been taken care of in the computations. On the average a household stands for 5.5 persons in rural areas of both the Provinces, and 5.7 in East urban and 5.9 in West urban.

A study of Table 2.2 reveals that generally the standard of living which is functionally related to the level of income, is quite low in Pakistan. On the regional basis Bergans' estimate puts the personal income in the rural sector of East Pakistan 18 per cent below to that of West. In case of the urban sector, the disparity is negligible. Bergans' estimate is very realistic in the sense that it is quite consistent when we compare it with the actual disparity of national income between East and West Pakistan. In the year under reference 1963-64 the national income per capita in East was 20 per cent lower than West. It would, however, be observed that rural per capita income is 40 per cent lower than urban personal income in East Pakistan and 28 per cent lower than its urban personal income in West Pakistan. This clearly shows a higher wage rate in urban areas - an incentive to high mobility rates of labour moving from rural areas. But the concentration of labour force in rural sector suggests that the absorptive capacity of labour in all other sectors is quite limited. Table 2.3 gives explicitly the income per household in both rural and urban areas of Pakistan.

It will be observed from the Table 2.3 that rural income per household over a wide range falls under the subsistence bracket. Even if we take into account one S.N.U. to cost less than a rupee per head 66.7 per cent in East and 54 per cent of household in West Pakistan would fall below the subsistence level. The figures indicate wide disparity and low income per capita.

TABLE : 2.3

Distribution of Household by Income Group
(cumulated percentage of total number of household 1963-64)

Monthly Income Per Household up to Rupees	East Pakistan			West Pakistan			All Pakistan		
	Rural	Urban	Combined	Rural	Urban	Combined	Rural	Urban	Combined
50	9.0	5.0	8.8	5.7	1.7	4.6	7.2	2.5	6.9
100	42.8	28.3	41.5	28.5	15.7	25.7	35.6	18.6	34.3
150	66.7	52.6	66.0	54.0	38.4	50.5	60.6	41.7	59.0
200	82.2	65.3	81.3	71.8	57.4	68.5	77.1	59.2	75.5
250	90.0	73.7	89.1	82.3	69.7	79.4	86.2	70.6	84.7
300	94.2	80.8	93.5	89.3	78.4	86.5	91.8	78.9	90.3
400	97.2	85.7	96.6	95.2	87.0	93.6	96.2	86.6	95.3
500	98.6	90.2	98.2	97.1	91.7	96.0	97.5	91.3	97.2
700	99.5	94.7	99.2	99.1	95.5	98.7	99.3	95.3	98.9
900	99.8	96.7	99.6	99.6	97.3	99.1	99.7	97.2	99.4
INF ...	100	100	100	100	100	100	100	100	100

Source: Bergan, op.cit. P.173.

The break-down of the income accrual sources are given in Table 2.4.

The Table 2.5. gives precisely an idea of rural and urban income inequality in Pakistan. It would appear that in both the parts of the country the top 20 per cent of households receive 43 per cent of the rural income while the top 5 per cent get nearly 20 per cent of the rural income. These figures reveal the extent to which rural economy is subsistence orientated. The situation becomes more gloomy when we take into account the number of breadwinners per household. According to C.S.O's estimate, the average number of earners per household comes to 1.5 - ranging from 1.1 to 2.3. Personal income distribution has been shown in Figure 2 and 3.

TABLE : 2.4.

Distribution of Personal Income by Source, 1963-64. (IN PERCENTAGES)

	Wages and Salaries	Self Employment		Rent Interest Dividends	Other Sources	Total
		Agriculture	Non Agriculture			
East Pakistan :						
Rural	18.2	43.3	9.0	5.9	23.6	100
Urban	44.2	5.8	30.1	7.5	12.4	100
Combined	20.4	40.2	10.8	6.0	22.6	100
West Pakistan :						
Rural	15.1	49.2	6.9	4.9	23.9	100
Urban	55.6	4.1	24.9	5.8	9.6	100
Combined	26.5	36.5	12.0	5.1	19.9	100
Pakistan :						
Rural	16.8	46.0	8.0	5.5	23.7	100
Urban	53.1	4.5	26.0	6.2	10.2	100
Combined	23.5	38.3	11.4	5.6	21.2	100

Source: op.cit P.183. This table is based on figures of C.S.O. in the forthcoming quarterly survey. Bergans' table however differs from that of C.S.O. in respect of 'other sources' only.

Note: The rural income from 'other sources' is quite significant both in East and West Pakistan, and this obviously needs to be broken down to assess the specific sources of income. The figure is not ignorable due to its relative size as a total income component. Bergan has also pointed out the limitation of 'other sources' data which may be due to certain statistical errors in allocating income to a specific source.

TABLE : 2.5

Income Share of Ordinal Group
(cumulated percentage)

	East Pakistan		West Pakistan	
	Rural	Urban	Rural	Urban
Lowest 5% get	1.0	0.7	0.8	1.0
" 10% "	3.5	1.5	2.3	2.5
" 20% "	8.0	5.0	6.8	6.0
" 30% "	13.0	9.0	12.0	11.0
" 40% "	18.5	13.5	18.0	16.0
" 50% "	26.0	19.0	26.0	21.5
" 60% "	35.0	25.5	34.5	29.0
" 70% "	45.0	33.0	44.5	38.5
" 80% "	57.0	43.0	57.0	49.0
" 90% "	73.0	59.5	72.0	63.5
" 95% "	82.5	70.5	83.0	74.0
" 100% "	100.0	100.0	100.0	100.0

Source: Bergan, op.cit. P.175.

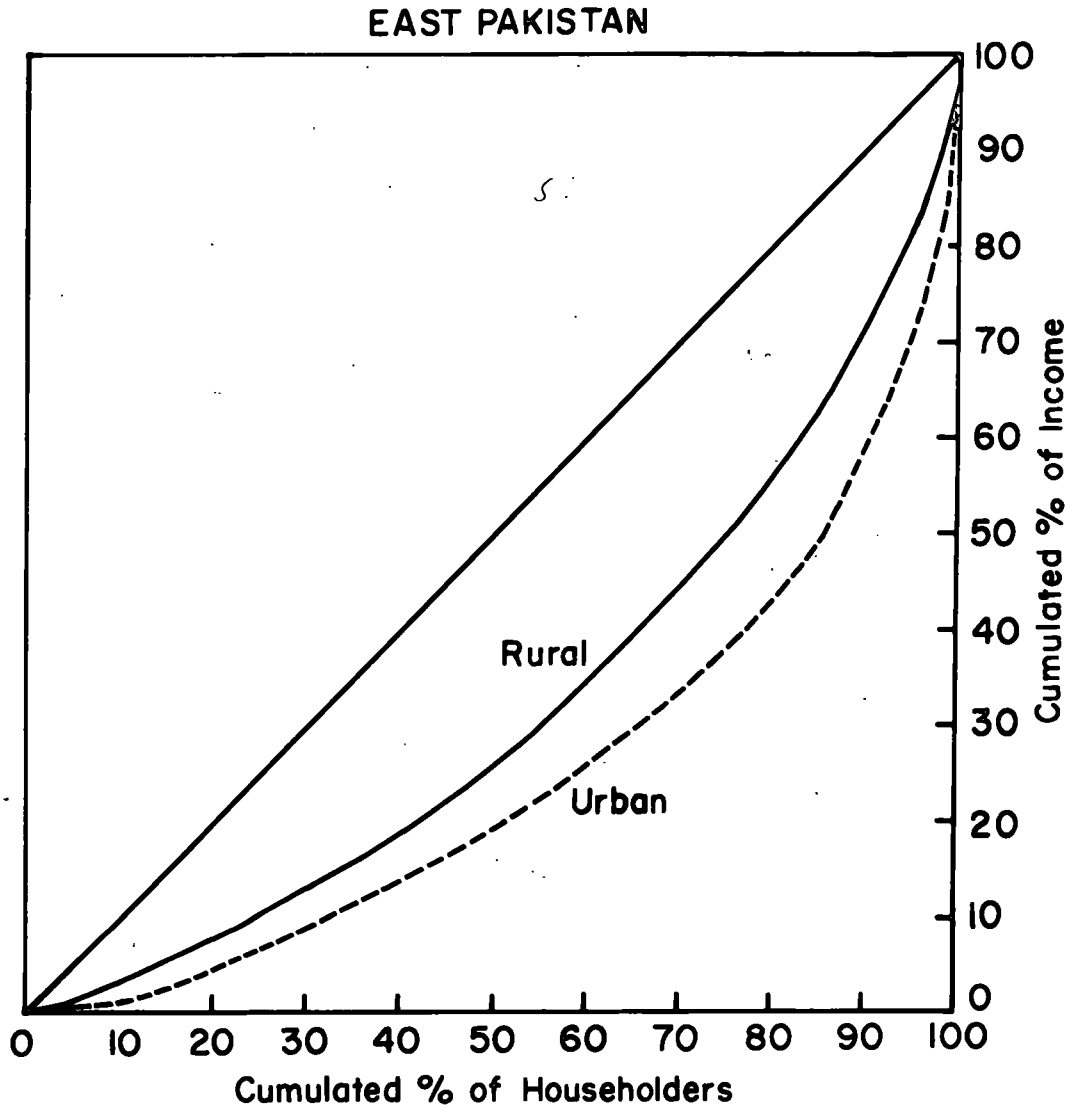

FIG. 2 Personal Income Distribution
LORENZ CURVES Measuring Cumulated Percentage Income Vertically and Cumulated Percentage Household Horizontally

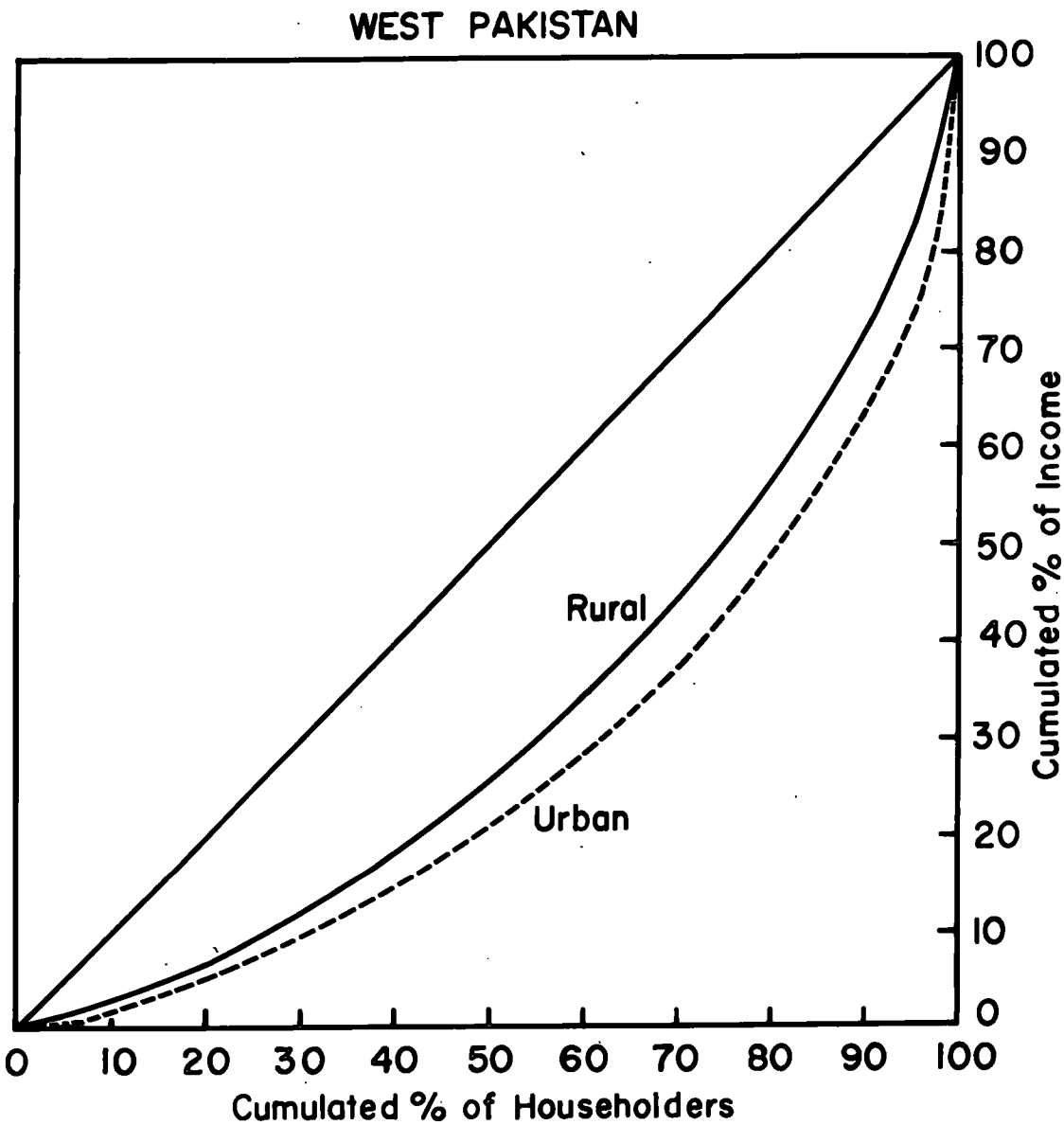

FIG. 3 Personal Income Distribution
LORENZ CURVES Measuring Cumulative Percentage Income Vertically and Cumulative Percentage Household Horizontally

The level of consumption:

Let us now examine the consumption level in relation to income per rural household. The National Sample Surveys do provide such data but the degree of accuracy will remain doubtful until a complete enumeration is made or coverage of the sample is widened to make the data more realistic and reliable. The Table 2.6 gives comparative figures for average monthly income and consumption in rural areas. The Table 2.6 refers to the years 1960 and 1961, whereas in our analysis of personal income, we have used data relating to the year 1963/64 which is more representative in the sense that the growth rate had actually gained momentum during the Second Plan period. But data on consumption is however not available for the year under reference. It may also be pointed out that personal income data in Table 2.6 was computed by the C.S.O. on current prices and hence the set of data for income as shown in Table 2.2 (at factor cost 1959/60) are not comparable.

It would appear from Table 2.6 that the level of consumption in relation to income is higher in West than in East Pakistan (in percentage terms). In East Pakistan the low level of consumption in proportion to an even lower level of income than the West, signifies merely a poor standard of living. The savings emerging from the first round of N.S.S.* for East Pakistan (Y-C = S) can not be regarded as showing a higher saving tendency compared

*National Sample Survey

TABLE : 2.6

Monthly Income and Consumption per Rural Household and per Capita.

	East Pakistan						West Pakistan					
	1960			1961			1960			1961		
	Per House hold	Per Capita	Per Cent	Per House hold	Per Capita	Per Cent	Per House hold	Per Capita	Per Cent	Per House hold	Per Capita	Per Cent
Average Monthly Income	131.1	24.8	100	153.4	28.4	100	142.1	25.3	100	173.9	31.0	100
CONSUMPTION	121.9	23.0	100	152.7	28.3	100	143.8	25.7	100	162.4	29.0	100
Food	86.9	16.4	71.3	102.2	18.9	67	97.0	17.3	67.5	101.4	18.2	62.5
Clothing and footwear	6.3	7.2	5.2	9.6	1.7	6.3	13.3	2.4	9.2	17.4	3.1	10.7
Housing	14.0	2.6	11.5	22.1	4.3	14.5	13.0	2.3	9.0	18.2	3.2	11.2
Miscellaneous	14.7	2.8	12.0	18.8	3.4	12.3	20.5	3.7	14.2	25.4	4.5	15.7
a) Y-C	9.2	1.8	7.8	0.7	0.1	0.6	- 1.7	-0.4	0.2	11.5	2.0	6.0

Source: C.S.O. N.S.S., Second and Third rounds. Statistical Year Book 1964 - Karachi 1966.
The figures relate to years 1960 and 1961.

a) Y = Income

C = Consumption

to West Pakistan. As it can be evidenced that in a closed economy, the consumers choice being limited, saving may be higher in the short run but as such can hardly be regarded as a stable saving function. During the fifties the economy of the East was more subsistence orientated mainly due to the lack of infrastructure, marketing and inadequate supplies of consumer goods. The impact of development was, however, noticeable in 1961 when consumption level rose proportionate to income showing only a nominal marginal saving per capita. The consumption (with the building of adequate infrastructure and increase in income) has become more broad based. In West Pakistan consumption, (as in the Second round of N.S.S.), was disproportionately higher than income which was also followed by a negative saving in the rural sector.[1] Therefore, the proportionate difference between income and consumption shows the net indebtedness of the rural sector. In the year 1961 the position, however, improved and income was positive in the sense that even with the rise in income and consumption the residual (savings) was adequate.

Since in determination of personal income we have used data relating to 1963/64, let us estimate the consumption by subtracting gross savings from personal income as computed by Bergan in his analysis of personal income and savings in Pakistan. So on the basis of residual (Y-S) we can get the following consumption figures: (See Table 2.7).

1. In an underdeveloped country Investment is equal to saving plus foreign aid. $\Sigma I_i = S_i + F$. For discussion relating to Pakistan see: Dr. M.K. Chowdhury's: (unpublished Thesis) : 'The Approach to Planning in Pakistan, PP.54 and 74-75.

TABLE : 2.7

Consumption per capita in rural areas
(yearly in rupees)

	East Pakistan	Percentage	West Pakistan	Percentage
Personal Income (Y)*	305.0	100	373.0	100
Gross Savings at the rate of 12% in East and 9.2% in West Pakistan (S)[1].	36.3	12	34.6	9.2
Y - S = Consumption (C)	268.7	88	338.4	90.8
Source: Tables 2.2 and				

* Income data are not comparable with those given in Table 2.6 as Bergan has computed income on constant factor cost 1959-60.

1. Bergans' savings data are those before taxes, whereas Y-C = S computed by C.S.O. (vide table 2.6) includes taxes, therefore 'S' is the net saving.

Savings:

In classical models an increase in saving is possible through a cut in consumption whereas in the Keynesian model consumption and investment can be expanded at the same time.[1] Nurkse is however, of the opinion that capital formation is possible without a cut in consumption which we will discuss later. It may, however, be added that the saving potential in the form of surplus labour and its mobilisation for capital formation has some implicit problems and therefore the validity of Nurkse's model depends on many other factors.

In a developing economy like Pakistan comprising a massive subsistence sector, people have a very small capacity to save. The level of consumption in relation to income is not high - it is just what is socially desirable. So a cut in consumption would mean a cut in labour productivity. With this assumption in view let us proceed to measure the existing saving potentiality in agricultural sector.

It will be observed from the income frequency Table 2.3 that the marginal rate of saving over a wide range would be zero as most of the income is either below or just above the

1. The discussion as appears in V.K. R.V. Rao's "Investment Income and the Multiplier in Underdeveloped Economy" in 'Economics of Underdevelopment' (ed) Agarwala and Singh, Oxford University Press 1966. PP. 205-218.

subsistence level. This argument could also be substantiated by reference to a land frequency table - the size of holdings (the lower the size, the more it is subsistence orientated). Therefore, savings at the moment can be mobilised only from the group of people falling in a higher income bracket (their consumption being conspicuous) or those having larger holdings. As discussed earlier, the classical model of saving can only be made operative by taxing income accruing to and conspicuous consumption by higher income groups in the rural sector. This is the only obvious possibility of involuntary saving through fiscal measures. In general, saving through a cut in consumption is not possible in the sector where the consumption is already at the subsistence level over a wide range. Moreover, voluntary saving through a cut in already low consumption largely depends on the readiness of the people to accept austerity. Therefore, either Keynesian model of Savings or the one suggested by Nurkse is most suitable under Pakistan's conditions except for the fiscal measures theoretically applicable to the small high income group.

Capital remains, however, admittedly a scarce factor in a developing economy even when there exist adequate levels of infrastructure and absorptive capacity. The other co-operant factors are thus necessary to attract the capital inflow, of course depending on its cost. In Pakistan for instance the short-term credit requirement alone of the agricultural sector is

estimated at Rs 3,000 million per annum.[1] Saving or capital formation for a transformation of agriculture is the crux of the problem. We may, however, assume that saving potential in higher income groups is there and what is needed is : (i) taxation of conspicuous or demonstration consumption; (ii) compulsory investment in Government bonds and securities; and (iii) proportionate increased rate of taxation on larger holdings.

In Chapter 3 B these points are further examined in a consideration of land revenue and other revenue collecting processes. Here it is necessary to remind ourselves of the situation illustrated in Chapter I where we have found the high pressure of the agricultural labour force on land resources but also the relatively low productivity of the land factor. The need for increasing the volume of savings and even more of investment clearly must be linked with the need for increasing productivity and production. Productivity cannot in Pakistan be simply regarded from a per caput point of view but even if it were then the short cut via increased holding size, mechanisation and a drastic reduction in the agricultural labour force is not possible. Productivity per land unit is on the other hand perfectly feasible and could accompany increased total production.

Voluntary or involuntary saving through taxation must be designed with these basic limitations in mind.

1. First Five-Year Plan, op.cit. P.288.

The taxation system should have provision for incentives such as remission and rebates for investment in agriculture provided such investment is certified by the local authorities or on production of receipts of inputs purchased. There is, however, one danger - the flight of capital from rural to urban sector even by transfers of land (through sales). But in either of these cases, the saving hidden or undeclared would enter into the investment stream - nationally it does not matter to what sector it goes. It will ultimately be taxed if for instance it is channeled to the corporate sector. The corporate tax at a subsequent stage would claim what was evaded at primary stage (say in the rural sector). Of course one caution is necessary that such investment should not be transformed into real estate in urban areas as is the case in most of the developing countries. A higher tax rate would be then the only remedy to channel such investments to production sector. Expatriation of capital in face of strict exchange control is out of the question.

Under a progressive taxation system, a distinction should be made between commercial farming and subsistence farming. It is further considered in Chapter 3.B, if taxation primarily for the purpose of increasing involuntary saving brings about sales of land, such transfer could be desirable if the land moves into the possession of owners more interested in maximizing production. For example a part of such transfers may be in favour of share

croppers depending upon their ability to pay for the land and recover costs from high and stable production. It would be worth while if some institutional credit was then provided to the peasant class as an indirect measure of land reform and rational distribution of land. Under peasant proprietorship while the productivity of land is unlikely to increase immediately at least the marginal productivity would slightly improve (keeping factor inputs as constant but labour productivity from x to xi). But subsequently the peasant class being more attached to land would be interested in raising the land productivity by investing more given the possibilities of so doing (and see Chapter VI). Even if the major part of such transfers again go to landlords the peasant share croppers would still be there and as such the transfer of land would not jeopardize the average yield per acre.[1]

Another alternative way of increasing involuntary saving is taxation on primary products entering the world market (see also Chapter 3.B). At present 10 per cent export duty is realised on jute and cotton. But a tax increase on such commodities requires a clear understanding of cost structure say per bale of cotton or jute - so that the accruing profit may actually be taxed proportionately. It is quite evident that cash

1. Some measures are required to ensure that land transferred is not subjected to 'absentee land lordism', this is another illustration of the need for integrating fiscal and non-fiscal measures.

crop farming is actually commercial farming and compared to subsistence farming (generally the food sector) it has got a strong forward and backward linkage effect. As the scope of investment is limited to the market extent, commercial farming enables all such cultivators to go for higher investment in material inputs, whereas the investment in subsistence farming is limited to the extent of local consumption point and the scope for a part of the surplus to be diverted (if possible) to local market demand.[1] The closed economy equilibrium will therefore, be distinctly different from that of the free economy. So the commercial farmers have definitely a better saving potentiality to afford tax and invest in government bonds even if such investment is made compulsory at the export point or through Marketing Boards established for the purpose.

Personal Savings:

Personal saving or net disposable income is derived by deducting consumption expenditures and taxes paid. The Table 2.8 gives gross personal savings (before taxation) for the year 1963/64.

1. The marketable surplus is estimated at 4 to 14 per cent in East and 8 to 24 per cent in West Pakistan as studied by Raquibuzzaman "Agricultural Marketed Surplus Function", Pakistan Development Review, Vol.VI, No.3, Autumn 1966, (Karachi), P. 379.

TABLE 2.8

Gross Personal Savings (1963-64)

	Gross Personal Savings			
	Per year Rs million	G.Savings as Percentage of Gross Personal Income (before tax).	Percentage of Gross Private Consumption.	(a) Percentage of Gross Private Savings of Income.
1	2	3	4	5
East Pakistan:				
Rural	2,076	12.0	88.0	12.0
Urban	156	9.9	90.1	13.9
Combined	2,232	11.8	89.2	12.2
West Pakistan:				
Rural	1,395	9.2	91.8	9.2
Urban	381	6.7	93.3	12.5
Combined	1,776	8.8	81.2	10.5
Pakistan:				
Rural	3,471	10.9	89.1	10.9
Urban	537	7.4	92.6	12.8
Combined	4,008	10.2	89.8	11.3

Source: Bergan, op.cit. P.185 (based on National Sample Survey of the C.S.O. of Pakistan). (a) Figures under this column have been taken from op.cit. Table XIII, P.186, these also include corporate savings i.e. figures under column 3 + corporate saving would make total gross private savings.

Table 2.8 indicates level of consumption and savings in both parts of the country and for the country as a whole. Savings as a percentage of gross personal income is higher in East Pakistan than the West. One very obvious reason is the lack of urbanisation and marketing centres in East Pakistan and inadequate flow of goods and services in this part of the country. In fact, as discussed earlier, this signifies a poor standard of living in East Pakistan. This part of the country in the words of Nurkse is yet to know about the variety of consumer goods. "Their knowledge is extended, their imagination is stimulated; new desires are aroused, the propensity to consume is shifted upward".[1] No doubt one would agree and appreciate a higher percentage of saving accrual, but since saving is to be adjudged in relation to income being already low in East Pakistan, it betrays the fact that actually consumption is not broad based. There are a number of reasons like transport difficulties, bad roads and limited supplies of consumer goods. However, this has to be borne in mind that it is just a temporary phenomenon so long as extra and other varieties of goods are not available. With the development of marketing centres and an increase in the rate of urbanisation, the saving in relation to income would proportionately be the same as in West Pakistan. So the level of savings in relation to income is more

1. Nurkse, "Problems of Capital Formation in Underdeveloped Countries" op.cit. P.59

realistic and stable in West than in East Pakistan.

Private Savings:

Personal savings differ distinctly from private saving since it does not include corporate savings. For private savings, we have to reckon corporate savings as well. From table 2.8 it would appear that corporate savings are higher in West than East Pakistan. To conclude, private gross savings in rural sector of East and West Pakistan are estimated at 12 and 9.2 per cent respectively. But keeping in view the personal income distribution (ref Table 2.4) to determine actual income originating from agriculture and saving thereof, we will have to deduct non-agricultural incomes and also those which are unspecified. However, the estimate of gross personal saving is supported by other evidences. During the year 1963/64, the gross domestic saving for the country as a whole was 11.8 per cent of the G.N.P. (market price). According to Dandekar's[1] estimates based on data of N.S.S. 1950 and 1951 in India, the gross saving was Rs 143 per rural household, whereas Paniker[2] estimated the gross rural saving at Rs 152 per household or 12 per cent of the gross income in 1961. In case of Pakistan, the gross rural savings per capita for the year 1963 comes to Rs 197 per rural household or Rs 35.8 per capita. Bergans computation of gross

1. Bert F. Hoselitz: "Capital Savings and Credit in Indian Agricultural Scoeity". Capital savings and Credit in Peasant Societies (ed) Raymond Firth (London 1964). P.2.
2. Ibid.

savings gives nearly the same percentage of saving i.e. 11 per cent (for Pakistan as a whole) as that of Panikar's in 1961 for India.

Investment in the Rural Sector:

The investment criterion in agriculture is distinctly different from that of industrial and other investment criterion. The elements of risk and uncertainty in particular tend to plug the flow in investment channels in the agricultural sector of an underdeveloped economy. The very nature of agriculture can not influence the investment decisions in the same way that can be found in protected fields of economic activity where the guiding force is assured profitability. The investment in such fields are precisely calculative in relation to its returns and profitability.

The investment in agriculture is highly susceptible, to risk and uncertainty in an underdeveloped economy due to certain unforseen factors. Therefore, factor productivity is more imaginative than concrete. No doubt agriculture has strong forward linkage but its backward linkage requires a high saving and investment ratio to create demand for material inputs. One main reason for this is to be found in the non-commercial state of agriculture in India and Pakistan. Countries like New Zealand, Australia and Denmark embark on large scale or capital intensive

commercial farming and their investment in agriculture is positive in the sense that a major part of the output enters not only into local market mechanism but also the world market. This has been largely possible due to ecological and environmental conditions and organisational control over factors blending risk and uncertainty.

In Indo-Pak sub-continent, peasant farming has been in existence from time immemorial. The nutrient richness of soils especially in Indo-Gangetic plane and Sind valley hardly required any material inputs but with the passage of time good soil has deteriorated and cultivation has spread on to physically marginal land and with that yield per acre has fallen. The agriculture of this region has mainly suffered due to conventional primitive methods of cultivation, tradition-bound economy and illiteracy. The poor state of technology and farming innovations did not permit the cultivators to arrest the deteriorating trend in production. On the other hand population increase at a faster rate than production continued to add pressure on land - resulting in the spread of subsistence farming. The peasant economy for a very long time remained non-commercialised and non-monetized. So with the advent of monetized economy, agriculture had very little to offer to attract investment particularly in the sectoral competition which went with paucity of capital. The savings accruing to the top 20 per cent even seek outlet for investment outside the rural sector. This is particularly true in the case of Pakistan where Zamindars

had domination and we find still that those owning major areas of land are least interested in agricultural investment. Theoretically speaking, the resulting flights of capital from rural to urban areas (by investment in stocks, real estate and entrepreunurial enterprises) is inevitable since the basic investment criterion is maximization of profit. Given the limitations of the situation the only remedy under such adverse situation appears to include an economically rational distribution of land and aid to the peasant class by taxing the top 20 per cent of incomes and subsidising agricultural inputs to small scale agriculturists. In the following section we will discuss in detail the agricultural taxation in Pakistan.

On the supply side investment depends on income minus consumption (Y-C = S) and we have already estimated the gross rural savings in Pakistan. To determine the size of investment we will have to deduct depreciation and taxes. According to one estimate in India for the years 1948-49 to 1953-54 the private rural investment was estimated at Rs 62 per rural household or, according to Dandekar, Rs 76.20 per rural household,[1] in 1950 and 1951. On the basis of personal rural income and savings we could estimate the net investment in agricultural sector by deducting depreciation and taxes, but these latter figures are not available and therefore, with certain reservation, we can only estimate investment as follows:

1. Bert. F. Hoselitz, op.cit. P.2.3

Gross Saving 11% of gross income	= Rs 3,471 million		(1963-64)
Therefore Total income	= Rs 31,554	"	[illegible]
Depreciation @ 5%	= Rs 153	"	[illegible]
Total agricultural taxation 1963/64	= Rs 593	"	[illegible]
Consumption @ 89.1%	= Rs27,978	"	
Net saving for investment	= Rs 2,830	"	

@ basis Table 2.4 as 46% income originates from agriculture.

The net investment for the entire rural sector including new investment on the basis of the data given above would come to about 9 per cent out of which an allowance should be made for housing say 1.5 per cent. That would leave only 7.5 per cent for investment in production sector - for agriculture alone we will have to deduct non-agricultural investment as nearly 8 per cent of income originates from outside agriculture and 23 per cent (see our income computation Table 2.4) originates from unspecified sources. The investment in agricultural sector alone would be roughly 4 per cent of the total rural income. So on the basis given above the investment per rural household comes to Rs 73.2 or Rs 13.3 per capita. A similar estimate has been made by M. Habibullah in East Pakistan on the basis of sample survey of five villages. His estimate comes to Rs 147 per household for Mukarempur, Rs 198 for Charduani and Rs 222 for Nikli. But with certain adjustment for disinvestment of capital on account of

natural calamities it comes to Rs 67, 100 and Rs.147 respectively for the villages mentioned above.[1] This estimate of investment gives a very gloomy picture as we have yet to account for certain leakages like hoarding in the form of gold - expenditures on ceremonies or litigation etc. The table below gives the breakdown of expenditures including such items which can not be regarded as investment. The basis of calculation has been taken from Indian estimates of investment expenditures.

TABLE : 2.9

Breakdown of Investment-Expenditure

Items	Expenditure Per rural Household in Rs.	Percentage
1. Housing[b]	22.6	30.9
2. Bullocks	3.1	4.2
3. Wells and Pumps	18.6	25.3
4. Land Purchase	14.3	19.5
5. Implements	1.2	1.7
6. Social[a]	10.2	13.9
7. Ornaments[a]	0.9	1.3
8. Miscellaneous	2.3	3.2
Total	73.2	100.0

Source: Our investment estimate broken in percentage terms as for India.

a. Can not be regarded as investment.

b. Can not be regarded as investment in agriculture.

1. Rural Capital Formation in East Pakistan. Bureau of Economic Research, University of Dacca (1963), P.30.

Supply of Capital:

We have already examined the level of income in relation to consumption, savings and investment. We have calculated the investment rate by method of elimination and the result obtained is not very heartening. A four per cent saving for investment is very poor a rate, by any standard. Now we will discuss the problems relating to supply of capital to agricultural sector remembering that one of the real problems is the supply of capital at a cost socially acceptable to the peasant society.

The supply of capital in agricultural sector has two sources namely: (i) own savings, (ii) credit from within or from outside the peasant class. The level of saving as discussed earlier is very low. It would appear from Table 2.9 that out of Rs 73.2 that we have worked out as saving for investment only Rs 40 per rural household (agricultural sector only) is actually invested. The potential saver class in agricultural sector has got his own choice of investment besides leakages such as demonstration consumption etc. pointed out earlier. So the supply of capital being quite inadequate, the saver class charges an exhorbitant rate of interest. There are also a set of negative factors which constrain the supply of capital (i) element of risk and uncertainty, (ii) lack of price incentive for primary products, (iii) vagaries of nature, (iv) low rate of loan recovery, (vi) the consumptive use of capital (at least a part of it) rather than for investment proper. Therefore, the rate of interest for other than institutional credit is as high as cent per cent; such a heavy premium on capital is

born out of poverty.

The supply of capital from outside the agricultural sector is not possible due to the fact that agriculture has very little to offer to investors. (Seasonal credit is however, advanced which is usually meant for cash crops by traders on the prospects of harvest). So the only possible source is institutional credit which suffers from two limitations; (i) inadequate supply of funds, (ii) organisational inability economically to cover a sizeable rural area. The second limitation stems partly from the fact that broadening the base of institutional financing requires larger overhead cost - and partly from the first limitation i.e. inadequacy of capital at the disposal of such institutions. The Table 2.10 gives explicitly the various sources of farm credit in Pakistan.

TABLE : 2.10 (in percentage)

Sources of Farm Credit.

Source:	E.Pakistan (Rajbari)	W.Pakistan (Former Punjab)
Relations and Friends	53.6	62.8
Landlords and other well-to-do people	13.7	0.2
Co-operatives	1.7	14.3
Government[1]	5.3	13.4
Village Shop Keepers	17.3	0.4
Beopari (Traders)	2.1	4.7
Money Lenders	2.8	1.1
Others	3.5	3.1
	100	100

1. Government by way of Taccavi loans.

Source: Punjab Board of Economic Inquiry: Report on the need andsupply of credit in Rural Areas of the Punjab Study No.101 (Lahore 1951) and Socio-economic Survey Board, Dacca University Report on the survey of Rural Credit and Rural Unemployment in East Pakistan 1956 (Dacca, 1958).

It would appear from Table 2.10 that institutional credit accounted for only 1.7 per cent of the total credit requirement in East and 14.3 per cent in West Pakistan. With the establishment of the Pakistan Agricultural Bank, the position has since improved. The percentage contribution to total credit, need, however, shows the ineffectiveness of institutional credit financing in rural areas. As against the total credit requirement of 3,000 million per annum, the total availability was of the order of Rs 150 million or 5 per cent. The institutional credit for the country as a whole is now estimated at 20 per cent. The cooperatives alone have provided about Rs 50 million annually.[1] During the First Plan period, out of total institutional credit financing of Rs 618 million, agriculture received only Rs 169 million. During the Second Plan period out of Rs 1,350 million, the total credit financing for the agricultural sector was estimated at Rs 400 million. The Table 2.11. gives the breakdown of credit financing during the Second Plan period:

1. Riazuddin Ahmed: Agricultural credit in Pakistan Sen za lectures 1964 State Bank of Pakistan, P.281.

Private Sector

Table 2.11 : Financing of Agricultural Sector 1960-65

Source	Rs (million)
Total allocation	880
Government	100[a]
Foreign Investment	Nil
Self Financing	380
Loans from commercial banks	50
Loans from specialised credit institutions	350 b.
Total	880

Source: Pakistan Second Five Year Plan Table 10, P.40

a. Taccavi loans to private sector as a capital liability of the Government under Land Improvement Loans Act 1883 and Agricultural Loans Act 1884.

b. This includes Government loan of Rs 160 million to Pakistan Agricultural Bank and cooperatives. Rs 350 million includes financing of Rs 150 million by the Pakistan Agricultural Bank and Rs 200 million by the cooperatives.

The problem with regard to paucity of capital is further aggravated when we look back to credit utilization for the purpose it is advanced. Of the credit generated nearly two-third is utilized for the purpose other than investment proper. According to the Pakistan Census of Agriculture, 1960, of 31.6 per cent in West and 21.7 per cent in East Pakistan of the credit advanced to a farmer was devoted to farm investment including capital investment and short-term investment.

TABLE: 2.12

Credit Utilization (in percentage)

Purpose	East Pakistan	West Pakistan
Personal	74.0	65.2
Farm[1] Investment	21.7	31.6
Debt. Repayment	4.3	3.2
Total	100	100

Source: Pakistan Census of Agriculture 1960.

1. Includes capital investment and current expenditures.

The table above shows that the real magnitude of credit requirement ought to be very high to finance actual investment. Under the present conditions, an average farmer is not creditworthy in the sense that he is too poor to bear the brunt of interest and depreciation for capital thus acquired. Therefore, most of the recipients of loans and advances belong to higher income groups or owners of large holdings. But the solution still lies in increasing the volume of credit with necessary controls, to elevate the peasant society from desperate poverty by making credit available to small farmers as well.[1] From banking point of view there are a set of conditions that a borrower is required to fulfil - security, timely payment of interest and repayment of capital. This problem can be solved by advancing institutional credit in material inputs to channel the credit in the right

1. This does not include farmers below subsistence level.

direction. However, since a farmer can not work with an empty belly, a provision should also be made for short term credit to meet his immediate strong necessities.

It may be added that despite certain handicaps the recovery rate in case of agricultural loans advanced by the Agricultural Bank since its inception to date (1965) has been quite satisfactory. The recovery rate was 77 per cent in the case of East Pakistan and 80 per cent in West Pakistan. This recovery rate by any standard is not bad keeping in mind the scale of rural indebtedness (49 per cent of farmers in East and 29 per cent in West). It is however, quite interesting to note that average production and price multiple say X.P is relatively higher in East than West Pakistan but absorptive capacity of material inputs and capital is poor. Some of the reasons are: (i) higher percentage of rural indebtedness, (ii) less organised state of agriculture, (iii) lack of institutional financing, (iv) small size of holdings. Therefore, the capital output ratio is low in East than in West Pakistan. The Table 2.13 gives average yield per acre and price per maund.

As shown in Table 2.13, the land carrying capacity in East Pakistan compared to West is unitary relative to 0.74 acre in West Pakistan. But the absorptive capacity is low in East Pakistan due to reasons discussed earlier.

TABLE : 2.13.

Average Yield and Prices (reference Year 1964/65)

Crop		Average Yield (maunds) (X)		Price per maund (P) (Rs)		(X x P)	
E.Pak	W.Pak	E.Pak	W.Pak	E.Pak	W.Pak	E.Pak	W.Pak
Rice	Wheat	12.3	9.4	29.5	18.1	362.8	170.1

Source: Calculated on the basis of Production and price figures from Pakistan Economic Survey 1965-66, pages 12 and 48 of Statistical appendix.

Now let us analyse the credit need of commercial farming and that of subsistence farming (i.e. food sub-sector) mostly non-market orientated and non-monetized. Data with broad classification of loans and credit for commercial and non-commercial farming are not available but there are indications that the largest portion of the institutional credit goes to commercial farming. The obvious reasons are minimum risk as most of the advances are short term and seasonal in character, the turnover is high, the product is not consumed at site but enters into market mechanism. There are warehouses and organized marketing centres, the loans thus advanced are more secure, mostly guaranteed by traders, and the rate of recovery is excellent. But from a development point of view and especially when food occupies a dominating position in the agricultural sector, the banking practices do not satisfy the total development needs of agricultural potential which, as noted earlier, could help to achieve a sustained growth rate, to supply food to the teeming millions and save foreign exchange currently spent on food imports.

It will not be unrealistic to say that commercial farming which occupies only one-tenth of the area in East and one-fifth in the West is largely dominated by people who are relatively well off and their credit need is not so dire as that of the small scale farmers. But due to the better socio-economic status of the people attached to commercial farming, they have greater access to credit institutions since they are already market

conscious and enjoy the privileges of a monetized economy (mainly as a result of marketable surplus). So most of the funds are pocketed by this class as they have frequent visits to urban areas and develop relationships more easily with traders and investors. The major inputs therefore go to commercial farming. This fact can be evidenced from the data of advances against hypothencation of crops, by the Agricultural Development Bank of Pakistan. (See Table 2.14). Similar classified data for entire loans and advances amounting to Rs 509 million are not available.

It would appear from the Table 2.14 that only a fraction of loan was advanced for paddy crop in East Pakistan whereas entire advances were made available to commercial farming. The argument for this runs as follows: The loans are popular among farmers as the procedure is simple and borrowers are required neither to mortgage their lands nor to produce securities. From the banks' point of view, it is easier to supervise and recover these loans as they are given mainly in kind and recoveries are made through a third party (brokers in case of tea, ginning factories in case of cotton sugar mills for sugarcane and Department of Food, Government of East Pakistan for paddy)[1]. From our point of view, i.e. the raising of the agricultural economy from desperate poverty, we have to invert this argument to test its validity in the face of the development problems the country faces today.

1. Economic Survey 1965-66 op.cit. pp.136 and 137.

TABLE : 2.14

Loan advanced against hypothencation of various crops (Rs million)

Period	Tea crop East Pak.	Paddy East Pak.	Sugarcane East Pak.	Sugarcane W.Pak	Cotton West Pak.	Total Loan E.Pak.	Total Loan W.Pak.	Pakistan
1961 to Dec 1965	16.4	5.4	15.9	10.6	4.6	37.7	15.2	52.9

Source: Economic Survey, 1965-66 op.cit. P.137.

The other source of institutional credit is cooperative credit which on the average has been able to advance only Rs 50 million per annum. The cooperatives are therefore quite ineffective to cater for even a fraction of the credit need of the agriculturists. Moreover, this credit institution has also been (as evidenced by different credit enquiry committees appointed from time to time) advancing more loans to the well-to-do class than to needy farmers deserved priority. Similarly the benefits of infrastructure developed and of material inputs have also largely gone to commercial than the poor subsistence farming.

Taccavi Loan:

One very good source of credit is the taccavi loans provided by the Government at a modest rate of interest at 6.5 per cent per annum.[1] But the size of credit is not quite adequate. During the First Plan period only Rs 91 million were made available to agriculturists and Rs 116 million during the Second Plan period. The Third Plan has a provision of Rs 121 million which is not at all sufficient to cover a segment of the agricultural sector's need.

From this summary of savings and investment it is already clear that the productivity of land and its cooperant factor such as labour will remain stationery unless agricultural factor inputs are available for a transition to a dynamic growth rate.

1. Taccavi loan was first introduced during British period which has since continued.

CHAPTER THREE

(Part A)

A : CAPITAL FORMATION FOR A SELF SUSTAINED GROWTH.

We have already discussed the low rate of capital formation in the agricultural sector and also the supply of capital from outside the rural economy. In this chapter we will examine the possibility of capital formation by utilizing surplus labour and agricultural taxation.

Nurkse after examining various possibilities of capital formation in an economy where disguised unemployment and underemployment is common and the marginal productivity of labour over a very wide range is zero, came to the conclusion that the state of disguised unemployment implies at least to some extent to a disguised saving potential as well.[1]

In the context of capital formation in underdeveloped countries with surplus labour and high population growth rate, some pointed reference has been made in economic literature[2] to the use of surplus labour. One would agree with Nurkse that in peasant society which is prevalent in most of the underdeveloped countries, some

1. Nurkse, Problems of Capital Formation in Underdeveloped Countries, op.cit. Page 37.

2. Of those include some important works (i) Economic Development with unlimited supplies of Labour by A.Lewis, (ii) Problems of capital formation in underdeveloped countries by Nurkse. (iii) Peasants and Dualism with or without surplus labour by A.K.Sen.

unproductive labourers are actually fed by the productive labourers. Therefore, a percentage of labour can be withdrawn from agricultural sector without reducing the total output.[1] Prof.Schultz is, however, of the opinion that such transfer of labour is not possible without a reduction in output.[2] Some economists also argue that withdrawal of labour from agriculture to any other sector would mean a reduction in total supply of a factor input which was previously available and therefore such reduction "ceteris paribus" would mean reduction in total revenue equal to the amount of labour productivity caused by such transfer to another sector.[3] While this is just a matter of accounting and in terms of a nations' G.N.P. one

1. It is estimated that 15 to 30 per cent agricultural labour is surplus in South Eastern Europe and Asia,in Egypt it is 40 to 50 per cent, according to Rosentein Rodan it is 10 per cent in Southern Italy,in Pakistan it is 20 to 25 per cent. (See F.A.O. monthly bulletin of Economics and Statistics 1957) and Galal Amins' "Food Supply and Economic Development" P.9

2. Schultz: Transforming Traditional Agriculture, op.cit. P.P.55-56.

3. Simon Kuznet: "Economic Growth and the contribution of Agriculture: Notes on Measurement" see in "Agriculture in Economic Development", op.cit. P.118. Kuznet measurement follows like this: 10 x current product per worker in Agricultural Sector (a rough ratio based on an average prior years' outlay of about 6/10ths of the current per caput income x 17 the age assumed at transfer. In case of Pakistan each transfer of labour from Agricultural Sector would thus mean (calculated on Kuznets' basis) taking current output as Rs 496, six tenths of which would be Rs 297.6 So,

$$y = \text{Rs } \frac{297.6 \times 17}{} \text{ or Rs } 5,059. \text{ (See Table 1.11).}$$

can ignore relative weights of sectoral contributions, nevertheless strictly from sectoral point of view it may be regarded as net loss to agricultural sector.

As regards saving potential Prof.Leibenstein gives emphasis on not only maximum utilization of surplus labour i.e. employment absorption criterion but also on the use of surplus arising out of excess labour minus maintenance cost for the capital formation - "a plan for forced saving out of the labour previously in disguised unemployment". Though he further argues that, "it is difficult to see why this group and not other in the economy should be selected for this purpose".[1] Let us assume that the labour in other sectors of the economy do proportionately contribute to some voluntary saving (the wage being higher than in agricultural sector) or that their demand for goods and services being entirely market orientated also bear proportionately a higher incidence of indirect taxation than those in agriculture falling under low income bracket and partially non-monetized.

Besides, it can also be assumed that the current level of production (for those productive labourers who remain engaged in agriculture after the withdrawal of redundant labour) may go up due to certain economies of scale, consolidation of holdings, tools and implements (other than mechanical) some method

1. See Galal Amin's "Food Supply and Economic Development" PP.9-10.

of cultivation requiring less labour. Of course there is every likelihood that their consumption would also increase but it may not be proportionately so high as to offset the entire saving in the long run. Moreover, with the increase in marginal output and thereby in total output the surplus wage fund (food) would necessarily enter into the market mechanism and the price paid by the labourers engaged on capital projects would enable those on farms to defer a certain amount of current consumption in favour of a few agricultural inputs which were not possible previously due to the non-availability of liquid cash. There is no question of inflation on account of additional demand for food as the total supply would remain the same initially when labour would be withdrawn. In terms of the theoretical model then, at a later stage, any income generation through the wage fund for the labourers engaged on capital projects will be matched by a proportionate increase in food supply.

Let us now examine Nurkses' model of economic growth through the use of surplus labour potential. His model rests on the fact that capital formation is possible without a cut in the level of consumption. Therefore it differs distinctly from those of classical and Keynesian models as in his own words "In the usual classical model, an increase in the rate of capital formation requires a reduction in consumption. In the Keynesian world of industrial unemployment, consumption as well as investment

can be expanded at the same time ..... on the other hand it is possible to increase capital formation without having to cut down the level of consumption".[1] The success of his model largely depends on certain conditions and consumption functions of those who remain on farm and of those transferred to capital projects. An increase in consumption and a resultant leakage to subsistence fund has been anticipated by Prof. Nurkse himself. Therefore, in a country like Pakistan or India with a recurring food shortage, this would mean a proportionately larger quantum of food imports keeping in view the fact that consumption on both ends (at farm and projects) would necessarily increase. Therefore, Nurkse's model can only be operative depending upon the size of food surplus, because in Pakistan even the food imports and food aid together can not cope with the situation sometimes. The volume of food imports and food aid both suffer from limitations - in the case of imports from stringency of foreign exchange and of aid from political and other considerations beyond the control of the aid recipient. So the transfer of labour would actually mean a disequilibrium in the supply and demand of food. The food supply being inadequate, additional import will be necessary to bring about a new equilibrium. The situation will arise partly due to the fact that after the transfer of redundant labour the 'economies of joint

1. Nurkse: "Problems of Capital Formation in Underdeveloped Countries", op.cit. P.38.

consumption' will be disturbed. For leakage such as transport cost etc. Nurkse has substantiated his arguments by introducing a foreign aid element proportionate to leakages that will arise.

The Nurkse approach to capital formation is, however, not wholly valid in Pakistan's situation and we must consider how, starting from an equilibrium point, another argument might be developed. Our first postulate is an equilibrium position supply and demand of food being equal with no food aid and imports. An essential condition for emergence of any saving in the rural sector will be a check on population growth as the effectiveness of any model will largely depend on population behaviour and consumption function. The worst leakage is associated with the high population growth rate if this remains unabated.

It is generally agreed that capital formation is possible through the effective use of surplus labour by[1], 'unit multiplier method'. The fact remains that a fair percentage of labour which appears to be voluntary employed over a wide range has zero productivity and as such can be employed in other sectors like irrigation, roads, construction, dams, bridges and culverts or small cottage industries. The mobilisation of labour would depend on choice of technique in creating employment opportunities. In Pakistan some 20 per cent of labour is estimated as surplus.

1. James S. Duesenberry, "Some Aspects of the Theory of Economic Development" Vol.III, No.2, PP.65-67 reference from Gerald M. Meirs, Leading issues in Economic Development, P.114.

Nurkse's model may then be feasible under Pakistan conditions given certain conditions outlined below:

1. First of all we will have to improve the food supply.[1] position by maintaining it at a level equal to aggregate demand. (This is a necessary corollary of the Leibenstein model -(see p.88).
2. The other unbalancing factor like population growth rate 2.3 per cent in fifties, 2.6 and likely to be 2.8[2] per cent in sixties (up to the end of Third Five Year Plan currently operating in Pakistan) needs to be checked.
3. An austerity drive, by limiting demonstration consumption, ceremonial functions, dowry expenditure, litigations and wastage of food, will be necessary.

Let us call these positive improvement factors necessary for the efficacy of the model.

1. At present the deficit in food production is estimated around 10 per cent of the total domestic production - in 1964-65 alone the quantum of import was 1.73 million tons of foodgrains valued at Rs 837 million (own sources Rs 252 million and aid under PL 480, Rs 585 million), 'Final Evaluation of Second Five-Year Plan, op.cit. P.166. If this amount should have been diverted to investment channel it should have been possible to provide gainful employment to 0.18 million people (the capital labour ratio being Rs 4,550 as estimated by Dr.Mahbubul Haq) 'Strategy of Economic Planning' P.249.

2. This growth rate will be inevitable despite family planning efforts of the Government of Pakistan. The Third Five-Year Plan has allocated Rs 200 million for Family Planning.

With these conditions satisfied the model will then be as follows:

Let us assume the labour participation rate as 100 per cent in agriculture, out of which 20 per cent is withdrawn to be employed on labour intensive capital projects sponsored by the Public Sector scattered in rural areas to minimise the cost of transportation of both labour and food. The withdrawal would result in 20 per cent surplus food and of this 18 per cent is marketed leaving 2 per cent for additional consumption and capital formation at farm end. The surplus as pointed out by Nurkse is taxed equivalent to 18 per cent (i.e. equal to the value of marketed surplus). Thus the savings mobilised through fiscal measures may be invested in capital projects together with the public sector outlay equivalent to increased consumption at farm end and the project end. Let us assume the deficit to be 4 per cent. In this case Government outlay of 4 per cent will generate additional income to labourers equal to wage paid. Due to time lag, short run inflation may be noticeable but it will be negligible as long as the wage being paid to the redeployed labour is not as high as the market-rate but rather only above the subsistence level.[1] The relative change in wage for labourers now employed on capital projects will be equal to the nett financial incentive offered to them plus the benefit of

1. Wage control and the guaranteeing of food supplies at a subsistence level wage exchange rate become essential socio-economic measures.

continuous employment. The average wage for such workers would be more stable than when offered only seasonal employment. In the context of high periodic and seasonal unemployment, particularly in East Pakistan, continuous employment would be a strong added incentive for workers to move to a new job site. The time-lag should be kept minimal so the production outflow may absorb the additional liquidity in the market as remarked by A.Lewis, 'Such inflations are actually self destructive'. In case of roads, embankments, bridges, culverts, laying of railway track or communication lines, dams construction, digging of wells, the value added by such projects would be equal to the increased (but proportionate) value added by the beneficiary sectors.

Now let us visualise the economic gains of those productive labourers who remain on farms. Starting from 20 per cent surplus product, 18 per cent would enter into a market mechanism which would mean a sort of transformation from non-monetized to monetized and exchange economy. Left with 2 per cent surplus after paying taxes would mean a net increase in the current wage-good per productive labour. There is also a likelihood that those who forego the incremental wage-good might invest in material inputs and thereby the marginal productivity of land is improved. However, the investment being on a low level, then marginal productivity may not significantly improve in the short run, but over a period of time with the supplies of material inputs, certain time

saving devices, improved methods of cultivation and use of better small implements might improve the situation. In the long run, the successive withdrawals of redundant labour even at a constant rate would not only mean the possibility of more intensive cultivation for the rest but also some sort of technological change will ensue and thus the desired productivity will be achieved. Taking in view the present state of backwardness and slack in factor inputs, a small dose of investment under such conditions will maximize the output even though the marginal output may not be very substantial. So after being relieved of the intense pressure on land, the agricultural sector would be elevated from the state of subsistence orientated economy to a growth path leading to a self sustained growth rate. With the rise in income level of the farmers an additional demand will be created in agricultural sector for industrial goods and also of the labourers in industrial sector.

Before we conclude our discussion, it would be worthwhile to test the argument as it is commonly advanced that at the peak demand of labour (the period being sowing and harvesting) unemployment or underemployment shrinks to nil at these points of time. Primafacie this may be true but keeping in view the gainful employment over the period of time (say 8 hours per worker per day) it can easily be identified that the time series of agricultural employment presents an erratic behaviour. A smooth trend is obtainable only after providing gainful employment which would be

stable and continuous in nature. We have already discussed the fact that the remaining workers on farm will have to work nearer to capacity (implicit in full employment) and secondly some technological change will be inevitable. The problem of small doses of investment for improved implements or material inputs may be resolved by the Public Sector programming and out of the marginal surplus which will accrue after the withdrawal of surplus labour.

B : AGRICULTURAL TAXATION

Land Revenue:

We have already studied the level of income - savings and investment in the agricultural sector of Pakistan and we know that the savings accrual to the higher income group in rural areas do not enter into the investment stream due to elements of risk and uncertainty. Therefore, some sort of flight of capital from rural to urban area is always there, because alternative areas of investment are relatively secured and more profitable. This flight of capital can be checked through fiscal measures (i) by taxing the higher income group or, (ii) by providing incentives to invest or reinvest the retained earnings. For increased burden and incidence of agricultural taxation we will have to exclude the large lower subsistance sector and the rest may be taxed progressively. To provide incentives for higher investment, the fiscal measures should allow certain exemptions. For example, in accounting for the increased taxation on land, the cost of agricultural inputs like manure and fertilizers, seeds, pesticides tubewells etc. may be partly or wholly exempted. As regards ability to pay, the incidence of increased taxation will be mostly on top 20 per cent, quite phenomenal due to inequality in income distribution. In rural areas there is always a sizeable hidden saving which does not go to productive investment because of tax

evasion - a common practice and secondly because of demonstration consumption or the transference of a part of income to urban areas. The rural sector being unorganised, assessment and valuation of products are faulty and therefore tax evasion is more common in rural than urban areas. The land revenue system in practice in Pakistan is suitable from the point of view of low cost of administration but it is not realistic or dynamic in the sense that it is not in line with income and price elasticity.

The existing land revenue and water rates bear no relationship to the taxable capacity of agricultural sector. There has been a tremendous increase in prices and income since 1939 but tax rates fixed at the time of settlement, in some cases 25 to 30 years ago have remained constant.[1]

During the last seventeen years (1947/48 to 1964/65) the land revenue amounted to Rs 2,926 million. During the fifties it was nearly Rs 136 million per annum which increased to Rs 256 million during the sixties. The Table 3.1B gives the periodical breakdown of land revenue in relation to G.N.P. and total revenue.

1. Second Five-Year Plan of Pakistan, op.cit. P.53

TABLE : 3.1B

Land Revenue

(Rs million)

Period	Land Revenue			G.N.P.[2]	Land Revenue as % of GNP.	Total revenue central and Provincial Govts.	Land Revenue as % of total tax.
	E.Pakistan	W.Pakistan	Total	Agriculture Sector			
As at the end of:							
1954 - 55	50	57	107	15,654	0.7	2,362	4.5
1959 - 60	93	156	249	16,753	1.4	3,736	7.0
1964 - 65	120	163	283	19,761	1.4	5,447	5.0

Source: 'Economic Survey' 1965-66, op.cit. P.3 Statistical Appendix.

2. a) Statistical Year Book 1964 C.S.O. Government of Pakistan. (Karachi 1966) P.304 and 308).

b) Evaluation of Second Five Year Plan, op.cit. P.154-157.

It would appear from Table 3.1B that the increase in G.N.P. originating from agricultural sector at an annual rate of 1.4 per cent in 1959-60, there was an increase of 0.7 per cent in land revenue but it remained constant at the end of 1964/65 when the annual increase in G.N.P. was nearly 3.5 per cent.

The private sector, particularly the higher income group, is sluggish as far as agricultural investment is concerned. The low rate of productive investment therefore warrants an increase in land revenue for increased investment in agriculture by the public sector. The income accrual to higher income group either goes to demonstration consumption or purchase of land as prestige value which is by no means a productive investment. The transfer of land as pointed out earlier does not add to total productive investment. It is also hard to believe that money thus received by sale of land is invested in land by the recipient. The sale of land is a matter of last resort when a farmer is compelled to do so for reasons such as marriage, litigation, poverty and hunger.

The sale proceed is thus spent on consumption whereas it is necessary that any income or income incremental must enter into the investment stream. The source of increased public spending therefore can be augmented by the agricultural sector itself in the shape of increased revenue. The increase in land revenue is moreover justifiable because of Government indirect

participation in production process by providing water, subsidized fertilizers, improved seeds and pesticides.

The present land revenue needs to be assessed on a progressive scale - the larger the size of the holding the higher should be the tax. In West Pakistan despite the land reform of 1959, larger holdings still exist or a large number of holdings belong to one family or so. Suitable increased taxation might promise a positive incentive to big land owners to take greater interest in their land or invest a part of their income in raising the total output. The increased taxation should however, be accompanied by certain positive incentives such as exemption of capital expenditures (tubewells or farm implements).

So far as the subsistence farmers are concerned, the keeping of land level, revenue and water rates at minimum may provide greater incentives if coupled with low cost agricultural inputs e.g. the distribution of free improved and treated seeds. The whole argument rests on the fact that in a developing economy where the Government has assumed a greater responsibility for production planning, then concerted efforts are required to be directed to boost agricultural production. These positive incentives should cost the exchequer not more than what is required to be spent on recurrent food imports at the cost of hard earned foreign exchange.

The investment in local currency even by way of deficit financing would be more beneficial than spending on food imports. The Government, besides building of infrastructure should also provide cheap or free agricultural inputs, the cost of which can partly be met by increasing the land revenue on a progressive scale.

The present land revenue system actually requires to be revised. The Taxation Enquiry committee has already suggested a reduction in the period of settlement to not more than 15 years and there should be no legal bar to the enhancement of land revenue.[1] Such a revision is socially justifiable because when settlements were made then adequate infrastructure, public sector spending, subsidies on fertilizers, improved seed, assured water supply, protection to crops were not available. In view of increased spending by Public Sector, a proportionate return in the shape of taxation is necessary for further spending. So with the increase in marginal rate of saving, the saving should increase pari passu a part of which may be mobilised through taxation for development purposes. In a country like Pakistan where the conditions do not fulfil the taxation pre-requisite like honesty in declaration of income, literacy for filling up the tax returns,

1. 'Second Five-Year Plan' op.cit. Page 53.

forced saving is more plausible.

Water Rates: Canal irrigation is one of the oldest forms of irrigation in the former Punjab. Some of the canals date back to the Mughal era while the others were developed during the British period in the nineteenth century.

After independence, tremendous development has taken place in the irrigation sub-sector for providing the necessary infrastructure for agricultural transformation. Irrigation in West Pakistan is a vital input for raising crops as well as for a future sustained agricultural growth rate. The Table 3.2B gives the details of irrigated area and water rate collection.

It would appear from the Table 3.2B that in West Pakistan nearly 70 per cent of the area has assured irrigation facilities, but despite the fact that a large area is covered by irrigation the land carrying capacity does not show any marked improvement and the standard yield per acre has deviated only within narrow margins. Some of the causative factors for low yield per acre are salinity and water logging, occasional drought due to low supply of water in rivers, and inadequate supplies of inputs. However, water logging and salinity, a twin menace, have mainly caused reduced production in terms of fertility. It is

TABLE : 3.2B

Area under Irrigation and Water Rate collection in West Pakistan.

Period	Total area sown to all crops (million acres)	Area irrigated by Govt. Canals (million acres)	Irrigated area as % to total Land	Water Rate collection as at the end of	Water rate collection per acre (Rs)
1947 - 48	28.8	19.5	68	85	3.5
1954 - 55	32.7	22.2	67	88	4.0
1959 - 60	35.4	24.0	70	67	2.8
1964 - 65	40.2	27.6	70	137	5.0

Source: C.S.O. Statistical Year Book 1965-66, PP.88, 70 and 327.

estimated that nearly 50 per cent of the irrigated area or 12 million acres are affected by water logging and salinity.[1] The affected areas, varying in degree, have declined in production at least to the extent of the quantum of food imports per annum while thanks to the development efforts in the country, nearly 8 million acres have been added to the area under cultivation since 1947. This has partly made up for the reduction in land carrying capacity on account of the twin menace referred to above.

The development of hydro-electricity and irrigation was possible in West Pakistan due to its natural endowment. The water resource potentiality is indicated below:[2]

	Water course availability
1959-60	48 MAF/Year
1964-65	68 "
1969-70	96 "
1985 ..	110 -125 "

However, inspite of the considerable resource volume and relatively high exploitation rate, the average annual receipt on account of water rates comes only to Rs 85 million. This state of affairs is strange given the fact that the multiple of total supply of water

1. 'Second Five Year Plan' op.cit. P.209
2. 'Third Five Year Plan' op.cit. P.296

with even a constant rate (MAF x Rate) would necessarily yield a higher receipt than has actually accrued. One of the obvious reasons for this is malpractice in administration causing a leakage to total receipts.

The figures relating to cost components per acre are not available to show the actual benefit to farmers of water input. However, if we use the one estimate employed in the Second Five-Year Plan i.e. 15 per cent contribution of water input to total production of foodgrains, and 6 per cent to jute and cotton, the water charges paid actually by the cultivators in relation to benefit would be very low. Let us assume the standard yield per acre of wheat as 9 maunds and calculate the value of benefit in monetary term.

Standard yield per acre (Wheat)	: 9 maunds
Contribution on account of water input @ 15%	:1.3 maunds
Price fetched @ Rs 12 per maund	: Rs 108
Of which 15 per cent	: Rs 16.2
Actually paid on water use per acre	: Rs 4 - 5

It was estimated that in East Punjab (India) the cost component per acre for water input was only 2 per cent[1]. We can safely

1. Schultz : 'Transforming Traditional Agriculture' op.cit. P.100 Schultz has used Nasir Ahmed Khans' estimate for East Punjab 1945-46 to 1947-48 "Problems of Growth of an Underdeveloped Economy" (Bombay, Asia Publishing House, 1961).

assume the same estimate more or less valid for West Pakistan. The West Pakistan provincial Government revised the rates in the early sixties but it would appear that even the revised water rates have not yielded sufficient revenue as the average collection of water rates during the last five years amounted to Rs 106 million per annum.

East Pakistan presents altogether a different situation. It is tropical, humid with highly seasonal rainfall averaging 76 inches. The soil is rich in fertility, topography and precipitation have in the main determined the agricultural pattern, for example jute and paddy are grown in the rainy season. During the dry season only a small area is cultivated. Failure of the monsoon causes famine conditions over vast areas.[1]

The agriculture in East Pakistan suffers usually from high floods, failures of monsoon rain and lack of irrigational facilities during winter season to raise rabi crops. Assured perennial irrigation would enable this part of the country to go for double and even triple cropping. At the end of 1959/60 the total area under irrigation was only 0.6 million acres or 2.5 per cent,[2] of the area sown to crops. During the Second Five year plan another 0.2 million acres have been added to the total area under irrigation with partial completion of Teesta irrigation project and ground water development and pump irrigation projects.

1. Second Five-Year Plan, op.cit. P.193.

2. Second Five-Year Plan, op.cit. P.194.

The coastal embankment project also made a good progress. Out of 2,800 miles of tidal embankments some 1,200 miles were improved and strengthened.[1]

The table 3.3B gives the periodic investment in public sector both in East and West Pakistan.

TABLE : 3.3B

Investment in Irrigation (Public Sector).

Period	Investment (Rs million)	Area brought under irrigation (million acres)	Area improved (million acres)
Up to 1954-55	680	3.0	N.A.
Up to 1959-60	780	1.8	2.6
Up to 1964-65	2,530	2.0	8.0
Total	3,990	6.8	10.6

Source: First Five Year Plan, op.cit. PP.329-32, Strategy of Economic Planning, op.cit. P.155, Evaluation of Second Five Year Plan, op.cit. P.198-199, Second Five Year Plan, op.cit. P.412.

Returning to water rates accrual, it was pointed out that there has not been a substantial change in the total receipts despite large investment in irrigation projects. So far the total area

1. 'Evaluation of Second Five Year Plan', op.cit., P.80-81.

brought under irrigation totals 6.8* million acres while the net change in gross receipt came to about 20 per cent higher than the yearly average yield of water rates. The increase in irrigated area produced a total 36 per cent higher than in 1947-48. So the position may be summarised as under:

1.	Average water rates collection per annum before revision of Rates[1] (1954-55 to 1959-60)	: Rs 77 million
2.	Average water rates collection per annum after revision of Rates[1] (1960-61 to 1964-65)	: Rs 106 million
3.	Percentage change over time in gross receipt	: 36
4.	Percentage change in total area under irrigation[2] over time	: 36
5.	The nett effect to total collection	: Nil

It would appear from these simple facts that increased gross receipt on account of water rates was proportionately equal to the nett area added to total irrigated area. This testifies amply to

* The figure relates to year 1954-55 to 1964-65, whereas since 1947 the net addition to total irrigated area comes to 8 million acres (see page 104).

1. Statistical Year Book 1964, op.cit. P.304.

2. Source of Calculation Table 3.2B.

the presence of malpractices in the collection of water rate, a fact which lies outside the scope of this thesis. Given the position as outlined earlier there could well be a progressive scale in determination of water rates - the bigger the size of holding, the higher the rate. There is every justification in doing so keeping in view first the economy of large-scale farming and secondly higher income as the marginal productivity multiplied by number of acres will be greater than that of the subsistence farmer having one acre or so.[1] A distinction can also be made between commercial and subsistence farming while levying water rates.

Export Duties on Primary Products:

Export duties according to the findings of the Taxation Enquiry Committee are "retrograde in principle and discourage exports, and the objective should be to replace them eventually".[2] To test the validity of this statement we will have to examine the elasticity of foreign demand for primary products, price response to supply and to what extent the export duty is retrogressive.

It may be pointed out that the supply response to prices both domestic and international are limited due to ceilings

1. Fragmentation of land would not be possible, as laid down in the Land Reform of 1959.
2. Second Five Year Plan, op.cit. P.51.

imposed on the cultivation of jute and cotton and any expansion in supply without a corresponding demand would mean lower prices to cultivators. Therefore, the export duty is not retrogressive in the sense that export of jute or cotton can not be pushed beyond the totality of foreign demand.

On the international plane, the prices of primary products are susceptible to violent fluctuations - even if the internationally quoted prices are low, the exportable commodities can not be held back because of (a) the nature of the product i.e. being primary; (b) the need to earn foreign exchange (the export base being limited) in face of continued disequilibrium in the balance of payments; (c) the certain assured income to growers and finally the fear of substitution. In case the prices go up, the supply can not be adjusted in the short run and thus the supply response in the long run as well as short will be limited to the extent of the ceiling on land for such cultivation. A vertical expansion in supply is possible but that too is limited by the extent of the absorptive capacity of farmers for increased agricultural inputs. Besides international demand which is usually short run in nature, a part of the increased domestic demand has to be satisfied due to industrial expansion. In such a situation the export duties do not have a retrograde effect on exports of primary products.

In a country like Pakistan where taxation is not very broad based, it is really difficult to abolish the export duties altogether. Depending on foreign demand elasticity and prices, the duties may be revised upward or downward. In the long run this may be replaced by agricultural income tax at source. (The receipt on account of export duties is given in Table 3.4B). The present rate of excise duty on raw tobacco is rupee 0.6 per lb. Table 3.5B gives the details of production and excise duty thus collected. The Table 3.6B gives the total revenue originating from agriculture.

TABLE : 3.4B

Export Duty on Jute and Cotton.

Year	Jute			Cotton		
	Export Duty per ton @ (Rs)	Quantity Exported 000 tons	Total Receipt (Rs million)	Export Duty per ton @ (Rs)	Quantity Exported 000 tons	Total Receipt (Rs million)
1954-55	84	197	16.5	342	127	43.4
1959-60	112	860	96.3	228	80	18.2
1964-65	56	703	39.3	57	129	7.3

Source: for Rates, Economic Survey 1964/65, P.135 for production; Statistical Year Book 1964, op.cit. P.99

TABLE : 3.5B.

Excise Duty on Raw Tobacco.

Year	Excise duty at per ton (Rs)	Production 000 tons.	Total Excise Duty collected (Rs million)
1954 - 55	1,120	125	140
1959 - 60	1,120	88	98
1964 - 65	1,344	102	114

Note: the figures are provisional, in absence of actual data, figures have been calculated on the basis of production and excise duty rate available.

TABLE : 3.6B

Agricultural Taxation.

(Rs million)

Year	Land Revenue	Water Rates	Excise duty on Tobacco.	Export duty on Jute & Cotton.	Total tax originating from Agriculture	Total tax receipt including non tax.	G.N.P. factor cost 1959/60	% to Column 7	% to Column 8
1	2	3	4	5	6	7	8	9	10
1954 - 55	107	88	140	60	395	2,362	27,908	16	1.5
1959 - 60	249	67	98	114	528	3,736	31,439	14	1.7
1964 - 65	283	137	114	47	581	5,447	40,987	10	1.4

Sources: Table 3.1B to 3.5B of the chapter. G.N.P. : Evaluation of Second Five Year Plan, op.cit. P.141 and 154 for total tax receipt.

The total revenue originating from agriculture came to 10 per cent of the total tax collected during the fiscal year 1964-65. A comparison of revenue originating from the agricultural sector with that of G.N.P. contribution, suggests that the existence of some important phenomenon; (a) the low income level (largely subsistence) of the rural sector; (b) the presence of hidden savings; (c) and tax evasion. In the case of Pakistan these characteristics are all more or less of importance.

The present tax receipt originating from agriculture is very low compared with the agricultural contribution to G.N.P. i.e. 49 per cent during the year under review. One very important reason of low receipt is tax evasion. As Kaldor observes "the agricultural or subsistence sector which typically accounts for one half or more of the national output, virtually escapes taxation at present owing to 'erosion' of the ancient land taxes of the countries of the Middle East and Asia". Compared to Pakistan, India, which has less favourable conditions such as less yield per acre, has 20 per cent of her total revenue originating from agriculture. In China during 1956-57, it was as high as 60 per cent.[2]

Tax evasion could however, be considerably reduced with standard strict administrative measures. Structurally more

2. W.H. Nicholls : 'Agriculture in Economic Development' op.cit. P.30.

Kaldor : 'Essays on Economic Policy' Duckworth, London ... P.258.

important, an effort should also be made to reduce the size of the non-monetized sector for better administrative efficiency in collection of taxes. The recently introduced agricultural income tax may help in mobilizing a part of savings for productive purposes. Real estate may be taxed heavily to discourage such investment and arrest the flight of capital from rural to urban areas. At the same time, through some fiscal concessions an atmosphere for higher investment may be created by providing exemptions for : agricultural inputs, long term investment for improvement of land, and subsidies on fertilizers and pesticides etc. To check demonstration consumption it could theoretically be worthwhile to plug the inflow of such commodities by banning their imports altogether.

CHAPTER IV

Dualistic Economy:

Impact of Agriculture on Industrialisation.

To trace the origin of dualism, it may be stated that dualism in any economy has existed through the ages in one form or the other. Today dualism occupies an important place in economic literature in the context of development economics. Pluri or dualism may have various forms such as dualism in factor resources, labour dualism and technological dualism, or the social dualism of Boeke.[1] Historically speaking dualism has stemmed from human wants necessitating an expansion in the existing productive sources. For instance, handicrafts in India and Pakistan have thrived through the ages side by side with the primitive industry of agriculture - the former market orientated and the latter very much self contained. The primary sector failed to expand to meet the growing variable demand for obvious reasons such as unemployment, underemployment, static stage of technical know-how. The introduction of an exchange economy caused therefore, a structural

1. Prof.J.H.Boeke (Economics and Economic Policy of Dual Societies, New York, 1953.PP.3-5) an exponent of social dualism states that it is not necessary that a society be exclusively dominated by one society "... where on the contrary, simultaneously two or more social systems appear, clearly distinct the one form or the other, and each dominate a part of the Society, there we have to do with a plural Society".

change leading to a distribution of factor resources to the sector or sectors where maximization of output and capital accumulation was possible to accelerate the overall economic growth rate. The dualism has come through a sort of evolutionary process warranting socio-economic changes - a change in institutional framework and a structural change in the economy.

So dualism in a developing country is the outcome of the transformation of a part of the traditional economy mainly subsistence orientated to exchange economy.[1] Such transformation however, largely depends on natural resource endowment, capital, technical know-how and specialisation.

In this chapter we will discuss only the relevant elements of economic and technological dualism in Pakistan, and their impact on the overall economy and the factors limiting the capitalistic growth model. It would appear that a capitalistic growth model on western lines would require a time lag to gain momentum. The growth of a capitalistic Sector in Pakistan is therefore much indebted to resource endowment originating from the agricultural Sector. We will then discuss the impact of the agriculture sector on industrialisation and its likely role in the near future.

Pakistan and many other developing countries present a dualistic system which is more economic in nature than

1. Gerald M. Meir: Leading Issues in Development Economics, op.cit. P.50

social i.e. manifesting a capitalistic sector side by side with the traditional agricultural sector. This dualism can be explained by the existence of wage differentials, interest rates and capital intensities - capital-labour and capital output ratios. Economic characteristics implicit in the dualism are also differences in scale, organisation, technology and growth rate.

Dualism in Pakistan:

Pakistan in 1947 was mainly a primary producing country. The dualism that existed was not so pronounced as it is today after the planned development efforts have produced a distinct structural change in the economy. This structural change includes marked development in all other sectors of economy but in the context of dualism we would consider here and also elsewhere only the two production sectors - agriculture and industries.

TABLE : 4.1

Structural changes in Gross National Product

(percentage)

Sectors	1950 actual	1960 actual	1965 actual	1970 Projected	1985 Projected
Agriculture	60.0	53.2	49	45	36
Manufacturing	6.0	9.8	12	14	21
All others including transport, construction and other services.	34.0	37.0	39	41	43
	100	100	100	100	100

Source: Third Five-Year Plan, P.21 and Final Evaluation of Second Five-Year Plan, P.7

The total structural change has been quite significant keeping in view the time span, infrastructure, the price elasticity of foreign demand for exportable commodities, foreign aid and finally the stage of technical know-how. The industrial sector has manifested on the average an increase of 4 per cent over the first decade, while the share of agriculture in G.N.P. declined by 7 per cent. It would appear from the table above that the industrial sector in a decade and a half could offset this decline in agricultural sector by only 6 per cent whereas all other sectors have counter-balanced to the extent of 5 per cent.

The earlier stage of industrialisation in Pakistan received a stimulus from the commercial sector which had dominated the economic scene up to 1952. After the Korean war boom, the exports declined sharply necessitating cuts in imports to an austerity level. The trade sector which had enjoyed a phase of liberal imports of consumer goods (63 per cent up to 1952 with 91 per cent of exports earnings originating from agriculture) found their investible funds idle. At the same time, governmental policy measures, particularly in the field of import restriction and capital diversion were being applied. The alternate investment choice was in the industrial sector which by now had gained some ground due to favourable investment atmosphere, (profit margins being quite high) tariff protection, fiscal concessions and capital imports besides cheap factor

inputs such as labour and raw material. The commercial sector thus channeled its investible funds with a low capital output ratio to an equally protected sector of industry without any element of risk. The index of industrial production showed a spectacular growth rate. The quantum and value indexes of manufacturing (1959-60 = 100) nearly doubled by the end of 1964-65.

The production trends of major items are indicated below:

TABLE : 4.2

Industrial Production.

Major Items only	Unit	1949	1965
1. Sugar	000 tons	38.6	273.0
2. Hydrogenated vegetable oil	"	2.5	100.5
3. Cigarettes	million nos	241	22,009
4. Cotton Yarn	million lbs	34	504
5. Cotton cloth	million yds	92	719
6. Woollen yarn	million lbs	-	6.4
7. Jute goods	000 tons	103	374
8. Upper leather tanned	million sq.ft	1.1	56.2
9. Tyres and tubes	000 nos	13	5,323
10. Fertilizers (all sorts)	000 tons	Nil	235
11. Paper and board	000 tons	Nil	117
12. Newsprint	"	Nil	37.3
13. Paints and varnishes	000 gallons	N.A.	1,204
14. Cement	000 tons	422	1,680
15. Steel rerolling	000 tons	12	296

Source: Economic Survey M/O Finance 1965-66, P.19 Table 9 of statistical appendix.

The index of industrial production has since been revised as previously it covered only production trends of 32 items. The revised index includes 200 items covering 97 per cent of production as against 75 per cent earlier coverage. This gives an idea of industrial expansion in Pakistan. The agriculture sector does not show a similar trend in production. The index of agricultural production during the same period (1959-60 = 100) rose to 123 for all crops and 117 for food crops only. The total food production at the end of 1964-65 was 17.6 million tons as against 13.2 in 1949-50 with food import rising from 0.1 to 1.7 million tons. The accelerated growth rate in industry and relatively slower rate of growth in agriculture have to be viewed seriously. The planners in Pakistan have been quite conscious of the situation but despite concerted efforts the agriculture sector has not been able to foster the desired growth rate. The following questions then arise: (a) has agriculture reached a point of saturation where any horizontal or vertical expansion is not possible ? (b) do the incentives and stimuli proportionate to a desired growth rate actually present a retrogression to output ? (c) have the factor inputs been sufficient to achieve the physical targets ? (d) how much have the external economics helped to make the agriculture sector viable ?

These are a few of the questions which stem naturally from the state of agriculture in Pakistan. Causative analysis supported by empirical evidence leads us to certain

conclusions.

1. As to our hypothesis at seriatim (a), it may be categorically denied both from macro and micro points of view. The average yield per acre is much below the standard average level of production in Europe - 2 metric tons per hectare, Japan and Taiwan - 3.8 and 6.6 metric tons per hectare.[1]

The production trend is not static in relation to factor inputs (it may in fact be proportionately lower due to various other causes). During the last fifteen years more than 8 million acres of land have been brought under cultivation. This means that there has been a horizontal expansion as the total increase in agricultural production has been not all due to vertical expansion; this is evidenced by the modest increase in yield per acre of wheat which for instance increased from 8.5 maunds in 1950-51 to 9.7 maunds per acre at the close of 1964-65.[2] Similarly there has been also vertical expansion in agricultural production especially in East Pakistan where hardly a million acres of land could be added to total area under cultivation during the last decade and a half. The average yield of rice per acre rose from 10 to 12.3 maunds at the end of 1964-65. The agricultural sector has therefore a dynamic growth potentiality which remains yet to be exploited.

1. Paltridge, T.B. : 'Population and Food Supply in the Far East' 'world crop' The International Journal of Agriculture, December 1963 (London) P.414.

2. Economic Survey 1965-66, P.13 Statistical Appendix.

The projected growth rates could not be realized for some obvious reasons such as the low rate of capital formation in agricultural sector, lack of factor inputs in proportion they are actually required, or structural disequilibrium at factor level, low rate of investment per acre and due to certain institutional reasons detrimental to agricultural growth rate. There is no estimate of private investment during the Second Plan period but it is presumed to be quite low in the field of agriculture despite the fact that the share of the latter was as high as 49 per cent of the G.N.P. In the last chapter we have already discussed the different aspects of capital formation in agricultural sector of Pakistan.

2. As to our question at seriatim (b), the incentives and stimulus have not been as adequate as one would find in industrial sector. This inadequacy in incentives or stimuli was not the result of a conscious attempt to create a sort of sectoral disequilibrium at factor level; rather it was a natural phenomenon destined to occur in an over-populated country partly due to inadequacy of resource factors and partly due to the institutional framework. For example, the lack of capital, scarcity of factor inputs such as fertilizers, fragmented holdings pressure on land, and absence of economy of scale in farming are some of the limiting factors. Moreover, the food control procurement prices have been detrimental to what otherwise might

have been price incentives. A procurement price system is no remedy since it is a sort of intervention in actual market forces in the determination of an equilibrium price. It would mean indefinitely a greater profit to the industrial sector and hence the terms of trade would always be in favour of industry; as such it is really a negative approach. In terms of the central importance attached in this thesis to the need for raising agricultural sector growth rate, it may even be regarded as nationally harmful. Since the elasticity of demand for food is always greater than the supply, the prices would always stabilize at some higher point in the absence of intervention. Therefore, the procurement prices are not actually proper incentives.

3. The factor inputs have not been sufficient or adequate to foster a desired growth rate and finally the impact of external economies arising from other sectoral development has not been very significant except for irrigation which we may actually treat as a development in agricultural sector itself. The industrial sector has not been able to cause any expansion in agriculture through food demand as food prices have been always controlled or restricted (see also pp: 137-38); and the industrial outputs going to agriculture have not been many except for fertilizers, the supply of which is far from satisfactory.[1] Strangely enough that

1. 162,000 tons in 1964/65 the average use per acre being only 5 to 6 lbs.

too has not been provided by the private sector - rather is it an industrial enterprise in the Public Sector, not only producing fertilizers but also effecting their distribution at subsidised prices.

One very distinct difference between the two production sectors is that of wage differential. The wages in industrial sector are relatively higher than agricultural sector. This is primarily due to certain natural characteristics of traditional and exchange economy mostly existing in underdeveloped countries. As pointed out earlier, the average wage good offered to an agricultural labourer in a country with unlimited supply of labour would not be equal to his productivity (as a part of his labour remains underemployed resulting in low marginal productivity of land combined with other factor inputs like capital).

In modern or capitalistic sector the situation is quite different. The supply of labour is unlimited due to disguised unemployment and therefore, the capitalist sector would normally offer a little more than a labour gets in the subsistence sector. Lewis[1] observes that there is usually a gap of 30 per cent or more between capitalist sector wages and subsistence earnings. Moreover, labour supply to a capitalist sector largely

1. Lewis, Economic Development with unlimited supply of labour, The Manchester School, May 1954 pp.139-91.

depends on capital intensities (both capital output ratio and capital labour ratio), choice of technique and coefficient of production.

From the savings and investment points of view, the capitalist sector in Pakistan differs widely from that of subsistence sector. Dr.Mahbubul Haq has estimated that the gross income to capitalist sector in 1959-60 amounted to Rs 1,400[1] million after the payment of wages, of which 25 per cent was absorbed by taxation and thus 75 to 80 per cent was reinvested or ploughed back. This was possible mainly because of the higher rate of marginal domestic savings in this sector. This higher rate of saving as Dr Haq maintains, and as would appear in case of many other underdeveloped countries, is due to inequalities in the distribution of income. Dr.Haq estimates that like India and Ceylon "nearly 50 per cent[2] of national income in Pakistan occurs to only 20 per cent of its population". The table below gives investment estimated in the capitalist sector compared to traditional sector.

1. Dr. M.Haq, 'Strategy of Economic Planning' op.cit. pp.22-23.
2. Ibid, pp.20-21. 'Economic Planning' op.cit. pp.20-21.

TABLE : 4.3

Investment in Production Sectors

(Rs million)

Sectors:	FIRST PLAN		SECOND PLAN		THIRD PLAN Projection only
	Allocation	Utilization.	Allocation	Utilization.	Allocation
Agriculture:	1,220	570	3,420	5,256	8,115
i) Public	1,220	570	2,515	1,856	4,115
ii) Private	N.A.	N.A.	905	3,400*	4,000
Industries:	3,000	1,850	5,120	6,605	11,813
i) Public	1,600	1,100	1,460	1,305	3,513
ii) Private	1,400	750	3,660	5,300	8,300

Source: First Plan: (i) 'Strategy of Economic Planning' op.cit. P.155.
(ii) Federation of British Industries, P.49 (for industrial investment).

Second Plan: (i) 'Evaluation of Second Five Year Plan' op.cit. P.32 (private financing) P.184 to 199 for (public sector investment).

* includes irrigation, and power as well - not more than Rs 400 million.

During the First Plan period, investment fell short of the target by 50 per cent in agricultural sector compared to 38 per cent in the industrial sector. During the Second Plan period, the investment in agricultural sector appears to have exceeded the Plan target by 50 per cent as against 29 per cent in the industrial sector. The estimate of private investment in agricultural sector is, however, open to doubt in the absence of reliable data comparable with that for industrial financing through investment schedule. The growth of capitalist sector was also possible in Pakistan due to the existence of a relatively organised capital market, relatively low rates of interest and institutional credit in most of the cases with a foreign exchange component. The industrial policy announced from time to time and also commercial policies identifying industrial requirement, have been quite helpful in accelerating industrial development. The agriculture sector on the other hand was not neglected but had no such potentiality either for attracting capital or for obtaining institutional credit for financing of this massive sector. There was also a lack of organization marketing facilities and, above all, the small size of surplus which is estimated at 15 to 20 per cent only. A better choice of technique (capital intensive) was not possible because of surplus labour problems and partly due to non-availability of funds to effect a technological change. The rates of interest charged to this sector by all other agencies

except institutional credit, is alarmingly high. So keeping in view the size of rural indebtedness the marginal productivity of per unit investment obtained on a higher premium rate, means lowering of the profit (if the debt is really paid with interest, that a compound rate of interest). Thus it retards income and savings from going to productive investment. It will be observed that besides self financing (largely due to higher savings for productive investment) adequate credit financing was also available to industrial sector. To begin with let us take the advances made by the commercial banks to various economic groups. The table below gives only the position as at the close of 1964 and 1965[1] but it gives an idea of sectoral priority in the matter of bank advances.

TABLE : 4.4

Scheduled Bank Advances by Economic Group (Rs million)

Economic Group.	Dec. 1964.	Percent	Dec. 1965	Percent
Agriculture	415	7.5	358	5.7
Manufacturing	1,959	35.7	2,424	39.0
Commerce	2,145	39.1	2,450	39.3
All others	960	17.7	1,003	16.0
Total	5,479	100.0	6,235	100.0

Source: Economic Survey 1965-66, op.cit. P.129.

1. The time refers to 31st December 1964 and 1965.

The table 4.4 indicates rather a declining trend in advances to agricultural sector compared to industrial sector.

Let us now discuss institutional credit financing in Pakistan with reference in particular to the dualistic economy. To the industrial sector lines of credit is obtainable from the Industrial Development Bank of Pakistan and the Pakistan Industrial Credit and Investment Corporation. In the case of agriculture from the Agricultural Development Bank of Pakistan and Cooperatives. Up to 31st December 1965, P.I.C.I.C. has provided effective financial assistance to the industrial sector amounting to Rs 1,222 million (since its inception in 1957). The Industrial Development Bank of Pakistan up to March 1966 (since its inception in 1961) has sanctioned Rs 1,075 million. Thus the total institutional credit to industrial sector on the average roughly amounts to Rs 337 million per annum, whereas the Agricultural Development Bank since its inception (1961) advanced agricultural credit amounting to Rs 509 million up to 31st December 1965, the yearly advances thus made coming to Rs 100 million. The cooperatives, as discussed in the last chapter, provided lines of credit to the extent of barely Rs 50 million annually. Table 4.5 highlights the economic features of the two production sectors :

TABLE : 4.5

Economic Features of Production Sector in Pakistan

1964-65.

	Agriculture Sector	Manufacturing Sector
Contribution to G.N.P. %	49	12
Employment (%)	65	11
Investment: (Rs million)		
(i) Public Sector	462	353
(ii) Private Sector	530	1,186
Institutional Credit (Rs million)	150	337
Advances by Commercial Banks (")	44	287
(Rs million) wages - (Rs))	50-60[a]	100[a]
Foreign Exchange earnings (Rs million)	993	964
Capital Labour ratio (Rs)	5,370	5,370*
Capital output ratio @	2.5	2.0
Growth rate (%)	3.7	8.8

The reference year is only 1964-65.
Commercial Banks total credit was equal to 736 million in 1965 so nearly 6% to agricultural and 39% to industry has been calculated.

a. Minimum wage in East Pakistan in Match Factory was Rs 104, jute bailing and pressing Rs 72, and cotton Rs 75. In West Pakistan the monthly wage was Rs 130 in sugar, steel and transport sectors.

* relates to all Sectors.

@ refers to First Five Year Plan.

Besides institutional credit, there is a sound capital market for industrial sector, a market which has shown a tremendous growth over a short period of industrialisation. The shares floated were usually fully subscribed. There are also institutions such as the Investment Corporation of Pakistan meant to underwrite new shares and the Investment Trust to mobilize savings to industrialisation by investing in stocks.

It is needless to point out the relative investment atmosphere enjoyed by the two sectors since the basic difference is on the one hand that of an exchange economy and on the other a traditional economy partly non-monetized. It will take time for agricultural sector to create confidence with regard to investment and profitability. It is however relevant to point out that this massive sector will take a still longer time for its transformation if it remains neglected and the retarding factors if not attended to would retrograde the present level of production as well.

Similarly the Export Bonus Scheme has largely benefited the trade and industrial sectors. The spillover of this scheme barely affects the agricultural sector.

Sectoral Relationship: The Impact of Agriculture on Industrialisation.

In the absence of an input and output table, we may make a partial attempt to analyse this relationship. Let us quote

John C.H.Fei who, after assuming an economy formed of two production sectors and a foreign trade sector, argues that within any planning period, it is the obligation of the agricultural sector to produce enough net output to satisfy first the consumer demand; secondly, the industrial sector's demand for raw materials and thirdly, the export demand. On the other hand it is the obligation of the industrial sector to produce enough net output to satisfy consumer demand and export demand as well as the investment demands by the Industrial sector and by the agricultural sector to expand future productive capacities.[1]

As one can hardly dispute the statement above, we would like to base our arguments on the obligation of the two production sectors to determine the extent of the existing as well as the likely relationship and inter-sectoral impact and interdependence. The agricultural sector feeds nearly 90 per cent of the population with the recurrent food shortages over a number of years of around 10 per cent being met by food imports. Similarly more than 90 per cent of calorie intake originates from agriculture (the 10 per cent we may count towards food processed by the industrial sector like fine sugar, vegetable oil and other cooking fats). The income elasticity for the demand of food in

1. An Analysis of the Long Run Prospect of Economic Development in Pakistan by John H.Fei and associates. Monograph in the Economics of Development, Institute of Development Economics, (Karachi 1962) P.10.

Pakistan is estimated at 0.6. So the bulk of demand both in rural and urban areas is satisfied by the agricultural sector. The position is likely to continue unless there is a shift in consumption pattern with the increase in the level of income, admittedly a very slow process in underdeveloped economies.

It is difficult to break down the total value of manufacturing products to ascertain the cost component of raw materials inputs from agricultural sector. On a limited sample basis such components have been worked out on the basis of CMI* data relating to the year 1959-60. The table 4.6 gives the cost component of industrial inputs from agricultural sector.

* Census of Manufacturing Industries (Central Statistical Office).

TABLE : 4.6

Cost component of Raw material as industrial input (Rs million)

Industry only by major sub-sectors. (Agro based).	Employment cost	Power	Cost of raw material consumed	Other cost	Value of Products and by-products	Percentage of raw material to total products.	Value added
1. Food manufacturing	540.9	165.5	2,861.9	889.8	4,458.1	64	1,544.7
2. Tobacco manufacturing	9.1	0.7	85.7	72.7	168.2	51	81.6
3. Textiles[1]	259.5	69.4	808.2	38.0	1,175.1	53	658.2
4. Manufacture of foot-wear and other textile goods	11.8	1.3	45.0	19.5	77.6	57	31.8
5. Paper and paper products	9.7	8.3	40.6	24.2	82.8	50	34.0
6. Manufacture of leather and leather products excluding footwear	5.1	0.6	51.6	7.1	64.4	80	12.78

Source: Pakistan Statistical Year Book 1964, Government of Pakistan publications Karachi, 1966
Census of Manufacturing Industries (ALL PAK) 1959, PP.135-36.

1. For textile we will have to make an allowance for imported yarns.

The table 4.6 gives the ratio of cost component of raw material to the value of total cost - this is proportionately very high, revealing the characteristics of low cost inputs which give rise to a higher margin of profit. The table also reveals an early stage of industrialisation based on mainly processing of domestic raw material, which signifies relatively low capital - labour and capital-output ratios. The low capital intensity has thus greatly helped in accelerating industrial development. The situation will last so long as the production coefficient at a given state of technology is low. Similarly the agricultural sector has continued to earn the bulk of foreign exchange as is evidenced by table 4.7 below.

TABLE : 4.7

Foreign Exchange Earnings (Rs million) During Second Plan Period (1960-61 to 1964-65)

Year	Agriculture	Manufacturing	Misc.	Invisibles	Total
1960-61	1,027	646	204	409	2,286
1961-62	1,023	643	254	464	2,384
1962-63	1,187	735	326	500	2,748
1963-64	1,059	834	378	514	2,785
1964-65	993	964	456	612	3,025
Total	5,289	3,822	1,618	2,499	13,228

Source: 'Evaluation of Second Five Year Plan' Table 7.2. op.cit. P.164.

The share of the agricultural sector in total foreign exchange earnings during the Second Plan comes to nearly 40 per cent compared to 28 per cent by the manufacturing sector. The structural change during the Second Plan had quite a profound impact on the structure of export, as will be observed from the relative earnings of the two production sectors in 1964-65. However, it is important to bear in mind that a sizeable quantity of jute and cotton processed at home appears in the bulk of manufactures comprising the export base. A relative decline in the export of jute and cotton has in fact been largely offset by the increased export of jute manufacturers, cotton yarn, cotton fabrics etc. So the total production flow from agriculture sector is still significant in developing the processing industries as well as enlarging the export base for manufactured goods. We can now discuss the other impacts of agriculture on industrial sector.

Let us first take the supply of labour to the capitalist sector. In a country like Pakistan, the capitalist sector has unlimited supply of unskilled labour than the demand depending on many other variables. So the capitalist sector is in a position to exact a value from labour higher than the real wage paid to it, the disguised unemployment in the subsistence sector depriving labour of the power to bargain for a higher wage. The capitalist sector is therefore in advantageous position to offer a worker wage just above subsistence earnings. In the case of normal

supply of labour the wage for the labour in capitalist sector would always be higher leading to a proportionate decline in the margin of profit. The agriculture has thus provided cheap labour to industry with a loss to its past investment in human resources belonging actually to that sector. Similarly the controlled prices of food in Pakistan has kept the general wage level low enabling the capitalist sector to obtain a higher growth rate through increased profit (retained capital) and investment. It will be observed that wholesale price indices for food (1959-60 = 100) 93.12 in 1956-57 stood at 104.26 in 1963-64 whereas prices have been very stable in case of raw materials. The wholesale price index for raw material was 102.62 which usually deviated between 4 to 5 per cent from 1956-57 to 1963-64. This gives an idea of the wages (also due to absence of organised trade Unions)and of raw material prices available to the industrial sector. Price inflation especially in the case of food in relation to income elasticity for its demand could not aggravate the situation i.e. by demanding a higher wage or due to a rise in wages in agriculture sector. Food aid has been additionally instrumental in stabilising prices for food. In any other case the equilibrium price (reached by interaction of supply and demand) must have accentuated price inflation leading to a rise in wages and thereby lowering the profit accrual to capitalist sector. The development efforts which generated additional income did not cause a proportionate rise in

prices due to control measures. In absolute terms, agriculture in a developing economy has a strong forward linkage effect in the early stage of industrialisation, to begin with the processing industries. Besides, this sector has also provided an expanded market for industrial goods like textiles, footwear, sugar, fertilizer etc. But on the whole industrial impact has not been very profound firstly due to weak backward linkage of agriculture sector and secondly income generated by the industrial sector has hardly an effective feedback to agriculture keeping in view its massive size. It would appear that the non-farm income to labour was not substantial enough to channel a part of income to productive investment in agriculture. The wages just above subsistence level can hardly allow such cash flow from urban to rural sector of the economy. The size of the capitalist sector is also very small which can employ only a small portion of the total labour supply. This problem we would discuss in length in the following chapter.

Finally we would like to point out that agriculture, as well as existing in this relationship to the industrial sector has also played a very vital role by providing the much needed foreign exchange component to give the country an industrial bias. Table 4.8 gives the earnings of the two production sectors to evaluate export-fed industrial imports.

TABLE : 4.8

Foreign Exchange Earnings of Production Sectors and Imports by Industrial Use.

(Rs million)

Year	Agriculture	Manufacturing	Total including all others.	Imports by industrial use			Industrial imports as % of total	Other imports as % of total
				Raw material	Capital goods	Total		
1954-55	1,125	37	1,169	171	463	634	54.2	45.8
1959-60	1,315	526	2,160	314	1,036	1,350	62.5	37.5
1964-65	1,507	964	3,025	1,531	2,628	4,159	137.0[a]	43.0[a]

a. The excess of imports over exports earning was financed other than own sources as well. Therefore the two figures do not reconcile.

Source: Pakistan Economic Survey 1965-66, op.cit. P.32 and 78 and Final Evaluation of Second Five-Year Plan P.166 and 78, Statistical Year Book 1964, op.cit. PP.194-95.

Table 4.8 gives explicitly the value of imports by industrial use as against the earnings of the two production sectors. It is clear the extent to which the agriculture sector has been instrumental in providing a foreign exchange component to the capitalist sector. The manufacturing sector despite annual compound growth rate of 10 per cent as against 3.5 in agriculture, has yet to develop an important export base constituted of manufactured goods.

Industrial Impact on Agriculture:

The industrial impact on agriculture is not very pronounced partly due to weak backward linkage effect of the agriculture sector (as noted above) and partly due to the stage of industrialisation which has been established and its wider impact on the other sectors of the economy has yet to be observed. However, despite these limitations of the industrial sector, normally the case in a developing economy, it has provided certain inputs to agricultural sector such as chemical fertilizers and insecticides. In 1964-65 the total production of fertilizers stood at 280,000 tons: while that of D.D.T. was beginning to be significant. We have already discussed the income effect which is quite weak keeping in view the low wages of the labour drawn from the subsistence sector and depressed prices of the raw materials. The supply position of agriculture in response to prices are given

below:

Year	Prices (Rs per maund)		Acreage (acreage 000)	
	Jute	Cotton	Jute	Cotton
1954-55	22	78	1,243	3,194
1959-60	33	77	1,375	3,370
1963-64	34	76	1,700	3,672

(Jute Raw Bottom Navayangenj, cotton 7 F Punjab R.C. Karachi, Statistical Year Book 1964, P.337)

The prices quoted for jute and cotton are of one single variety and therefore are not very representative but still they indicate the trend in prices and acreage. The jute price in a decade jumped from Rs 22 to Rs 33 per maund but since then there has been no substantial increase in prices. The prices for cotton during a decade and a half have been quite stable. Therefore, the response to supply position so far as the increase in acreage is concerned, can not be attributed to prices alone. A preference for liquid money (even if the price of product is low) may be a reason for horizontal expansion. Let us view the industrial sector from another angle i.e. its remarkable achievement in the production of consumer goods and its sustained flow to urban as well as rural areas. This sector has made the country self sufficient in a number of consumer goods besides manufacturing intermediate products and investment goods.

The growth[1] rates have been of the order of 9.2, 13.7 and 10 per cent respectively (1960-64).

The terms of Trade:

The terms of trade of the two production sectors can finally be discussed in the light of investigations and findings of S.R.Lewis and S.Mushtaq Hussain.[2] "The terms of trade between the agriculture and industrial sectors in developing countries have received considerable attention in the general literature of economic development. The terms of trade are important determinants of the distribution of income between the two sectors, as well as the capacity for saving (particularly in manufacturing sector) and incentives to produce and sell (particularly in agricultural sector)". In Pakistan the terms of trade of the agricultural sector are alleged to have been depressed to benefit the growth of industrial sector. "Considerable opposition to increased taxation of the agricultural sector has been based on the assertion that the sector is already taxed". The principal results of their investigations are given in the Table 4.9 below:

1. Lewis S.R., Hussain, S.M. "Relative Price changes and Industrialisation in Pakistan: 1951-1964". PP.408-425. Pakistan Development Review Institute of Dev.Economics Vol.VI, Autumn 1966, No.3, Karachi 1966.

2. Ibid, P.408.

TABLE : 4.9

Domestic Terms of Trade for East and West Pakistan
(Three-year moving averages : 1951-52 - 1963-64).

Period	WEST PAKISTAN		EAST PAKISTAN	
	Manufacturing Sector	Agriculture Sector	Manufacturing Sector	Agriculture Sector
1951-54	108.62	97.39	126.86	77.09
1952-55	111.22	91.14	138.55	63.32
1953-56	116.42	87.36	144.81	62.83
1954-57	112.00	91.41	128.54	78.37
1955-58	107.77	96.03	108.67	90.11
1956-59	104.52	98.76	97.28	97.19
1957-60	102.60	99.43	99.65	94.93
1958-61	98.05	103.13	101.67	100.65
1959-62	95.32	106.39	105.53	102.14
1960-63	94.75	108.28	106.21	103.01
1961-64	96.06	107.84	104.36	100.46

Source:
Pakistan Development Review Volume VI, No.3, 1966. P.412

Notes:
1. For the manufacturing sector's terms of trade:
The weight for manufacturing prices are the values added in each industry in 1959/60 and the weights for agricultural prices are estimated purchases of agricultural goods by the non-agricultural sector in 1959/60.

2. For the Agricultural Sector's terms of trade:
The weights for the agricultural prices are the gross output of each commodity in 1959/60 and the weight for manufactured goods are estimated purchases of manufacturers by the agricultural sector in 1959/60.

Source: Lewis and Hussain, op.cit. Table 1. Page 412.

On the basis of the Table 4.9, in West Pakistan, the terms of trade were in favour of manufacturing sector up to 1960 but later declined in favour of the agricultural sector. In case of East Pakistan despite a relative improvement in terms of trade for agricultural sector, it still remained in favour of manufacturing. However, it may be noted that up to the mid nineteen-fifties agriculture faced very adverse terms of trade which ultimately improved from the later part of the fifties and onward. Lewis and Hussain attribute these adverse terms of trade in the nineteen-fifties for agriculture to three main reasons, (a) a fall in world prices of exports, (b) an over-valued currency, (c) a cessation of substantial imports of manufactures. Later the improvement in terms of trade for the agricultural sector according to Falcon and Gotsch was due to improved incentives provided to farmers such as the removal of foodgrain price controls, decreases in export duties coupled with rising prices of agricultural goods and constant absolute prices of manufactured goods.

This hypothesis may however be viewed with some scepticism. Firstly, incentives cannot be shown to be so marked as to bring about the desired change in terms of trade for agriculture. Secondly, the marketable surplus has been continuously small irrespective of prices while the supply in relation to demand has been metigated by food imports under PL 480

which have served as a cushion to likely erratic price behaviour we may call this a price stabilizing factor. Similarly a constant absolute prices of manufacturing goods may well be explained by relative supply growth i.e. the position of supply in early fifties and later fifties. So the improvement in terms of trade in agriculture can not entirely be attributed to incentives alone. We may, however, agree with Lewis and Hussain that "A part of agricultural growth may have been a short-run positive response to greatly improved incentives". The problems of industrial growth have to be considered in a wider perspective keeping in view the complexities of future effective demand, capital intensities, external economies,[1] choice of technique and ultimately attempts to remove the disequilibrium at factor level.

H.B. Chenery[2], while explaining the existence of structural disequilibrium in most of the developing economies, says that industrialisation would largely depend, firstly on factor proportions, secondly the availability of foreign exchange, and lastly the rate of growth.

1. As Dr.Haq stresses the more attention should be paid to projects which yield 'genuine' external economies.

2. The 'Role of Industrialisation in Development Programme' H.B.Chenery, P.459 Ed. 'The Ecos. of Underdevelopment' Oxford University Press, 1963, by Agarwala and Singh

In the case of Pakistan there is a great variation in factor proportions such as unlimited supply of labour. The redundant labour from agriculture can be withdrawn but despite the desirability and scope of industrialisation on account of this natural endowment, there are other limiting factors like the paucity of investment fund, technology and vocational training of labour.

The other limiting factor to industrial growth has been the non-availability of foreign exchange primarily due to an excess of imports over exports - for very obvious reasons such as (a) the composition of exports, (consisting of primary products for which the foreign elasticity of demand is unstable), (b) recurring food shortages and (c) development imports. Keeping in view the investment atmosphere in Pakistan a much larger expansion was possible in the industrial sector but it was restricted by the non-availability of the foreign exchange component. Dr.Haq is of the opinion that "75 to 80 per cent of industrialists retained income could be ploughed back if they could get complementary inputs like foreign exchange."[1] So for this complementary input Pakistan depends largely on aid and on trade which is relatively a poor sector.

1. Dr. M. Haq, "Strategy of Economic Planning" op.cit. P.23

The attainment of a higher growth rate is a slow process in any developing country especially after the initial breakthrough. Industrialisation for a sustained and high growth rate would essentially require a level of investment coupled with complementary inputs such as foreign exchange in a much higher proportion than would be needed in an earlier stage of industrialisation. However, with an increase in per capita income, the consumption of manufactured goods would also increase more or less in the same proportion. The income elasticity of demand for manufactured goods is at present low in Pakistan. Therefore, in view of the limited increase in national income per capita, the industrial sector can not expand beyond the limit of domestic effective demand. We are not considering the foreign elasticity of demand because in a developing economy industrialisation is mostly meant for import substitution and self sufficiency at home. We cannot be very optimistic about an expansion in the export base comprising manufactured goods because of the near saturation point reached in processing industry while future expansion in large scale industries (heavy complex) would largely be imports substituting in nature - for instance iron and steel, electrical goods, spare parts machinery and tools etc.

So an effective demand for manufactured goods would not only require a higher income per capita but also an expansion in massive sectors such as agriculture. The domestic level of

consumption for manufactured goods would increase substantially if the rural sector of the economy were responsive, depending of course on income elasticity. Therefore, what is needed is at least a balanced growth of the two production sectors. It will be observed that an increase in agricultural growth rate is necessary to wipe out the deficit in food production leading to a net saving of foreign exchange to finance development imports. In the agriculture sector with an increase in marginal productivity increased income - saving and investment would also mean that a part of the incremental income would be spent on manufactured goods. The supply growth of agriculture is also necessary to stabilise the prices of factor inputs to industrial sector.

Moreover, a most important aspect in the case for agricultural development comes from the possibilities of higher growth rates in other sectors resulting from development in this sector. For example, higher saving and investment in agriculture would give rise to higher income and proportionately a part of the saving may be mobilised for use in other sectors of development. Effective demand for an expansion in the industrial sector must come from the rural sector. A prosperous agricultural sector would also strengthen its backward linkage effect and would therefore result in a demand for increased agricultural inputs in the long run. The pattern of development in agriculture must also be

related to the fact that increased rate of savings and investment in agricultural sector may be impressive in total but is in fact broken down to small actual units. The smallness of these absolute quantities, arising from the position outlined in Chapters I and II, has a marked qualitative effect on nature of demands made by agricultural sector upon the industrial sector.

CHAPTER V

The Problems of Labour Redundancy in Agricultural Sector.

Economic policies in a developed country, or economic planning in an underdeveloped country utilising the sum total of productive sources, aim at ceteris paribus achieving full employment.

Keynes did not recognise open or disguised unemployment in underdeveloped countries on the basis of their possessing ample investment opportunities, whereas the post Keynesian economists (A.Lewis, Nurkse, Rosetein Rodan) are of the opinion that open or disguised unemployment does exist in underdeveloped countries and the remedy is not the same as would be applicable in the case of a developed economy.[1] The conditions equal to or short of full employment depend on a set of variables distinctly different between developed and underdeveloped economies. For example production or technical coefficients are fixed in a highly industrialised country and therefore the problem of unemployment is cyclical in nature in contrast to the

1. J.M. Keynes was of the opinion that cyclical unemployment which occurs in a highly industrialised society can be remedied by resorting to deficit financing and thus creating effective demand.

underdeveloped countries where these coefficients vary and unemployment is not cyclical. Another explanation of disguised unemployment or underemployment is found in the concept of structural disequilibrium at factor level as examined by P.C. Kindleberger and Despres.[1]

Vera Lutz by summing up the arguments of post-war economists[2] has interpreted the concept in the following words, "that low availability of capital (and other resources) in relation to population in certain circumstances, make it impossible for a country to achieve full employment at any positive wage rate - the circumstances are; i) the limited availability of the proportion in which the various factors can be used to produce individual commodities or that is to say the technical coefficient of production; ii) structure of domestic demand which has a marked slant[3] towards capital intensive products and; iii) insufficient opportunities for exporting labour-intensive products in exchange for imports of capital intensive ones".

1. The concept used by Kindleberger and Despres is as follows: Disequilibrium at factor level may arise either because a single factor receives returns in different uses or because the price relationship among factors are out of line with factor availabilities.

2. Vera Lutz: Italy a study in Economic Development, Oxford University Press, London 1962. P.13-14.

3. This slant can however vary keeping in view the state of economic development. (Ibid).

In this chapter we would like to test these hypotheses in Pakistan conditions and would discuss at length the various types of unemployment especially the problems of labour redundancy in the agricultural sector. In this connection we would take into account the growth rates in agricultural sector and test empirically the growth rate relationship (production sectors only) with employment trends and the likely behavioural pattern on the basis of projected growth rates. We would also examine the factors limiting employment and the absorptive capacity of various sectors in relation to agricultural sector.

Estimate of Underemployment:

There are various types of unemployment but we would like to discuss only those which are relevant to a study of the rural sector in underdeveloped economies.

Pakistan due to a high population growth rate[1] presents a case of open as well as disguised unemployment. There are social and institutional causes and economic causes of disguised unemployment. As A.K.Sen puts it, the social causes are, for example, sharing of total working hours to share in total output whereas the economic causes are; i) disequilibrium in factor proportions, ii) limited opportunity for technical

1. According to the 1951 Census it was 1.6 per cent per annum rising to 2.4 per cent in 1961 and 2.6 per cent estimated in 1965.

substitution; iii) market imperfection both for factors of production and output in agricultural sector.[1]

We would make an attempt to measure unemployment and underemployment by two alternate methods; 1) Land-labour ratio; 2) Investment criterion based on capital-labour ratio.

Table 6.1 measures the labour redundancy in agricultural sector on the basis of the land criterion with a fixed parameter of land requirement per worker estimated at 6 acres in west and 4 acres in East Pakistan,[2] with working hours aggregating to 2,500 hours per annum.

1. A.K. Sen "Choice of Technique" Basil and Blackwell, Third Edition (London 1968) P.XVIII.

2. See Dr.Haq, "Strategy of Economic Planning" op.cit. P.241

TABLE : 5.1

Labour Redundancy in Subsistence Sector

Year	Total cropped area including sown more than once (million acre)		Total Agricultural labour force (million)		Land required per fully employed Labour		Labour fully employed (million)		Surplus Labour (million)	
	E.Pak.	W.Pak.	E.Pak.	W.Pak.	E.Pak.	W.Pak.	E.Pak.	W.Pak.	E.Pak.	W.Pak.
1950-51	26.2	31.8	10.9	6.2	4	6	6.5	5.3	4.4	0.9
1960-61	27.4	34.5	14.6	7.2	4	6	6.8	5.7	7.8	1.5

Source: C.S.O. Year Book, 1964 PP.17 and 92,93; Economic Survey 1964-65, Statistical Appendix P.4

1. Source: Dr. M. Haq: Strategy of Economic Planning P.241

   Note: The method of calculation is the same as used by Dr.Haq.

The Table 5.1 shows a higher percentage of disguised unemployment in East than in West Pakistan. In East Pakistan, the average annual addition to labour force in the agricultural sector during the decade examined was 0.37 million compared to a little more than 0.01 million acres added to the total cropped area. In West Pakistan, the increase in labour force was offset by the addition of 3 million acres to the total cropped area. The disequilibrium at factor level is due to a comparatively larger cropped area in West than in East Pakistan. (The regional redundancy of labour could, however, be wiped out by inter-wing migration of labour). The size of underemployment in East Pakistan also signifies a low marginal productivity of labour compared with West Pakistan.

The position, as it emerges from this empirical study, shows a fair percentage of labour as redundant whereas a technical change based on less labour-intensive techniques might render more labour as surplus.

Our estimate of disguised unemployment in East Pakistan over a decade aggregates to more than 50 per cent in 1960-61 as against 33 per cent estimated by Dr.Haq[1] for the year 1949-50.

1. Dr.Haq, op.cit. P.241

In West Pakistan, only 20 per cent labour is estimated as surplus. In India, apart from seasonal unemployment, 16 per cent of agricultural wage labourers have been estimated as unemployed but this analysis did not include disguised unemployment[1].

The method used in measuring the labour surplus however suffers from certain inadequacies, as pointed out by Dr.Nurul Islam, in that while estimating the labour surplus, seasonal variation in employment has not been taken into account and secondly a fixed labour input coefficient irrespective of the quality of land has been assumed.[2] Suitable correction requires a revision of the parameter that we have assumed in the case of land both in East and West Pakistan, so by giving a reasonable allowance to seasonal variation in employment, the percentage of surplus labour in agricultural sector would be lower than what we have estimated by using the method of estimation from Dr.Haq. The above estimate (Table 5.1) will also be a little exaggerated if we do not include the employment of agricultural labour force for purposes other than cultivation of land. A single criterion -

1. A.K. Sen, "Choice of Techniques" op.cit. P.6 reference his footnote "Agricultural Labour, Essential Statistics, All India Agricultural Labour Enquiry, Government of India, New Delhi 1954, P.14

2. Dr. N. Islam: Concept and Measurement of Unemployment and Underemployment in developing Economies", 'International Labour Review' March 1964, P.240.

land alone would not justify the total labour absorptive capacity of agricultural sector. There are certain occupational engagements such as basket and fish net making, quarrying, orchard or herd keeping, which take up the labour time of the cultivators during slack seasons. On the other hand the total unemployment (including partial) is estimated as in Table 5.2.

TABLE : 5.2

Labour Force and Employment. (million-man years)

Year	Total Labour Force	Agriculture	Non-Agriculture	Equivalent partially unemployed	Percentage unemployed to total civilian labour force.
1	2	3	4	5	6
1950 - 51	27.30	16.25	5.45	5.60	20.5
1954 - 55	30.10	16.90	6.65	6.55	21.8
1960 - 61	33.70	17.85	8.35	7.55	22.4
1964 - 65	37.25	19.30	10.40	7.55	20.3
1969 - 70	41.45	21.80	13.40	6.25	15.1

Source: 'Third Five-Year Plan' op.cit. P.155

The Table 5.2. shows disguised unemployment standing at 22.4 per cent for the country as a whole. A regional breakdown is not available but a higher level of disguised unemployment may be assumed, on the basis of data earlier examined, in the case of East Pakistan. The total equivalent partial unemployment shown under column 5 for all sectors actually relates to the agricultural sector as the bulk of such unemployment occurs in this Sector. Those looking for job in all other sectors actually fall back upon the subsistence sector. We can, however, make an allowance for unemployment mostly visible (looking for jobs for instance) in other sectors as well which, keeping in mind the criteria of employment used in capitalist sector, is likely to be insignificant.

Capital-Labour Ratio:

So, modifying our earlier estimate of unemployment, we can safely project underemployment in agricultural sector of East Pakistan, if not at 50 per cent, then of the order of 30 to 35 per cent in terms of equivalent partial unemployment. Let us now examine the changes in investment and employment overtime. The Table 5.3 gives such changes together with the incremental capital-labour ratio.

1. 'Third Five-Year Plan' op.cit. P.155.

TABLE : 5.3

Investment and Employment in Agricultural Sector

Period	Investment (Rs million) including irrigation.			Agricultural Employment estimate (million)	Increase in Employment (million)	Incremental Capital - Labour ratio colm 4 ÷ 6	Agricultural Growth Rate
	Public	Private a	Total				
1	2	3	4	5	6	7	8
1950-51-1954-55	1,020	500	1,520	16.90	0.65	2,338	N.A.
1955-56-1959-60	1,350	1,000	2,350	17.85	0.95	2,474	1.3
1960-61-1964-65	4,386	3,400	7,786	19.30	1.45	5,370	3.5
1965-66-1969-70	8,277	4,650	12,927	21.80	2.50	5,200	5.0

a. Private investment are available only for Second and Third Five Year Plans which includes Power also. The estimates for earlier periods 1950-51-1954-55 and 1955-56-1959-60 are tentative estimates based on trend of investment in the Second and Third Plans.

Source: (i) Evaluation of Second Five Year Plan, op.cit. PP.32,183, and 199. (ii) Evaluation of the First year of the Third Plan, Planning Division, Government of Pakistan, P.9 (iii) First Five Year Plan, P.156. (iv) Strategy of Economic Planning, op.cit. P.155

Note: The bench mark figure for agricultural employment was 16.25 million (1950-51).

Table 5.3 indicates a substantial increase in private investment after the First Plan period (1955-60) and with that the incremental capital-labour ratio has proportionately increased. Capital intensity is therefore likely to go up in the subsequent plan periods. So, keeping in view the actual capital-labour ratio, a much higher magnitude of investment will be needed to generate additional employment.

The problem of unemployment, however, remains quite serious in view of the fact that even at the end of the Second Plan the backlog of unemployment was about 20 per cent. A check on population is clearly necessary through family planning, but family planning efforts presumably will not be effective in bringing about a desired change in the population growth rate in the short run for obvious reasons such as religious taboo, resistance to acceptability due to illiteracy and the economic dependence of females in the existing institutional framework. Its success in urban areas is more assured than in rural areas where people are less responsive to family planning schemes.

Under these conditions the backlog of unemployment would not allow of much technical change and hence the technique of production for a long time is destined to remain stagnant unless surplus labour is withdrawn. It would be relevant to add R.S. Eckaus observation "in a country in which capital was scarce and unemployment of considerable magnitude, the attempt to achieve

full employment by use of relatively capital-intensive investment would be more likely to lead to inflation and balance of payments difficulties, short of full employment, than if more labour-intensive techniques were used[1]. It means the country must allow and prefer a more labour-intensive technique as long as the marginal product is non-negative.[2] The remedy lies in creation of labour-intensive capital projects as suggested by Nurkse which we have already discussed in chapter three. It is also quite obvious that sectoral growth rates other than agriculture will not be substantial enough to wipe out the backlog of unemployed in agricultural sector; for instance in the industrial sector, it is not possible due to high capital-output ratio needs. Much higher growth rates are needed in other sectors of the economy for a spill-over of their external economies to the massive sector of agriculture. It is needless to stress that in the development of an economy there is a definite sectoral interdependence as far as external economies are concerned. This is what is advocated by

1. Eskaus, R.S. : The Factor proportions problems in underdeveloped areas "Economics of under-development" op.cit. P.349

2. A.K. Sen : 'Choice of Techniques' op.cit. P.XVIII.

the exponents of the theory of balanced growth.[1] Under the present institutional and economic framework a balanced growth is necessary to develop the necessary infrastructure yielding external economies and investment in human resources to elevate the level of education and technical know-how. Under a planned growth model a balanced growth is not hard to visualise.

Labour Productivity:

Let us now however, examine the agricultural labour productivity in relation to that part of the G.N.P. originating from the agricultural sector.

1. A.O. Hirschman, however, does not agree with the idea of balanced growth. He is of the opinion that it fails as a theory of development: "development presumably means the process of change of one type of economy into some other more advanced type - but such a process is given up as hopeless by the balanced growth theory which finds it difficult to visualise how the underdevelopment equilibrium can be broken at any one point" (See 'The Strategy of Economic Development' Yale University Press, 1958, PP.1-5). Similarly, Dr.Haq also feels a little uneasy while viewing Pakistans' economic development based more or less on the idea of balanced growth. "Historically growth has never been balanced, there have always been leading and lagging sectors as well as regions" (See 'Strategy of Economic Planning' op.cit. P.37).

TABLE : 5.4

Average Productivity of Labour

Period	G.N.P. at current factor cost (1964-65) Agriculture Rs million.	Total Agricultural Labour force (million)	Agricultural Labour force fully employed (million)	Average Product fully employed labour (Rs)	Average Production per agri-cultural labour (Rs)	Percentage variation 6 over 5
1	2	3	4	5	6	7
Pre Plan (1954-55)	10,845	23.45	16.90	640	462	72
First Plan (1959-60)	16,753	25.30	17.85	940	660	71
Second Plan (1964-65)	21,919	26.85	19.30	1,135	816	72
Third Plan (1969-70)	26,870	28.05	21.80	1,230	950	78

Source: Economic Survey 1965-66, op.cit. P.4 (Statistical Appendix)
Third Five Year Plan, op.cit. P.156

Column 5 = column 2 ÷ column 4 whereas column 6 = column 2 ÷ column 3.

Table 5.4 gives an idea of the average,productivity of agricultural labour in Pakistan. With the relative growth in G.N.P. originating from agriculture, the average productivity shows an upward trend but due to labour redundancy the relative increase in average labour productivity is not very sharp. One would agree with A.K. Sen that "It is not that too much labour is being spent on the production process, but that too many labourers are spending it - disguised unemployment thus normally takes the form of a smaller number of working hours per head per year".[1] He further elucidates his arguments with an example that if three brothers in a family look after a herd of cattle every alternate day then in that case the marginal productivity of labour may be equal to zero, other things being equal. So if a brother goes away the others may be able to do the same work without reducing the output assuming no period of critically high demand for labour. A.K. Sen's arguments hold good in the case of India and Pakistan where population pressure on land is intense and the marginal productivity of labour is low.

Absorptive Capacity of Labour in different Sectors:

Let us now examine the absorptive capacity of labour in different sectors of Pakistan economy to test the hypothesis that for a long time to come the agricultural sector will have to bear the brunt of an unlimited supply.

1. A.K. Sen : "Choice of Techniques" op.cit. PP.4-5.

TABLE : 5.5

Total Employment by Industrial Group

(in millions)

	1951	1955	1965 estimated	1970 estimated
Agriculture	16.25(	16.90(71%)	19.30(65%)	21.8
Manufacturing	1.40	1.80 (8%)	2.60 (10%)	3.4
Trade and Commerce	1.40	1.80	2.40	2.8
Construction	0.20	0.50	0.60	0.7
Transport and communications	0.30	0.50	0.60	0.7
Mining	0.01	0.02	0.04	0.06
Services	1.32	2.02	2.34	2.80
Others	0.93	0.01	1.82	2.94
Total	21.95	23.55	29.70	35.20

Source: Total employment and agricultural employment (Table 5.3). Manufacturing estimates: 'Strategy of Economic Planning' op.cit. P.248.
Employment in sectors e.g., trade, construction, transport etc., for the years 1965 and 1970 have been calculated at constant rate (as in 1955) and the residual has been given as employment in 'others'. An attempt has been made to break down the non-agricultural employment as given in Table 5.3 to show roughly the absorptive capacity of different sectors.

Note: Data on economic classification of employment is not available except for the year 1951, data which is not acceptable to Planning Commission.

From Table 5.5 it would appear that absorptive capacity in all sectors other than agriculture is very low. Despite a structural change in the composition of G.N.P. with the agricultural sector declining from 60 in 1950 to 49 per cent in 1965, it still provided 65 per cent of the total employment as against the manufacturing sector with about 10 per cent. The increase in employment in the manufacturing sector has been quite low in the past - only 1 per cent over a period of five years (in relation to total employment during the same period). The decline in agricultural employment[1] shown in the table is, however, liable to doubt in the absence of actual figures for employment in other sectors. The Third Five Year Plan provides only the breakdown of employment in terms of agriculture and non-agriculture, which is not sufficient to ascertain the actual decline in agricultural employment.

The absorptive capacity of all other sectors is unlikely to improve substantially in view of the fact that, (a) the capital intensity for all other sectors will be relatively high in subsequent plans; (b) the foreign elasticity of demand for our exports (manufacturing) will be low due to international competition; (c) the expansion in industrial capacity will be more import substituting in nature than export bound; (d) expansion in industry would therefore largely depend on effective demand from the rural sector and this is likely to remain low due to low

1. In percentage terms

productivity income and savings, (e) the choice of techniques may be less labour-intensive in future, and finally, (f) the service sector will expand only "pari passu" with the expansion in production sectors, so if the growth rate assumption is wrong in the case of the production sectors, the service sector might also appear sluggish.

TABLE : 5.6

Addition to agriculturally utilized acreage and Employment.

Year	Land utilization (million acres)	Net addition made (million acres)	Additional Employment (million)
1950-51	58.10	-	-
1954-55	61.29	3.19	0.65
1960-61	61.96	0.67	0.95
1964-65	68.70	7.34	1.45

Source: C.S.O. Statistical Year Book 1964, P.92 and Table 5.3.

The total addition to acreage as appears from the table above was approximately 10 million acres over a decade and a half as against additional employment of 3.05 million. The average land-labour ratio works out to roughly 2:1 which is again below the criterion of land requirement per fully employed labour (see P.156).

Bearing in mind the land utilization rate during the last fifteen years, it can be assumed that horizontal expansion in the agricultural sector even in West Pakistan will be a slow process.

Now let us analyse the vertical expansion in agriculture. We have already observed that any technological change would mean a partial replacement of labour; it may be argued therefore that methods of cultivation and techniques will not be more capital-intensive warranting a change in labour proportion, but we can also assume that allowing a higher labour participation rate with choice of technique as constant, would mean a further lowering of the marginal productivity of labour.

The situation is quite enigmatic in view of the fact that some economists such as Haberler suggest improvements in the methods of cultivation and in the skill of farm labour in order to increase the total output.[1] But it is difficult to visualise a technical change without a corresponding reduction in labour proportion or the working hours. The changes as such can be remedial so long as they do not cause replacement of labour; rather, intensive cultivation may need more labour.[2] As suggested by Viner, an addition in labour force is possible by careful

1. G. Haberler: Critical observations on some current notions in the theory of economic development. "Leading issues on Development Economics" op.cit. P.77.

2. As Japanese rice cultivation methods (transplantation) require more labour input.

selection of planting seed, thinning and mulching, pains-taking harvesting (without much loss to grain) gleaning and cleaning of crops and "thus despite fixed technical and economic ingredients, the marginal productivity of labour will be positive it can be done so long as the labour technical coefficients are relatively high".[1]

But remembering the volume of surplus labour in Pakistan (in terms of disguised unemployment) the agricultural sector may not be able to provide as much employment opportunity as projected in the perspective plan. Moreover, as the labour considered as unemployed in all other sectors usually falls-back on the agricultural sector, the size of surplus labour in that sector will be larger than has been anticipated. This is so because rates of urbanisation and industrialisation are low in relation to the population growth rate. Therefore, since marginal product is less than average product, as Nurkse has pointed out, additional labour would contribute less than previously engaged labour[2] 'ceteris paribus', that is to say, in the absence of any major technical change. A numerical example is given below.

1. J. Viner: 'Disguised Unemployment' (Leading issues in Development Economics, op.cit. P.79)

2. Nurkse: 'Excess Population and Capital Construction' (Leading issues in development economics, op.cit. P.74)

Supposing 5 units of labour produce 10 units of product, the average product being 2 units, productivity will go down if 7 units of labour produces 10 or even 12 units of output (the average product now being 1.4 or 1.17). In any case the marginal product would be less than what it was previously.

From this point we can turn to a discussion of the disequilibrium in factor proportions. It will be seen that with successive increases in the agricultural labour force, then a technical change will be relatively difficult. This situation will arise due to unlimited supply of labour in proportion to land and capital. So in a situation like this, according to Nurkse, the surplus labour whose marginal productivity is zero over a limited range would go on sharing in total output in a sort of institutional arrangement.[1]

Creation of more employment opportunities in agricultural sector is also not easy due to certain scarce or fixed factor inputs like capital or land. Therefore 'capital intensive' techniques are not possible and not suited to conditions in Pakistan. However, one would agree with A.K. Sen[2] that "... in so called overpopulated areas scarcity of capital has led to such substitution of capital by labour that the marginal product of labour is not zero; thus the withdrawal of labour will reduce the

1. Nurkse: 'Excess Population and Capital Construction' op.cit. p.74

2. A.K. Sen : "Choice of Techniques' op.cit. P.6

rural output somewhat". We agree with the latter part of the statement that 'withdrawal of labour will reduce the rural output somewhat' only with the understanding that this refers to a reduction in the total volume of production and not to marginal productivity.

In overpopulated countries like India and Pakistan however, capital substitution by labour is possible to a certain extent (not beyond the fixed proportion of capital and labour) and by this means production volume may rise even though productivity may fall. It is the balance between these which is important. We are now in a position to conclude that there is open as well as disguised unemployment in Pakistan - more pronounced in the Eastern than in the Western part. Capital is a scarce factor in relation to supply of labour. Technical change leading to replacement of labour is not feasible. The surplus labour therefore requires to be withdrawn but where to and in what way ? In the following section we will consider various ways of the answers which can be given to this question.

To begin with, as a remedial measure, control of population is necessary to reduce the pressure on land. In this connection, it may be pointed out that some institutional arrangement might work better than family planning which largely depends on voluntary response. For example, the marriageable age may be revised upward by legislation (its efficacy would, however,

depend on administrative controls). In practice legal measures are very rarely effective in dealing with individual elements of social value systems.

Rural industrial cooperatives could be formed and promoted partially by the Government by providing funds (say capital goods only), these to be repaid over a long period, to take care of seasonal unemployment and substantiate low farm income. This would actually be an effort to monetize the rural sector of the economy and create a partial shift from subsistence wage (being wage good) to money wage in the long run. The rural industrial cooperatives could be planned to process only agricultural raw materials with chain store outlets in each Thana area.[1] Agricultural implement workshops could also be established by rural cooperatives. A caution is however needed to see that products of rural industries are marketable and their capital needs do not expand depending on choice of technique necessarily a labour intensive one[2].

Intensive methods of cultivation could be adopted to absorb more labour, this being possible due to enlarged future agricultural inputs, which would create additional employment so long as what is involved is 'landesque capital' and not 'labouresque

1. Examples: weaving of 'lungi' and Saris on 'khaddi' in East Pakistan, jute carpet, rattan canefurniture, coire matting, ropes, fish canning etc. In West Pakistan industrial cooperatives may produce woollen carpets, cotton cloth, packed fruits and juice etc.

2. As Dhar and Lydall in case of India have come to the conclusion that small factories use more capital and more labour per unit of output than large factories (cf. Hanson, A.H. The Process of Planning, Oxford University Press, 1966 P.510).

capital'.[1] This will be in addition to the possibility of mobilizing redundant labour for employment in 'capital projects' as discussed earlier in Chapter Three.

The Public Works Programme could be expanded and designed to reduce unemployment and underemployment in rural areas. In Pakistan, the Works Programme[2] was launched in 1962-63 and at the end of 1964-65 the following list was made of problems encountered during its implementation; (i) shortage of skilled labour; (ii) lack of surveys and feasibility studies; (iii) delay in time schedule; (iv) the problem of maintenance of completed projects; (v) misuse of funds; and (vi) poor communications.

1. Terms borrowed from A.K. Sen (Choice of Techniques, op.cit. P.82).

2. The main objectives being: (a) to provide larger employment by creating work opportunities in the rural areas on local projects not requiring large capital investment; (b) to create an effective nucleus for planning and development at the local level and to associate an expanding segment of the population in the development effort; (c) to create infrastructure such as roads, bridges, irrigation channels and the like in rural areas; and (d) to raise additional financial and manpower resources for the implementation of local projects through taxation or voluntary labour. (See Final Evaluation of Second Five Year Plan, op.cit. P.129).

As Arthur Lewis has pointed out, despite the presence of an unlimited supply of labour in an overpopulated country skilled labour is always in short supply.[1] The shortage of skilled labour is quite phenomenal in a country of unlimited supply of labour and its opportunity cost is also high, a fact which Lewis regards as a temporary bottleneck or, in his words, "Marshall should have considered it a quasi-bottleneck".[2] This situation will persist so long as scarcity of capital does not allow more training facilities. For any works programme skilled labour would always be in short supplies because at the prevalent wage then labour as such would remain immobile. Secondly the opportunity cost of skilled labour being higher elsewhere the skilled labourer would not feel attracted to work on a small irrigation project where the amenities of life are also inadequate and the real wage is less than where he is already employed and or can keep himself employed. The idea of employing skilled labour for the execution of works programmes in a rural area is actually self defeating in the sense that such projects and schemes would generate additional employment for those unemployed or underemployed at a wage a little higher than the subsistence sector for capital

1. A. Lewis : 'Economic Development with unlimited supplies of labour' seen in 'Economics of Underdevelopment' (etd) op.cit. P.406.

2. Ibid.

formation at a lower cost. The project should be so designed as to employ a large volume of unskilled labour for instance in the building of dams or embankments, excavation, earth filling, road building etc. In case of skilled labour factor and capital intensity will also be high and this must be very sparingly used. The Works Programme should therefore distinctly differ in nature from that, for instance, of the usual projects undertaken under the Irrigation Sub-sector and should mainly aim at employing unskilled labour for capital formation for reducing the pressure on land.

As regards problem (ii) on page 177 the supply of survey and feasibility studies would mean a requirement for technical staff and an organisation leading to an increase in the overhead cost. Moreover, under the present institutional arrangements such measures (despite being useful) are not possible unless a nucleus of technical staff is created for the purpose. Therefore, the only way out remains, is to create works requiring a minimum of experts and which could be executed quickly and effectively. Point (iii), the maintenance of completed projects could be got over by passing the responsibility to local administration at which level the points made in the last paragraph also apply. As regards poor communications, it may be added that Works Programme should primarily go for building the necessary basic physical infrastructure first and only then projects or schemes the progress of which would partly depend on better communications.

To make a works Programme effective, it is necessary to lay down certain conditions and priorities. Each programme should be based on certain critical criteria, such as maximum yielding of external economies while annual programmes for different areas may be framed according to particular needs and prevailing conditions (with regard to factor inputs), and programmes could differ in nature from area to area. A quantitative evaluation would, however, reveal the income generation effect through the works programmes and the actual increase in the level of employment. Keeping in view the investment criterion, used in the Second Five Year Plan the total additional employment thus created would come to roughly 0.12 million.[1] This estimate is however quite tentative. A more realistic assumption would be based on a lower capital intensity than the one for the agricultural sector. Moreover, since regional prices for factor inputs differ, we can get a relatively higher level of employment in some areas than this conservative estimate shows. In the works programme we will have to presume a higher proportion of labour input than other factor proportions, and with the wage rate being proportionately low the capital-labour ratio would be still lower. Therefore, we can assume that the works programme was instrumental in creating employment to the extent perhaps of 0.2 to 0.25 million during the

1. Total investment being Rs 650 million for the period 1962/63 to 1964/65 and the capital intensity Rs 5,370 (during the Second Plan Period for agricultural sector vide Table 6.2).

Second Plan period. It is however, difficult to carry out any empirical study to determine the size of the leakages observed by the Planning Commission, such as the misuse of fund, uneconomic location of projects and bad materials used.

CHAPTER VI

'Strategy of Agricultural Development'

In an underdeveloped country, given a policy of economic development and planning, one is dismayed to find a massive sector such as agriculture, having a slow growth rate (being traditional in nature and where a breakthrough is a real task), still dominating the economic scene. Due to the sheer size of this sector, the agricultural growth rate however low is positively correlated with the overall growth rate. In other words, a sustained and higher growth rate in any sector of the economy, due to its limited size, does not influence appreciably the overall growth rate. Therefore, faced with such a situation an agricultural transformation is needed to make the economy viable and self sustained as well as to prepare the ground for 'take off'.

It is difficult to copy the pattern or path of growth of the advanced nations as the situations differ distinctly when we look back and note differences in factor proportions, labour productivity, higher rate of saving and investment via trade sector or colonial rule, demographic pattern etc. Simon Kuznets puts his argument in these words.[1] "Both the absolute and relative economic position, as well as the

general cast of the immediately antecedent history, of the now developed countries in their pre-industrial phase were cardinally different from the economic position and the immediate historical heritage of the underdeveloped countries of today. It is, therefore, far from safe to extrapolate economic or demographic aspects from the earlier records for the developed countries to current and prospective levels for the underdeveloped".[1]

In today's world, development of an underdeveloped economy is a complex problem which differs widely between countries because of the existence of various types of slack factors and the variety of development underway - some evolutionary in character and some through planned efforts.

However, the economic prosperity and advancement of the developed countries in the majority of cases is attributable to the trade sector or foreign capital investment in the initial stage of development. To the underdeveloped economies of today such trade gains cannot quickly be made. As regards, foreign private investment there is now a set of economic and non-economic conditions which have to be satisfied. These not only include natural endowments but also the variation in profit margin and foreign demand as between sectors and sub-sectors of the economy.

1. Simon Kuznets: 'The pre industrial Phase in Advanced Countries' P.151 Agarwalaand S.P.Singh (Ed), "The Economics of Underdevelopment", Oxford University Press, New York, 1963.

Thus a steel production project may be less attractive to foreign private investment than may be part of tertiary industry. Foreign investment is not necessarily concerned with national investment needs and in any case must take note of socio-political conditions which may not be condusive to such investment. Therefore, to a considerable extent 'trade' has been replaced by 'aid' for underdeveloped economies, or private foreign investment by inter-state capital movements without which a reasonable growth rate on capitalistic pattern is not possible. Development through aid is extraneous and painful process, but dependence on aid is likely to continue so long as the vicious circle of poverty is not broken, this poverty largely attributable to the dominance and the characteristics of the traditional agricultural sector.

In this concluding chapter will be discussed three main points, firstly, the problem of transforming the agricultural sector and its self sustained growth, secondly, the response of the agricultural sector to prices and techniques and thirdly, the attainment of general prosperity via the agricultural sector. In context to the third point, paying special attention to the possibility of 'single factor' development approach will be examined.

Transformation of Agricultural Sector:

The transformation of agriculture needs basically the elimination of extreme poverty in agricultural sector, but implicit in this lies the complexity of problems such as the social environmental factor, the institutional framework and economic factors.

The social environment factor as observed in the peasant society of Pakistan is the outcome of age long traditions, culture, social behaviour, and convictions. The attitude, 'be satisfied with the minimum' can only be visualised in a stagnant society. Born into such an environment a farmer remains tradition-bound with regard to method of cultivation, techniques and thrift, sceptical about new experiments, investment prospects or a technical change. Consequently as Schultz[1] points out : "the state of arts and the state of preference and motives for holding and acquiring sources of income remain constant". He further elaborates his views by stating that, "yet it is possible that traditional agriculture has certain strong built-in-resistors to any changes in the existing state of arts".[2] Similarly there are a set of institutional arrangements under which farmers live as for example the pattern of land ownership,[3] and land tenure.

1. T.W. Schultz: 'Transforming Traditional Agriculture' Yale University Press, 1964. P.30.

2. Ibid, P.33

3. According to Census 1951, the position was as under:

	W. Pak.	- E.Pak
	(percentages)	
Land owners :	56.8	76.0
Tenants :	41.7	9.7
Landless :	2.3	14.2

Source: 'Population Growth and Economic Development' I.D.E. Karachi 1960, P.204.

Parts of the socio-economic complex which has a land tenure facet[1] are also elements such as family based employment in agriculture[2], joint family system[3], and consumption patterns.[4]

The economic factors are those which we have already discussed such as disequilibrium at factor level and causes that stem from a 'shortage-dominated' economy.[5] Let us now examine the possibility of transforming the agricultural sector with the given conditions as enumerated.

1. The Tenure position was as under:

		Owner farm %	Owner and tenant %	Tenant farm %
West Pakistan :	1 to 2.5 acre	38	23	39
East Pakistan :	0.5 to 1 acre	89	9	2

Source: Pakistan Census of Agriculture 1960, Vol.II, P.56, and Vol.I, P.46.

2. One to two members of the family usually work on farms, the average size of family is 5.

3. Essentially an institutional arrangement to share in work and output which has been discussed in outline in the preceding chapter.

4. As according to an estimate by Raquibuzzaman marketed surplus in East Pakistan varies from 7 to 17 and in West Pakistan from 8 to 27 per cent of the different volumes of production (reference Pakistan Development Review, Vol.VI, IDE, Karachi, 1966).

5. The term as used by V.K.R.V. Rao in "Investment Income and the Multiplier in Underdeveloped Countries" Economics of Underdevelopment, op.cit. P.210.

above. To test this hypothesis we will have to proceed with a set of criteria based on: (i) investment; (ii) technological change; (iii) prices and other incentives; (iv) profitability; (v) transfer of labour; (vi) supply of physical factor; (vii) a change in institutional framework; and socio-psychological attitude.

Investment is intended to maximize the national product of income per capita. There are several criteria of investment such as capital output ratio, social marginal productivity approach or rate of savings and reinvestment.[1] A.E. Kahn the exponent of the S.M.P. criterion of investment is, however, of the view that the capital-turnover (capital-output ratio) criterion is useful where capital is relatively scarce and labour is abundant. In sectoral allocation capital output ratio has proved useful criterion of investment.

Investment in agriculture sector largely depends, strictly from the development point of view, on choice of technique. The production coefficient is highly variable in an agricultural sector such as that of Pakistan. Investment is required to be viewed in relation to other variables like labour. Therefore labour and capital may form a set of combination depending on certain choices of technique. For instance, a more

1. Many evaluation of investment criteria have been made by A.E.Kahn, H.B. Chenery, O. Eckstein, A.O. Hirschman, H. Leibenstein and Nurkse.

labour intensive technique would require less capital than a more capital intensive one (see also p. 176). However, in a populous peasant society like Pakistan capital is replaceable by labour up to the point where the marginal productivity of labour remains positive or up to a point where capital is not replaceable by labour. Both land replacing capital or labour replacing capital may raise productivity but one would agree with A.K. Sen that so far as observation goes:[1] "investment in fertilizers or in irrigation or in pest control, increases yield per acre considerably (without replacing labour), investment in machines like tractor, threshing machines etc. is useful mainly in replacing labour (without raising yield per acre).[2] It is, however, arguable whether a machine replacing labour does not necessarily increase the output per unit of land. The other cooperant factors remaining the same, the yield per acre in all probability must equal or exceed the amount of labour thus replaced. There is in fact no disagreement about capital being a scarce factor and the level of investment being desperately low in the agricultural sector of the under-developed economies. But investment alone can not be the sole basis for a speedy

1. A.K. Sen, op.cit. P.82.

2. A.K. Sen referring to S.R. Sen's paper in the proceedings on the nineth International Conference on Agriculture Economics (London 1956) P.56 where S.R. Sen is of the view that "while mechanisation of farming operations improve considerably the yield per unit of labour, it does not necessarily increase the yield per unit of land.

transformation of agricultural sector. After creating the necessary infrastructure what is needed in Pakistan is to give more attention to other supply factors, so that the absorptive capacity and effectiveness of per unit capital utilization may be increased. The position with regard to supply of factor inputs is far from satisfactory. For example the distribution of fertilizer is not efficient mainly due to organisational inefficiency. The short supply position of fertilizers (at production level) is further aggravated by distributional deficiencies. The distribution of fertilizer is decentralised both in East and West Pakistan, within West Pakistan, the Agricultural Development Corporation effecting sales of fertilizer through the Cooperative Department which in turn organises a Rural Supply Cooperative Corporation for wholesale and Union Cooperative Societies for retail sale of fertilizer. While in East Pakistan the Agricultural Development Corporation appointed the Department of Agriculture as its agent for retail business. This Department constructed 4,000 Union stores and engaged special staff for sale of fertilizer, but it has been reported that Union stores remained closed for most of the time and the cultivators could not buy fertilizer.[1]

1. Ghulam Mohammad: 'Strategic Problems in Agricultural Development in Pakistan', The Pakistan Development Review, IDE. (Karachi 1964) P.228.

This sort of organisational pyramid duplication of sales function can not help in solving the real problem. In place of a bureaucratic organisation there could be quick and efficient distribution through stores run by private enterprise. A fair margin of profit may be allowed to dealers fully or partly subsidised by the Government. This subsidy could even be equal to overhead costs borne in centralised systems in building an organisational pyramid, constructing and maintaining stores or godowns and appointing full time storekeepers and still be more effective, since all the evidence leads to agreement with Ghulam Mohammad that: "Private agents have a personal stake in sales and if the profit margins are sufficiently high all out efforts to sell large quantities of fertilizer may be expected".[1]

Thus with a smooth supply line built in for factor inputs, then investment can play a more effective role. As the supply of factor inputs such as fertilizer depends ultimately on the purchasing power of the farmer, and since this is low in Pakistan, then there exists a need to be redressed by public spending, subsidising or by providing the needed credit for the purpose (see p. 221 et seq).

Technological Change:

Theoretically technological change in a populous peasant society is not possible. The agricultural sector has a

1. Ghulam Mohammad: op.cit. P.228

variable technical coefficient of production and the factor endowment is such that labour is a relatively abundant factor, so that techniques of production are labour intensive.[1]

In Pakistan or India, however, it can be observed that the majority of the cultivators are not resistant to technical change and improvement if this can be shown to have a comparative advantage.

There is illiteracy but not mass ignorance about the resultant profitability of a technical change. Nevertheless the rate of acceptability of any technical change depends on the availability of capital and the capacity to pay for it, or as Lewis puts it "other determinants of the rate of technical change are the quality of entrepreunership and effectiveness of the institutional framework in making the new ideas feasible, acceptable and profitable".[2] The reasons for a constant art form a complex including elements such as are fragmented, holdings which can hardly satisfy the conditions to make technical change feasible - i.e. to meet the cost of such inputs and depreciation, poverty, low production, income, saving and investment and the small size of the marketable surplus. The agricultural sector of the Pakistan economy is largely non-monetized. It is true that

1. G.M. Meier, "Leading issues in Development Economics", op.cit. P.68.

2. A. Lewis: The Theory of Economic Growth, George Allen and Unwin, London, P.177-82.

technology replacing labour is out of the question but certain inputs e.g., improved small tools and implements can easily be utilised for intensive cultivation which would not necessarily replace labour or reduce working hours either. For agricultural transformation such innovations and improvements are necessary. In West Pakistan, there is scope for accepting technical change on a limited scale because of the relatively large size of land holdings, less redundancy of labour and the potential of land reclamation. As discussed earlier in the last chapter, a technical change is feasible at a stage when the size of surplus labour is relatively small. In East Pakistan such change is more difficult because of the dominance of small holdings, lower land availability, and a higher percentage of redundant labour.

The issue of Supply response to prices and techniques:

We need now discuss the issue of supply response to prices and techniques, an issue which has been much debated in the context of underdeveloped countries. At one extreme is the attitude of Boeke[1] who is of the view that the pre-capitalistic eastern economy has limited needs in contrast to the unlimited needs of the capialistic society and hence it is characterised by backward-sloping supply curves of effort and risk taking. '.... anyone expecting western reactions will meet with frequent

1.J.H. Boeke "Economics and Economic Policy of Dual Societies" New York 1953. reference from "Leading Issues in Development Economics", op.cit. P.56.

surprises. When the price of coconut is high, the chances are that less of the commodities will be offered for sale; when wages are raised the manager of the estate risks that less work will be done; if three acres are enough to supply the needs of the household a cultivator will not till six, when rubber prices fall the owner of a grove may decide to tap more intensively, whereas high prices may mean that he leaves a longer or smaller portion of tappable trees untapped'. A similar view has been expressed by Raymond Frost. "There are millions of peasant farmers in Asia and Africa who are happy to make a certain amount of money and no more. They will therefore, grow more crops as prices rise but only up to a point where their desire for money is satisfied. After this point they may even grow less as prices continue to rise".[1] Boeke's argument is based on certain observations in Indonesian peasant society which, however, can not be generalised in context to entire underdeveloped world. His observation may be partially correct in a closed non-monetized and non-market orientated economy. In aggregative terms his theory is not necessarily applicable to the whole underdeveloped populous world. Higgins has criticised Boeke on the following counts that wants are not limited since both marginal propensity to consume and import are high (as observed in Java and Borneo itself). "Far up the great rivers of Kalimantau (Borneo), hundreds

1. Raymond Frost: "The Backward Society,"(New York St.Martin Press, 1961). P.74

of miles into the jungle, good rubber prices result in a spate of orders for bicycle, mattresses, watches, fountain pens and the like. Sampans in remotest canals are loaded with Australian tinned milk and American tinned soup".[1] Lewis is also of the same view "the suggestion that economic development is prevented by farmers not having worldly values is largely a myth, since farmers are almost everywhere an acquisition class".[2] This is true because almost all the under-developed countries are now more or less open to the external world. The agriculturists are conscious at least of gross income and expenditure and, generally, seek to improve their standard of living. In Pakistan the situation is one of an open economy. The urban growth rate and industrialisation have already influenced the consumption patterns and needs of the people and these have lead to perceptible increased efforts and enterprise without which we would not be able to observe that there is hardly a village in the remotest part of the country without a transistor-radio or a battery torch. The limitations to supply response are, therefore, economic rather than social or behaviouristic factors.

1. Benjamin Higgins "The Dualistic Theory of Underdeveloped Areas" Economic Development and cultural change, 'Leading Issues in Development Economis, op.cit. P.59.

2. A. Lewis: 'Theory of Economic Growth' George Allen and Unwin, London, P.177-182.

A more convincing analysis than that of Boeke and Frost has come from V.K.R.V. Rao in his study of Investment Income and Multiplier in underdeveloped countries: '.... variations in agricultural output in a country like India, where irrigation accounts for less than 20 per cent of the cultivated area, are largely dominated by the vagaries of nature, and response to price increase is less effective in terms of aggregate output than in those of individual crops': "Moreover the belief is widely held, and not without justification, that the supply curve of agricultural industry as a whole is not only inelastic but also tends to be backward rising, so that an increase in the value of output need not necessarily lead to subsequent increase in the volume of output".[1] Rao in addition observes the disincentive factors such as price control and Governmental procurement besides the uncertainty of continuing high prices and the inelasticity in the supply curves of the factors of production.

Let us now discuss the problem of supply response in the context of needs and prices. As regards needs, it is an observable fact that they are not severely limited even in a peasant society and they are not necessarily restrained by environmental factors but rather by economic factors and institutional framework.

1. V.K.R.V. Rao "The Economics of Underdevelopment" edited by Agarwala and S.P. Singh, Oxford University Press, New York 1963, P.208-9.

One may agree with Rao's contention that in the short run the supply response may not be in proportion to price increase. This may be due to certain forces such as vagaries of nature at present beyond control or it may be due to the fact that income accruing to the primary sector is not sufficient to allow productive investment after incremental income is spent on increased basic consumption e.g. on food and housing. As a phenomenon it may be significant in the short run but in the long run with a higher level of income through planned effort the response of supply to prices could be more pronounced. The whole problem is that of breaking through the vicious circle of abysmal poverty which results in very little incremental income being available for productive investment.

It is, however, also an admitted fact that farmers do respond to price increases. R.M. Stern studied the supply response of Pakistan and Indian jute cultivators both before and after the World War II and reached the conclusion that the "price system seems to work fairly positively in the short and longer runs even in underdeveloped countries, where peasant producers rely on rather primitive methods of production".[1]

1. R.M. Stern: "The Pirce Responsiveness of Primary Producers" Review of Economies and Statistics Vol. XLIV, No.2, May 1962, P.203.

Ralph Clark also has observed that it is rather jute and rice prices which influence the cultivators crop choice.[1] A similar study made by Roy Krishna and W.P. Falcon concerning price response of American Desi varieties of cotton in Punjab (1914-46) confirmed that farmers were as responsive to prices in producing more cotton as their American counterpart.[2]

Regarding price response to supply Dr.Ziurddin concludes that "... environmental factors in less developed countries are not such as to rule out the possibility of a dynamic supply response in agriculture ... what is required is appropriate policies".[3]

So we may now conclude, that supply response to prices and technical change is always positive if not in aggregative terms at least in the case of individual crops. We are left with a need for income increment to be substantial if there is to be any effect on investment.

Prices and Profitability:

It has already been pointed out that in so far as food prices in Pakistan are concerned, they will equate at a

1. R. Clark, "The Economic Determinants of Jute Production" F.A.O. Monthly Bulletin of Agricultural Economics and Statistics Vol VI, No.9, Sept.1957, P.6 - See also in study by Dr. Ziauddin: "Impact of Development Programme on Agriculture: Issue of Supply Response", Pakistan Economic Journal, Vol. XVII, Dacca, 1967, P.14.

2. Dr. Ziauddin, op.cit.

3. Ibid, Dr. Ziauddin, op.cit.

relatively higher point in absence of food aid and grants, price control mechanism or establishment of procurement prices by the Government.

The main price stabilizing factor has been food imports. Table 6.1 gives the indices of wholesale prices by major groups:

TABLE : 6.1

Indices of Wholesale Prices and Index of Production.

Period	Price Indices				Index of Production	
[illegible]	Rice	Wheat	Jute	Cotton	Food	Fibres
1956-57	104.6	95.3	125.7	98.3	96	102
1957-58	94.3	95.7	101.5	96.7	90	108
1958-59	96.4	95.8	78.0	86.2	88	103
1959-60	100	100	100	100	100	100
1960-61	91.3	114.4	219.8	109.1	107	91
1961-62	95.6	106.1	119.8	100.1	109	119
1962-63	103.0	100.3	103.1	96.7	105	119
1963-64	92.7	110.8	103.5	97.1	118	124
1964-65	96.2	120.7	141.2	114.0	121	112

Source: Economic Survey 1965-66, op.cit. P.9 and 47 of Statistical Appendix.

The causal relationship between prices and supply response can not be established in aggregate term because of the equilibrium prices reached through external sources (aid and grants) which in fact (even in the absence of price control mechanism) would stabilize the food prices at a lower level. The supply response of jute and cotton is bound to be limited due to the institutional framework, for instance the ceiling on cultivation. As regards food, the response can not be appreciably felt because of the limitation of physical inputs such as land and because of low income and investment and the limited scope of technical change and innovations.

A positive supply response is possible only when greater incentives are provided through the price mechanism which as would appear from the Table 6.1 has not been hitherto encouraging. There is an immense possibility of vertical expansion in agriculture in Pakistan if certain incentives and profitability is guaranteed to this sector. Much of the development effort in Pakistan is indebted to more or less stable food prices (due to higher weight of food in total consumption) which have kept the wages down. Price trends are illustrated in figure 4.

Figure 5 provides comparative trends of food and fibres production and their prices. For this purpose, a new set of indices of all food prices has been used together with the indices of production given in Table 6.1.

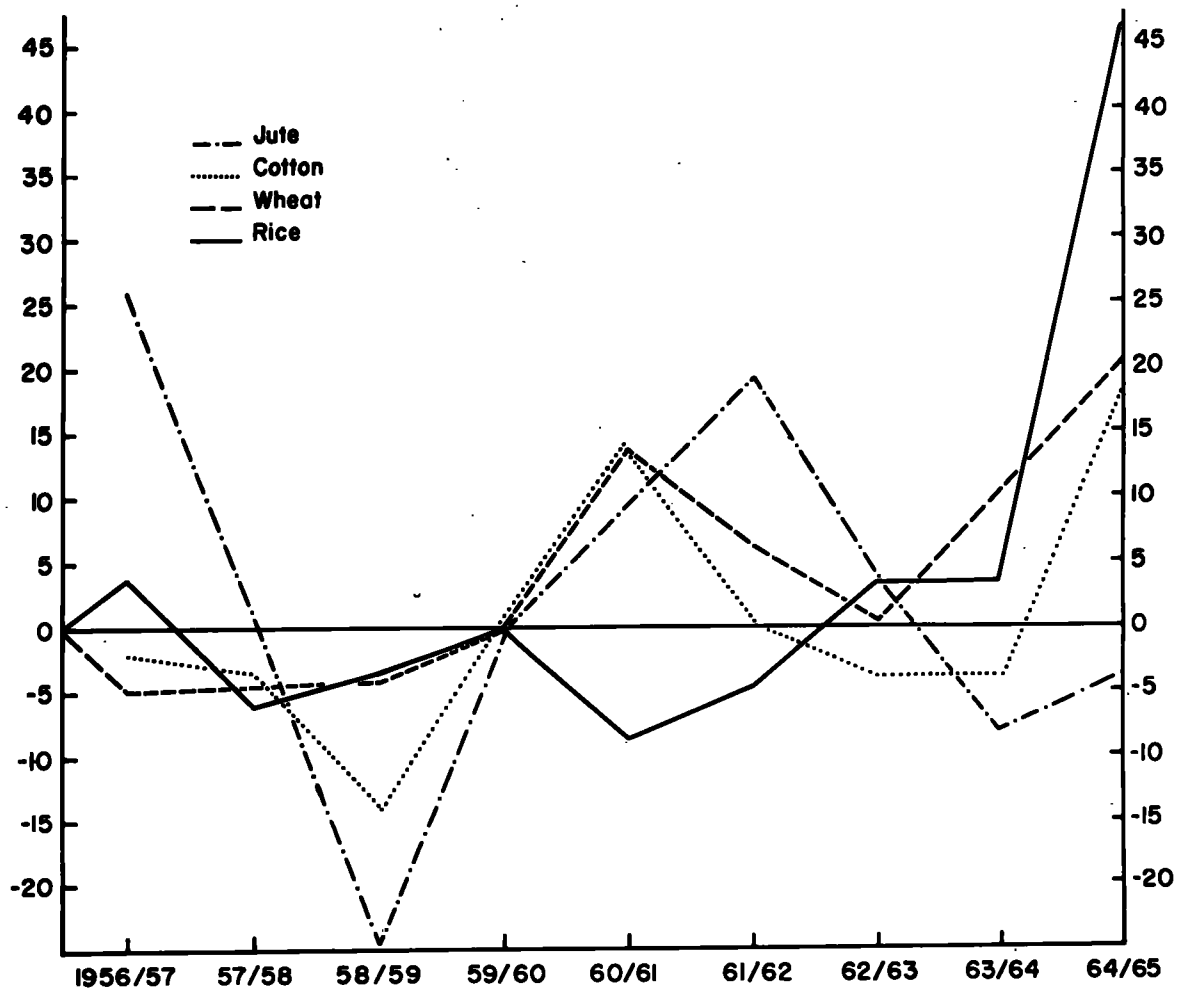

FIG. 4 Indices of Prices of Rice, Wheat, Jute, and Cotton

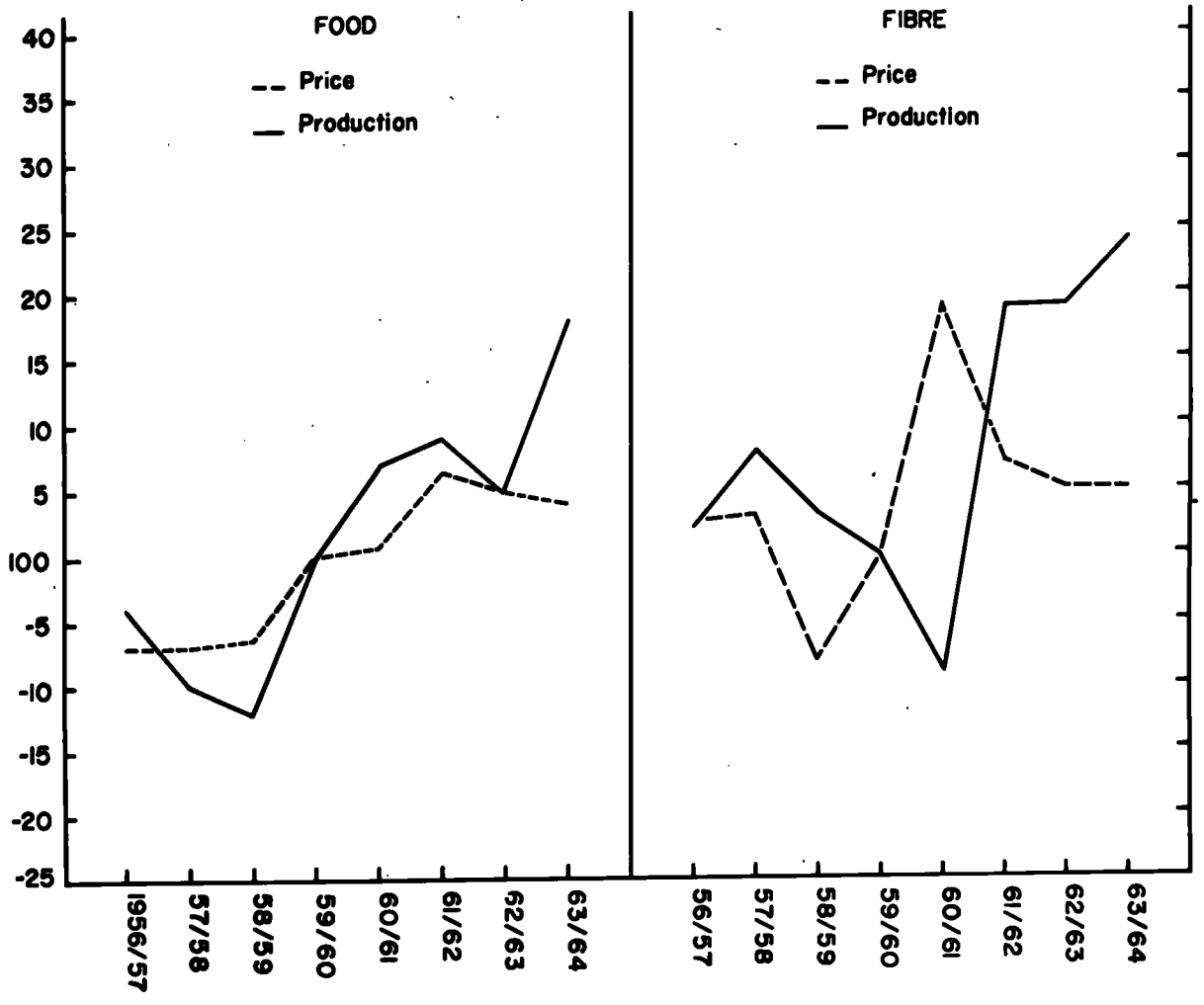

FIG. 5 Indices of Prices and Production of Foodstuffs and Fibres

TABLE : 6.2.

Base 1959-60 = 100.

Period	Price Indices		Indices of Production	
	Food	Raw Material	Food	Fibres
1956-57	93.12	102.62	96.0	102.0
1957-58	92.78	103.19	90	108
1958-59	93.39	92.32	88	103
1959-60	100.00	100.00	100	100
1960-61	100.50	119.15	107	91
1961-62	106.63	107.30	109	119
1962-63	104.92	105.06	105	119
1963-64	104.26	105.32	118	124

Source: Statistical Year Book 1964, C.S.O. Government of Pakistan P.330

The transformation of agricultural sector has always been viewed theoretically as involving many complexities such as: "An increase in supply of products involves techno-economic factors, quality of natural resources, labour supply, size of farm capital, technique of production employed; availability of credit, the supply of needed physical inputs, socio-psychological factors such as pattern of tenure, mental attitude to technical change, profit, willingness to accept risk and prices".[1] Many thoughts have been directed in one way or the other to these very problems and precondition

1. Dr. Ziauddin has summed up the problems as quoted above op.cit. P.2

variables, some of which we need to discuss in order to arrive at conclusions. Schultz is of the view that the "transformation of agriculture is possible by acquiring and learning the effective use of a profitable new set of factors"[1] and that is possible without the conversion of small farms into larger units, the key factor being training and research.

Clark and Haswell laid great stress on the production of labour-intensive crops, the keeping of livestock and the cultivation of fruits to increase farm output and at the same time spreading through time the demand for labour.[2]

The Third Plan of Pakistan does in fact lay emphasis on such methods of increasing productivity and expanding purchasing power in rural areas.[3]

Folke Dovring, like Hirschman, Leibenstein, Higgins, finds the solution of transforming agriculture in the reduction of the size of the agricultural labour force[4] or in reducing the relative role of agriculture in industrial or occupational

1. T.W. Schultz "Transforming Traditional Agriculture" P.

2. Clark and Haswell : 'Economics of Subsistence Activity' referred to in "Modernising Subsistence Agriculture - experimental survey by A.Farouk and S.A. Rahim, Dacca 1967, P.7

3. Third Five Year Plan of Pakistan, P.412.

4. Folke Dovring: "Share of Agriculture in growing Population" from Eicher and Witt (edited), op.cit. P.79.

structure of a country - the direct corollary being the expansion of other industries faster than population growth. Rogescue finds an answer to this problem in developing peasant holdings and cottage industry.[1]

Planners in India and Pakistan and in many other countries, depending on variable factors have more or less sought to build up a necessary infrastructure so as to create external economies which will influence agricultural transformation. The new situation is designed to insulate the traditional economy against the vagaries of nature - i.e. to build in certain resistant forces to enable a major breakthrough without periodic economic retreats. The planners in general have sought to dovetail in agricultural planning all the multiple factors relevant to increasing the output so that final implementation may include programming irrigation projects, land reclamation, extension, fertilizer supply, seeds and mechanisation, marketing and research, storage, insecticide supply, animal husbandry, soil development, model schemes, fisheries, forestry, range management, rural credit, and land reform.[2]

1. Reference from Dandekar's "Economic Theory and Agrarian Economics" P.163 "Agriculture in Economic Development" (etd) Eicher and Witt. Dandekar however does not agree to peasant holdings or ceiling on land since it will be difficult to mobilize labour from Agricultural Sector to non-agricultural sector (op.cit. P.180).

2. This list is taken from the breakdown of financial expenditure as it appears in Final Evaluation of Second Five Year Plan, PP.183-184.

The efficacy of such comprehensive programming envisaging a little bit of everything is doubtful in the sense that the total impact still remains much less than that to be desired. This is partly a consequence due of the size of the sector and partly due to the paucity of investible funds.

The transformation of agriculture requires actual development at the base level and as such development is essentially required to be felt by the peasant class for a breakthrough. But in most of the underdeveloped countries planning and programming starts at apex level by creating administrative units and entailing a lot of overhead cost for a meagre inflow of net benefit to individual cultivators.

Secondly, an investment pattern of allocation of funds thinly over the whole field does not reach the base level of development in sufficient quantity to produce the change which is so needed. It is not necessary to have a balanced growth within the sector, as many of the desiderata are in fact secondary and might follow from concentration upon the critical primary desiderata.

Agricultural planning should necessarily aim at a breakthrough and for that the available funds should be so allocated for one or two sub-sectors, as to bring about a change, for which the best criterion would be the maximization of output.

This physical achievement would in itself lead to the transformation of agricultural sector and much else would follow as private sector activity became attracted. In practice the entire allocable funds from the public sector could be directed to develop one or two physical inputs; in concluding this chapter we will discuss some aspects of single factor development approach.

A Single Factor Development Approach:

In Pakistan an agricultural transformation is necessary to keep a balance between population and production. When we look back to the problems of agricultural transformation we find that in the near future or even in distant future keeping in view the pressure on land, the land labour ratio is likely to more or less remain the same. Radical technical change is not possible keeping in view the size of disguised unemployment and remembering that capital is a scarce factor and that the credit requirement is enormous. The institutional framework may well take a great deal of time to change while the land will remain fragmented. Commercialisation of agriculture is not feasible in the short run due to the limited size of the surplus (food).

After enumerating these negative factors let us now re-examine the remaining possibilities for agricultural transformation, bearing in mind the arguments developed earlier in

this thesis.

Much of the efforts have been directed through planning to provide necessary infrastructure to quicken the pace of agricultural development.

A sizeable investment has been made in irrigation projects, reclamation of land, and flood control, all mostly long term investments with a considerable time lag between investment and actual benefit accrual. While massive investment was being made in long term projects, the short term investment was quite inadequate and clearly failed to bring about an increase in agricultural production, especially in food, proportionate to an increase in population and the result was a growing disequilibrium. From the point of view of strictly short term financing, the investment under the previous two plans and that which is currently in operation can be summarised as given in Table 6.3.

The total long term investment in physical infrastructure up to the Second Five Year Plan comes to about Rs 3,158 million and short term and other investment to Rs 782 million as against the physical achievement in terms of new land brought under cultivation which was about 4 million acres and in terms of improved irrigation another 10.5 million acres. The cost per acre of land brought under cultivation comes to Rs 1,000 per acre and on the basis of average yield per acre, wheat

TABLE:6.3

Public Sector Expenditures. (Rs million)

	Pre Plan.	First Plan.	Second Plan	Third Plan (Projection)
Water Development	630	780	2,530	8,047
Long term 80%	504	624	2,030	6,436
Short term and others 20%	126	156	500	1,611

Source: Strategy of Economic Planning, op.cit. PP.154-156, Final Evaluation of Second Five Year Plan, PP.32, 13 and Evaluation of the First year of the Third Five Year Plan. P.9

Note: Greater allocations were made for multi-purpose projects and irrigation projects including barrages in West Pakistan. Irrigation projects can, however, be treated as short and medium term investment especially in case of East Pakistan. Expenditures on investigations etc. may be treated as miscellaneous, whereas for flood regulation and drainage these are mostly long term and partly short term in nature. Expenditures on drainage reclamation of tubewells and on open canals may be treated as short term. On that basis the short term investment would hardly come to 20 to 25% of the total investment made for water development sub-sector.

equivalent product would come to roughly 1.3 million tons. But the relative share of the land factor being 25 to 30 per cent of the total output would be roughly 0.4 million tons.[1]

Similarly on agriculture, village aid and works programmes, Public Sector expenditures amounted to Rs 3,422 million up to 1964-65. The physical achievement in terms of

1. Calculated on the basis of Schultz Table 3, for Punjab India, Reference 'Transforming Traditional Agriculture', op.cit. P.100. Schultz has however assumed land share 25% and water charge as 2% whereas we have taken both as 30%.

increase in total output was 5 million tons in food and 14 million tons in cash crops (taking average production 1950-51 to 1954-55 to 1964-65).

The production of cash crops had doubled by the end of 1964-65 but keeping in view the 80 per cent acreage under food, 80 per cent of the total investment can be safely assumed to have gone to the food sub-sector making thereby a net addition of 5 million tons. The total investment in the agriculture sector including irrigation comes to Rs 7,422 million in Public Sector as against physical output of 5 million tons or Rs 1,200 per ton of food per annum.[1] So far as the public sector is concerned the short term investment has been quite low. The private investment estimates are not available but tentatively as given earlier (Chapter Four) it is estimated at Rs 4,300 million for the period under review (up to 1964-65).

The criterion of short term investment is always the likely increase or maintenance of the existing production level, a part of income accruing from such investment paid as premium for the use of such capital and a part is either consumed, reinvested or both. However, in relation to the massive size of the agricultural sector, short term productive investment has been quite meagre and here we feel that in most of the

1. Calculated after assuming 20% investment to have gone to cash crop sector.

underdeveloped economies capital is really a scarce factor for short-term investment. Capital is not only needed for further long term investment in the physical infrastructure but capital is also needed for investment in physical inputs like improved seeds, fertilizers, insecticides, small implements etc.

The farmers are not altogether ignorant of the use of physical inputs but the paucity of capital available to them limits such use. So keeping in view the paucity of such capital the short term investment could be most effectively directed to develop a single factor input rather than to direct funds to a number of measures which would be thinly spread. Similarly a 'package programme' in India or Pakistan will not be very effective in the sense that the concept is based on the maximum utilisation of all the physical inputs, while in the context of the real region this ideal becomes quantitatively unattainable. Since some form of selectivity is necessary and since it is not possible to divert long term investment funds to short term projects then a single factor development approach appears logical, for example, use of fertilizer in East Pakistan and of improved seed in West Pakistan.

Before we proceed to discuss the efficacy of such development approach, it may be pointed out that by developing a single factor we do not mean a cessation of all other inputs except the one we have recommended. Actually what is stressed is the maximum use of a single factor input and its development with regard to production, distribution subsidy, credit for the

purpose and acceptability by farmers. The case can be set out as follows:

1. It would appear that even at a constant rate of all other inputs say water, seed and labour, the increased, or more precisely, the optional use of fertilizer would increase the marginal productivity of land thus maximizing the total output.

2. Let the rate of inflow of all other factors be normal, assuming the average flow of such physical inputs as even constant, the intensive use of fertilizers would increase, the output.

3. The Single Factor development approach is based on the idea of profitability which can be manifested to a farmer to invoke in him the deep sense of profit realization.

4. The programme operation needs the popularisation of inputs for greater acceptability and to achieve this end, subsidies and credits would be necessary to ensure the smooth flow of such inputs.

This briefly is one of the effective ways leading to a breakthrough of the vicious circle of poverty by a maximization of output per acre leading to a higher level of capital formation and productive investment.

An actual example can be adduced to show its feasibility. Shell Italia has done a wonderful job in transforming the agricultural sector at 'Borgo' A Mozzano

commune at Bagni-di Lucca in Italy. This was not a package or saturated programme but it was based on showing farmers real profitability. The idea of such transformation was introduced through a technical expert who surveyed the land in that area, did soil testing and recommended new varieties of seed which would maximize the yield per acre. The farmers were resistant to such change because of the element of risk involved in initial experiments but the demonstration of relatively much higher yield per acre attracted others. The farmers around became less resistant to accept the change. Later other factors were introduced such as greater use of fertilizer and pesticides. The result in 10 years was a rise in income from 326,315 to 909,232 constant lire per head. Mechanization was introduced at a later stage and thus the dynamic approach to the problem brought about a radical change such as abandonment of marginal land and reduction of labour by 50%. This was possible more due to intensification than to disintensification.

The stages of development were as under:

(I) Survey.

(II) Introduction of new varieties of crop.

(III) Higher production -leading to marketable surplus, rise in income.

(IV) Higher investment by affording purchase of additional inputs.

(V) Building of infrastructure, for instance accessable roads with indigenous capital.

(VI) Formation of cooperatives for sales and purchase.

(VII) Yet higher income, and a sustained growth rate.[1]

The extension services alone were provided by the Shell Italia Agricultural Studies Centre.

While taking a lesson from Borgo-A-Mozzano, let us now turn to our problems of agricultural transformation. Repeating the same sequence as we have witnessed in the case of Borgo, may not be possible in its entirety due to many factors such as lower land-labour ratio, labour productivity, disguised unemployment, limited scope of existing industrial expansion, a very low income per capita, etc, but certain partial experiments on similar lines are possible under Pakistans' conditions as well.

The soil surveys may be carried out extensively on sample basis and through Union Councils leaflets may be distributed recommending the type of fertilizer and its result.

1. Thanks to British Council who provided me the necessary funds to visit 'Borgo-A-Mozzano' in Lucca Italy, and to study the method of transformation of a similar traditional agricultural economy as that of Pakistan in March 1968. This also enabled me to attend a seminar "Twelfth International Training Stage on the Problems of Economic Development and method of Agricultural Extension from 1st April 1968 but I could only attend the Seminar for 4 days.

Zealous extension workers may be employed say one per 5 union councils to demonstrate the effective use of fertilizers. It is needless to stress the importance of fertilizer as one of the quickest and perhaps the cheapest means of increasing agricultural production.

As regards fertilizer requirement, the estimate of the Agriculture Commission of the Government of Pakistan was as follows:[1]

" ... calculating on the basis of plant food removed by different crops from an acre of land, the cropped area of the country will require a replacement of nearly four million tons of nitrogenous fertilizer alone in terms of amonium sulphate. Assuming that up to 25% of this amount is re turned to the soil in the form of plant and animal residues, animal excreta, silt deposition, biological and chemical fixation, the net requirement for replacement would come to about 3 million tons". It then appears that the target for fertilizer distribution at the end of the Third Five Year Plan is only 484,000 tons, which is less than one-fifth of the total stated requirement. Table 6.4 gives estimates of fertilizer distribution.

1. Report of the Agriculture Commission, Government of Pakistan (Karachi 1960) P.76.

TABLE : 6.4

Estimated Distribution of Fertilizer.

Nutrient (N+P+K)	Supply of Fertilizers (000 tons) E.PAK	W.PAK.	Total	Total acreage million acres		Use of fertilizer Per acre. (In lbs)	
1	2	3	4	5	6	7	8
				E.P.	W.P.	E.P.	W.P
1959-60	13	19	32	25	35	1.1	1.2
1964-65	76	86	162	28	40	6.3	5.0
1969-70*	234	250	487	29	42	18.0	13.5

Source: Third Five Year Plan, P.419 for columns 2, 3, and 4
* Figures for 1969-70 is based on estimated in Third Five Year Plan, PP.297/98 and 307/308 column (5) Statistical Year Book, Government of Pakistan 1964 and Evaluation of Second Five Year Plan.

Full data in respect of field experiments with fertilizers in Pakistan are not available to determine the actual return on account of fertilizer application. Howver, to indicate such returns in concrete empirical term, we may use a standard application rate of balanced fertilizer to be some 150 lbs.[1] per acre as in South

1. S.M. Hassan: 'Chemical Industry' PP.1,035-1,036 of Trade and Industry, Vol X, No 12, Karachi 1966. Hassan has given average use as 150 lbs per acre in South Korea etc.

Korea, Formosa and Thailand. The world standard intake of fertilizer is however estimated at 300 lbs.[1] per acre. The total requirement at a standard intake of 300 lbs[2] will be very nearly 10 million tons, whereas at the standard rate of 150 lbs the total requirement will be 5 million tons which minus the 25% of the nutrient returned to soil through natural processes leaves approximately 3.75 million tons. This estimate comes very near to Agriculture Commission's estimated requirement in 1960. So at the standard rate of fertilizer intake of 150 lbs per acre the actual coverage would thus come to as shown in Table 6.5.

1. Report of the Agriculture Commission, Government of Pakistan, (Karachi 1960) P.75.

2. 300 lbs x 71 million acres.

TABLE : 6.5

Fertilizer Requirements.

Year	Fertilizers intake (000 tons)			@ standard intake of 150 lbs per acre Area covered in (000 Acres)*			Net addition in Production @ 50% of average output in terms of wheat (000 tons) *		
	E.Pak.	W.Pak.	Total.	E.Pak.	W.Pak.	Total.	E.Pak	W.Pak	Total
1959-60 (actual)	13	19	32	200	280	480	32	45	77
1964-65 (actual)	76	86	162	1, 135	1,300	2,435	109	214	323
1969-70 (projected)	234	250	484	3, 500	3,700	7,200	580	611	1,191

* Total intake/standard intake per acre = acreage covered.

acreage covered x 50% of average yield per acre = Total output realised on account of fertilizer. Per acre yield @ 50% being 358 lbs and 370 lbs respectively.

It would appear from Table 6.5. that up to 1964-65 only a nominal increase in production was possible through fertilizer intake. At the end of the Third Plan, the production on account of fertilizer input would exceed a million ton. The total intake of fertilizers as envisaged in the current Plan is only one-fifth of the total requirement so it can safely be assumed that if total requirement of fertilizer is met the food production even at the rate of a modest increase of 50% would be around 6 million tons.[1] The cost in monetary term would be Rs 3,600 million @ Rs 600 per ton of chemical fertilizers. The cost per acre on account of various inputs to develop one acre of land is given below:

	Cost Per acre in (Rs)	
1. Irrigation	1,000	(long term)
2. Reclamation	750	(long term)
3. Fertilizer @ 150 lbs	40	(short term)

In other words, an investment of Rs 80 in fertilizer would be equivalent to the output from one acre of land taking the average yield as constant.

1. Wheras the instances are the 'N+P' gives 43 to 80% increase in yield per acre of paddy (ref: Agriculture Commission Report, Karachi 1960, P.75 and in case of IRRI rice in East Pakistan the yield per acre may be cent per cent (@ 150 lbs of fertilizer as estimated by Mr.Hassan "Chemical Industry" See 'Trade and Industry, Vol X, No.12, December 1966 PP. 1,035-36.

According to an estimate by R.W.Herdt[1] an investment of Rs 244 per acre gave a net output of 3,000 lbs or 1.3 ton of paddy at Thanjavur India. Out of the total cost the purchased inputs such as fertilizers (26 lbs P + 27 lbs N) accounted for Rs 34 and plant protection Rs 6 per acre. The maximum yield was realised where N+P was used in the ratio 1:1 The expenditure in Public sector on fertilizers was as under:

(Rs million)

	Total Investment Agricultural sector including Irrigation	Expenditure on Fertilizer.	Percentage to total investment.
First Plan (actual)	1,350	200	15
Second Plan(actual)	4,386	420	9.5
Third Plan (projected)	8,256	880	10.6

Source: 'Strategy of Economic Planning' op.cit. P.156; Evaluation of Second Five Year Plan, op.cit. PP.183-194, 199 and Evaluation of the First Year of Third Five Year Plan P.157.

It would appear from the table above that compared to total allocation made in public sector for Agriculture plus Irrigation, the allocation for fertilizers in percentage term has gone down during the

1. R.W. Herdt: "Effects of Purchased Inputs on paddy yields" Indian Journal of Agricultural Economics, Vol.XIX, July-Dec, 1964, P.221.

Second Plan and Third Plan.

Therefore, as already pointed out earlier, the impact on total output on account of fertilizers will be much lower than should have been possible by allocating at least Rs 1,800 million for the purpose keeping in view the rate of acceptability popularisation and absorptive capacity in relation to income (the absorptive capacity could partially be substantiated through institutional credit).

The present productive capacity of fertilizers in Pakistan is estimated at 260,000 tons which is likely to go up to 2.5 million tons of nitrogenous fertilizers in terms of Ammonium Sulphate at the end of 1969-70.

So we come to the conclusion that the allocation of short term investment, keeping in view the very low rate of capital formation in the agricultural sector, has been low, especially on the purchase of factor inputs like fertilizers which could theoretically have taken care of the 10% of total food requirement which must now be met by imports by increasing the food production even with a constant rate of all other factor inputs. In a country like Pakistan investment in physical input is clearly important to accelerate the agricultural growth rate. It is more desirable to develop one or two physical inputs than to go for many and thereby allocating larger sums for the purpose. A concentrated coordinated effort from the production base down to

distribution of such inputs is necessary to achieve the ultimate goal.

One of the most effective ways of hastening agricultural transformation will therefore be to develop and make investment in one of two selected agricultural inputs. The efficacy of such programme would, however, largely depend on efficient distribution machinery, perhaps better entrusted to private enterprise rather than to national organisations as discussed earlier in this chapter, and on extension services to make farmers conscious of likely development and profitability. A programme of this sort may be launched on a country wide basis. The Union Council may maintain a register of inputs used production per acre before and after application of fertilizers in their areas to assess the effectiveness of the programme.

In Chapter three, in a consideration of revenue and taxation, the use of fiscal means to direct investment was discussed. The single factor approach has the additional merit of being compatible with fiscal measures in that an integrated policy of taxation, credit and subsidy could be feasible. Besides, as pointed out earlier, the concerted and coordinated efforts would necessarily include improvements in supply factors and the creation of an institutional framework. For example fertilizers, seeds and pesticides could be made available easily through chain stores. Capital being the scarce factor, then any set of combinations with other factors such as labour or land, it could be supplied by

creating agricultural credit institutions specially for this purpose. For short term financing (as this being less inflationary) capital can be provided by strengthening either the cooperatives or by the Provincial Cooperative Banks with their wide spread branches. While allowing credit financing to play an important role in view of low rate of savings, it would be relevant to point out that it is not necessary to estimate the entire credit needs of the agricultural sector.

In the past such attempts have been made to determine the size of the credit need. This sort of estimate is however, not quite realistic in the sense that a major part of the agricultural economy is subsistence oriented and as such it should be excluded while making an estimate of the credit need. The farmers with uneconomic sizes of holdings roughly 25 to 50 per cent in Pakistan are not creditworthy. The credit institutions not being philanthropic organisation are run on commercial lines and therefore lines of credit can be granted to farmers having financial stability i.e. a capacity to pay back the credit and the premium on capital use and meet the depreciation on capital thus acquired. The farmers having one acre or less than one acre of land can hardly obtain credit as their total output is less than subsistence level, they are not in a position to pay for

the capital use.* Under such a situation as this any capital use improving marginal output thus adding to previous total output would mainly in fact be consumed, the limiting factor being land and usually the fixed prices for the agricultural output. It is, however, argued that credit need of subsistence farmers is dire and necessary to elevate them from the level of desperate poverty. Such questions are based more on the canon of social justice than economic considerations.

To such farmers, as discussed in the chapter on agricultural taxation, the Government may provide cheap or free agricultural inputs, reduce land revenue and water rates thereby assisting them to increase marginal productivity and the level of subsistence. This is essentially aid and not credit. The whole

*An empirical example would reveal the implicit problem:

1.	Average product per acre	=	13 maunds
2.	Price (more or less constant)	=	Rs 12 per maund
3.	Total return before credit = 13x12 financing	=	Rs 156
4.	Credit financing	=	Rs 100 at 7 p.c. interest per annum.
5.	Change in total output	=	2 maunds or 2x12 = Rs24.
6.	Total consumption requirements(e.g)	=	Rs 300.

Therefore any income incremental would be spent on food and the farmer will not be in a position to pay for the credit.

while it must be remembered that while private and public investment in agriculture is capitalistic, then its employment remains largely traditional. Aid accepts this situation, credit systems seek to change it.

To others institutional credit may be provided at reasonable rates of interest. Keeping in view the present financial resources of the lending agencies, it would be worthwhile their resources are augmented by budgetary grants.[1] This will help immensely the credit institutions to cover a larger number of rural areas and improve the situation. In credit financing through budgetary grants, let us assume rupees hundred million would definitely bring about an increase in the net value added thereby reducing the quantum of food imports to that extent.

In connection with credit financing a word of caution would be relevant to add, in that case such credit should necessarily be supervised credit ensuring its effective utilization for productive purposes. However, it can not realistically be assumed that cent per cent would be productive investment and therefore, we can allow a margin of 20 per cent or so as unproductive. This sort of budgetary grants would be required so long as the agricultural sector does not become self-sustained. This will be thus a direct exercise in production economics leaving welfare economic policy pursued separately if the exchequer permits.

1. In the case of Pakistan Industrial Development Corporation up to 1962 (till it became Provincial concern after bifurcation) budgetary grants were made for P.I.D.C. without charging any interest.

CONCLUSION.

The thematic approach, in dealing with the entire problems of agriculture, was transformation of this massive sector for a self sustained growth rate and its role to satisfy largely the pre-conditions to take-off.

In the first chapter, we have found that the dietary composition is low, with the labour efficiency also being low. Income elasticity for the demand of food is very high because consumption is not very broad based. The land-labour ratio is also generally low more so in East than in West Pakistan. The population growth rate is higher than the domestic supply of food. Therefore, the recurrent food shortage has been a drain on foreign exchange on account of food imports. A check on population is not possible in the short run so production has to be boosted by increasing the land carrying capacity. There is a great possibility of both horizontal and vertical expansion - horizontal in West and vertical in East Pakistan.

An empirical study has been made of labour productivity in wage-good and monetary terms. It has been concluded that agriculture can play a very vital and multiple role in the economic development of Pakistan by (I) providing food to the teeming millions; (ii) saving foreign exchange on food imports; (iii) and providing a base market for industrial expansion.

In the second chapter, the problems of capital formation has been studied. We have examined the level of income, consumption savings and investment. The productivity in general being low, the rate of capital formation is also low. This is largely due to desperate poverty and an agriculture which is subsistence orientated. It has been found that gross saving per capita is as low as 12 per cent, of which the productive investment only accounts for 4 per cent. This low rate of capital formation is attributable to a number of factors like the paucity of capital and low level of technical know-how, and also largely due to intense pressure on land. The marginal productivity of labour over a wide range is near zero. Moreover, agriculture has a low status for investment choice and consequently the backward linkage effect is very weak in case of specially the food sub-sector. There are economic as well as social and institutional causes of the low rate of capital formation in the agriculture sector. This is because of disparity in income, small size of holdings, non commercial attitudes in farming, joint-family system etc. A major part of the income in agricultural sector accrues to top 20 per cent of landowners which does not enter into the investment stream due to the element of risk and insecurity in agricultural sector. So the major part of the income is transferred from rural to urban sector for investment in real estate where the margin of profit is high and the investment is relatively secure.

A part of the income accruing to big landlords is also spent on conspicuous consumption. It has been suggested therefore that keeping in view the income inequality the top 20 per cent who fall under higher income group may be taxed progressively.

In chapter three, we have examined the possibility of capital formation under the given conditions. In this connection two remedial measures have been found suitable; (i) capital formation by mobilising surplus labour and (ii) agricultural taxation. We have discussed at some length Nurkse's model for utilizing surplus labour and have suggested certain preconditions for the efficacy of this model. It has been found that in Pakistan a fair percentage of labour who appear to be voluntary employed, over a wide range have zero productivity and as such they can be employed on capital projects. For agricultural transformation it is necessary that surplus labour is successively withdrawn.

With regard to agricultural taxation, it has been observed that despite the fact that agriculture contributes nearly 50 per cent to G.N.P. the total agricultural tax(revenue) is only 10 per cent of the total tax collection. During the two Plan-periods 1955-65, the public sector spending in providing for the necessary infrastructure has been quite substantial but tax collection "pari passu" has not increased. The land revenue is not based on price and income elasticity. Price and income have

increased over time but the revenue collection has remained more or less constant. Tax evasion is very common. Similarly the water rates have also not increased despite sizeable investment in irrigation projects. The water rates have been revised but due generally to maladministration the collection on this account has not improved.

We have examined the various implications of export duty and have come to this conclusion that tax base being quite limited, the realization of export duty on agricultural products is not retrogressive. We have thus concluded that flight of capital may be arrested by taxing real estate and providing certain incentives to agricultural investment. Demonstrative consumption may be checked by banning the imports of such goods in the country altogether.

In chapter four, the problems of labour redundancy have been studied. It has been found that keeping in view the present land carrying capacity, the land labour ratio is very low. It is largely due to surplus labour or disguised unemployment. Under these conditions technical change is not possible as any technical change would mean partial labour replacement.

The labour absorptive capacity of all other sectors is very limited therefore the bulk of labour is destined to remain with the agricultural sector, mainly because the capital intensity in all other sectors is high. An expansion say in industrial sector which is not possible due to low rate of capital formation

and meagre inflow of foreign aid.

In the fifth chapter, the dualistic growth model and the impact of agriculture on industrialisation has been discussed. It has been found that industrial development in Pakistan is largely indebted to agriculture which has provided cheap labour inputs, low priced food and raw materials besides keeping the price level and wages low and the margin of profit to the industrial sector high. This sector has also been able to provide the much needed foreign exchange to industrial imports.

In the sixth chapter, supply response to prices has been examined and it has been found that any adjustment in supply is not possible in the short run. The supply response is also constrained by the factor proportion like capital or land.

Finally the problems of agricultural transformation have been discussed. It has been found that in proportion to long term investment, the short term investment has not been quite adequate and so the production sector of agriculture failed to expand. For example, in the absence of short term investment in seed, fertilizers and pesticides the production did not increase.

So keeping in view the present level of infrastructure the short term investment is more desirable for agricultural transformation. In this connection a development model has been suggested based on single factor development approach. The study reveals that short term investment in fertilizers is most desirable to quicken the pace of agricultural transformation.

BIBLIOGRAPHY

Amin, Galal : Food Supply and Economic Growth with special reference to Egypt, Frank Cass, London, 1966.

Agarwala and S.P. Singh : The Economics of Underdevelopment, Oxford University Press, 1966.

Bergan, A : Personal Income and Savings in Pakistan, Pakistan Development Review, Vol. III, No.3 Summer, Karachi, 1967.

Bhagwati, J. : The Economics of Underdeveloped Countries, World University Press, London 1966.

Clark, Colin : Future Sources of Food Supply; Economic Problems, etd, Food Supplies and Population Growth, Royal Statistical Society, London, 1963.

Chandrasekhar, S : Hungry People and Empty Land, George Allen and Unwin, London, 1954.

Chowdhury, M.K. : The Approach to Planning in Pakistan, unpublished Ph.D thesis, Faculty of Economics and Social Studies, University of Manchester, 1967.

Eicher and Witt : Agriculture in Economic Development, etd, McGraw Hill, 1964.

Ellsworth, P.T.	:	Import Substitution in Pakistan, Pakistan Development Review, Karachi, 1964.
Ghulam Mohammed	:	Water logging and salinity in Indus plain, Pakistan Development Review, Vol. IV, No.3, Karachi 1964.
Henery, B.J. and Hpu, U.		Estimates of Possible performance for selected Major Crops, East Pakistan, Monography, 1964.
Hansen, H.A.	:	The Process of Planning: A Study in India's Five Year Plans, Oxford University Press, 1966.
Hirschman, A.O.	:	The Strategy of Economic Development, Yale University, 1964.
Haq, Mahbubul	:	The Strategy of Economic Planning: A case study of Pakistan, Oxford University Press, 1963.
Habibullah, M.	:	Some Aspects of Rural Capital Formation in East Pakistan. Bureau of Economic Research Dacca University, East Pakistan 1963.
Keynes, J.M.	:	The General Theory of Employment Interest and Money, Macmillan, London, 1967.
Kaldor, N.	:	Economic Policy, Vol. I, Duckworth, London.

Khadija Haq	:	Measurement of Inequality in Urban Personal Income Distribution in Pakistan, Pakistan Development Review, Vol. IV, No.4, 1964.
Khan Irshad M.	:	A Note on Consumption Pattern in Rural Areas of East Pakistan. Pakistan Development Review.
Khan, M.H.	:	The Role of Agriculture in Economic Development, Netherland Agricultural Documentation Centre, 1966.
Lewis, W.A.	:	Theory of Economic Growth, Allen and Unwin London, 1965.
Lewis, W.A.	:	Development Planning, Allen and Unwin, London, 1966.
Lutz, Vera	:	Italy, A case study in Economic Development, Oxford University Press, 1962.
Lewis Jr, and Qureshi	:	The structure of Revenue from Indirect Taxes in Pakistan, Pakistan Development Review, Vol.IV, No.3, Karachi, 1964.
Meier, M.G.	:	Leading Issues in Development Economics (Ed) Oxford University Press, 1964.
Nurkse, R.	:	The Problems of Capital Formation in Underdeveloped Countries, Oxford Press, 1966.
Papenek, F.G.	:	Industrial Production and Investment in Pakistan, Development Review, Vol.IV, No.3, Karachi, 1964.

Qureshi, M.L. : Population Growth and Economic Development (Ed) Institute of Development Economics, Karachi 1960.

Raquibuzzman, M. : Marketed Surplus Function of Major Agricultural Commodities in Pakistan, Pakistan Development Review, Vol.VI, No.3, Karachi, 1966.

Rostow, W.W. : Economic Growth, Cambridge University Press, 1965.

Sen, A.K. : Choice of Technique, An Aspect of the Theory of Planned Economic Development, Oxford University Press, 1968.

Waterson, A. : Planning in Pakistan, The Economic Development Institute, I.B.R.D., Baltimore, 1963.

Government of Pakistan Publications :

Planning Commission : First Five Year Plan, Karachi, 1958.

Second Five Year Plan, Karachi, 1960.

Third Five Year Plan, Karachi, 1965.

Final Evaluation of Second Five Year Plan, Karachi, 1966,

Evaluation of the First Year of the Third Five Year Plan, 1967.

Government of Pakistan.

Ministry of Finance : Major Commodity Review, Karachi, 1960.

Pakistan Economic Survey, 1964-65 and 1965-66.

Government Sponsored Corporations, 1965.

Government of Pakistan.

Central Statistical Office : Statistical Year Book, 1964 and 1965 and 1966.

Population Census of Pakistan, Bulletin No.5, Karachi