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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

THE INDUSTRIAL DEVELOPMENT
OF
PAKISTAN

June 15, 1966

South Asia Department

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CURRENCY EQUIVALENTS

4.762 rupees = U.S. \$1.00
1 rupee = U.S. \$0.21
1 million rupees = U.S. \$210,000
1 billion rupees = U.S. \$210 million

PREFATORY NOTE

This report is based on the findings of a mission in February-March 1966 to Pakistan, composed of Messrs. O. J. McDiarmid, A. H. Atkinson (Consultant), A. Cilingiroglu, J. Derrick (Consultant), R. Hablutzel, J. Hendry, R. Niebuhr and L. Toutounji. Messrs. B. K. Abadian and C. J. Martin also assisted in preparing the report.

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GLOSSARY OF SOME AGENCY INITIALS

- CGDWP - Central Government Development Working Party
- ECNEC - Executive Committee of the National Economic Council
- EPB - Export Promotion Bureau
- IDBP - Industrial Development Bank of Pakistan
- IPB - Industrial Promotion Bureau
- PC - Planning Commission
- PICIC - Pakistan Industrial Credit and Investment Corporation
- PPA - Provincial Planning Authority
- EPIDC - East Pakistan Industrial Development Corporation
- WPIDC - West Pakistan Industrial Development Corporation
- EPSIC - East Pakistan Small Industries Corporation
- WPSIC - West Pakistan Small Industries Corporation
- EPWAPDA - East Pakistan Water and Power Development Authority
- WPWAPDA - West Pakistan Water and Power Development Authority

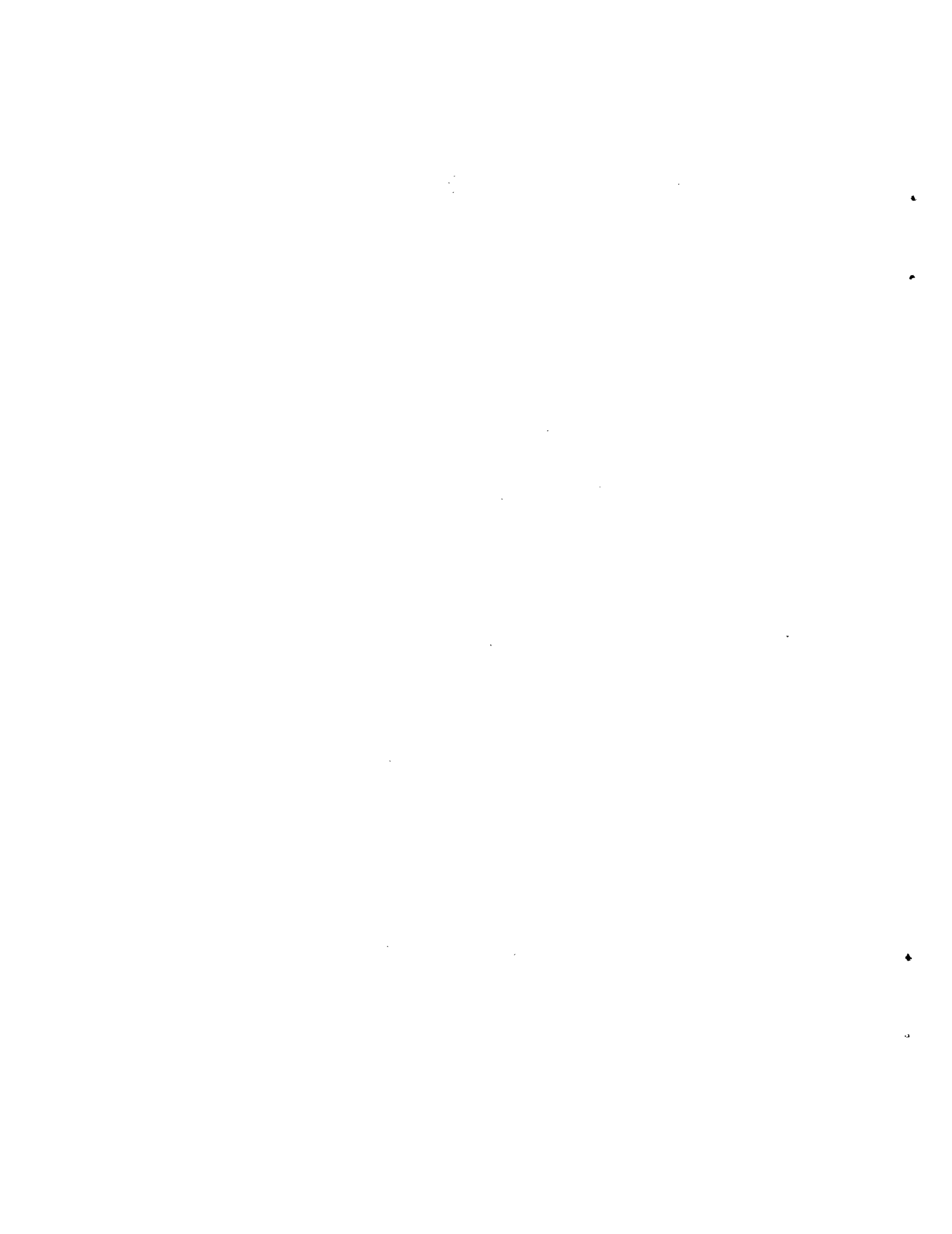


SUMMARY AND CONCLUSIONS

i. In addition to the mobilization of domestic and foreign financial resources, three basic problems confront Pakistan's industrial development strategists. They are: (1) considerable under-utilization of present plant except in textiles; (2) a pressing need for import substitution which often prompts investments which may not be in accordance with Pakistan's comparative advantage in the longer run; and (3) an exchange rate system which, despite recent measures to improve it, still under-prices much foreign material and equipment into the economy. The inter-relationship between these problems is close as will be evident from this report. Together they have produced a situation in which the scarcest of Pakistan's resources, namely, capital equipment purchased with foreign exchange, has not been as productive as would have been desirable, while her most abundant and cheapest resource, labor, remains under-utilized. A further emerging problem is that the exchange rate applicable to imported materials and equipment is much lower than that applicable to most industrial exports, while agriculture does not enjoy a similar advantage, though fertilizer and some other farm inputs are subsidized. A domestic market, sheltered by import restrictions, together with tax holidays, etc., have resulted in high rates of return on industrial investment and high rates of corporate savings.

ii. Despite the pervasiveness of these problems, which are common to many developing countries, the industrial progress of the country has been rapid and sustained, with an average annual growth in the large and medium-scale manufacturing sector of 16 per cent in the 1950's and 13 per cent thus far in the 1960's. Small-scale industry, however, has developed slowly. In the Second Plan, both industrial investment and output as a whole exceeded their targets by roughly the same proportion. Investment was about 14 per cent above the Plan goal, whereas industrial output grew by 65 per cent as compared with a Plan target of 60 per cent. We expect about this rate of expansion to continue through the Third Plan (which started July 1, 1965). Insofar as the industrial sector is concerned, we believe that the Plan output target can be achieved with a considerably lower level of investment than the Plan envisages.

iii. In the Second Plan, government policy was to encourage private industry by a variety of tax and other incentives and to sponsor public sector industries only in lines not attractive to the private sector. However, some deviation from this policy seems evident from the list of government plants proposed for the Third Plan. Import substitution, the goal of progressing towards income and industrial parity between the two Provinces, and latterly, defense considerations, have prompted proposals for more public sector industry. However, in general, the Government has responded quickly and efficiently in meeting the legitimate needs of the private industrial sector, and as yet, the latter has suffered little from the competition of the public sector.



iv. This report does not consider all aspects of Pakistan's industrial development. Limitations of time, writing space, and man-power precluded a full survey of such significant elements as small-scale and handicraft industries, and consumer goods production is only partially covered. We have tried to steer between the Charybdis of superficiality and the Scylla of excessive detail and, to the extent possible, facts about existing plants and institutions have been put in annexes. Special attention is given to public policy and investments included in the Third Plan.

v. Pakistan is only moderately well endowed with natural resources, lacking adequate coal, iron and most non-ferrous metals. However, the supply of energy from natural gas and hydro is increasing rapidly. The industries which have enjoyed the greatest success thus far are those that have utilized agricultural raw materials (jute and cotton), in combination with the cheap and adaptable labor force.

vi. During the Second Plan, the consumer goods industries commanded the largest portion of industrial investment, most of which took place in West Pakistan. In addition to increasing the investment and industrial output targets about threefold over the Second Plan, the Third Plan is putting more emphasis on capital goods industries, and with the help of public sector investments, a larger proportion is intended for East Pakistan. The public sector is expected to invest about 32 per cent of the total industrial allocation during the Third Plan as compared with 25 per cent during the Second. Over 40 per cent of East Pakistan's allocation is for the public sector as compared with only 16 per cent in the Western Province. For the Third Plan as a whole, industry is allotted about 23.5 per cent (Rs. 12,200 million) of total planned development expenditures as compared with the 21 per cent invested in that sector during the Second Plan.

vii. Despite the greater emphasis on capital goods production, the mission has estimated that the capital/output ratio may be only marginally higher during the Third as compared with the Second Plan. This is because investment in other capital-intensive fields (with long gestation periods) will not increase in proportion to the total. Providing adequate imports are obtained to utilize the planned expansion of productive facilities, Third Plan prospects for growth in industrial GNP are good. The mission has also concluded that by 1969/70 the net import substitution effects of the industrial program may be about Rs. 1,500 million a year, the same as the target in the Third Plan, though defined differently.

viii. Reference is made above to the relatively favorable export exchange rates for industrial products, which range from 30 to 45 per cent above par. Our analyses of export industries indicate that this exchange rate premium is an essential element in their profitability and expansion. Through import taxes including the recently applied defense surcharge, the effective import rate has been raised, and this, together

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with the elimination of direct controls in 1964/65 on a substantial list of industrial raw materials and components, was a substantial step towards the greater use of the market mechanism in allocating foreign exchange to industry. Of total private imports into Pakistan (before the effective suspension of the Free List last fall) about 40 per cent were on that List, 20 per cent came in under bonus (effective rate about Rs. 11.9) and 40 per cent remain under direct import controls. However, there is still much to be done in this respect and the recent economic report (AS-112a of May 20, 1966) makes some suggestions. Much higher priority needs to be given to import flows that will provide for better use of existing plant as compared with the construction of new capacity. Foreign aid can play a vital role in this connection. Present import levies need to be supplemented by tariff adjustments on consumer goods, to which most residual import controls still apply. Tariffs on capital equipment and intermediaries should be generally lower than on consumer goods but they should be adequate, particularly where there is a domestic raw material base for Pakistan production of such goods.

Points on Specific Industries

ix. This is not a full resume of the mission's observations but only a summary of the points that seem to us to be of special policy significance. This mission's appraisal of Plan targets for production and export are generally in line with those contained in the economic report (AS-112a).

x. Jute. If Pakistan is to improve its position in the world market and meet the Plan target, there appears to be a need for a more vigorous price stabilization program for raw jute and positive measures to increase its production. In the interest of higher production, lower cost, improved yield, and better return to producers of raw jute, the number of intermediaries in the marketing process will have to be reduced. The provision of improved physical facilities for storage and handling should be treated as an integral part of a comprehensive scheme that would cover major problem areas and aim at raising productivity.

xi. Jute manufacturing, which has been and will continue to expand rapidly, has now reached a point where considerable effort will be required to improve efficiency and reduce production and overhead costs. There will be continuing growth in demand for jute fabrics in the foreseeable future, provided the price is competitive with possible substitutes. However, the developing countries will ultimately attempt, and in many cases succeed, in establishing similar types of industry probably mainly for internal consumption. It is vital that Pakistan keep in the van of the industry, by research, training and development of new and better products. Marketing arrangements will require streamlining and the use of modern selling techniques. The danger of over-expansion is present and must not be ignored. However, the principal constraint during the Third Plan will be the supply of machinery and the physical and managerial problems involved in bringing it into production.

xii. Cotton. With the excess of cotton supply in the world market, the export target for raw cotton will have to be reached in an increasingly buyers' market. This calls for a continuing effort to improve quality, both in the growing and the ginning stages. The 20 per cent rate of growth of the total crop over the past five years has been somewhat disappointing. A growth of 50 per cent over the next four years is necessary if the requisite quantity is to be produced by 1970.

xiii. As for the cotton textile industry which has, hitherto, enjoyed complete protection in the domestic market, the results achieved so far, with regard to efficient production and cost reduction have been disappointing. The return on investment is high, and the expansion of output is entirely attributable to the increase in investment. It would be unwise to ignore rising costs and steps should be taken to improve the competitive position of the industry in the world market and to intensify the effort to find new markets in developing countries.

xiv. The targets set down in the Third Five-Year Plan for increasing capacity are extremely ambitious, and, on past performance, unlikely to be fully achieved. It is possible, however, to achieve great improvements in the existing plants if sufficient effort is expended in training the labor force, evolving and applying work norms and raising the standard of supervision and management.

xv. The expansion of textile machinery manufacturing on a viable scale, preferably with foreign participation, could produce a substantial saving in foreign exchange and provide a valuable service to the industry.

xvi. Fertilizer. Continuing vigorous efforts and better distribution arrangements are needed to increase fertilizer consumption, particularly in East Pakistan. A balanced use of nitrogenous and phosphatic fertilizers would bring increased benefits to the farmers. In response to this domestic requirement, a large expansion in fertilizer production is being undertaken, both in the public and private sectors. This may result in some export capacity during an interim period while demand catches up with output. The market for such exports requires further study but there seems no reason to conclude that Pakistan's natural gas resources cannot be used to good advantage in producing nitrogenous fertilizer at competitive world prices. A combination of public and private financing including the participation of private foreign investment is desirable to produce the results hoped for from this industry.

xvii. Equipment Industry. The principal reservations which the mission has about the industrial sector of the Third Plan concern several of the public sector projects intended to produce machinery for Pakistan industry. This applies particularly to the duplication of new mechanical equipment production facilities in East and West Pakistan. Some of the output planned from these "complexes" will also duplicate what is being done, or what could be done, in the private sector. This is a field where domestic demand is

limited and where the private firms already engaged have found it difficult to produce on an economic basis. The analysis of feasibility reports of some of the new public sector projects indicates that, even on fairly optimistic assumptions, the plants will operate at a loss for three years or more, after they commence operations, and that the foreign exchange savings are not likely to be very great, nor will substantial employment be provided in relation to the investment incurred. This is not an adverse judgment on the production of investment goods generally in Pakistan, but reconsideration and more careful economic analyses of some of these projects are highly recommended. It seems to the mission that a more desirable way to invest a portion of Rs. 1.7 billion now ear-marked for plants in the equipment industry field, would be to encourage more production of textile machinery and some of the durable consumer goods, such as electrical appliances, which would have a ready market in Pakistan, and based on recent experience in the case of simpler products, in foreign markets as well.

CHAPTER 1

INTRODUCTION

1. The principal objectives of this study are to examine: (a) the progress that has been made in the industrial sector of the Pakistan economy during the last ten years (First and Second Plans); (b) the factors that have played an important part in that progress; and (c) the plans and outlook for the industrial sector during the Third Plan. While special emphasis will be given to the industries in which major investments are contemplated during the Third Plan and which are expected to contribute substantially to Pakistan's gross national product and balance of payments viability, we will also cover overall industrial investment magnitudes, the division of industrial investment between the private and public sectors and between East and West Pakistan. This study is a part of the Bank's continuing review and appraisal of the Pakistan Third Plan which was started in the economic report, AS-109, of April 26, 1965, and continued in the current year's economic report, AS-112a, of May 20, 1966.

2. Measured in terms of the annual rate of growth, manufacturing has been the "leading" sector in the economy from the establishment of the country. Its contribution to GNP increased from 5.8 per cent in 1949/50 to 9.3 per cent ten years later, and to 11.5 per cent in the bench-mark year of the Third Plan, 1964/65. By the end of the Third Plan, 1969/70, manufacturing is expected to contribute 13.5 per cent of GNP (Appendix table 2). This will require a rate of growth in this sector during the Third Plan of about 10 per cent a year, about the same as the 9.8 per cent achieved during the Second Plan. In order to achieve this continuation of the rate of growth, 24.6 per cent of total Plan development expenditures are allocated to industry as compared to about 21 per cent actually invested in industry during the Second Plan. In absolute terms, investment planned for industry in the Third Plan (Rs. 12,200 million) is about 150 per cent larger than for the Second Plan. Even taking account of price changes, the increase in real terms will probably be over 100 per cent, if the investment goals for the Third Plan are achieved. The 1965 Bank mission concluded that the industrial production targets for the Plan could be met with a somewhat lower level of investment than is allocated to industry in the Third Plan. Our present study gives some additional support to this view.

3. Within the manufacturing sector as a whole, there has been a great difference between the rates of growth achieved by large and small-scale industries. Growth of the former has exceeded the targets set by the Planning Commission, whereas the latter have fallen far short of these targets (Appendix table 4). Thus, during the Second Plan the output of large-scale industries grew nearly 15 per cent a year or roughly 40 per cent more than the planners envisaged and three times faster

than GNP. On the other hand, small-scale industries fell short of its goal by about 43 per cent and grew only 2.6 per cent a year, half as fast as the economy as a whole. The growth targets for the Third Plan are 13.2 per cent a year for large-scale manufacturing and only 3 per cent a year for small-scale manufacturing establishments, nearly the same as the Second Plan actuals. The disparate growth of large and small-scale industries is reflected in their changing contribution to GNP. In 1949/50 when manufacturing industry was in its infancy, the contribution of small-scale industries was over three times that of large. By the end of the Second Plan, the latter had become twice as important as the former and by 1969/70, even if small-scale production increases as envisaged in the Third Plan, it will be considerably less than one-third as important as large-scale manufacturing.

4. The growth performance of Pakistan's industry in recent years compares favorably with that of other Asian countries. According to United Nations data, all Asian countries in the region of the Economic Commission for Asia and the Far East (excluding Japan) had a growth in industrial production of 55 per cent from 1958 to 1963 compared with 71 per cent for Pakistan. The estimate for the world (excluding Mainland China and certain small collectivist states) was 44 per cent growth over the same period.

5. The first requirement of Pakistani industry after Partition was that it expand to alleviate the country's acute shortage of foreign exchange either by processing the country's most abundant raw materials (such as raw jute and cotton) for export or by providing import substitutes for essential consumers' goods. The production of inputs for agriculture, such as fertilizer, and of intermediate products, such as basic metals, are now becoming more important in Pakistan's industrial planning, in addition to equipment industries.

6. Pakistan's economic policy has had an impact on industrial growth in many different ways and has generally been highly favorable to such growth. Among the principal manifestations of this policy were the fact that nearly all Pakistan's industries which could be established under the investment sanctioning system were given the opportunity of importing raw materials and equipment at the official exchange rate while selling in a highly protected market at home or exporting at a more favorable rate under the export bonus system. The complex of factors which favored industrial development also included lower tariffs on imported materials, components and capital equipment than on the finished products, and special institutional credit arrangements which provide medium and long-term capital at rates of interest considerably below the real cost of capital in Pakistan. By virtue of a liberal tax incentive program, industry has been favored as compared to other sectors of the economy, although efforts to use this program to attain greater geographical dispersion of industry may have delayed investment in some instances. While these incentives were, in principle, available to most, if not all, industrial categories, they were particularly

favorable to consumer, and to a much lesser extent, intermediate goods industries. Capital goods industries have developed slowly in Pakistan, a situation which the Government is now attempting to rectify during the Third Plan by increasing the proportion of total investment going into capital goods production from 8 per cent to 15 per cent of total industrial investment.

7. Industrial policy during the Second Plan was to provide indirect and direct incentives for the private sector rather than to expand the government role. Thus 75 per cent of industrial investment in the Second Plan was by the private sector and only about 25 per cent for those public sector undertakings in which it was thought the private sector would have little interest. In the Third Plan, however, the public sector portion has been increased to about 30 per cent. This partly reflects the desire of the Government to expand capital and basic intermediate goods production and also to move ahead fast in certain fields such as fertilizer, where it was thought that the private sector would not enter (at least without government participation) because of the magnitude of investment required. While there are other considerations in this, such as the use of industrial investment to try to attain income parity between the Provinces and the purpose of avoiding monopolistic positions in respect of the supply of essential intermediate goods, the allocation of larger sums to the public sector does not appear to represent a basic preference for public vs. private industrial expansion. The Government continues to be pragmatic, inasmuch as it is prepared to entertain proposals for private investment including foreign participations in such industries as steel and fertilizer, even though public sector funds have been tentatively ear-marked for these undertakings.

8. Industry in Pakistan, as in most developing countries with quantitative import controls, has had the reputation for high profitability, particularly in respect of the firms serving the domestic market. The results of a recent study for the Government on this subject is summarized in Appendix table 6. The sample consists of the firms listed on the Karachi stock exchange which would cover the larger but not necessarily the most profitable enterprises. Among the manufacturing industries the average rate of return after taxes is about 11 per cent, though the range is considerable. This study does not seem to bear out the usual assumption that domestically oriented industries are more profitable than export industries, though the sugar industry appears to be an exception.

CHAPTER 2

THE SECOND AND THIRD FIVE-YEAR PLANS

Second Plan

9. The Second Five-Year Plan's industrial investment target was Rs. 3,725 million to produce a 60 per cent increase in industrial production. Reported investment over the five years totalled Rs. 4,238 million or 14 per cent more than planned, and the industrial production index in the quarter ending March 31, 1965 was some 65 per cent above the 1960 level. Large-scale industry doubled in output over the five years, a growth rate of 16 per cent per annum. A main emphasis in the Plan was on the better utilization of installed capacity by balancing modernization and expansion of existing industries. The primary aim of government policy was to increase industrial production for domestic consumption and export through the provision of liberal credit and import facilities for private investment and, where necessary, through public investment. The division between the public and private sectors followed the Plan's intentions and about 75 per cent of investment was recorded in the private sector and about 25 per cent in the public.

10. Using a broad grouping of industries into consumer, intermediate and capital goods, the proposed distribution of total investment was as follows: consumer goods 39 per cent; intermediates 53 per cent; and capital equipment 8 per cent. Investment during the Plan period differed moderately from these proposed percentages. 47 per cent was investment in the consumer goods industries; the intermediate goods industries absorbed 45 per cent; and the capital goods industries 8 per cent. The overage in investment was thus in the consumer goods field and the shortfall in intermediates.

11. Industrial investment in the Second Plan was channelled mainly into textiles, chemicals and food manufacturing, which together accounted for 56 per cent of the total. Nearly all investment in textiles, 75 per cent of that in food manufacturing and about 60 per cent of investment in fertilizers, was in the private sector. Only in the basic metal industry was public sector investment (85 per cent of the total) greater than private investment.

12. To enable the development of industries in accordance with the aims of the Second Plan, in July 1960 an Industrial Investment Schedule was established. Because by June 1963 the amount of investments sanctioned was above the original target, a revised Industrial Investment Schedule was issued. At the end of the Plan period, total sanctions amounted to Rs. 5,126 million (Table 1). There is an inevitable time lag between the sanctioning of projects and actual investment, due in part to delays and obstacles: some sanctions are never taken up while others are revoked but still appear in the totals. For these reasons, actual private investment was only Rs. 3,390 million or some 65 per cent of investment sanctioned (see Chapter 3, Table 3 for industry breakdown).

Table 1

Investment Sanctioned in Private Industrial Sector (July 1960-June 1965)

(Million Rupees)

Year	East Pakistan			West Pakistan			Total		
	Local	Foreign	Total	Local	Foreign	Total	Rupees	Foreign Exchange	Total
1960/61	85.5	89.7	175.2	343.0	465.2	808.2	428.5	554.9	983.4
1961/62	231.7	213.3	445.0	359.4	449.8	809.2	591.1	663.1	1,254.1
1962/63	136.2	137.1	273.3	335.1	304.8	639.9	471.3	441.9	913.2
1963/64	87.6	240.2	327.8	250.2	364.0	614.2	337.8	604.2	942.0
1964/65 ^{1/}	100.6	102.6	203.2	402.2	428.0	830.2	502.8	530.6	1,033.4 ^{2/}
Total	641.6	782.9	1,424.5	1,689.9	2,011.8	3,701.7	2,331.5	2,794.7	5,126.2

^{1/} Figures for the year 1964/65 do not include sanctions made against cash allocation by the Provincial Governments as these data are not available.

^{2/} Rs. 650 million for Karachi Steel Plant which was transferred from Public Sector to Private Sector and Rs. 120 million for Karachi Oil Refinery sanctioned before the Second Plan but included in the Second Plan Target are also to be added which brings the total to Rs. 5896.2 million.

13. Physical production for many important items was not closely related to investment in those industries. This is to be expected, since there is a time lag between investment and production. Not all the physical production targets of the Second Plan were met. One which was substantially achieved was cotton yarn, where the target was 520 million pounds by 1964/65 and production 518 million pounds. The target for jute manufactures was originally 380,000 tons and then revised upward to 440,000 tons; the actual output in 1964/65 was only 331,000 tons. This shortfall was due partly to slow deliveries and delayed installation of plant, and partly to a strike in the mills in that year. The original target for sugar was 300,000 tons and later increased to 500,000 tons, but only 231,000 tons in the best year of the Second Plan. The output of nitrogenous fertilizer was 15 per cent below target, while the outputs of soda ash, sulphuric acid and caustic soda were each equal to less than half the planned production. Physical targets and actual production in the Second Plan period in selected industries are given in Table 2. In general the results were good.

Table 2

Manufacturing and Mining: Physical Targets and Achievements
During Second Plan

Sub-sector/Item	Unit	1959/60	Maximum	Plan	Percentage (3) of (2)
		(1)	in any yr. 1960-65 (2)	Target (3)	
White sugar	Thousand tons	150	271	500	54
Vegetable ghee	" "	22	95	50	190
Jute goods	" "	230	331	440	75
Paper and board	" "	53	101	105	96
Ammonium sulphate	" "	42	52.3	50	105
Ammonium nitrate	" "	..	74	10	72
Urea	" "	..	148	176	84
Superphosphate	" "	1.5	8.8	18	49
Cement	" "	1,050	1,685	4,000	42
Soda ash	" "	25	33.8	74	46
Cotton yarn	Million lbs.	380	518	520	100.5
Cigarette	Million	9,000	19,650	15,000	131
Coal	Thousand tons	723	1,229	1,500	82
Natural gas	Million c.f.t.	25,750	72,000	100,000	72

14. During the Second Plan period, investments sanctioned in the private sector amounted to Rs. 3,701.7 million in West Pakistan and Rs. 1,424.5 million in East Pakistan. While in West Pakistan the role of the public sector was subsidiary and intended to be complementary to private enterprise, in East Pakistan the public sector was dominant and, even where disinvestment by EPIDC took place, there was a tendency to retain management in government hands.

Third Plan

15. The Third Plan provides an industrial investment allocation over three times the original targets in the Second Plan. The recent revision of the Third Plan targets provides a total of Rs. 12,200 million, implying a reduction in investment in the public sector program from Rs. 4,470 million to Rs. 3,900 million as compared with the original Plan projections. The target for the private sector is unchanged at Rs. 8,300 million. The Plan investment is to be 68 per cent in the private sector and 32 per cent in the public, a change of 7 per cent in favor of the public sector as compared with the Second Plan. The distribution among types of industries gives investment in consumer goods 39 per cent of the total, intermediate goods 46 per cent, and investment goods 15 per cent (see Table 3).

16. This means a nearly doubling of the proportion for investment goods as compared with the Second Plan. It is proposed to build up the investment goods industries to balance the economy. At the same time, it is proposed to encourage both those industries with a high import substitution potential and those giving high employment compared to the investment. In terms of the three categories of industry, therefore, this means that the capital goods industries will be favored except where the exploitation of indigenous raw materials particularly favors the establishment of an industry in one of the other two categories.

17. Owing to the events of the last half of 1965, at the inception of the Third Plan, investment in the private sector was to be controlled through the "Hard Core" of the Comprehensive Industrial Investment Schedule.^{1/} It listed some 63 industries in the large- and medium-scale part and 66 in the small-scale section. The total sum represented by these two sections was Rs. 3,711.4 million as compared with the Plan figure of Rs. 8,300 million. Under this Schedule, an industrialist could make an investment in one of the listed industries if he could arrange suitable financing: in practice, some control was imposed by the shortage of foreign exchange. Items not on the "Hard Core" list required special approval. In April the Comprehensive Schedule was published and became fully operative. This Comprehensive Schedule lists 200 industries (classification being the same as that used by the Central Statistical Office). The total amount of investments listed in the Schedule was Rs. 10,373.6 million, 25 per cent higher than the investment included in the Plan. The assumption is that, if schemes to the value of the Schedule were put in hand, it was likely that considerably less will be invested by the end of the Plan period.

18. Appendix table 8 compares actual investment in the Second Plan period for each group of medium- and large-scale industries with the proposals included in the Third Plan.^{2/} A lower priority has been given to traditional industries such as food processing and textiles and, to a lesser extent, chemicals. Greater importance has been given to the metal industries such as mechanical and electrical machinery, transport equipment and the metal producing industry in general. The change of emphasis to public sector investment is partly because of the increased importance of such large-scale complexes.

^{1/} See Chapter 3, Table 4.

^{2/} As now revised.

Table 3
Investment by Industry Category
(Millions of Rupees)

	Consumer Goods	Intermediate Goods	Investment Goods	Total
<u>Second Plan Actuals</u>				
Private	1,840.8	1,221.8	276.4	3,339.0 78.8%
Public	174.3	666.6	58.5	899.4 21.2%
	2,015.1 47.5%	1,888.4 44.6%	334.9 7.9%	4,238.4 100.0%
<u>Third Plan Projections</u>				
Private	3,466.1	3,663.2	1,170.7	8,300.0 68.0%
Public ^{1/}	1,291.9	1,948.8	659.3	3,900.0 32.0%
	4,758.0 39.0%	5,612.0 46.0%	1,830.0 15.0%	12,200.0 100.0%

^{1/} Revised allocations.

CHAPTER 3

MAJOR FACTORS IN GROWTH OF INDUSTRIAL SECTOR

Supply of Inputs

19. Pakistan has vast potential manpower but is relatively poor in mineral resources. Its principal natural resources are water flows and gas fields, both usable for generation of power. The hydro potential of East Pakistan is small, however, owing to the flatness of the land, and the principal use of water in West Pakistan is for irrigation.

Energy

20. Natural Gas. By far the most valuable source of energy so far discovered in Pakistan is natural gas. There have been eight fields discovered in West Pakistan and seven in East Pakistan. All are dry fields except the one at Dhulian in West Pakistan. Presently known reserves and fields already in use are shown in Table 1. Present estimated reserves amount to 15.6 trillion cubic feet, expressed in equivalents to a standard gas of gross calorific value of 1,000 B.T.U./cu.ft. At a daily offtake of 859 million cubic feet, present reserves would last fifty years. In 1965, the daily offtake was approximately 220 million cubic feet which is expected to rise to 570 million cubic feet by 1970. This means, if more fields are not discovered, the same rate of expansion cannot be sustained in the Fourth Plan period as in the Third.

21. Although natural gas is very convenient and cheap as a fuel, the added value per cubic foot is considerably higher when used as a chemical raw material for fertilizers or petrochemicals. This consideration was important in the Government's decision to include substantial investments in these types of industry in the Third Plan.

22. One gas field in East Pakistan (Titas) and one in West Pakistan (Sui) have been exploited for distribution and general use. The Titas Gas Transmission and Distribution Company (jointly owned by EPIDC 90 per cent and Pakistan Shell 10 per cent) has laid a 14-inch pipeline some 50 miles to Dacca. Initial use is about 5 million cubic feet per day but with additions to the distribution network is expected to rise to 90 million cubic feet after 10 years.

23. In West Pakistan, the distribution system is based on the Sui field. A 16-inch pipeline 347 miles long to Sukkur, Hyderabad and Karachi was laid in 1955 by the Sui Gas Transmission Company (25.5 per cent WPIDC, 25.5 per cent private shareholdings and 49 per cent Burmah Oil and Commonwealth Development Finance Corporation). Final distribution is carried out in Karachi by the Karachi Gas Company (33 per cent WPIDC and 67 per

cent private shareholders) and elsewhere by Indus Gas Company (100 per cent WPIDC). At present, transmission is about 90 million cubic feet per day, of which 60 million are used in Karachi. Two new compressors are being installed en route which will provide another 15-20 million cubic feet in addition to the present total potential of 100 million.

24. The Sui Northern Pipelines, Ltd. (33-1/3 per cent WPIDC, 33-1/3 per cent Burmah Oil Company and 33-1/3 per cent private stockholders) is building a net work to bring the Sui gas to Lyallpur, Lahore, Gharibwal and Rawalpindi and thus link up with the present distribution of the Dhulian field which, at present, is supplying the Rawalpindi area.

25. In East Pakistan, the four biggest fields of Habibganj, Titas, Rashidpur and Kailash Tilas are all close together and so alike in composition that they may be easily piped into a common offtake main. The gas is planned for general industrial use around Dacca with possibly a heavy chemical complex near Kailash Tilas. The Sylhet field is used to supply the Fenchuganj fertilizer factory. Estimates have not yet been made of reserves in a new field at Jaldi.

26. In West Pakistan Sui Gas Transmission serves two cement companies and the Multan fertilizer plant. More will be required for the extension to the Daudkhel plant and new possible fertilizer plants near Karachi (for export). Until 1970 the sole planned use of the Mari field is for the fertilizer factory at Dharki, 12 miles from the field. This will take some 20 million cubic feet per day at first but may rise to 40 million.

27. Petroleum. A small oil field is being exploited at Dhulian in the northwest of West Pakistan. The value of production is less than 20 per cent of Pakistan's requirement of petroleum products. Considerable investments have been made in oil exploration by six private companies and the government-owned Oil and Gas Development Corporation, the latter operating with a Russian line of credit. No oil has been struck but the search is being continued.

28. Coal. At present, the country is spending Rs. 40 to 45 million a year on imports of coke. The Third Plan target is to double domestic coal output from the present level of 15,000 tons. Coal deposits exist both in East and West Pakistan. Estimated resources are some 540 million tons--360 million tons in the west. None of the coal is suitable for the manufacture of metallurgical coke but it may be used, after treatment, for foundries, lime kilns, and sugar mills. The chief problem in coal mining is the accessibility of the deposits which are located in mountainous regions in West Pakistan and at considerable depth (over 3,000 ft.) in East Pakistan.

29. Peat. Peat of good quality has been found in East Pakistan but, in view of the discovery of coal deposits, it has been decided not to go ahead with its exploitation.

Table 1

Natural Gas Reserves

Field	Cubic Feet x 10 ⁹		Cubic Feet x 10 ⁶		
	Estimated Reserves	Gross Calorific Value Btu's Cu.ft.	Adjusted ^{1/} Reserves	Available per Day ^{2/}	Already Committed
West Pakistan					
Sui	6,300	933	5,600	339	250
Mari	5,000	674	3,370	204	40
Uch	2,500	308	770	47	-
Kandhkot	200	842	170	10	-
Khairpur	250	130	33	2	-
Zin	100	484	48	3	-
Mazarani	30	976	30	23/	-
Dhulian	1,700	n.a.	(1,700)	17	13
			<u>11,721</u>	<u>624</u>	<u>303</u>
East Pakistan					
Titas (Brahm-Anbaria)	1,360	1,040	1,410	85)	
Habibganj	1,000	1,020	1,020	62)	130
Rasidpur	740	1,014	750	45)	
Kailas Tila	380	1,050	400	24	
Sylhet	280	1,052	290	18	19
Chhatak	20	1,007	20	1	5
Jaldi	n.a.	n.a.	n.a.	n.a.	
			<u>3,890</u>	<u>235</u>	<u>154</u>
		Total	15,611	<u>859</u>	457
			Estimated Usage by 1970		<u>570</u>

1/ Adjusted for Standard Gross Calorific Value of 1000 Btu's/cu.ft.

2/ Assuming 50 year life of field at 330 days per year.

3/ Production depends on production of crude oil.

30. Electric Power. In West Pakistan, power is produced by large hydro and thermal plants operated by WAPDA in the Northern part, and by gas-fired plants operated by the Karachi Electric Supply Corporation, and smaller municipal units in the south of the Province. A nuclear power plant of 137 MW is to be installed in Karachi. Power consumption in the Province has grown at an average 21 per cent p.a. in the last four years but with a declining rate of growth. Industrial consumption was 670 million k.w.h. in 1964, about a third of total consumption, after it had been over 50 per cent in 1960. Thus industrial use grew less fast than the total, about 14 per cent annually. This is mainly due to a rapid increase of electrically operated tubewells for agriculture.

31. Forecasts for total power demand for 1970 are between 6 and 7 billion k.w.h. compared with total 1965 consumption of 3.3 billion k.w.h. Financial allocations for the Third Plan to meet this demand appear low, and some degree of continued power shortage is expected until the commissioning of the Mangla power plant in 1968.

32. In East Pakistan power is provided by one hydrostation at Kaptai and several thermal plants, all operated by EPWAPDA, plus scattered diesel stations in isolated areas. Total electrical generation increased by 20 per cent per annum between 1960 and 1964. New thermal plants using natural gas, as well as a nuclear plant (140 MW at Roopur) are planned to be installed during the Third Plan. The power program for East Pakistan is based on optimistic assumptions regarding the growth of industrial and rural demand, and if implemented on schedule would provide for considerable surplus generating capacity. The crucial bottleneck at present is the distribution network, and this will continue to deserve highest priority.

Other Minerals

33. Among the other minerals (aside from those used in energy generation) capable of being mined on a commercial basis are rock salt, chromite, limestone, silica sand, gypsum and argonite. New barytes deposits and caolinized clay were recently discovered. Minor mineral occurrences, not so far commercially exploited, include manganese, lead, copper, phosphate, and chloride.

34. Sizeable iron ore deposits are known in the Mianwali and Hazara districts in West Pakistan, but their iron content is below 40 per cent on average, and most of it has a high sulphur and phosphorous content. Total reserves are estimated at 400 million tons. Extensive research has gone into testing the usability of these deposits for steel making, but so far it has been negative.

Manpower

35. Labor and manpower data are not available in Pakistan on a comprehensive basis.

36. In a country such as Pakistan, with a very high rate of unemployment, provision of jobs must have high priority in any capital investment plan. Some industries inherently require more investment per worker than others, but comparison of investment per worker in the same industries between industrialized and developing countries shows a sharp contrast (see Table 2). Figures for Pakistan show even higher employment per unit of investment than other developing countries.

Table 2

Capital per Person Employed in Certain Modern
Manufacturing Industries in Selected Countries

(In Thousands of U.S. Dollars at 1950 Prices)

Industry	United States	Mexico	Columbia	India	Pakistan ^{1/}
Sugar Refining	26.8	8.2	12.4	2.6	1.7
Wood Pulp, Paper and Paper Products	10.2	8.9	4.8	6.6	4.3
Cotton Yarn and Cloth	8.7	2.1	6.2	1.8	0.7

^{1/} At 1959/60 prices, based on fixed assets per worker.

37. There are four distinct reasons for high employment compared with capital invested:

- (a) Encouragement of industries basically labor intensive;
- (b) Use of manual (rather than automatic) processes where labor cost is low and machinery cost high;
- (c) Employment of superfluous indirect labor;
- (d) Overmanning of machines due to unskilled labor and poor plant management.

The first two are desirable and the latter two undesirable. The first is obviously highly desirable as long as it does not disturb the country's industrial growth and, with the present low wages, such industries should tend to have a comparative advantage over their competitors in the industrialized countries. The choice of manual rather than automatic methods must be considered in each case in order to find the most economic solution. The fact that automatic machinery needs more skilled maintenance and expensive, imported spare parts favors a manual method. On the other hand, the manual tasks which are associated with automatic or semi-automatic machinery tend to be less skilled and labor recruitment may be easier.

38. During visits to factories, the mission noted the use of large numbers of employees with no obvious duties except sweeping up and making tea. Undoubtedly, employers may feel a duty to give employment to the maximum number of people. It is, however, disguised unemployment and has the undesirable effect of introducing a slow working tempo in the whole factory. Similarly, over-manning of machines is also disguised unemployment but is very much better than the associated problem frequently encountered where use of an untrained and unsuitable operator was reducing the production of an expensive imported machine.

39. It was most noticeable that complaints about the difficulties of getting suitable workers was confined almost entirely to those factories which were badly planned and managed. The more enlightened managements tended to train their own operatives (although the smaller ones expected to obtain toolmakers, fitters, etc., already trained) and had no complaints about their abilities. Several were using production standards from Western Europe and stated that labor productivity was within 10 per cent of European levels.

40. Thus, although government training of skilled tradesmen is essential to supply the smaller factories, better management and supervision is the key to improvement in labor and machine productivity. However, incentives for such improvements are partly lacking in Pakistan owing to the absence of effective competition and cost pressure.

Employment in the Plan

41. Using Pakistan records where available and those for similar countries in other cases, the Manpower Section of the Planning Commission have estimated the investment, necessary to provide one extra man with a job. Using these figures, the mission has calculated the number of jobs provided by the investments in the Third Plan. Thus calculated, the new jobs to be generated number 1,422,000 rather than the 950,000 target stated in the Plan. They also show that the Third Plan is not less labor intensive than the Second as might at first appear from the increase in emphasis on intermediate and capital goods production.

Management and Technicians

42. The government-sponsored schemes for management and technical training are impressive. These are described in Annex I. In Karachi, no industrialist indicated the slightest difficulty in recruiting technicians and skilled workmen. With managers, however, the situation is otherwise. In the course of its factory visits, the mission saw only a few cases of satisfactory management techniques such as cost control, production planning, financial planning and budgetary control. Where modern techniques were used efficiently, the foreign partner had brought in the systems and installed them complete. The mission considers there are essentially two reasons for this:

- (a) The management training courses given, including those given by foreign advisors, tend to be somewhat academic so that the participants are unprepared for the complications which arise in practice. In the case of systems installed by foreign partners, these have been proven in their own plants and industries and the technicians are well experienced in the practical complications that can arise.
- (b) Secondly, and by far more important, is the lack of competition in most industries. Thus, as long as a manufacturer can produce a more or less satisfactory product, sales are assured by prohibitive import duties, quantitative controls, or actual prohibition of imports. Thus, normally working below capacity and certainly working inefficiently, manufacturers have been able to make satisfactory profits. This restrictive policy has undoubtedly encouraged reinvestment of capital and has played a major part in the growth of industry, especially in West Pakistan. It has meant, however, that there has been very little incentive to raise efficiency and reduce costs. This is well illustrated in the cotton textile industry where productivity (output per unit of plant) has remained static over ten years in spite of the expansion by installation of modern machinery. It is hoped that the liberalization of raw material imports will lead to some increase in competition among units in the same industry. But the mission feels that specific industries are now advanced enough so that protection for their finished goods can be lowered and most prohibitions on imports eliminated.

43. While the sheltered conditions for industry remain, training in management will be largely ineffective. More important, however, other countries have found that, in the long term, they engender a restrictionist attitude on the part of entrepreneurs which militates against industrial growth. Also, when competition finally comes, managers are not trained or experienced to meet it and usually a generation of managers (ten years) must pass before effective results are obtained and by that time many export outlets may be lost.

Government Policy Towards Industry

44. The basic policy of the Government is to leave the establishment and development of industry to private enterprise. Government activity in manufacturing industry is undertaken through the East and West Pakistan Development Corporations (EPIDC and WPIDC) which are chartered to engage in several types of enterprises to supplement the private sector. The PIDCs' are expected to enter only those fields which are required for

development but which are not sufficiently attractive to private investors. These would include industries which are too technologically complex and/or capital intensive for the private sector or industries which are intended to serve as pioneer units in hitherto non-industrialized regions. The PIDCs¹ are supposed to disinvest their holdings in established industries when possible and to reinvest the proceeds in new ventures on the industrial frontier.

Investment Control

45. To insure the development of the private industrial sector in accordance with the aims of the Plan, the Government exercises control over the level and composition of private investment expenditure through the Industrial Investment Schedule (IIS). The Schedule is prepared by the Investment Promotion Bureau and it lists the industries in which investment will be permitted and inter alia specifies for each industry by province the maximum amount of investment to be sanctioned, its associated foreign exchange component and production target. The Comprehensive Industrial Investment Schedule for the Third Five-Year Plan is a massive document listing 200 industries with an aggregate investment target of over Rs. 10 billion.^{1/} The private investor is free to take up any investment within the Schedule.

46. Under the present sanctioning framework for new investment, an entrepreneur typically applies to one of the two development banks (PICIC of IDBP) with a project to take up a portion of one of the categories in the IIS. The project is approved or rejected by the financing agency without further reference to Government. This procedure is a marked improvement over past methods which required each project to be considered and sanctioned by a high level government committee with attendant difficulty and delay. Investment projects involving foreign private loans or investments require the sanction of the Central Investment Promotion and Coordination Committee (CIPCOC). Investment projects with no initial or operating foreign exchange requirements and projects whose foreign exchange component is financed exclusively by bonus vouchers (a market source of foreign exchange discussed below) require no formal sanction but are registered with the IPB. Investment by these last two routes is relatively small.

47. The Industrial Investment Schedule system was first established and operated during the Second Plan period. The Schedule was exhausted and over-sanctioned after two years of operation and the expanded revised Schedule which was issued was again partly over-sanctioned even though

^{1/} The untoward events of 1966 caused a review of industrial priorities and plans and in November it was decided to issue only an excerpted version of the Comprehensive Schedule. This first phase schedule was of high priority industries (with a supplementary schedule for small and medium-scale industries). In the first week of April 1966, however, the full Comprehensive Schedule was released and supersedes the first phase schedule.

Table 3
Sanction & Utilization of Investment in the Private
Sector Large & Medium Industries during the Second
Plan Period (July 1960 to June 1965)

(Millions of Rupees)

Industrial Group	Investment sanctioned	Investment utilized
1. Food Manufacturing Industries except Beverage Industries	544.6	407.2
2. Beverage Industries	25.1	20.3
3. Tobacco Manufactures	62.3	52.8
4. Manufacture of Textiles	1576.0	1013.4
5. Manufacture of Footwear, other wearing apparels and made-up textile goods	23.5	18.9
6. Manufacture of Wood, cork and allied products) (except furniture)	19.2	15.4
7. Manufacture of Furniture and Fixtures		
8. Paper and Paper Products	512.3	264.0
9. Printing publishing and allied Industries	43.5	28.6
10. Manufacture of leather, leather products except footwear	18.5	15.6
11. Manufacture of rubber products except footwear	35.6	28.9
12. Manufacture of chemicals and chemical products including fertilizers	765.0	439.7
13. Petroleum Products	120.0*	121.8
14. Petrochemical	289.4	152.3
15. Manufacture of Non-metallic mineral products except products of petroleum and coal	412.2	221.4
16. Basic Metal Industries	120.7	32.5
17. Manufacture of Metal products except machinery and Transport equipment	144.0	100.5
18. Machinery except Electrical machinery	101.1	71.6
19. Electric machinery, apparatus & appliances	172.2	91.4
20. Transport Equipment	142.7	71.1
21. Miscellaneous Industries	340.2	171.6
Total	5468.1	3339.0
Karachi Steel Mill (original estimates)	650.0	

*Karachi Oil Refinery

Note: The distribution of Cash Licenses for import of machinery during 1964-65 is not included in the above figures investment against which amounts to Rs 62.8 million.

Source: Industrial Promotion Bureau.

some categories had no investment ceilings. During the Second Plan the Schedule probably had little restrictive effect on the composition of investment within the permitted industries; it was expanded when all initial allocations were taken up and its main function apparently was the prohibition of investment in excluded industries. To what extent the operation of the present Schedule will discipline the Third Plan will be seen only as time passes.

Import Policy

48. The import policy (covering all private imports) is formulated by Government and administered by the Chief Controller of Imports and Exports (CCI&E), an officer in the Ministry of Commerce, who is the licensing authority. Imports for the private sector are made under licenses issued to commercial importers (for resale to consumers and industry) and to industrialists (for their own use, not resale).

49. In 1964/65 this type of import control still covered about 40 per cent of total private imports, the remainder being under Bonus Vouchers and the Free List. Under the licensing system an industrial importer must obtain from his provincial Directorate of Industries a quota which specifies his requirements of imported raw materials and spares for one shift operation based upon an assessment of needs made by the Directorate. The CCI&E issues industrial licenses for each shipping period on the basis of the assessed entitlement which is a unit of account. The percentage of the entitlement which is licensed for a shipping period is one measure of import policy for that period. A number of industries (generally smaller units) continue to be licensed on a case-by-case basis and an industrial quota holder may be transferred to a specific licensing status (or to bonus).

50. The structure of the basic licensing system for private sector imports has been modified since 1959 by the adoption of: (1) automatic repeat licensing, (2) open general licensing, and (3) the adoption of a free list, a feature which today dominates much discussion of Pakistani economic policy. Import policy also has been used for export promotion purposes. The important Export Bonus Scheme and export performance licensing will be considered below.

51. Licenses to import are normally granted on a shipping period (six months) basis but under repeat or automatic licensing specified industries and commercial importers do not have to wait until the next shipping period before they can get another license. They can automatically get a repeat license upon showing proof of meeting utilization criteria on the initial license.

52. The open general licensing system was essentially a device to admit new individuals to the commercial importing trade, but since many of the commodities on the Open General List (OGL) are only suitable for industrial use, the OGL is of benefit to industry as the flow of imports increases. Repeat licensing and the OGL recede from central importance in import policy with the adoption and growth of a "free list" of items that can be imported without license.

Table 4
Planned Private Sector Investments
(Millions of Rupees)

Group ^{1/}	Third Plan		Comprehensive Investment		Hardcore Investment	
	Document	%	Schedule	%	Schedule	%
1	590	7.1	727.5	7.0	52.5	1.4
2	10	0.1	10.0	0.1	-	-
3	50	0.6	46.5	0.5	8.9	0.2
4	2,400	28.9	3,271.5	31.5	1,330.2	35.9
5	50	0.6	67.2	0.7	13.0	0.3
6	22	0.3	22.0	0.2	5.0	0.1
7	40	0.5	26.4	0.3	4.0	0.1
8	150	1.8	199.9	1.9	32.0	0.9
9	32	0.4	6.44	0.6	10.0	0.3
10	39	0.5	55.5	0.5	10.0	0.3
11	50	0.6	52.4	0.5	4.5	0.1
12	448	5.4	881.4	8.5	616.3	16.5
13	200	2.4	200.0	1.9	100.0	2.7
14	531	6.4	806.3	7.8	400.0	10.8
15	659	7.9	1,056.7	10.2	154.0	4.2
16	1,112	13.4	471.0	4.5	242.0	6.5
17	450	5.4	489.1	4.7	169.8	4.6
18	360	4.3	391.2	3.8	249.9	6.7
19	226	2.7	297.5	2.9	95.9	2.6
20	269	4.5	460.6	4.4	76.8	2.1
21	512	6.2	500.7	4.8	106.6	2.9
22 and 23	-	-	275.8	2.7	62.5	1.7
	8,300	100.0	10,373.6	100.0	3,711.4	100.0

^{1/} Same classification as in Table 3 with addition of Groups 22 and 23 which are service industries and unclassified industries respectively not requiring foreign exchange.

53. The Free List. The free list specifies goods which may be freely imported without license by registered importers of the commodities (new registrants are admitted). First announced in January 1964, the free list then contained four iron and steel items, and was subsequently expanded to 51 items in June 1964. The source of the import is generally specified because the free list was initially, and remains in considerable part, financed by tied commodity aid. The free list has been in suspense since mid-1965 because of the curtailment of commodity aid and the Indo-Pakistan conflict.

54. The expansion of imported intermediate goods through the free list mechanism was intended to and did achieve a significant increase in industrial production through an improvement in the utilization of existing capacity and an improvement in the distribution efficiency of raw material imports. It is expected that the resumption of free list imports on a more adequate scale will not only facilitate the broadening of the industrial base for increased import substitution and exports during the Third Plan, but generally, through the operation of market forces, induce a greater degree of competition among industries, which should lead to a growth pattern determined by efficiency rather than capacity.

55. The free list has marked the first substantial departure from ten years of comprehensive direct controls toward a regime of indirect (fiscal, monetary, etc.) controls. Further steps in this direction should be accompanied by adjustments in the tariff policy.

56. Tariff Policy. The Pakistan tariff has a multiple rate structure with some concessional rates applicable to commonwealth countries. Most duties are ad valorem and levied on the c.i.f. prices of imports. Table 5 presents the average rate of duty by broad types of commodity in an attempt to describe the rate pattern of the schedule. Sales taxes, which are also levied on imports, are included in the calculation of the averages. In 1964-1965 machinery and equipment bore the lowest average burden--22 per cent, and consumer luxuries the highest--144 per cent (actual rates range, of course, from zero to several hundred per cent). With respect to machinery and equipment, differential rates favor the East Wing. In 1964-1965 duties were raised from 12-1/2 per cent (7-1/2 per cent for East Pakistan) to 25 per cent (20 per cent for East Pakistan) but as a temporary relief, collection of only 20 per cent of the increase was required in cash and promissory notes accepted for the remainder.

57. Tariffs in Pakistan have reflected mainly revenue considerations, and strict import licensing has controlled the total volume and composition of imports. The development strategy has dictated the basic pattern of rates with lowest duties on machinery, higher duties on raw materials, and highest duties on consumer goods, especially luxuries. Low duties on pharmaceuticals are motivated by social considerations. The strategy, simply put, has been to encourage industrialization by low rates of duty on capital goods and essential raw materials while discouraging the import of the least essential consumer goods.

Table 5

Average Rate of Duty on Imported Goods by Types of Commodity

Description	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65
Consumption Goods										
(a) Essentials	35	35	35	35	35	55	55	55	56	56
(b) Semi luxuries	54	54	54	54	54	111	111	111	116	118
(c) Luxuries	99	99	99	99	99	140	140	140	142	144
Raw Materials for Consumption Goods										
(a) Unprocessed	26	26	26	26	26	27	27	27	30	31
(b) Processed	43	43	43	43	43	50	50	48	51	61
Raw Materials for Capital Goods										
(a) Unprocessed	23	23	23	23	23	28	28	28	31	32
(b) Processed	38	38	38	38	38	40	40	39	42	55
Capital Goods										
(a) Consumer durables	71	71	71	71	81	81	85	85	89	91
(b) Machinery and equipments	41	44	44	44	44	17	17	17	17	22

Source: Based on Table VI in Ghulam Mohammad Radhu, "The Rate Structure of Indirect Taxes in Pakistan", "PDR Fall, 1964.

58. This policy makes for high profit incentives in the consumer goods industries and lower profit incentives in industries producing capital goods and intermediates. It encourages capital intensive investment and to some extent, industries with a high dependence on imported raw materials and intermediaries. The present tariff thus reflects the objectives of early industrialization: to create import substitution in consumer goods (e.g., textiles, etc.) which had previously to be imported but for the production of which there was a domestic raw material base. Now that there is an industrial base and because additional import substitution must now be achieved largely in intermediates and capital goods (substitution in the consumer area is already largely achieved), we may expect to see a changing tariff structure. In the field of consumer goods excessive protection (in the past largely achieved by outright prohibition) should be discontinued, and import duties raised selectively under the strategy of encouraging domestic production of equipment goods.

59. The regulatory duties imposed on free list items in 1964/65 and the defense surcharge imposed in 1965/66 in the form of a 25 per cent increase in the import duty and sales tax on all items except machinery brought with it a general adjustment in the effective cost of imports which brings it somewhat closer to an equilibrium rate of exchange on the import side, and establishes a better basis for resource allocation through the price mechanism in the case of free list imports. However, specific tariff adjustments in line with industrial policy are still to be made.

Export Policy

60. Export Bonus Scheme. The scheme was introduced in January 1959 as an experiment, particularly to promote industrial exports to which it principally applies. With modifications from time to time, it was extended over the Second Plan and has again been extended to cover the Third Plan as well. The scheme applies to all commodities and manufactured goods except raw jute, raw cotton, raw hides and skins, raw wool, and tea (the traditional exports). Upon realization of exchange earnings and surrender to the State Bank at official rates, an exporter can receive bonus vouchers, the face value of which is equal to a specified percentage of his export earnings. The percentage entitlement to bonus (20 per cent or 30 per cent of the export value) depends upon the type of goods exported. The vouchers are freely transferable and are bought and sold at a premium, the amount of which is determined in a free market. The list of goods importable freely against surrender of bonus vouchers is published from time to time by the Government, and controls the volume of demand for vouchers. The premium accruing to the exporter has been kept fairly stable over the years at around 150 per cent of par by changing the entitlements or the list of items that require bonus vouchers for their importation. A preferential effective exchange rate for exporters is financed by consumers of bonus imports.

At present an exporter with a 30 per cent entitlement has an effective export rate of about Rs. 6.90 and with a 20 per cent entitlement about Rs. 6.20 to the dollar. The effective import rate for bonus imports is about Rs. 11.90.^{1/}

61. The partial devaluation achieved by the operation of the scheme has been effective in promoting manufactured exports over the last five years, and the mission believes that the two effective rates of Rs. 6.20 and Rs. 6.90 based on the present bonus entitlements and the present premium provide an adequate incentive for their continued growth.

62. Other Measures for Export Promotion. Export performance licensing is a relatively minor feature of the import control system which allows industrial units to obtain additional import license up to 50 per cent of the f.o.b. value of their exports. The licenses may be used for import of raw material, packing material, and machinery and equipment for approved balancing and modernization of plant.

63. An export insurance scheme was established in 1962 and a "pay-as-you-earn" scheme was adopted in 1962. This promotes the use of suppliers' credits for investment projects which have export potential. Concessional freight rates and rebates on credit charges have been secured for export transactions. The Export Promotion Bureau provides guidance and market information to exporters, serves as a point of contact, and engages in generally institutional promotion of export. More important is the fact that industries which export at least 30 per cent of their production qualify for a tax holiday.

Tax Policy

64. Industrialists generally regard the tax climate in Pakistan as highly favorable. Fiscal incentives undoubtedly were a significant factor in the good financial performance of Pakistani industry over the Second Plan. The changes in the tax structure from the Second to the Third Plan are in the direction of slightly reducing fiscal incentives to industry, but the mission thinks there is still some more tax capacity in the industrial sector which could be utilized without jeopardizing the rate of private investment.

65. The net income of companies is subject to tax at the flat rate of 30 per cent plus a super tax also at a rate of 30 per cent. Rebates of a portion of the super tax, however, are allowed if the firm fulfills

^{1/} The effective exchange rate obtained by exporters through the bonus scheme may be shown with the aid of a simple formula. $E_e = E_o (1 + r p)$. Given the official rate, E_o , at 4.76; the bonus rate, $r = 30$ per cent; and the premium, $p = 150$ per cent; we see that the effective rate, $E_e = 4.76 (1 + 30 \times 1.50) = \text{Rs. } 6.90$ to the dollar. The effective rate on imports purchased with bonus vouchers is given by, $E_e = E_o (1 + p)$, or $4.76 (1 + 1.50) = 11.90$ per dollar using approximate current values.

qualifying conditions (e.g., pays cash dividend, is a public company, is small in terms of sales, or is in certain areas of mining or food processing). The statutory effective rate of tax can vary from 35 per cent to 60 per cent. Losses may be carried forward for a period up to six years.

66. Depreciation allowances now fall into two categories: initial and normal.^{1/} Business assets which have not been used in Pakistan, although they have been used elsewhere (such as imported second-hand equipment), are generally entitled to an initial (first year) depreciation allowance of 25 per cent on plant and machinery (40 per cent on used ships). The rate of initial depreciation allowance on industrial and commercial buildings is 15 per cent and on industrial housing 25 per cent. An extra depreciation allowance on plant and equipment of 50 per cent and 100 per cent (of normal) respectively, is allowed if double or triple shifts are worked.

67. Tax Holiday. Tax holidays for new industrial ventures take the form of total exemption from the company income tax on profits earned during a given period of time, presently ranging from two to six years, according to defined geographic zones. The most underdeveloped regions receive the longest tax holiday while Karachi and other industrial centers receive the shortest. This may result in a ring of new industries being established on a perimeter ten miles or so outside the city limits. The present scheme was started in April 1959 and was to expire at the end of the Second Plan, however, the law with some modifications was extended for the duration of the Third Plan. To be eligible for tax holiday, a new industrial venture must fulfill the following conditions:

- (1) Be primarily based on Pakistani raw materials or be included in a rather broad list of industries which by fiat qualify for the holiday (see Table 6);
- (2) During the tax holiday, they must set apart in a special fund 60 per cent of the exempted profits which can only be invested in the development and expansion of the industry or some other industry in the IIS;
- (3) Be owned and managed by a company registered in Pakistan with paid-up capital of at least Rs. 50,000 (U.S.\$10,500).

^{1/} Formerly, industries established under the tax holiday scheme were allowed, at the expiration of the holiday period, to calculate depreciation allowances for tax purposes on the basis of the original cost of the assets even though they had been in use for several years. This feature was changed when the law was extended to cover the Third Plan so that now after expiration of the tax holiday period, the basis for calculation of depreciation allowances is the written down value of the capital asset (i.e., original cost minus normal depreciation). A development allowance, which gave additional depreciation of 20 per cent on plant and equipment (installed after June 30, 1962) so that 120 per cent of the cost of plant and machinery could be recovered as depreciation charges, has also been eliminated.

Table 6

Industries Eligible for a Tax Holiday

- (1) Drugs and pharmaceuticals (basic manufacture)
- (2) Fertilizers
- (3) Insecticides and pesticides (basic manufacture)
- (4) Petrochemicals
- (5) Wires and cables
- (6) Agricultural machinery
- (7) Boilers and compressors
- (8) Tractors
- (9) Machine tools and manufacture of other capital equipment
- (10) Manufacture of trucks, cars, scooters, autorickshaws, and bicycles
- (11) Ship building and repair
- (12) Diesel and I.C. engines
- (13) Textile machinery including manufacture of looms and spindles
- (14) Selected mineral production (coal, chromite)
- (15) Refractories
- (16) Manufacture of radio components
- (17) Ceramic and sanitary-ware
- (18) Livestock feed
- (19) Gas and electric appliances, gas and electric meters and water meters
- (20) Canning and preservation of food
- (21) Canning and processing of fish
- (22) Components of above
- (23) Footwear and leather goods
- (24) Tanning and curing leather
- (25) Surgical instruments
- (26) Sports goods
- (27) Cutlery
- (28) Carpets
- (29) Other units which export at least 30 per cent of their production
- (30) Poultry and dairy farming

Tax Holiday: Geographical Zones

- I. Areas eligible for a tax holiday of six years:
 - (1) The whole of East Pakistan excluding Dacca, Narayanganj, Chittagong and Khulna and areas within a radius of ten miles of their municipal limits.
 - (2) All areas of West Pakistan lying to the West of the Jhelum/Chenab/Panjnad/Indus line but excluding the areas under III.
- II. Areas eligible for a tax holiday of four years:
 - (1) The cities of Dacca, Narayanganj, Chittagong and Khulna and the areas within a radius of ten miles of the municipal limits of these cities.
 - (2) The whole of West Pakistan excluding the areas eligible for the tax holiday for two years.
- III. Areas eligible for a tax holiday of two years:

The Tehsils of Nowshera, Mardan, Rawalpindi, Jhelum, Sialkot, Gujranwala, Lahore, Lyallpur and Multan and the Talukas of Sukkur and Hyderabad and Karachi.

68. Capacity Tax Proposal. Aware of the necessity of encouraging industrialists to use their plant to full capacity, the Government has recently obtained powers to levy taxes on an assessed production capacity of the plant. This would seem a questionable device at present, when output is hamstrung by the lack of raw materials. When raw materials are freely available, a capacity tax would certainly encourage high plant utilization. In practice, however, capacity taxes have met with the following problems:

- (1) Apart from one or two industries, such as spinning and weaving of textiles, equitable assessment of capacity is exceptionally difficult. Thus, an arbitrary decision must be taken by the assessor visiting the plant. This introduces the danger of corruption.
- (2) The tax gives an incentive for plant utilization only and none for economies in material or labor costs.
- (3) In time of recession and falling sales, the industrialist bears a double burden.

For these reasons, the mission favors other forms of taxation in preference to a capacity tax.

Financing

Sources of Industrial Financing

69. Manufacturing industry in Pakistan relies for its financing on three principal sources: (1) reinvestment of profits, (2) flotation of new stock, and (3) credit by specialized banks, mainly the Pakistan Industrial Credit and Investment Corporation (PICIC) and the Industrial Development Bank (IDBP). Two additional sources are the commercial banks which extend credit for working capital mainly in the form of credits against inventories and imports, and private foreign investment.

70. Available data are not sufficient to arrive at aggregate investment figures for private industry from the financing side. Total private investment is calculated by the Planning Commission as a residual after estimating total investment on the basis of physical data such as the consumption of cement and structural steel, import of machinery, etc., and deducting public investment. Financial data are available in part, however, and the following sections describe the principal sources mentioned above.

71. Self-generated savings. A recent study conducted for the Pakistan Institute of Development Economics and the Planning Commission analyzed the balance sheets of all non-financial companies (industrial, construction, transport and commercial) listed on the Karachi Stock Exchange, to obtain a representative sample for the calculation of corporate savings. The study covers the period 1959-1963 during which the number of industrial and commercial companies studied increased from 59 to 104.

72. Over this period, the paid-up capital of such companies increased from Rs. 781 million to Rs. 1,503 million, while the aggregate net worth of the companies increased from Rs. 982 million to Rs. 2,112 million or by Rs. 1,130 million. This is Rs. 408 million more than the increase in the paid-up capital, reflecting the accumulation of reserves invested but not capitalized. To obtain the total of self-generated savings, we must add to this figure the amount of capitalized reserves and the reinvestment of dividends. There are no data on these elements but they probably constituted a considerable part of the increase of Rs. 722 million in paid-up capital. If, as seems probable, about 60 per cent of the increase in paid-up capital consisted of capitalized reserves and reinvested dividends, about two-thirds of the increase in net worth was self-generated over the four-year period.

73. The fairly high average rate of profitability, with gross profits (before taxes and depreciation) representing about 18.5 per cent of gross sales and 26 per cent of net worth, also supported a strong demand for loan capital (obtainable at 6 to 8 per cent from PICIC and IDBP), which expanded at a faster rate in these companies than their net worth and by almost the same absolute amount.

74. The following table indicates that gross profit as a proportion of sales declined from 19.7 per cent to 18.2 per cent. This seems to show that the effect on profits of more competition was greater than the effect of better utilization of plant, at least up to 1961. Since the import liberalization program became significant only after 1963 and some reduction in unit costs for many industries should have resulted therefrom, it is likely that the declining profit trend was reversed again in 1964/65.

Table 7

Gross Profits in Relation to Sales, Net Worth,
and Capital Employed 1959-1963

(Millions of Rupees)

	1959	1960	1961	1962	1963	Average 1959-63
Gross Profits (before taxes and depreciation)	262	333	368	422	522	381
Gross Sales	1332.5	1745.3	2152.2	2264.2	2862.3	2071.3
Ratio of Gross Profits to Gross Sales	19.7%	19.0%	17.1%	18.6%	18.2%	18.5%
Net Worth	982.2	1202.7	1463.9	1694.0	2053.3	1479.2
Ratio of Gross Profits to Net Worth	27	28	25	25	25	26
Gross Capital Employed	1839	2186	2673	3166	3893	2751
Ratio of Gross Profits to Gross Capital Employed	14	15	14	13	14	14
Paid-up Capital	780.6	927.2	1119.9	1263.4	1502.7	1118.8
Ratio of Gross Profits to Paid-up Capital	33.6%	35.9%	32.8%	33.4%	34.7%	34.1%

Source: Khadija Haq and M. Baqai, Savings in the Corporate Sector in Pakistan (unpublished draft).

75. The amount of gross corporate profits just about doubled in these four years from Rs. 262 million to Rs. 522 million. Of this, roughly 30 per cent had to be set aside for taxes. The tax rate varied somewhat over the period with changes in the tax law, but on the whole it appears that with a basic corporate income tax of 50 per cent and effective tax payments being fairly stable at about 30 per cent of gross profits, roughly two-fifths of gross profits have been tax exempt. Of course, the expiry of tax holiday eligibility for one group of companies was offset by other companies

becoming eligible for tax holiday. The distribution of dividends was about 20 per cent of gross profits on average, so that self-generated savings (including depreciation) available for direct gross investment came to about 50 per cent of gross profits. Within this, the allocation for depreciation declined over the years from 32 per cent in 1959 to 27 per cent in 1963. On the other hand, the ratio of retained earnings (excluding depreciation) to gross profits increased from 18 per cent to 25 per cent.

76. It would appear from this study that profits directly ploughed back by the companies whose balance sheets were analyzed were in the order of Rs. 250 million in 1963 or 34 per cent of the income on capital employed in that year. This does not, however, include capitalization of reserves and reinvestment of dividend income. As indicated above, an additional one-third of capital employed may have been derived from the latter two sources. Official estimates of total profits ploughed back by large-scale industry are Rs. 450 million in 1960/61 and Rs. 750 million in 1964/65.

77. Significant differences exist between different industries with regard to profits and their disposal. The rate of return (gross profits as per cent of net worth) was highest for the sugar and jute industries in 1963 (34 per cent) followed by fuel/power and pharmaceutical/chemicals (31 and 28 per cent). They were lowest in textiles (22 per cent) transport (22 per cent) and miscellaneous (23 per cent). However, this was subject to substantial change over the years; thus the sugar industry yielded only 5 per cent in 1960, whereas profits in the textile industry in that year were 33 per cent. A summary of selected data for 1963 is given in Table 8 .

Table 8

Selected Data by Industries for 1963

(Millions of Rupees)

	Net Worth	Sales	Gross Profits	Tax	Divi- dends	Depre- ciation	Retained Earnings
Textile and Allied Manufactures	510	615	113	33	20	26	34
Jute	224	388	77	27	16	14	20
Cement	77	49	19	5	0	5	9
Pharmaceutical/Chemical	59	70	16	7	3	3	3
Engineering/Construction	98	228	21	10	4	5	2
Fuel/Power	397	354	110	32	24	32	22
Transport/Communication	201	276	44	5	5	28	6
Sugar and Allied Manufactures	71	92	24	1	3	2	18
Miscellaneous	416	791	97	39	18	27	13

Source: Appendix table 6.

78. The Capital Market and Non-Specialized Financial Institutions. The capital market plays a minor role in the financing of new industrial investment in Pakistan but strong efforts are being made to expand its role. Large family groups are the predominant source of capital for subscription to new issues of stock for large-scale manufacturing enterprises. Tax laws recently enacted were designed to encourage a wider participation of stock-holders by levying higher corporate income tax on "private" companies with less than 50 per cent of their shares in the hands of the public. But the absorption of family stock offered for sale as a consequence is somewhat reducing the market's capacity to absorb new issues.

79. Of the two stock exchanges at Karachi and Dacca, only Karachi is an active market. It started mainly as a guilt-edged market, developed through operations of the State Bank of Pakistan. In the mid-fifties, the first industrial stock issues were successfully offered for public subscription, and current trading gradually developed. Since 1959 private savings invested in shares of all types have been between Rs. 100 million and Rs. 160 million a year (see Table 9 below). This of course includes the saving of dividend income reinvested by managers or owners of existing enterprises.

80. Apart from direct investment by individuals in corporate shares, capital investments in industry are made by insurance companies, commercial banks, the National Investment Trust, and of course, the specialized industrial financial institutions.

Table 9

Non-Corporate Private Savings in Financial Assets

(Millions of Rupees)

	1959	1960	1961	1962
Currency holdings	102	338	-128	52
Bank deposits	148	61	164	298
Postal savings schemes	59	59	70	82
Provident funds	52	54	71	69
Life insurance	30	39	52	66
Corporate shares	164	163	98	131
Gross savings	555	713	327	699
Less: borrowings ^{1/}	57	57	67	70
Net savings	498	656	260	629

^{1/} Loans taken by individuals from government agencies, the Agricultural Bank, House Building Finance Corporation, and Refugee Rehabilitation Finance Corporation.

Source: Pakistan Development Review, Vol. IV, No. 1.

81. Postal savings and Provident fund schemes are government operated, and their net receipts are transferred to the central budget. However, insurance companies hold a part of their assets in industrial stock approved by Government, along with a fixed minimum percentage of government securities. Commercial banks lend considerable amounts each year against stock exchange securities (about 8 per cent of total advances) and a considerable part of advances against non-specified collateral (20 per cent of total advances including unsecured) is presumably used for the acquisition of industrial shares. Altogether, about 40 per cent of commercial banks' advances are classified as credit to manufacturing industry, with the total amount outstanding on July 1, 1965 at Rs. 2,130 million, which was Rs. 728 million more than one year earlier. However, it must be noted that private credit expansion has been unusually high during 1964/65, and of course, the financing of investment in fixed assets represents only a small part of commercial banks' activities in industry.

82. Although the commercial banks as a rule do not hold industrial stock for their own account, it is clear from the above that they play an important role in indirectly financing private portfolio investment. It was with their support that public subscription to new flotations increased from Rs. 65 million in 1960/61 to Rs. 300 million in 1964/65. This was only one-seventh of self-generated savings in 1960/61, but it increased to two-fifths of such savings in 1964/65. Official projections for 1969/70 imply a relative slow-down of new flotations and a ratio of one to three between the two sources, with Rs. 500 million of new flotations and Rs. 1,550 million of self-generated savings. This is reasonably consistent with the evidence from the special study discussed above.

83. The National Investment Trust was established in 1962 as a mutual fund to encourage shareholding by small investors. It is the only investment company in Pakistan, and is controlled by ten shareholders, including PICIC, IDBP, Pakistan Insurance Corporation and private banks and individuals. Units were issued at Rs. 10 a piece. About half of its portfolio is in government bonds. It is entitled to take up 20 per cent of any new share flotation. At the end of 1964 the value of outstanding units was Rs. 77 million. Thus it is a fairly significant factor in the market.

84. Private Foreign Investment. The net inflow of private capital into Pakistan is at the rate of \$20-30 million a year at present. For the Third Plan as a whole, the Government has projected a total inflow of Rs. 700 million (\$147 million). A study prepared by the State Bank of Pakistan covering the period 1960-1963 showed an inflow of private capital of Rs. 306 million in these four years, of which Rs. 191 million was investment in mining and manufacturing industries. Over half of the total has been from the U.K. Government policy is generally favorable to the inflow of private foreign investment but, as evidenced by the above statistics, its contribution to industrial financing has been limited.

Industrial Financing Institutions

85. In order to meet the growing and accelerating requirements for medium- and long-term credits, with investment standards necessary to carry out the industrialization plans with a minimum of wastage of limited resources, the Government has helped in establishing specialized industrial financing institutions to channel the funds into the different sectors within the guidelines set by the Industrial Investment Schedules. We will summarize the nature and functions of these establishments here. More details are in Annex IV. At present, the industrial financing institutions are:

- (a) The Pakistan Industrial Credit and Investment Corporation Limited (PICIC), incorporated in 1957 and presently the most important source of foreign exchange loans to large-scale private industry. It also takes equity participations and does some underwriting.
- (b) The Industrial Development Bank of Pakistan (IDBP), which came into existence through the reorganization of the Pakistan Industrial Finance Corporation (PIFCO) in July 1961; its main task is to provide long- and medium-term financing to medium- and small-scale industries.
- (c) The Investment Corporation of Pakistan (ICP) which was established in February 1966. Its activity will primarily be the channelling of savings into the new capital issues market, underwriting, and related activities.
- (d) In the public sector, the West Pakistan Industrial Development Corporation (WPIDC) and the East Pakistan Industrial Development Corporation (EPIDC), founded in 1962, following the bifurcation into two provincial organizations of the original Pakistan Industrial Development Corporation (PIDC). They have been given the responsibility of supplementing the private sector in the development of large-scale public sector industries in their respective provinces.
- (e) In the small industries field, there are two government institutions, the West Pakistan Small Industries Corporation (WPSIC), which is the result of the setting up in 1965 of the Small Industries Division of WPIDC as an autonomous body, and the East Pakistan Small Industries Corporation (EPSIC), created in 1957. These institutions sponsor, sanction and assure part of the credit risk involved in financing small units in the private sector. However, IDBP is the disbursing agency making the final financing decisions and absorbing part of the credit risk.

86. PICIC. Since its inception in 1957, PICIC has sanctioned loans, net of cancellations, amounting to Rs. 933 million that are associated with industrial investments totalling approximately Rs. 2,500 million. Because of the size of its operations, the importance in the Pakistani industrial community of its main shareholders, the skill and imagination of its management, and its ability to obtain loans directly from foreign sources, PICIC has become the most effective spokesman for private enterprise.

87. PICIC's financial returns have shown constant improvement over the years. Net profits of Rs. 7.2 million were earned in 1964, equalling 15.2 per cent of net worth and 18 per cent of share capital. Dividends paid were 7 per cent, equalling 38.9 per cent of net earnings. Sums overdue on loans in arrears at the end of 1964 amounted to only 0.4 per cent of the total portfolio, and chances of recovery of even this small per cent are good. A slowdown in the sanctioning of new loans was registered during 1965, in part as a consequence of the Indo-Pakistan war, and in part because of the general tight credit situation that prevailed until the third quarter of the year. However, its disbursements were higher than ever in that year.

88. A cause of concern in PICIC's past operations has been the unbalanced geographical distribution of its sanctions between East and West Pakistan. Until recently, East Pakistan's share was on a decline from 35 per cent in 1958-1960 to only 11.2 per cent in 1965. This record is in contrast to the Government's desire of balancing the economic development of the two provinces. To a certain extent, this is explained by the relatively smaller scale of East Pakistan industry compared with PICIC's high lending floors of Rs. 1.5 million in foreign exchange and Rs. 2.5 million in local currency. It is also true, however, that PICIC has concentrated on meeting the financing requirements of the buoyant private sector of West Pakistan. Recently, however, PICIC has given indications of a more active approach towards East Pakistan. It is presently considering the sanctioning of loans amounting to Rs. 95 million for the erection of seven jute mills in that province, and has also actively promoted and indicated its desire to participate in the financing of some of the fertilizer plants planned there.

89. IDBP. IDBP has been the fastest growing industrial financing institution in Pakistan and its operations have undoubtedly had a major impact on the country's industrial development. From the start of its activity in 1961 until February 1966, it sanctioned 2,528 loans totalling Rs. 1,029 million (more than PICIC over a longer period). Rs. 506 million were in East Pakistan and Rs. 523 million in West Pakistan, showing a good balance between the two provinces. This is a remarkable contribution to the development of East Pakistan's industry. It has been done partly in cooperation with the East Pakistan Industrial Development Corporation (EPIDC), particularly in setting up 18 new 250-loom jute mills.

90. IDBP's repayment performance has not been very satisfactory. It has not been able to secure repayment terms reflecting the possible cash generation in the enterprises receiving its loans. Also, the quality of its

appraisal work in general needs to be improved. Loans in arrears are estimated to run as high as 8 per cent of the total amount of the portfolio. IDBP has become a vital part of the private industrial credit structure of Pakistan, and a strengthening and improvement of its operations would help it make use of its resources to much better advantage.

91. Though most of IDBP's loans are secured by adequate collateral, its present equity seems low compared to the volume of its operations and the risk involved. A better capital structure could be achieved by transforming the IDBP's local currency debts to the Government into low-cost, long-term loans, subordinated to other debt.

92. ICP. The recently created ICP is expected to help attract more savings to the capital market. It is jointly owned and managed by the private sector and the Government. It will only engage in local currency operations, and is expected to help finance medium-sized enterprises, which otherwise would not be able to float issues in the capital market. ICP as a source of rupees may become a desirable complement to IDBP's and PICIC's foreign exchange operations.

93. EPIDC and WPIDC. The Pakistan Industrial Development Corporation (PIDC) and, subsequently, WPIDC and EPIDC, have given an important impulse to Pakistan's rapid industrial development. While private industry has had a comparatively free choice of investing in industries on the Industrial Investment Schedules, the PIDCs have had to take the initiative in setting up more difficult industries, sometimes not well suited to the conditions of the country.

94. Public sector industrial investment for the Third Plan is set at Rs. 4,580 million, Rs. 3,100 million for East Pakistan and Rs. 1,480 million for the West. Responsibility for some of this financing could be transferred to the private sector by developing techniques for associating private entrepreneurs with PIDC enterprises and accelerating EPIDC's and WPIDC's disinvestment policy. As a result of the buoyancy of the private sector in West Pakistan, the amount of WPIDC's investments have been shrinking. Out of original Second Plan allocations of Rs. 588 million, WPIDC's net total sanctions were Rs. 350 million.

95. Funds advanced by Government to WPIDC for investment in different projects in the past have been treated as investment on behalf of the Government and entitled to dividends. From 1965/66 these funds will be considered as loans bearing 2 per cent interest. It is expected that the greater profit motivation embodied in the new policy will have a beneficial effect on the overall efficiency and profitability of WPIDC's operations.

96. EPIDC's role in East Pakistan has been of particular importance to the development of the province because of the slower emergence of a group of private entrepreneurs compared with the West. Not only has it carried out its own program, but often it has encouraged the private sector to associate with it. A measure of the hoped-for development of East Pakistan is the emphasis given in EPIDC's Third Plan financial target, which is an ambitious

average yearly expenditures of Rs. 450 million envisaged for the present Plan, compared to the Second Plan's average of Rs. 121 million and 1964/65's Rs. 205.6 million.

97. It is emphasized that our general feeling that the PIDC's have contributed substantially to Pakistan's industrial development does not involve an endorsement of some projects in the Third Plan. These are discussed in appropriate industry-by-industry sections below.

98. Various preferences designed to promote Bengali entrepreneurs in East Pakistan industry has discouraged West Pakistani investors in the private sector, and contributed to inflate the role of the public sector. Deprived of the beneficial contribution of a buoyant private sector, the over-all development of East Pakistan is therefore being delayed and, probably, carried out with somewhat less efficiency.

99. WPSIC and EPSIC. The encouragement of small industry should be a major means of accelerating industrialization in Pakistan, of broadening the ownership base, and of creating new jobs with a minimum of investment. However, the small industries program to date must be considered a failure.

100. On the public sector side, it was thought rightly that the first step should be the creation of an infrastructure consisting of well-equipped small industries estates, training centers and common facilities for the private sector. However, the program was not adequately planned and proved too ambitious compared to the resources allocated. Little selectivity was applied in the location of estates. Consequently, some of the estates compete with others for occupants.

101. Private sector development was, to some extent, hampered by these deficiencies in the public sector program, but the main reasons for the failure were:

- (a) the acute shortage of funds allocated; and
- (b) the procedures of the Industrial Development Bank of Pakistan (IDBP), the official financing agency for small industries.

102. From its establishment in 1961 until February 1966, small industries in West Pakistan had received only 5.3 per cent of IDBP's total sanctions in that province, while in East Pakistan the figure was still smaller, 1.4 per cent. A distribution of new sanctions more in favor of small and medium industries would be more in line with the specific purposes for which IDBP was originally created, which included not only the economic but also the social objective of assisting new entrepreneurs to emerge.

103. In view of the fact that IDBP receives adequate collateral for its share of the risk in small industry loans (it assumes only 25 per cent of the risk, and has a prior right to the collateral), and that the Small Industries Corporations conduct extensive feasibility studies on the projects they sponsor, it might be advisable for IDBP to set up a Small Industries Financing Department, which would use less time-consuming appraisal methods and would be allocated a reasonable proportion of the bank's total funds.

104. Together with this it is suggested that, because of present difficulties in the organization and staff of IDBP, its lower lending limit should be set at Rs 100,000, with the Small Industries Corporations handling the very small loans.

105. It appears essential, if any success is to be achieved, that both the Government and IDBP should increase their efforts to place the financing of small industries on a more adequate footing. It would be advisable inter alia that the Small Industries Corporations attempt to diversify and increase their sources of funds by entering into financing agreements with other lending institutions.

106. The Small Industries Corporations are helped in their operations by foreign consultants familiar with their problems. This opportunity should be used extensively to train the Corporations' staffs and improve their technical capability so as to enable them to take over after the phasing out of the consultants' services, without any loss in the quality of the work.

107. The implementation of a successful small industries program has proved difficult and arduous, wherever undertaken. In Pakistan, the general economic environment is not unfavorable to small-scale industries, and the present stagnation has more to do with institutional factors which can be remedied.

CHAPTER 4

PRODUCTIVITY OF INVESTMENT

Relation of Investment to Output

108. In order to forecast the contribution, which investment in industry will make to economic growth, it is essential to know the approximate values of the gross incremental capital/output ratios for the different types of industry in the investment program. Generalization about these ratios for broad categories of industry is difficult. They will depend upon local conditions including *inter alia* the size of the market and the stage of technical development of the specific undertakings. However, as a general rule, the ratios tend to be relatively high for intermediate goods industries where capital investment is large in relation to value added. If raw materials have to be imported, the total added value produced in the country (by intermediate and related primary materials production) may be low as in the case of steel making with imported pig iron. Capital goods industries also usually have high capital investments but their added value tends to be high too, so that the resulting ratio may be only a little higher than for consumer goods industries. This appears to be the case in Pakistan.

109. The Harvard Advisory Group, working in the Planning Commission, has estimated the capital/output ratios for different industries, based on the relation between investment and output in 1960/63. The calculated ratios are shown in Appendix table 10. The mission has summarized these ratios into the above-mentioned groupings to compare the Second and Third Plans. The ratios are weighted with the investment projections for the Third Plan. Table 1 compares the weighted average ratios for the two Plans. It illustrates that the overall industry capital/output ratio may be only marginally higher in the Third than the Second Plan.

Table 1

Comparison of Capital/Output Ratios

2nd Plan Actuals and 3rd Plan

	Consumer Goods	Intermediate Goods	Investment Goods	Average
<u>2nd Plan Actuals</u>				
Private Sector	1.81	3.24	2.06	2.36
Public Sector	1.65	3.61	2.20	3.14
Total	1.80	3.37	2.09	2.52
<u>3rd Plan</u>				
Private Sector	1.86	3.23	2.13	2.50
Public Sector	1.56	3.86	2.47	3.08
Total	1.81	3.46	2.26	2.68

This is due to the fact that the main emphasis in investment has been shifted somewhat from consumer goods to investment goods which have similar capital/output ratios. The heavy industries which are capital intensive (iron and steel making, heavy chemicals and cement) are all classified in the intermediate group.

110. The analysis above assumes that the capital/output ratios for each industry will remain constant between the Second and Third Plans. There are, of course, several factors which may change these ratios over time, such as:

Factors tending to increase ratios:

- a. Increased investment in industrial estates, training facilities and others which are not immediately productive.^{1/}
- b. Increasing use of tied loans which may result in increases in the price of equipment.

Factors tending to decrease ratios:

- a. Increased availability of raw materials resulting in better utilization of plant;
- b. Increased productivity of workers and improved management;
- c. Technological advances.

111. Increased availability of raw materials is potentially the most important among these factors. In the last two years of the Second Plan, the ratios for import-intensive industries decreased considerably because of greater availability of raw materials. It is reasonable to assume that the overall capital/output ratio for industry will not show a significant increase during the Third Plan period, provided raw materials can be supplied which will enable all industries to work a full one shift and some two shifts.

112. As a further step in investigating the productivity of investment in the Third Plan, we examined the available information on actual project proposals to see if the growth in industrial output projected in the Plan was consistent with the level of investment planned. Nine industry groups were selected which together constitute over 80 per cent of the total planned investment.^{2/} A rough estimate was then made for industries not

^{1/} However, the Third Plan provisions for these investments are slightly lower than Second Plan (6 per cent of the total as compared with 8 per cent).

^{2/} Data was taken from the PIDCs' Project Proposals (PCI's) for the public sector, the IIS and actual loan proposals of PICIC for the private sector.

covered by our sample. Gross investment figures used are somewhat below Plan figures because the mission attempted to evaluate the feasibility of the proposed Plan investment in each industry and arrived at lower estimates in some cases and higher ones in others. The capital/output ratios so calculated averaged 2.82 as shown in table 2.

Table 2

Estimates of Investments
and Added Values Over
Third Plan Period

(In Millions of Rupees)

Group		Original Plan Gross Investment	Mission Estimates		Capital/ Output Ratio
			Gross Investment	Incremental Added Value 1969-70	
Group I	Food	786	661	239	2.77
Group IV	Textiles	2,477	2,052	844	2.44
Group VII	Furniture	634	584	338	1.73
Group XII	Chemicals	1,470	1,714	710	2.41 ^{1/}
Group XIV	Petrochemicals	826	928	266	3.49
Group XV	Non-metal Minerals	980	683	186	3.67
Group XVI	Basic Metals	1,546	764	224 ^{3/}	3.41
Group XVIII	Mechanical Machinery	607	581	115	5.06 ^{2/}
Group XX	Transport Equipment	700	792	263	3.00
		10,026	8,759	3,185	2.75
Other Groups at Estimated Capital/Output Ratio		2,036	1,779	838	2.12
Add investment that is not directly productive such as, training, in- dustrial estates, etc.		818	818	-	-
Total		12,880	11,356	4,023	2.82

^{1/} Unusually low for Chemical Industry due to high proportion of urea plants with high added value.

^{2/} Unusually high for heavy engineering due to several plants not coming into production during Plan period.

^{3/} Including 95 for output of Karachi Steel Mill.

The ratio arrived at by the above method does not appear unduly optimistic in the light of Table 1 which shows an even more favorable ratio arrived at by using the Harvard Group capital/output estimates.

113. We conclude from these calculations that even with a total investment of Rs. 11.4 billion or 12 per cent less than the Plan indicates, the additional value added in 1969/70 would be roughly 50 per cent higher than the Plan figure of Rs. 2,710 million^{1/} if investments were made in time to produce outputs in the last year of the Plan.^{2/} Even allowing for some lags in investment we believe that the Plan substantially under-estimates the growth in GNP from the industrial sector. These capital/output ratios are based on one shift operation for most industries other than textiles.

Production and Installed Capacity

114. In a country like Pakistan lacking adequate mineral resources and other indigenous raw materials, the expansion of plant must be coordinated with provision for imports of such materials. If foreign exchange is spent on plant and then imports of raw materials are only sufficient to run them at half capacity, half the capital cost is wasted.

115. Both, sources of foreign aid and the import licensing authorities in Pakistan, have ranked the financing of capital goods imports above raw materials and components apparently on the assumption that they were thus making a greater contribution to economic development.^{3/} At the same time, many industrialists expanded their capacity primarily because this increased their entitlements to licenses for raw materials. For the three years 1960/61 through 1962/63, imports of capital goods increased by 50 per cent while raw material imports remained virtually constant. A survey in 1963 estimated that about 80 per cent of the plants were operating at only one-third capacity, nearly all citing insufficiency of raw materials as a main cause.

116. The import liberalization program, started in 1964 with the introduction of the Free List (see paragraph 53), improved the situation substantially, since the 51 commodities on the list included nearly all raw materials which Pakistan's industry requires from abroad, apart from some semi-finished goods and components and some essential consumer items. Imports of items on the Free List grew by 46 per cent in the last half of 1964, compared with the same period in 1963, although total imports grew by only 14 per cent.

1/ Third Five-year Plan, May 1965 p. 129. Revised Plan is Rs. 12,200 million so our estimate is only about 7 per cent lower than the Revised Plan.

2/ Of course, a heavy bunching of investments in the last year or so of the Plan would reduce output in 1969/70. To the extent possible, account has been taken of this factor in table 2, but the timing of investments may still be somewhat optimistic.

3/ This is not the appropriate place for a discussion of this issue. However, it is clear that given appropriate domestic policies, foreign aid in a form calculated to maximize utilization of the productive capacity of the recipient will also maximize economic growth.

117. A study was commissioned by U.S. A.I.D. to assess the effect of import liberalization on the utilization of industrial plant capacity. A survey was conducted of 65 industrial plants which imported over 90 per cent of their raw materials. The results are tabulated below:

Table 3
Single Shift Capacity Utilized
(Per Cent)

	West Pakistan	East Pakistan	Total
July-December 1963	53	54	53
January-June 1964	61	63	62
July-December 1964	76	77	76
Late February-Early March 1965	80	85	82

118. The increase from 53 per cent to 82 per cent in 1½ years, of course, also improved the capital/output ratio for the industrial sector in 1964/65. There is some evidence to show that productivity has fallen over the first nine months of 1965/66 as a consequence of import restrictions which were reimposed as a result of the emergency and the shortage of commodity aid commitments. However, the general impression gained from factory visits by the mission was that industries had been living on stocks accumulated during the previous year. Therefore as yet production has not suffered drastically. However, inventories of raw materials seem to be at a very low level and a significant drop in manufacturing output must be anticipated late this fiscal year and extending into 1966/67 unless a freer import policy can be adopted soon.

119. The mission found it disturbing that, even with the shortage and high cost of capital equipment, production targets and provision of materials are based for the most part on a single shift operation except in the case of textiles and a few other industries using indigenous raw materials. Working on a two-shift basis, not only would production be doubled, but overheads would be sharply reduced, and scarce senior management would be employed to much better advantage.

Import Substitution and the Industry Program

120. The measurement of import substitution involves some definitional problems. In the usually accepted sense of the term, if the ratio of total imports to GNP is reduced over time, one may say that import substitution has occurred in the economy. Since, as between 1964/65 and 1969/70, we expect this ratio to rise from 10.7 per cent to 11.9 per cent, clearly no import substitution in this sense is contemplated during the Third Plan.

However, the resources gap (current account deficit) is expected by the mission to decrease from 6.3 per cent to 5.3 per cent of GNP over this period. In this section we will consider only the effect of the industrial program in reducing (or slowing down a possible increase) in the resources gap. This seems consistent with the use of the concept in the preparation of the Third Plan.

121. Magnitude of the Problem. In the course of preparation of the Plan, various estimates were made of the amount of domestic production that would have to be substituted for imports during the Plan in order to preserve balance of payments equilibrium, given Rs. 16.5 billion of foreign aid. While no overall estimate of import substitution appears in the Plan, the input/output model for 1969/70 that was used in preparing the Plan indicates that about Rs. 1.6 billion additional import substitution and/or export earnings would be required. This is "additional" in the sense that it is additive to the import substitution that would have occurred if the changes in the relation between imports of intermediate goods and output that were occurring in the Second Plan (1960/61 to 1964/65) continued to the same degree in the Third Plan.^{1/} Structural changes in the form of a high proportion of total output in the form of intermediate and capital goods production is proposed to achieve this additional import substitution. Subsequent to making the Rs. 1,600 million estimate, the rate of agricultural growth assumed in the Plan was reduced from 5½ per cent to 5 per cent per annum, with resulting decrease in estimated export earnings and increase in additional import substitution requirements which were recalculated (in a separate study sponsored by A.I.D.) at Rs. 2,900 million. However, in our latest economic report (AS-112a, May 20, 1966), we have estimates that export earnings in 1969/70 may be about Rs. 250 million more than the Plan estimate and this should reduce the "additional" import substitution problem to about Rs. 2,650 million.

122. Balance of Payments Effect of Industry Program. Two basic questions arise, namely, to what extent will the industrial investment program as now formulated help to meet the import substitution objective; and what changes in the program are indicated by further studies of specific industries? In respect of the first question, the mission has made a rough estimate of the effect that might be expected on the 1969/70 balance of payments from the industrial investment program discussed above. We have assumed that the industries and industrial groups included in the program will all produce items for which there is a demand in Pakistan or which can be exported. Thus in a gross sense, the added value produced by this investment will go to meet the import substitution objective. However, to measure the net balance of payments effect of this investment, it is necessary to deduct from the total added value produced in 1969/70 from the Third Plan industrial investment (1) the direct import component of

^{1/} In technical language if Second Plan marginal elasticities between inputs of intermediate goods and output remained constant through the Third Plan.

the increased production; (2) the additional import demand generated by the income resulting from the new production; and (3) the service on the foreign debt incurred to acquire the necessary plant and equipment. As it is indicated in Table 2 above, the total value added (increment to GNP) resulting from the Third Plan investment in the industrial sector should be about Rs. 4 billion in 1969/70. Using ratios from the Planning Commission's input/output analysis, the mission has estimated that the direct import component of the gross production required to obtain this amount of value added will be Rs. 1,413 million in 1969/70 (Table 4). Deductions (2) and (3) mentioned above had to be calculated on a rough basis. We assumed that the expenditure of the income generated by the added value in the industrial sector would be divided between domestic goods and imports on the same basis as all other income. In 1969/70, about 12 per cent of income is expected to be spent on imports. Thus the import demand generated by producing this Rs. 4 billion of added value would result in increased import demand of Rs. 480 million.^{1/} Debt service on the foreign component of the new investment in the industrial sector will, considering the terms on which Pakistan is receiving foreign aid, be comparatively small, probably not more than Rs. 100 million. Thus the net import substitution resulting from the industrial program would appear to be about Rs. 2,000 million. If account is also taken of the import component of agricultural inputs to industry and of the power, communications and other service sectors, which have to increase their outputs in order to sustain this increase in industrial production, the net balance of payments effects will be further reduced. However, it seems possible to conclude that the net import substitution effects of the industrial program will be in the range of Rs. 1,000 to 1,500 million.^{2/}

123. In respect of the second question posed above, namely, what alterations in the Plan are indicated by the need for import substitution, certain studies have been proceeding but have not yet reached definitive conclusions. While the mission was in Pakistan, a limited study became available.^{3/} This consisted of arranging all industries into seven groups (each called a nexus) with each group made up of industries internally related both as suppliers and consumers. Thus transactions among groups are much less important than those within them. Each of these groups were then treated as a bloc for purposes of ascertaining the effect on the balance of payments of a unit increase in value added produced by the group. The investment per unit of value added by the nexuses were also ascertained and the results summarized as follows:

-
- 1/ We recognize that the amount of import substitution achieved will affect the ratio between inputs and total income. There is therefore some circularity in this analysis. However, the practical consequences are likely to be minimal.
 - 2/ This is not to say, however, that there will not be a shortfall in foreign exchange if, as the mission thinks probable, the receipt of foreign aid may fall short of the Plan target and the import dependency of the development program may not be reduced from 50 per cent to 38 per cent over the Plan period as is now contemplated (see Economic Report AS-112a, May 20, 1966, p. 32).
 - 3/ Draft Paper (April 26, 1966) - Settling Investment Priorities for Pakistan by Alfred Conrad and Wouter Tims.

Table 4

Third Plan Industrial Investment, added Value and Import Component^{1/}

(Millions of Rupees)

Industry Group	Investment	Capital/ Output Ratio	Value added	Gross Production	Import Coefficient % of (4)	Import Component (4) x (5)
	(1)	(2)	(3)	(4)	(5)	(4) x (5)
Food Manufac- turing	661	2.77	239	1,500	7.5	113
Beverages	9	2.01	4	20	7.5	2
Tobacco	44	1.67	26	68	4.1	3
Textiles	2,052	2.44	844	2,911	5.0	146
Clothing and Footwear	44	1.56	28	90	8.7	8
Wood Products	125	2.09	60	288	4.6	13
Paper	584	1.73	338	917	10.0	92
Printing	39	2.23	17	82	4.6	4
Leather Goods	34	1.92	18	85	9.4	8
Rubber Products	44	2.07	21	70	19.6	14
Fertilizer, Chemicals	1,714	2.41	710	2,138	3.7	80
Coal and Pet. derivatives	175	2.72	64	346	8.4	29
Petrochemicals	928	3.49	266	797	1.9	15
Non-metallic mineral products (cement)	683	3.67	186	264	5.8	13
Basic metal (steel)	764	3.41	224	669	35.2	236
Metal products	403	1.92	210	764	24.2	185
Non-eletrical machinery	581	5.06	115	312	17.4	54
Electrical machinery	344	2.09	165	398	18.0	72
Transport equipment	792	3.00	263	1,496	18.1	270
Miscellaneous	483	2.21	219	562	9.2	51
Total	10,538	2.62	4,023	13,819	10.2	1,413

^{1/} Capital/output ratios estimated by the mission. Import coefficient derived from 1963/64 54/54 sector input/output table proposed by Planning Commission.

Table 5

Ranking of Nexuses by Capital Costs and by Balance of Payments Effects

<u>Producing Nexus</u>	<u>Capital Costs per unit of value added</u>	<u>Balance of Payments Effect per unit of value added</u>
	<u>Rank</u>	<u>Rank</u>
Jute based production	1	1
Investment goods production	2	3
General Intermediates	3	2
Manufactured consumer goods	4	4
Fibre-based production (ex-jute)	5	5
Agriculture based production	6	6

124. This indicates that there is no great conflict between the objective of maximizing economic growth and that of attaining greatest import savings per unit of investment. The top ranking jute-based nexus has, of course, limitations in expansion since it depends on export markets. While the results of this study tend to support the strategy of the Plan, which emphasizes the production of investment goods and general intermediate products for import substitution, it needs to be used with great reservations, at least until the constraints imposed by the limited size of the domestic market and the effect of this on costs of production are taken into account. Also, in the present study the groupings are too broad and made up of too many industries to draw any firm conclusions regarding industry-by-industry investment programs.

125. Another study has been made which takes the demand side more into account. The details of the study are complex, but it consists essentially of an analysis of the items in the import bill for 1963/64 for which substitutes may be produced in Pakistan and of the demand elasticities for such items applied to the increases in income assumed in the Third Plan. It is shown that significant import savings can be achieved in three sectors, namely, non-metallic minerals (cement), coal and petroleum derivatives, and base metals (largely steel). The industrial sector studies indicate that prospects for achieving import substitution in the first two of these sectors are relatively assured during the Third Plan but the main steel plant (Karachi) may not come into production until later.

1/ Paper (July 25, 1966) - Industrial Growth During the Third Plan by Wouter Tims.

CHAPTER 5

TEXTILES

Jute

Raw Fibre

126. Production and Prices. The agricultural economy of East Pakistan is based on rice and jute. Since independence, a virile jute manufacturing industry has developed. In addition, a valuable export trade has been built up in the raw fibre, of which the country is the world's major producer and chief exporter. There is, however, cause for some disquiet over the comparatively static quantity of jute grown, and the apparent lack of improvement in yield per acre over the past years.

127. There is some difficulty in assessing accurately the acreage under cultivation and the total production of the crop. Official estimates are at variance with those of the trade. The official figure for 1964/65, for instance, is some 20 per cent above that of the trade. With the lack of accuracy in production estimates, it is difficult to make a forecast of future trends.

128. From none of the sources, however, is there any evidence of consistent growth in production. If an average of the various estimates is taken over four-year periods since 1949 the results are:

Table 1

	Average Acreage (in thousand Acres)	Average Production (in thousand Bales)	Average Yield (in Bales per Acre)
1949/50 to 1952/53	1,745	6,158	3.53
1953/54 to 1956/57	1,259	5,156	4.09
1957/58 to 1960/61	1,498	5,598	3.37
1961/62 to 1964/65	1,793	6,122	3.42

129. These figures indicate that a slight decline has occurred in the yield per acre over the past sixteen years. From this evidence, there is unlikely to be a significant rise in yields per acre unless vigorous action is taken to introduce more fertilizer and high quality seeds.

130. The average price of raw jute, from 1947/48 to 1962/63, both for internal consumption and export is tabulated in Appendix table 14. The variations are wide. A minimum of Rs. 11.37 per maund was reached in 1952/53 as against the high of Rs. 62.21 in 1960/61. A strong correlation, with a one year lag, exists between production and price. This means that if the price is allowed to fluctuate freely as it has in the past, similar fluctuations of the availability of raw jute is inevitable.

131. Rice which can be grown as an alternative crop also affects the acreage sown to jute. Various estimates have been made of the economy of growing jute as against rice, but a general jute-rice price ratio (per maund in each case) of 1.6 to 1.7 could be regarded as the minimum, below which the area would be switched to rice cultivation. There are, undoubtedly, certain hard core jute growers, but a large fringe area exists which will be switched from one crop to the other, depending on the grower's assessment of the relative financial return.

132. The wide price variation in the price of raw jute must damage the jute goods industry unless mills carry large stocks of raw materials. With new mills coming into operation the building of large stocks would impose severe financial burdens during a crucial initial period.

133. The price variations given in Appendix table 14 are the average for the season, but within the season equally wide fluctuations can occur. Prices may rise after the farmer has disposed of his crop, and the benefits resulting from such higher prices are seldom reaped by him.

134. Wide fluctuations in price can only do damage both to the industry and the export market for raw jute. Even if temporarily, high prices inevitably cause a search for substitutes. When the price falls back, a certain proportion of the lost market will not be recovered. As Pakistan has virtually a monopoly of the production of raw jute for export, and an increasing share of the market for manufactured jute products, she has more to lose from this than any other country. The Jute Board has taken some action to stabilize prices; but, to date, this has had little effect. A stabilization fund has been set up, which may in 10 years be adequate for its purpose. This may be too long to wait since, in the meantime, demand may be seriously affected by excessive price fluctuations in raw jute.

135. Handling and Marketing Arrangements. The methods of handling raw jute from grower to the baling stations at the mills have changed little over the years. Often the jute passes through six hands between the grower and the final exporter. This involves high costs and any financial advantage which could accrue to the grower through higher price is sharply reduced. There is, undoubtedly, a case for the provision of better physical conditions for storage and handling, but it must be an integral part of a complete plan that would promote the movement of jute from the grower to the consumer at minimum cost and ensure that maximum return is given to the producer. There may be merit in the establishment of an organized raw jute market in a single physical location, and the feasibility of this should be studied at the earliest possible opportunity.

136. Export. With the comparatively static production of raw jute fibre and the steady rise in the domestic manufacture of cloth, the export of raw jute has fallen from a high of almost 7 million bales in 1950/51 to an estimated 3.9 million bales in 1964/65. In Appendix table 15 jute exports are classified by destination, revealing significant changes. The main change is the decline of exports to India, from 2.5 million bales in 1950/51 to 0.1 million bales in 1963/64, with an estimate of 0.5 million bales for 1964/65. If the Indian exports are excluded, all other exports show a fall from 4.4 million bales in 1950/51 to 4.2 million bales in 1963/64 and an estimated 3.4 million bales in 1964/65. There is, of course, no measure of the extent to which smuggling has replaced the vanished legal export to India but it is said to be quite large.

137. A summary of the table of exports by area, in millions of bales, is presented below:

Table 2
(Millions of Bales)

	1950/51	1956/57	1962/63	1963/64	1964/65
Europe (excluding USSR)	2.87	2.66	2.46	2.33	
North America	0.73	0.31	0.28	0.41	
Asia (excluding India)	0.20	0.32	0.36	0.61	
Africa	0.05	0.12	0.29	0.41	
South America	0.16	0.12	0.05	0.05	
Australia	0.03	0.02	0.03	0.04	
USSR	0.04	0.05	0.10	0.37	
Others	0.31	0.35	0.48	0.01	
Total	<u>4.39</u>	<u>3.95</u>	<u>4.05</u>	<u>4.23</u>	<u>3.40</u>
India	<u>2.54</u>	<u>0.60</u>	<u>0.29</u>	<u>0.09</u>	<u>0.50</u>
Grand Total	<u>6.93</u>	<u>4.55</u>	<u>4.34</u>	<u>4.34</u>	<u>3.90</u>

Source: Appendix table 15.

138. The consumption of raw jute is likely to continue to fall in Europe and North America, with little change in Australia. In both Asia and Africa there are strenuous efforts being made to develop local fibres which, although inferior to jute in many respects, have the advantage of providing local employment and reducing the drain on foreign exchange. The increase of production in these areas, of jute together with allied fibres, principally mesta and kenaf, is shown in the following table:

Table 3

(Thousand Bales)

	1956/57	1960/61	1961/62	1962/63
Pakistan	5,516	5,622	6,966	6,300
India	5,768	5,113	8,047	6,927
Asia	1,702	3,126	4,014	2,878
South America	174	213	269	230
Africa	50	67	28	28
Europe	-	22	22	22
	13,210	14,163	19,346	16,385

139. India is increasing the amount of jute and mesta grown, although the latter is an inferior substitute.

140. Thus, the export market does not appear to be expanding at any significant rate, and the Third Plan target of 4.0 million bales by 1969/70 seems to be reasonable. The price estimated in the projected export earnings in the Third Plan of Rs. 200 per bale may turn out to be lower than will be obtained, but certainly any price above Rs. 250 would tend to price jute out of the market. If the export surplus is higher than the above figure, the only possible customer would be India.

Jute Manufacturing Industry

141. The jute industry is the main source of export earnings from manufactured goods. It employs the major part of the industrial labor force in East Pakistan. The growth of the industry since 1951 has been impressive, and the combination of private and public ownership has been a strong factor in quickening the pace of its expansion.

142. All mills are integrated to combine spinning, weaving and bag making. The present standard unit, generally started under the auspices of E.P.I.D.C., is of 250 looms, half of which produce hessian and the remaining half sacking. Extensions to existing mills would be either broad looms or 250 loom units. The largest unit, indeed, the largest jute mill in the world, is at Narayanganj. It has 3 thousand narrow and 128 broad looms with finishing and bag making machinery.

143. The existing mills in production are principally of medium size.

Table 4

Mills According to Size

Size	No. of Mills	No. of Looms Installed
Below 250 looms	2	321
251-500	13	3,686
501-750	3	1,968
751-1,000	4	3,352
Above 1,000	1	3,049
Total	23	12,376

Of the 23 mills, all but three were initially set up by P.I.D.C. and of the original 20 set up, 11 have already been transferred to the private sector, whilst eight are in the semi-public sector. It is the stated intention of the Government to encourage private investment in the jute industry, and eventually have all units in the private sector.

144. Broad loom cloth for carpet backing is a rapidly-expanding but comparatively recent market. This product is usually manufactured as an adjunct to existing mills. At the end of 1965, there were a total of 472 broad looms in operation, but this is likely to be more than doubled soon.

145. The First Five-Year Plan called for the installation of up to 12 thousand looms. But by the end of 1960, only 8,092 looms were installed. The Second Five-Year Plan target was 18 thousand looms installed by 1965. Although some 17 thousand looms had been sanctioned by the end of the Second Plan only 12,500 looms were installed by the end of 1965. The Plan also provided for the installation of 1,200 broad looms, but only some 800 were sanctioned and approximately 500 were working at the end of 1965.

146. In Appendix table 16 the production figures for 1953/65 are given. The weight of cloth produced per loom cannot, of course, be taken as an infallible indication of the efficiency of the industry, nor, indeed, of its profitability. The ratio of the different cloths produced is a large factor in the weight produced, even more so with the introduction of broad looms.

147. To achieve higher productivity, standards of production for each type of cloth should be established and performance measured against these rather than in overall terms, as at present.

Costs and Profits

148. An increase in conversion costs must be regarded with concern since the future of the industry depends on maintaining jute as a low cost packaging material.

149. In Table 5 the cost figures of 3 mills for the period July to October 1965, have been analyzed. Notwithstanding the fact that monthly figures may have wider variations than those for longer periods, the range of costs is extremely wide. The variance between the highest and the lowest cost per ton (monthly average) for an individual mill was Rs. 507.26 for hessian and Rs. 242.26 for sacking. If a weighted average of hessian and sacking is taken, on the basis of an equal number of looms producing each type (typical situation) the average conversion cost, excluding profit, is Rs. 901 per ton. The average profit per ton on sales is Rs. 623 excluding any provision for profit on the half of the bonus vouchers required to be used to import capital equipment.

Table 5

Costs

	Average (3 mills)	Individual Factory Total Cost	
		High	Low
R u p e e s p e r T o n			
<u>Hessian</u>			
Factory Cost	799.25	1,003.94	608.84
Raw Jute	997.85	1,010.68	898.53
Admin. & Sales Cost ^{a/}	84.16	84.16	84.16
	<u>1,881.26</u>	<u>2,098.78</u>	<u>1,591.53</u>
<u>Sacking</u>			
Factory Cost	509.76	552.76	514.25
Raw Jute	867.44	975.08	771.33
Admin. & Sales Cost ^{a/}	84.16	84.16	84.16
	<u>1,461.36</u>	<u>1,612.00</u>	<u>1,369.74</u>

^{a/} These are not broken down by product and therefore an average allocation was made based on total costs and tonnage produced.

Source: E.P.I.D.C. - Balance Sheets

150. The f.o.b. port price of hessian during the period was Rs. 2,240. This price contrasts strongly with that in the export earnings projection in the Plan of Rs. 1,400 per ton for 1965 and Rs. 1,250 per ton for 1970. This raises the question mentioned above whether such a high price will not eventually work against the industry by encouraging the development of substitutes. At present the industry, apart from mismanaged units, seems very profitable.

151. Labor. At its inception, the industry had to rely on a limited number of operatives who moved from Calcutta to form the nucleus of a skilled labor force. This labor force has now expanded to some 85 thousand workers, many of whom are still comparatively untrained. Facilities for formal and systematic training are non-existent and the only training given is on the job training, with attendant weaknesses being perpetuated. In consequence the cost of labor is high and is steadily rising and at present is over one-third of the conversion cost. Output per worker is low. If a broad comparison with the U.K. is made, each worker in Pakistan turns out an average of 8.8 thousand lbs. of finished cloth per annum, based on a 60-hour week, against a figure of 20 thousand lbs. for a 40-hour week in the U.K. Thus, despite producing a high proportion of sacking in Pakistan, against virtually none in the U.K., the productivity per worker in the U.K. on a similar hourly basis, is nearly 3.5 times the level attained in Pakistan. As all machinery in Pakistan is of the latest type, and the buildings are new and designed especially for the industry, against in many cases older equipment and certainly less suitable buildings in the U.K., the use of more labor input per unit of output would suggest that there exists a large scope for increasing labor productivity and reducing cost.

152. Standards of performance which can reasonably be expected from trained labor should be established by work study, carried out on an overall industry basis and used as a guide to all managements for the staffing of the units. With the expansion contemplated, the absorption of surplus labor will not pose serious problems at present, but when the rate of expansion slows down, as it inevitably will, difficulties will arise if labor effectiveness is improved, and no outlet is found to absorb redundant labor.

153. Management. The standards of management varied considerably in the units visited, and with the rapid growth of the industry, this is to be expected. With no cadre of management on which to draw, the industry had to rely on managers trained and recruited either in Calcutta or the United Kingdom. There has, however, been a flow of young men for training to the Technical College at Dundee. Technical competence is a valuable asset in a manager, but there are other and equally important skills to be developed. There are, at present, no local facilities not only to learn these, but, equally important, to keep abreast of the latest management and technical developments. With the continuing growth of the industry, envisaged in the Third Plan, there will be a shortage of competent managers for many years. In future, all management will probably be drawn from within the country, and thus, training and re-

training facilities must be provided for management at all levels.

154. Consideration should be given to the establishment of a Jute Industry Center including a Technical College giving courses at differing levels. This could be established perhaps at the University at Dacca and be similar to the Institute of Technology at Lyallpur for cotton. The Center would also house the research organizations for raw material processing techniques and end usage, and a central service bureau manned by specialists in costing, work study, production planning, and the modern management techniques, who would have experience in their application to the jute industry.

155. If the idea of a Jute Center is accepted, it should be supported, in whole or in part, by the industry (a levy on output) and by fees for services rendered to individual firms. It is vital that the research, training, and services are integrated in order that a continuous cross-pollination of ideas takes place and the practical and theoretical work kept in continuous contact.

156. Cost Control. The basis of accurate costing is in the soundness of the fundamental information on which the final figures are computed. There is little evidence to indicate that this exists in either labor, material, or in the allocation of overhead expenditure. There are no production cost standards available for labor, such as could be obtained on an overall industry basis as most of the machinery in use is of a standard pattern and the range of yarn and cloth produced is limited.

157. The wide variations in the cost of the basic raw material presents serious problems in building up accurate costs. As there is at present no machinery in existence for stabilizing the price of raw jute, arrangements to cope with this situation must be considered. As noted above the methods of collection and marketing raw jute are unwieldy, cumbersome, and expensive. As a result, some of the larger private companies have their own organizations for buying and collection, carrying on, indeed, as merchants in their own right. This is impractical for the growing numbers of smaller units, and although E.P.I.D.C. managed mills do have a form of centralized buying, this in no way solves the basic weaknesses.

158. Until some form of price stabilization, with up-to-date arrangements for collection, grading, storage and marketing are instituted, the mills will suffer from the violent and generally unpredictable swings in the price which influence their operations far beyond any other element. With the constant expansion of exports, some stability in the price of the raw material is an essential ingredient in quoting satisfactory prices for forward delivery.

159. In order to develop a consciousness of costs throughout the industry, assistance from the two main central sources of statistics, namely, the Pakistan Jute Mills Association and E.P.I.D.C., would probably be of the greatest value. A study carried out under the auspices of these bodies giving basic information on costs supplemented by necessary documentation, would be an invaluable assistance to individual managers.

160. Accurate cost estimation would enable individual mills to have a sound basis on which to plan sales policy, and thus allow concentration on either bulk production, special fabrics, or the most profitable combination of both, to ensure maximum return on capital investment.

161. Exports. The growth of the industry is synonymous with the growth of exports. The totals for 1955/56 to 1964/65 are as follows:

Table 6

Exports of Jute Goods from Pakistan
(1955/56 to 1964/65)

Fiscal Year	Hessian	Sacking (thousand tons)	Others	Total	(1)	(2)	(1) as
					Value of Jute Goods Exports (M.Rs.)	Total Exports from Pakistan (M.Rs.)	Per Cent of (2)
1955/56	20.7	56.6	-	73.3	106	1,778	6
1956/57	27.8	53.4	-	81.2	91	1,608	6
1957/58	33.7	73.8	0.4	107.9	91	1,422	6
1958/59	42.3	91.2	0.8	134.3	155	1,307	12
1959/60	56.8	133.2	4.1	194.1	227	1,791	13
1960/61	61.5	131.5	4.4	197.4	314	1,799	17
1961/62	64.1	153.8	3.2	221.1	321	1,843	17
1962/63	67.3	155.3	2.5	225.1	306	2,247	14
1963/64	71.6	171.8	9.6	253.0	323	2,299	14
1964/65	52.9	140.6	12.7	216.2	293	2,414	12
1965/66 (6 mos.)	44.4	107.3	12.6	164.3			

Sources: P.J.M.A.;

Report of Jute Enquiry Commission;

Pakistan Economic Survey, 1964/65.

The figure for 1964/65 is depressed due to labor troubles which severely cut back production for two months. The figure for the first six months

of 1965/66 is 164,360 tons, thus giving an annual rate of 328,720 tons which is some 70 thousand tons higher than the level achieved in any previous year. A breakdown of export of gunnies, by countries, is given in Appendix table 17 .

162. There has been a rapid rise in the export of broad loom cloth, which is enjoying a ready market, especially in the U.S.A. With the high quality of jute available and the new plant installed, the quality of this product is unsurpassed anywhere. The production of broad loom cloth is small compared with that of India which has at least 2,500 looms in operation against some 500 in Pakistan. There is likely to be a continuing growth in demand for this cloth, used for the backing of tufted carpets, provided no synthetic substitute with either price or quality advantage is produced. The world market for this cloth in 1970 is estimated at 527 thousand tons against some 210 thousand tons at present. However, whilst offering greater scope for expansion of the jute industry, it also offers a tempting market to the synthetic fibre industry.

163. There has been a decline in the export of hessian and sacking to the U.S.A. and Western Europe, but this has been more than offset by the demand from the developing countries. This trend is likely to continue as bulk handling problems are solved and less expensive packaging materials are used.

164. The growth of exports is likely to continue, however, until after 1970, but it would be imprudent to underestimate the effect India can have on the world market. The Indian jute trade is suffering from an acute shortage of raw material which restricts its output by some 20 per cent. If unlimited supply of raw material was available, exports from India could be stepped up considerably. This would put a further 80 thousand tons (half of Pakistan's 1965/66 exports of gunnies) on the export market, which would have a depressing effect on prices. There is no foreseeable reason why this should occur in the immediate future, but it must be noted that the crop in India has grown from 2.06 million bales in 1948/49 to a peak of 8.00 million bales in 1962/63, and with the ever-present shortage of foreign exchange, priority will inevitably be given to both the growing of jute or similar fibres and their manufacture for export.

165. Also it is important for Pakistan to note that each of the developing countries is endeavoring to grow fibre, which, while probably not of the same quality as jute, can be converted into cloth. As the countries principally concerned enjoy a tropical or semi-tropical climate, some, at least must be successful and thus these markets may diminish in the long-term.

166. Export Market. Arrangements for selling are of vital importance. The larger and well-established companies have their own

organizations and agents, whilst the mills managed by E.P.I.D.C. have a centralized selling section. As more mills develop in the private sector, the problem of sales is likely to intensify. Buyers, at present, have to make individual inquiries from each of the mills for quotations and this is both time-consuming and cumbersome. With the growth of the industry, a centralized market is becoming more essential, where each mill or group of mills would be represented, and buyers could readily obtain information about prices, availabilities and delivery conditions. The market would be the central source of information for the whole industry, and would work in conjunction with other similar markets throughout the world.

167. Future Export Growth. As noted above provision is made in the Third Plan to increase the number of ordinary looms to 25 thousand and broad looms to 2,500 whilst the Industrial Investment Schedule and E.P.I.D.C. envisage 28 thousand ordinary and 2,620 broad looms.

168. At present, the total looms in operation are of the order of 12 thousand ordinary looms and 500 broad looms, and, even, if foreign exchange is available, it is highly unlikely the target of 25 thousand and 2,500 can be achieved by 1970. A detailed examination of the order and supply position indicates that it is unlikely that all the Second Plan looms on order (4,500) will be installed and running before the end of 1968. This would require bringing into operation looms at the rate of 1,800 a year, against the previous annual average of about 800 (Appendix table 18). The Mission believes that about 18,500 ordinary and 1,750 broad looms will be in operation at the end of the Third Plan.

169. The earnings of the industry in foreign exchange are forecast below. It can be assumed that, if the farmer is to grow jute at all, an average price of at least Rs. 26 per maund or Rs. 710 per ton will have to be paid by the mills for raw materials, which is the September-December 1965 price for "X" Bottom jute. The average conversion costs are some Rs. 900 per ton. Thus a minimum average price, without profit, at present costs, would be Rs. 1,610 per ton. A price of Rs. 1,250 is forecast in the projection of Foreign Exchange Earnings for 1970. Including the profit on bonus vouchers this would yield about Rs. 1,500-1,600 a ton. Thus if the price, now at over Rs. 2,000 a ton, should fall so low a larger entitlement under the bonus system would be necessary, assuming no change in the present bonus premium.

170. A projection of annual earnings to 1969/70, based on an average ordinary price of Rs. 1,300 per ton and a broad loom price of Rs. 1,800 per ton is given below:

Table 7

Year	Ordinary Looms				Broad Looms				Total Export Earn- ings (Mn.\$)
	Aver. No.of Looms Work- ing	Production (in '000 tons)		Export Earn- ings (Rs.Mn.)	Aver. No.of Looms Work- ing	Production (in '000 tons)		Export Earn- ings (Rs.Mn.)	
1965/ 1966	12.0	384	304	395	500	30.0	30.0	54	94
1966/ 1967	13.0	416	326	424	850	42.5	40.5	73	104
1967/ 1968	14.5	464	364	473	1,100	55.0	51.0	92	119
1968/ 1969	16.0	512	402	523	1,350	67.5	61.5	111	113
1969/ 1970	17.5	560	450	585	1,600	80.0	72.0	130	150
Total				2,400				460	600

171. The Rs. 715 million (\$150 million equivalent) for 1969/70 compares with Rs. 700 million estimated by last year's economic mission and Rs. 800 million in the Third Plan. Based on present prices, of course the Rs. 715 million is a conservative estimate.

Investment

172. On the basis of installing 1,500 narrow looms and 250 broad looms per annum, the annual investment would be (in millions of rupees):

	<u>Total Cost</u>	<u>Foreign Exchange</u>
Narrow looms	180	100
Broad looms	50	35
	<u>230</u>	<u>135</u>
Or a total over 5 years of	1,150	675

173. West Pakistan Industry. Up to the present, all looms in operation are in East Pakistan, but there is provision for the development of the industry in the West Wing as well. At present there are less than 700 looms in the West, but the Plan provides for a further 2,000 narrow and 500 broad looms. This would be roughly 10 per cent of the nation-wide industry.

174. The mission has doubts regarding the wisdom of such a large expansion in West Pakistan in view of the comparative advantage of the East Wing in this industry. Most of the raw jute for the West Pakistan mills will have to come from the East Wing and there is no indigenous nucleus of skilled labor, supervision, and management with experience in the industry. The

production of broad loom cloth at the rate of 26,000 tons per year from 500 looms which is envisaged cannot possibly be even partially absorbed in West Pakistan and must be exported. There are no recognized channels for the exporting of jute fabrics from the West Wing, and it seems inevitable that selling arrangements for this cloth will have to be done through Dacca. It does not appear logical, when industrial development is vital to East Pakistan, that the industry which is the most fitting and natural should be slowed down because of diversion of equipment to the West, where there are no advantages of raw material, skills or export marketing arrangements. There should be priority given to the delivery of machinery, which will be one of the major factors in expansion, to the existing areas of jute production and only when these are satisfied should the industry in the West Wing be developed.

Cotton

Raw Cotton

175. Production. Cotton yield per acre as well as total quantity growth has steadily increased since 1950. For 1954-59 and 1959-64 yield per acre increased as compared with the preceding five-year periods by 2.7 per cent and 17.9 per cent respectively and production by 13.7 per cent and 14.7 per cent. The following table provides greater detail.

Table 8

	Yield ^{1/} (lbs. per acre)	Total Production ^{1/} (in '000 bales)
1949-54	187.5	1,467
1954-59	192.9	1,668
1959-64	227.5	1,914
1964/65	233.8	2,139
1965/66 ^{2/}		

^{1/} Five year annual averages.

^{2/} Provisional figure.

Source: Appendix table 19.

176. Yield figures for principal cotton-growing countries are presented in the next table. For Pakistan the average yield over the past five years has been 240.3 pounds per acre as against the world average of 300.

Table 9

	Yield (lbs. per acre)		Yield (lbs. per acre)
Israel	970	Aden	250
Honduras	727	Iran	246
Syria	550	Pakistan	240
Mexico	550	Afghanistan	215
United States of America	528	Argentina	210
Peru	490	Turkey	210
Colombia	405	India	118

Source: Appendix table 20.

177. Given sufficient water and proper use of fertilizer, the yield per acre can be considerably increased in Pakistan. Also in order to get greater production and better quality the program for the control of pests should be accorded high priority. The quality of cotton has been steadily improving. With the continuing introduction of new varieties of seeds, and with constant development of those varieties most suitable to differing local conditions, still higher quality of fibre can be grown.

178. A figure of 360 pounds per acre appears a reasonable objective. Should this figure be achieved from the 3.7 million acres presently under cultivation, 3.33 million bales could be produced. Thus the Third Plan target of 3.5 million bales for 1970 appears within reach.

179. There is considerable variation in ginning standards. Many of the ginning factories have obsolete machinery. Greater control is necessary, both in picking and ginning, if full advantage of the improved strains is to be realized. There was substantial improvement for a period, but the momentum appears to have declined. There was evidence of reluctance to make funds available for ginning factories, which could be a serious deterrent to achieving the target laid down in the Third Plan. The provision in the Industrial Investment Schedule for new ginning capacity is Rs 11.5 million of which Rs. 10.0 million is for West Pakistan and Rs. 1.5 million for East Pakistan. In addition, the balancing modernizing and replacement schedule makes a substantially higher provision of Rs. 25.3 million, almost all of which is allocated to West Pakistan. This allocation may prove inadequate if the raw cotton production target is fully achieved.

180. Price. The price of raw cotton has not varied significantly over the past 10 years, save in the spring of 1965 when a sharp rise occurred. The wholesale index of cotton prices is given in Appendix table 21. Prices on the Liverpool market of Pakistan cotton and a comparable American variety are given in Appendix table 22. The price rise in the first 8 months of 1965 (greater than in any one of the preceding years) was almost wholly reversed toward the end of the year.

181. The current world surplus of cotton is a factor to be reckoned with. In America the carryover of cotton stock is expected to total 19.6¹/_{million} million bales on August 1, 1966. Of this, some 16.3 million bales are held by the Commodity Credit Corporation which is the highest figure on record. This stock is to be released on the world market over a period of 4 years starting in 1966/67, with a subsidy of 1.6 cents per pound (Rs. 30 per bale) which is bound to depress world prices by this amount at least.

182. The price outlook for the future is not very bright despite the fact that the difference between non-Soviet bloc production, excluding the U.S.A., and consumption has continued to narrow in recent years. Outside of the U.S., such consumption has risen at an average rate of 668,000 bales per year, whilst production has risen at the rate of 762,000 bales,

¹/_{million} i.e., 16.2 million American bales

the gap between consumption and production being estimated at 2.1 million bales in 1965/66, but the net exports to Communist countries is about 2.4 million bales. However, the U.S.A. has had a fairly constant surplus for export of six million American bales, for the past fifteen years, which has not been totally disposed of. Thus, there is a net world surplus of raw cotton. There is no reason to suppose that this situation will change soon. In fact, with the rapid growth of synthetic fibres, there is likely to be a greater surplus of raw cotton in the future.

183. Export Targets. Compared to the Third Plan target of 3.5 million bales of cotton for 1969/70, domestic demand will total 2.32 million bales. The exportable surplus will, therefore, be 1.18 million bales, as compared to the current figure of 0.7 million bales. Viewed against total world trade in cotton of some 18 million bales, this export surplus is not large. However, considerable effort will be needed both in marketing and in improving the quality of cotton produced. The price of Rs. 450 for long staple and Rs. 400 for "Desi" appears reasonable which would yield exports valued at Rs. 523 million against the Third Plan target of Rs. 557 million. This is a conservative estimate.

Cotton Textile Industry

184. The Pakistan cotton textile industry is the largest single provider of employment among the manufacturing industries and a substantial earner of foreign exchange.

185. The foundations of the industry were laid by entrepreneurs who settled principally in Karachi immediately after independence. Their background of merchandising was undoubtedly a large factor in the initial rapid and successful growth which the industry achieved. The rate of growth of capacity, which was extremely high in West Pakistan between 1951 and 1955, is given in Appendix table 23 together with the planned figure for 1970. Growth of the industry slowed down considerably in the late 1950's but would appear to be again accelerating. The growth of capacity in East Pakistan was slow until 1962, but has recently been rapid. However, the growth in output has not been in line with expansion of capacity, especially during the past five years. In East Pakistan, there has actually been a decline in production. The following table illustrates the relationship between output and capacity.

Table 10
Spinning
(Percentage Increase)

Period	<u>East P a k i s t a n</u>		<u>West P a k i s t a n</u>		<u>All P a k i s t a n</u>	
	Capacity	Production	Capacity	Production	Capacity	Production
1950-55	117	38	696	840	480	537
1955-60	53	115	9	48	15	65
1960-65	82	27	29	21	39	19
1950-65	506	278	1024	1520	830	1056

Weaving
(Percentage Increase)

Period	East P a k i s t a n		West P a k i s t a n		All P a k i s t a n	
	Capacity	Production	Capacity	Production	Capacity	Production
1950-55	50	25	670	603	420	327
1955-60	--	1.5	13	45	15	38
1960-65	66	- 47	15	23	20	18
1950-65	150	- 14	933	1150	620	600

186. Analysis of production by loom-hour and spindle-hour is given in Appendix table 24 which reveals a slight decline over the years. This should be of concern to senior management as it may reflect inadequacies in supervisory personnel.

187. The industry has enjoyed a high return on the capital invested. The following are the average annual rates of return on capital investment for twenty of the leading mills:

0-20%	20-40%	40-60%	60-80%	80-100%	over 100%
2	9	5	1	1	2

or an average of 44 per cent. Taking into account the similarity of plant, raw material and end product the variance is surprising.

188. The industry enjoys complete protection on the home market which absorbs about 80 per cent of production, both from imports which are barred, and perhaps more significantly, from competition with the synthetic fabric due to the heavy import duty on imported synthetic yarns. This latter condition may change with the growth of the production of synthetic yarns within the country (see next section). Increase in domestic consumption is still only maintaining the same pace as the growth of population.

189. Quality. There has been considerable improvement over the years in the quality of raw cotton grown, and in its handling at the gin mills. The staple has been lengthened by the introduction of imported seeds. Finer counts of yarn can now be produced. Although there has been a slight trend towards the fine, and in general, more profitable cloth, but the change has not been very significant as yet.

190. The production-mix of the textile fabrics has not changed significantly in Pakistan in the recent years (Appendix table 25). There has been some increase in the production of finer qualities in West Pakistan, but in the East the quality of grades produced actually decreased, both in absolute amount and as a proportion of overall production. In the country as a whole the average proportions of fine, medium and coarse cloth produced in 1960-64 and 1965 were:

Table 11

	<u>1960-64</u>	<u>1965</u>
Fine	9.8%	9.0%
Medium	53.0%	53.0%
Coarse	37.2%	38.0%

This refutes any suggestion that the slow down in production has been due to the spinning and weaving of finer counts.

191. The rise in exports is putting more pressure on the industry to improve quality since foreign buyers apply stricter standards than the home market. There remains considerable scope for further improvement and the general standards of quality control do not conform to modern requirements.

Variety of Products

192. Up to 1961 there was a steady growth of the proportion of cloth bleached, dyed and printed. Since then, there has occurred a slight decline. The figures for 1965 compared with 1955 and 1961 are (in millions of yards):^{1/}

Table 12

	<u>1955</u>		<u>1961</u>		<u>1965</u>	
Grey	335.2	74.0%	375.4	51.1%	403.7	54.5%
Bleached	64.4	14.2%	133.1	19.0%	123.3	16.7%
Dyed and Printed	53.6	11.8%	208.5	29.9%	213.0	28.8%
Total	453.2	100.0%	699.0	100.0%	740.0	100.0%

193. The range of prints observed during the visits to factories were of the type to appeal to the home and the less sophisticated export markets. The export marketing of dyed and printed goods is subject to trade restrictions to an even greater extent than grey cloth, but even if these were modified, it is unlikely with the present range of products Pakistan could make significant inroads in the dyed and printed goods fields. There is little yarn-dyed cloth produced and, indeed, very few of the mills visited had yarn dyeing plant in operation, although in some cases it had been installed. The integration of cloth structure into

^{1/} Details given in Appendix tables 26 and 27.

design is needed. The absence of an indigenous source of synthetic staple yarn until recently, had discouraged blending them with the natural fibre. When these become available, fabric design incorporating both these elements should be actively encouraged.

194. Machinery and Equipment. Some 75 per cent of the production capacity of the industry was installed during 1951-56. Since its installation much of this equipment has been running on three shifts and the majority on more than two shifts. With the inevitable abuse which any machinery must suffer during the training of both operators and maintenance staff, coupled with the difficulty of obtaining suitable spares which must have forced improvisation, this machinery is now reaching the stage where complete overhaul and refitting is necessary, and, in most cases, replacement is desirable. In the mills visited, the standards of maintenance varied considerably, routine overhauls being a feature in some, whilst only emergency or breakdown repairs were carried out in others.

195. In general terms, the standard of mechanical condition was higher in the spinning section than in the weaving, which is common in the industry due to the heavy reciprocal motions in looms, with the attendant high wear factor.

196. In the majority of mills inspected, looms which had originally been fitted with automatic equipment had been either considerably modified or the automatic parts removed entirely. There were few automatic looms working in their original condition, and in no case were the looms being used to full advantage.

197. There was considerable feeling among manufacturers with regard to the lack of foreign exchange to purchase essential spares. With the absence of any fully effective local source of equipment, this leads to loss of productive capacity and delays in delivery at a time when there is a comparatively good market for cloth.

198. There are at present three small units producing some types of machinery. But these units cannot meet the demands of the industry. Most machines produced are copies of older types, all non-automatic or semi-automatic. For maintaining and developing exports higher quality fabrics are needed which involve machinery fitted with automatic stop motions. In addition to quality considerations rising labour costs are likely to become a serious factor in the ability to compete in the export market, especially if domestic prices weaken, and the high profit originating from this source is jeopardized.

199. There is, undoubtedly, a strong case for the establishment of a much more viable textile machinery industry within the country. It is recommended that an investigation be carried out of the feasibility of establishing a textile machinery unit specializing, initially, in the manufacture of simple cotton equipment. The design of a modern loom and its production could be a sound starting point, as there are at present

some 26,000 looms which should be replaced in the next five years, as they will have been in operation for 15 years. In the Third Plan, provision is made for the replacement of 8,000 units, and the installation of 34,000 additional new looms, i.e. a total of 42,000 units. This replacement policy for the large units whose production must be oriented towards the export market, where design, quality, price and marketing are the principal features, should be supplemented by a program for the complete overhaul of the replaced looms. These fully reconditioned looms could then be sold to the smaller units in the decentralized sector where, with low overheads, local markets, and limited product range they could be used to advantage. There may be objections by the larger units to this increase in competition in the home market. In most cases, however, they have had a long period of high profits enabling them to accumulate reserves and make export marketing arrangements. Also the sale of redundant machinery means further liquid assets.

200. There is a project for the establishment of a factory to produce looms in the East Wing. The company will produce principally for the jute industry. This project would not be in a position to specialize in any great degree in the development and production of the looms for the cotton industry which are needed to prevent the industry from becoming dependent on either obsolete equipment or imported equipment.

201. The manufacture of many other types of the less technically complex machinery should also be encouraged, as at present a considerable amount of foreign exchange is being utilized in purchasing machinery, which, with little effort, can be produced in Pakistan.

202. Accessories for the textile trade are now being manufactured in increasing quantity. This should be further developed to make the country self-sufficient in shuttles, bobbins, healds, etc.

203. Labor. The initial low labor cost and the desire to give maximum employment has led to overstaffing in the industry. Wages are now becoming an important part of the total product cost. Reference has already been made to the removal of the automatic features of looms. Thus, looms which were purchased at higher cost to reduce the wage bill have had no effect on such costs. It is difficult to obtain accurate and meaningful statistics on spindles and looms per operative. From samples taken, the following ratios emerge which seem to be indicative.

	<u>Spinning</u> - Number of firms analysed: 37					
Number of firms	5	21	7	2	1	1
Spindles/Worker						
Ratio	Under 20	20-30	30-40	40-50	50-60	Over 60
	<u>Weaving</u> - Number of firms analysed: 27					
Number of firms	4	9	9	2	2	1
Looms/Worker						
Ratio	Under 1	1-1.5	1.5-2.0	2.0-2.5	2.5-3.0	Over 3.0

204. Thus, the spinning sections average one worker per 29 spindles, and the weaving sections one worker per 1.6 looms. It is possible that weighted average estimates may diverge somewhat from these figures, but it is unlikely that the variance would be significant. These figures compare unfavourably with those of other countries where the bulk of the plant is comparatively modern and a large proportion of the industry has been in existence for a period of over 10 years.

205. There is little attempt by the industry to introduce any form of work measurement, method improvement, and thereby improve the utilization of labor. Even when improvements in methods were obtained through modifications to plant or the introduction of new equipment, there was little attempt to train and fit the labor to the new situation. In no factory visited were there meaningful labor cost returns to indicate to management and supervisory staffs, at regular intervals, the proportion of the cost incurred on labor in the budget.

206. The training of labor is carried out by haphazard methods. In no organization visited was there a training section to formally and correctly train new entrants to the industry. It is not surprising, therefore, that large discrepancies exist between performances, both in terms of quality and quantity of production. If the industry is to advance and even maintain its present position in foreign markets, there must be a conscious effort to improve the performance of labor. As an initial step, it may be useful for the Association to prepare reasonable performance norms for various tasks in the industry and issue them to their members as a guide. Also, standard training methods could be evolved which would be of general benefit to the industry. There is a high ratio of non-productive to productive labor which is a common feature in the industry.

207. Management. The quality of commercial management at the top level is high. This is reflected, to some degree, in the high rates of profit and the expansion of the industry. With the growth of many of the units, and the additional responsibility of selling in the export markets, a severe strain has been placed on the management of many firms.

208. There was little evidence of the utilization of even the simpler management techniques of market research, production planning, cost control, work study, material control and quality control. This is not to say, of course, that these are not in part carried out on an informal basis. But what can be said is that there are no standards available on which to judge the effectiveness of supervision and labor. This situation may be improved when the full effect is felt of the training given at the new Institute of Textile Technology at Lyallpur. This, however, must be regarded as a long-term development, as the course is of three years duration and the first class has not yet completed the course. The mission visited this Institute and it undoubtedly fills a critical need. It is well equipped and the standard of the staff is high. At present, the total output of qualified technicians will be of the order of thirty per year, which will probably

not be enough to meet the normal needs, although, of course, there will still be a supply of foreign-trained men to supplement this figure. Short courses should also be arranged as quickly as practical, for lower levels of the existing supervisory personnel. Courses designed at Lyallpur can be utilized in the other main centers of the industry, even though the practical facilities similar to those of the College may not be available. For the training of existing supervisory staff, strong emphasis should be placed on management techniques, in cooperation with the Institute of Management, whose expertise may prove a most useful adjunct. The new Textile Productivity Cell to be opened in Lahore in 1968 will also provide valuable training for intermediate levels of management.

209. Exports. Figures relating to the export of yarn and cloth are given in Appendix table 28 . There has been a substantial rise in the total exports. In fact, the 1965 level is the highest ever achieved, i.e. 191 million yards of cloth and 55 million pounds of yarn valued at Rs.222 million. Another promising feature is that the export markets for cloth have been diversified and the dependency on the United Kingdom market reduced. This is shown in the following table:

Table 13

	<u>Total Exports</u> (in million Yards)	% to United Kingdom		<u>Total Exports</u> (in million Yards)	% to United Kingdom
1956	19.5	41	1961	54.3	38
1957	10.8	42	1962	84.2	51
1958	5.6	64	1963	103.4	42
1959	42.0	56	1964	187.6	27
1960	76.0	50	1965	190.5	26

210. This broadening of the base for exports is of vital importance to the industry if continuing expansion is to be achieved.

211. The operation of the export bonus voucher scheme has had a strong influence on the export of yarn and cloth. There was a slump in total world exports of yarn from 1957 to 1958 and the exports from Pakistan fell from over 40 million pounds to under 7 million. In 1959, a 20 per cent export bonus was placed on yarn exports. Immediately exports climbed to nearly 82 million pounds. In 1960, the total was 90 million pounds. This export was aided by the price control on cloth on the home market which was not removed until 1961. This quantity of yarn export starved the home weaving trade, especially in the non-mill sector, and, under pressure from the weaving section, the export bonus was cut to 10 per cent in January 1960. The effect

of this action was felt in the second half of that year. Then in January 1961, the export bonus was completely removed. In consequence, exports fell to under 15 million pounds in that year and to 6.5 million pounds in 1962. In August 1962, the 10 per cent export bonus on yarn was re-introduced and in 1963 exports rose to 36.5 million pounds. The export bonus was raised to 15 per cent in January 1964 and 20 per cent in July 1964, and exports rose to 56 million pounds in 1964 and to an estimated 55 million pounds in 1965. This is far below the 1959-60 peak but is still a substantial foreign exchange earner.

212. Cloth exports declined from 1956 to 1958 although output rose. In 1958, the export bonus of 20 per cent was introduced and in 1959, exports rose sharply. Although there was a setback in 1961, due, in part, to the high export of yarn, exports have continued to rise, and have reached a total of over 190 million yards in 1965. The export bonus undoubtedly played a major role in this expansion.

213. Export Marketing Arrangements. Marketing in the export field is, at present, carried out by firms on an individual basis with varying degrees of success. The large companies often have their own organizations in centers such as the United Kingdom. As a general rule, the industry relies upon agents. With the desire of the industry to produce goods such as finished cloth and, in some cases, made-up garments in close proximity to the consumer, these arrangements will require close examination. Information fed back to the producers' level on market trends has to be considerably increased and the reaction to design ranges and styles has to be immediately communicated. The marketing arrangements that suffice for the disposal of grey cloth are very inadequate when dealing with the wide range of differing patterns, colours, and finishes of finished cloth. Differences are even more pronounced when dealing with made-up garments. The time is opportune for a complete appraisal of marketing arrangements, including the establishment of a series of bases, established for the industry rather than for individual firms, to take advantage of markets. These bases may in their initial stages require some form of assistance from official quarters, but should aim to be self-supporting and an integral part of the industry. This form of marketing is particularly important in developing countries where the availability of suitable agents is strictly limited, and the market for the types of cloth produced is large.

214. Company Size and Structure. The majority of companies in the mill sector are vertical in structure, carrying out all processes, including dyeing, printing and finishing. Those that confine their activities to spinning account for one-third of the total units. The new units now being established for this purpose initially start with 12,500 spindles and plan to build up to 25 thousand spindles which is regarded as an economical unit. The principal customers for these units are the hand loom weavers and the weaving units in the decentralized or the non-mill sector.

215. There is little evidence that size alone is the determining factor in efficiency; indeed, from a study of the relevant statistics, it can be inferred that it has no bearing at all. There is also little evidence that the location of the factory in East or West Wings has any influence on the effectiveness of operation. There is evidence that some of the longer-established, large mills do not obtain the efficiency which could be expected in view of their experience and ability to carry larger technical staffs.

216. The desire of the vertical organizations to carry out finishing operations has led to the purchasing by individual units of machinery which is almost inevitably underutilized. It was found that in no unit visited by the mission was the full range of finishing plant being utilized. This is a waste of valuable capital. There is undoubtedly a case for full investigation into the merits and the demerits of the amalgamation horizontally of much of the dyeing, printing, and finishing capacity to achieve higher utilization of plants. In addition, the techniques associated with these aspects of the industry are complex and require high degrees of special skills at all levels. It is very unlikely that individual units, except the largest ones, can obtain or indeed afford, this expertise. Some small, independent units for carrying out these operations do exist, but their total impact on the industry is negligible. The evidence of operations in countries with long experience in the industry supports the view that specialized horizontal, rather than vertical, organizations lead to more efficient and higher quality production.

217. Decentralized or Non-mill Sector. This sector consists of hand loom and small power loom units. Accurate statistics are difficult to obtain; the last reliable assessment being made in 1956 and the following overall position of the hand loom section was revealed:

Total number of hand looms installed	484,418
Idle looms	167,735
Looms not working on cotton yarn	63,336
Cotton cloth produced (millions of yards)	467.05
Value of cotton cloth produced (millions of Rupees)	408.66

The concensus of opinion is that this sector has increased since 1956, especially as there is an adequate supply of yarn available, which was not true in the late fifties. The size of the power loom section, which consists of units of from 4 to about 50 looms, is now estimated at some 35 thousand. The total consumption of yarn by the decentralized sector, in 1964, was estimated at 187 million pounds and the cloth produced at 748 million yards. This represents half the cotton cloth supply for the home market. The production rose by about 70 per cent during 1956-64 against a rise of 50 per cent in the mill sector.

218. There has been a growth of ancillary small units to carry on winding, slashing and sizing, and finishing operations. This will assist considerably in the further development of this sector, which should be encouraged to meet a greater proportion of the home demands, releasing cloth from the modern large units for export.

219. Third Plan Targets. The figures given below indicate the expansion planned for the period 1965-70:

Table 14

	Installed & Sanctioned (1965)			Third Plan Expansion			Total (1970)		
	East	West	Total	East	West	Total	East	West	Total
<u>Spinning (In Million Spindles)</u>									
Plan	0.80	2.10	2.90	0.50	0.60	1.10	1.30	2.70	4.00
Comprehensive Schedule (IIS)	0.809	2.241	3.050	0.80	0.60	1.40	1.61	2.84	4.45
Comprehensive Schedule (1st Phase)	0.809	2.241	3.050	0.40	0.30	0.70	1.21	2.54	3.75
In Operation 31/12/65	0.654	2.045	2.699	-	-	-	-	-	-
<u>Weaving (In Thousand Looms)</u>									
Plan	14.0	36.0	50.0	6.0	14.0	20.0	20.0	50.0	70.0
Comprehensive Schedule (IIS)	9.53	35.0	44.53	8.0	15.0	23.0	17.53	50.0	67.5
Comprehensive Schedule (1st Phase)	9.53	35.0	44.53	2.5	3.45	5.95	12.03	38.45	50.48
In Operation 31/12/65	5.0	31.0	36.0	-	-	-	-	-	-

220. Thus, if the Plan target is to be reached in 1970, a total of 1.3 million more spindles and 34,000 additional looms will have to be brought into production, an increase of 48 per cent and 94 per cent respectively over 1965. This will call for considerably more dynamism by the industry than has been shown in recent years, when total growth was of the order of 15 per cent in the period 1955-60 and 27 per cent in the period 1960-65.

221. It may be possible to achieve this growth, but the following estimates prepared by the mission, which gives a total increase for the period of 37 per cent in spindles and 55 per cent in looms installed, may be regarded as more likely to be achieved:

Table 15

	No. of Spindles Running (In Million)	Percentage Increase	No. of Looms Running (In Thousand)	Percentage Increase
End 1966	2.9	7.4	40	11.1
1967	3.1	7.0	44	10.0
1968	3.3	6.6	48	9.1
1969	3.5	6.1	52	8.5
1970	3.7	5.7	56	7.7
Third Plan Period		37.0		55.5

The increase would be roughly equal, in respect of the spinning, to that attained in 1950-55. The installation of spinning machinery with its attendant preparation and winding machinery is a lengthier and more complicated operation than that of erecting looms. Thus, the possible rate of expansion of weaving capacity has been assessed at 20,000 looms over the period, which is considerably higher than that achieved over any previous similar period.

222. If the replaced looms in the mill sector are reconditioned and used by the decentralized sector, a further 8,000 looms will be kept in production. The replacement figure of 8,000 may be high in view of the age and condition of the plant in the longer-established units. The figures given in the Plan and those suggested by the mission are compared in the following table:

Table 16

	1970	
	Derived from Plan	Mission
<u>Production of Yarn^{1/}</u>		
Cotton Yarn Produced (Million lbs.)	820.	760.
Spindles in Operation (Million units)	4.00	3.70
Raw Cotton Consumed (Million bales)	2.50	2.17
<u>Consumption of Yarn</u>		
By Mills (Million lbs.)	464.	371.
By Hand and Decentralized Looms (Million lbs.)	210.	210.
By Hosiery, etc. (Million lbs.)	70.	70.
Total Consumption (Million lbs.)	744.	651.
<u>Exports of Yarn</u>		
Quantity exported (Million lbs.)	76.	109.
Price (Rs. per lb.)	1.7	1.7
Value of Exports (Million Rupees)	130.	185.
<u>Production of Cloth</u>		
By Mills (Million yards)	1,572.	1,258.
By Hand and Decentralized Looms (Million yards)	850.	850.
Total Production (Million yards)	2,422.	2,108.
<u>Consumption of Cloth</u>		
Total Consumption (Million yards)	1,945.	1,945.
Population (Millions)	127	127
Consumption per Capita (yards)	15.3	15.3
<u>Exports of Cloth</u>		
Quantity exported (Million yards)	477.	163.
Price (Rs. per yard)	0.7	0.7
Value of Exports (Million Rupees)	334.	114.
Earnings from Yarn and Cloth (Million Rupees)	464. ^{2/}	299.

^{1/} Projections of production, exports, etc., 1969-70 are based on current production coefficients of lbs. of yarn per spindle and yards of cloth per loom.

^{2/} The Plan projection of cotton textile exports was actually only Rs. 350 million. Perhaps yarn exports were not included.

223. The growth of consumption in the home market, which is estimated at 465 million yards, will absorb all the extra production of cloth on the basis of the conservative estimate made above. But there will be an increase in the export of yarn from 55 million pounds in 1965 to 109 million pounds in 1970.

224. If the 8,000 looms to be replaced during the Plan period are re-conditioned and installed in the decentralized sector, another 180 million yards of cloth can be produced, which quantity would be available to release mill production for export. This should earn a further Rs. 126 million in foreign exchange. If this occurred, yarn exports would be reduced by 53 million pounds (Rs. 90 million). Thus the net contribution of this proposal to exports would be Rs. 36 million. Total export receipts from the industry by 1970 would be Rs. 335 million as compared with a Plan estimate of Rs. 350 million. These compare with Rs. 222 million in 1965.

Rayon and Synthetic Fibers

225. The synthetic fiber industry in Pakistan has concentrated principally on the weaving and knitting of yarn. Expansion of the industry has thus been restricted by the difficulty of obtaining import licenses for yarn and the high cost of supplies when imported with bonus vouchers. Also, the domestic market has been limited since the high cost of yarn plus taxes on the finished products have made the goods too expensive for the general public. Only 15 per cent of total textile consumption is of man-made fibers.

226. Nevertheless, there has been a substantial rise in export sales which are steadily increasing to a wide range of markets. In some companies visited, a very high percentage of total production, in one case 100 per cent, was for export. Of course, the duty paid on the imported yarn (125 per cent for rayon filament) is rebated when the product is exported, and in addition, the producer obtains an entitlement to import materials at the par rate up to 50 per cent of the value of his exports. On the other hand, for goods sold domestically, the duties plus the bonus import rate increase the cost of raw materials by about 300 per cent. The Government obviously has sought to develop this only as an export industry. However, it is a common practice for mills to import a proportion of low-cost reject quality yarn for manufacture of fabric for the home market, which, with the low machine efficiency achieved, results in high production costs and low output from expensive machinery. The ensuing loss is regarded as offset by the larger quantity of cloth produced with the same cost in foreign exchange.

Production

227. Cloth. Production of fabric from man-made fibers for 1956-64 are given below:

Table 17

(Million Yards)

	Mills	Non-mill Sector	Total
1956	14.5	58.9	73.4
1957	13.4	37.8	51.3
1958	9.0	40.9	49.8
1959	19.3	62.6	81.9
1960	26.0	93.3	119.3
1961	22.0	31.3	53.3
1962	25.0	107.7	132.7
1963	36.1	127.6	163.7
1964	34.9	161.1	196.0
1965 ^{1/}	250.0

^{1/} Estimated.

The introduction of additional warp knitting machines, of which an estimated 160 are now installed, will greatly increase fabric production.

228. Many of the pioneering companies engaged in the manufacture of synthetic fiber fabrics are parts of cotton textile producing units. The trend, however, is towards specialized companies. A recent development has been towards machine-embroidered fabrics. There is a ready market for this cloth throughout the world, as well as for the specially woven cloths, provided design is original and appealing, and quality standards are high.

229. Yarn. Installed and sanctioned capacity for yarn production exceeds the total yarn used in 1965. The list of plants is given below:

Table 18

(In Tons per annum)

	Installed	Sanctioned ^{1/}	Total
<u>West Pakistan</u>			
1. Acetate rayon plant	3,000	--	3,000
2. Nylon extrusion plant	600	--	600
3. Textile, tire cord and twine yarns (3 units)	--	2,600	2,600
4. Nylon guts and sport goods (2 units)	--	200	200
<u>East Pakistan</u>			
1. Chittagong plant	1,000	--	1,000
2. Tire cord and twine (2 units)	--	1,200	1,200
3. Viscose rayon plant	3,500	--	3,500
Total:	8,100	4,000	12,100

^{1/} The figures on new capacities sanctioned should be treated with caution as they are likely to be exceeded.

230. Two rayon plants have been built and are now on trial production, one producing acetate rayon and the other viscose rayon. The acetate rayon plant near Lahore has a rated capacity of 3,000 tons per annum, but may reach 3,500 tons. The basic materials are all indigenous to Pakistan, cotton linters and acetone made from molasses being the principal constituents. Acetate rayon does not in general enjoy the same demand as viscose rayon, and is often used in conjunction with viscose rayon and other fibers to produce cross-dyeing effects. The viscose rayon plant is established at Kharnafuli, using bamboo as the basic raw material. It is anticipated that full production will start in July and the production capacity is rated at 3,500 tons per year. There is at

present in operation in West Pakistan one nylon extrusion plant, based on imported caprolactum with a production of 400 tons per annum, and approval has been given for increasing the production capacity to 1,000 tons per annum.

231. In West Pakistan there have been three more plants sanctioned for textile, tire cord and twine yarns, two of 1,000-tons per annum capacity, and one of 600-tons capacity. In addition, there are two plants sanctioned for the production of nylon gut for sports goods, each with a rated capacity of 100 tons per annum. In East Pakistan, a unit established near Chittagong has a rated production capacity of 1,000 tons per annum, and will be in production in the near future. There are two further plants of 600 tons per annum sanctioned for textile, tire cord yarn, and twine to be established in East Pakistan.

232. There are plans for the production of polyacrylonitrile fiber from acetate which were approved and finalized in 1964. The credits, however, have not yet been utilized, due to inquiries being conducted on the reasonableness of prices quoted. A project for the production of polyester fiber has been submitted, and a second feasibility report was made which is now under consideration. It is possible that the petro-chemical complex based on natural gas would provide the basic materials for a further group of plants producing synthetic fibers such as nylon, polyester, or polypropylene.

233. The total additional production capacity of rayon and synthetic fibers installed and sanctioned is approximately 12,000 tons per annum for textile production. At 21,280 yards of fabric per ton of fiber, this would supply a cloth output of 255 million yards, which is a little higher than the present production. However, the inevitable increase in demand for cloth and gestation period for these new plants will probably necessitate the import of yarn during most of the Third Plan.

234. If the polyacrylonitrile and polyester fiber plants are installed, additional production capacity of 8,500 tons of yarn will be available, providing for 180 million yards of cloth. These may alter the pattern of the market, as they may well include a large proportion of staple fiber to blend with the natural fibers already available.

235. There are at present no specific plans for the production of staple fiber for blending with both cotton and wool. This is an aspect of the industry which deserves close appraisal, as the trend of the majority of fabrics is towards blends, both for wearing apparel and fabrics for furnishing and carpets.

236. There is apprehension amongst some smaller units of the weaving section of the industry that control of many of the fiber-producing plants is exercised by their competitors in the fabric market. Thus they fear that influence may be exerted on the supply and price of the yarn. There is, no doubt, some logic in this fear, and it is a factor which must be closely

scrutinized when further sanctions for fiber plants are granted. Entrepreneurs that have no interest in the manufacture of the fabric should be actively encouraged to participate in this industry so as to provide a broad basis for fiber supply.

CHAPTER 6

FERTILIZERS AND CHEMICALS

Fertilizers

237. Chemical fertilizers have become an important factor in Government plans for development of the agricultural sector in Pakistan. This importance derives in large part from the fact that a significant share of agriculture's growth performance during the Second Five-Year Plan can be traced to the increased use of chemical fertilizers. In order to maintain or improve this performance, the use of fertilizers will have to expand, and the strategy of development adopted by the Government explicitly recognizes this necessity.

Estimated Demand

238. East Pakistan. Estimating the future demand for fertilizer in a country like Pakistan poses the usual problems and hazards in making projections for a market which is in the early stages of development. The approach adopted for this survey assumes that the official retail price to the farmers in East Pakistan will remain the same as at present throughout the period to 1974/75, and that the recommended applications of fertilizers would bring economic returns of at least 2.5 to 1 on major crops. The important determining factors thus become the timely availability of supplies at the farm level, the effectiveness of extension and sales promotional efforts, and availability of credit. The demand estimates used here include implicit judgments that there will be progressive and coordinated improvement on all these counts.

239. Three different estimating methods were used for East Pakistan, and these give a range within which demand could fall in the years 1969/70 and 1974/75. The methods and assumptions employed are described in Annex II. For purposes of condensing the range suggested by the different estimating procedures, the mid-point of the range has been used as a representative value. This mid-point of the range is shown in Table 1 for the three types of fertilizers, in terms of plant nutrients.

240. West Pakistan. The current fertilizer market situation in West Pakistan is one of shortage in supplies, and there are frequent reports of black market sales at two or three times the official retail price. It therefore seems plausible that increased quantities would be purchased at the official retail prices, and that offtake would be higher if supplies were actually on hand. The quantities required to clear the market at official retail prices are not known, but the existence of excess demand provides grounds for some presumption that acceptance of fertilizer by farmers has reached a point where future market prospects are quite good. As further support for this view, new Mexican wheat varieties are being introduced in West Pakistan which promise substantial yield increases with large applications of fertilizers. As acreage under these new varieties expands, this should be reflected in increased demand for fertilizers.

Table 1

FERTILIZER DEMAND ESTIMATES -- PAKISTAN

(in '000 tons of nutrients)

Year	N			P ₂ O ₅			K ₂ O		
	East Pakistan	West Pakistan	Total	East Pakistan	West Pakistan	Total	East Pakistan	West Pakistan	Total
1965/66	36	106	142	13	8	21	4	-	4
1966/67	48	134	182	18	14	32	6	-	6
1967/68	63	171	234	25	26	51	9	-	9
1968/69	81	217	298	36	47	83	14	-	14
1969/70	99	275	374	50	85	135	20	-	20
1970/71	118	306	424	61	105	166	26	-	26
1971/72	138	341	479	74	130	204	34	-	34
1972/73	162	379	541	90	155	245	45	-	45
1973/74	183	422	605	109	195	304	62	-	62
1974/75	204	470	674	132	235	367	82	-	82

241. The estimate of demand for fertilizers in West Pakistan is also shown in Table 1. It is based on the assumption that the rate of offtake achieved during the Second Five-Year Plan will be continued through the Third Plan, and gives quantities which check well with other estimates made independently for the period through 1969/70. Projections for the Fourth Plan period do not continue the same annual compound growth rate because it has been assumed that factors such as water availability will begin to impose some constraints. The methods and assumptions employed are also described in Annex II. As in the case of East Pakistan, the estimates assume that prices remain unchanged and that application of fertilizers is economically beneficial to farmers employing them.

Distribution System

242. The estimates of future demand for fertilizer assume there will be improvements in the present distribution system such that farmers will be increasingly assured of an adequate supply of fertilizers, in balanced proportions suited to crop requirements, and in time for application when fertilizers are most effective. Distribution problems in a broad sense have plagued Pakistan's efforts to increase fertilizer use to date -- inadequate imports, shortfalls in production, imbalance in the location of stocks which causes localized shortages, frequent reorganizations of the distribution system, limited storage capacity, and transportation bottlenecks. These have not all occurred simultaneously, but one or more of these problems have been present throughout the Second Plan period, and have had an adverse effect on the quantities of fertilizers sold.

243. The fertilizer distribution system in East Pakistan is in the process of a reorganization which will bring greater private sector participation than in the past. The East Pakistan Agricultural Development Corporation (EPADC) will be responsible for procurement (from factories in East Pakistan and from abroad) and distribution to storage points located in each thana. Private dealers will take delivery at the thana storage points for resale to farmers in market centers throughout each thana. This arrangement will replace the use of Union Agricultural Assistants (Agriculture Department) as the retail sales agents, thereby freeing them to concentrate on their extension responsibilities. The changeover to a private dealership system is scheduled to be completed in all parts of the Province by April 1967.

244. The current distribution system in West Pakistan is the reverse of that in East Pakistan. Prior to July 1965 a major share of the distribution was carried out by private dealers who received supplies from either the West Pakistan Agricultural Development Corporation (WPADC) or the West Pakistan Industrial Development Corporation (WPIDC). A minor share (25 per cent) was distributed through cooperatives supplied by the Rural Supply Cooperative Corporation (RSCC). Since July 1965 the RSCC has been distributing 75 per cent of the total available supply of fertilizers through its affiliated cooperatives, and the WPADC has been allocated 25 per cent for distribution in its project areas and for use in the

promotion of improved seed in all parts of West Pakistan. The shift away from private dealerships was designed to curtail the practice of charging prices above the official retail price during this period when supplies are scarce, but the persistence of reports of black market prices indicates the Government's objective has not been fully achieved. It is doubtful that the present reliance on the RSCC and the cooperatives is intended as a permanent arrangement, although it will probably be retained until there are sufficient supplies to remove the existing shortages.

245. Expansion in the use of fertilizer also depends on the effectiveness of the extension service and the sales promotion efforts, and on the availability of credit. These elements in a fertilizer program are probably more critical in East Pakistan, where the market is still quite undeveloped, but good extension work and sales promotion activities will be required in West Pakistan in conjunction with the introduction of new wheat and cotton varieties which need more fertilizer than local varieties now being used. Government is aware of the importance of an improved distribution system, supported by extension, sales promotion, and credit facilities, and efforts to overcome present deficiencies in these respects can be expected. A more detailed discussion of the distribution system and related elements is provided in Annex III.

Present Production

246. The East Pakistan Industrial Development Corporation (EPIDC) urea plant at Fenchuganj began production in December 1961, and since 1962/63 has supplied all the urea requirements of the Province. The plant had a rated capacity of 117,000 tons of urea per year, but actual production has never exceeded 109,159 tons per year. There were breakdowns in production during 1964 and 1965 which curtailed the supplies available for the peak periods of offtake, and in some districts where stocks on hand were low this probably restricted sales below what might have otherwise been achieved. It is now expected that the plant will be completely closed for two months in 1966, possibly in May and June, to complete a major overhaul of the facilities. This would come just before the period of peak offtake by farmers, and will result in another disappointing year unless imports of urea can be brought to distribution centers in time. Because of the plant's performance to date, the EPIDC has downgraded its rated capacity to 100,000 tons of urea per year (equivalent to 46,000 tons of N), which should be achievable after modifications to be carried out in 1966.

247. Production facilities are currently operating at three locations in West Pakistan -- Daudkhel (ammonium sulphate); Multan (calcium ammonium nitrate and urea); and Lyallpur (super phosphate). Total annual production capacity is 64,420 tons of N and 3,060 tons of P_2O_5 . Actual production in any year since 1960/61 has never exceeded 45,000 tons of N.

248. Offtake in West Pakistan began to exceed domestic production in 1963/64, but imports were not increased until stocks had been depleted. The current shortage reflects this failure to increase imports during 1964/65 (when they actually declined). Present estimates are that 45,440 tons of N will arrive in West Pakistan during 1965/66, which will mean a total supply for the current year of about the same order as offtake during 1964/65. There has been very little phosphatic fertilizer used in West Pakistan, and no potassic fertilizers.

Planned Increases in Production Capacity

249. With estimates of future fertilizer requirements running far beyond existing production capacity, Government is actively pursuing a program of new plant construction. Both East and West Pakistan have reserves of natural gas which make it possible to produce nitrogenous fertilizers from their own natural resources, but the raw materials for phosphatic fertilizers must be imported. Domestic production of fertilizers, particularly nitrogenous fertilizers, will therefore result in important foreign exchange savings, as well as assuring supplies for domestic use. Current Government thinking assumes that there will be periods during which domestic urea production will exceed domestic requirements, but that such excess urea can be sold in world markets or under bi-lateral trading arrangements.

250. At the time the mission was in East Pakistan, planned increases in production capacity were under review by Government and not completely final. Initial expectations had been to increase urea production capacity by 78,200 tons of N (170,000 tons of urea), but a report to the Government by Dr. Ernest W. Nagelstein, Chief, Research Division, UNDP(SF) in January 1966 stated that recent technological developments permit larger scale plants to achieve substantial economies by producing ammonia at rates of 600 tons per day (for urea production at a rate of 340,000 tons per year). As a result of this, Government was planning an increase in urea production capacity of 156,400 tons of N (340,000 tons of urea) at a minimum, with the possibility of increases greater than this if financing could be arranged. This report assumes, however, that the figure of 340,000 tons of additional urea capacity represents the basic Government position at this time.

251. A plant to manufacture 14,720 tons of P_2O_5 (32,000 tons of triple super phosphate) is currently under construction at Chittagong, and is scheduled for completion by early 1967. Two additional TSP plants, each with a capacity of 55,200 tons of P_2O_5 , are also planned. One is to be installed at Chittagong, and the second would be at Khulna. The timing of these is still uncertain, other than that they will be taken up in the above order, but both are scheduled to start during the Third Plan period. The Khulna plant would probably be started late in the Third Plan at the earliest. Completion of all three plants would represent an installed capacity of 125,000 tons in terms of P_2O_5 .

Table 2

EXISTING AND PROPOSED FERTILIZER PRODUCTION CAPACITY
IN PAKISTAN

Status and Type of Plant	East Pakistan	West Pakistan
(in '000 tons of nutrients)		
<u>Existing and Under Construction:</u>		
Urea (Fenchuganj)	46.0 (N)	
TSP (Chittagong)	14.7 (P ₂ O ₅)	
Ammonium Sulphate (Daudkhel)		10.5 (N)
Calcium Ammonium Nitrate (Multan)		26.8 (N)
Urea (Multan)		27.1 (N)
Super Phosphate (Lyallpur)		3.1 (P ₂ O ₅)
<u>Construction Approved:</u>		
Ammonium Sulphate (Kaudkhel)		8.4 (N)
Calcium Ammonium Nitrate (Multan)		15.6 (N)
Urea (Multan)		6.9 (N)
Super Phosphate (Lyallpur)		5.4 (P ₂ O ₅)
Urea (Esso-Mari)		79.6 (N)
<u>Proposed:</u>		
Urea (Ghorasal)	156.4 (N)	
TSP (Chittagong)	55.2 (P ₂ O ₅)	
TSP (Khulna)	55.2 (P ₂ O ₅)	
Urea (Kandhkot)		230.0 (N)
TSP (Karachi)		69.0 (P ₂ O ₅)
Ammonium Sulphate (Daudkhel)		126.0 (N)

Source: E.P.I.D.C.; Planning Department, West Pakistan.

252. The Government of West Pakistan informed the mission that it plans to increase the capacity to produce nitrogenous fertilizers by 466,480 tons of N, bringing the total to 530,900 tons of N. Expressed in terms of fertilizers, this would be an increase of 1,388,000 tons of the three kinds of nitrogenous fertilizers used in the Province (urea, ammonium sulphate, and calcium ammonium nitrate). Of this increase, Government has already approved the construction of additional plant capacity to produce 110,480 tons of N. These would be located at Daudkhel, Multan, and Mari, the last being a private urea plant to be installed by a subsidiary of Esso Standard Eastern, Inc. The Mari plant would have a capacity of 79,580 tons of N (173,000 tons of urea per year), and total output is to be sold through a marketing and distribution system set up for this purpose by the company. All of these plants, which have received approval to begin construction, are expected to be in operation before the end of the Third Plan period.

253. The Central Government has also sanctioned the financing for two other plants producing nitrogenous fertilizers, and hopes that construction may be started on these during the Third Plan period. Neither the location nor the financing has been settled for these plants, but tentative thinking is to place a urea plant at Kandhkot to produce 230,000 tons of N (500,000 tons of urea) and an ammonium sulphate plant at Daudkhel to produce 126,000 tons of N (600,000 tons of ammonium sulphate). Because of the present uncertainties concerning source of financing and location, it appears unlikely that either of these plants will be in operation before 1970/71.

254. It has been noted above that the use of phosphatic fertilizers in West Pakistan has been quite limited in the past. This is an imbalance in fertilizer use which should be corrected because fertilizer trials in West Pakistan show that, in general, reliance on nitrogen alone does not produce the most economic returns to the farmers. Government has therefore made provision for new capacity to produce phosphatic fertilizers in West Pakistan to supply a gradually improving balance in fertilizer use. Construction has been approved for one plant at Lyallpur to produce 5,440 tons of P_2O_5 (32,000 tons of super phosphate), and this should be in operation before the end of the Third Plan. The Central Government has also given financial sanction to a second plant, to be located at Karachi, which will produce 69,000 tons of P_2O_5 (150,000 tons of triple super phosphate). Although this plant has not reached the stage where construction has actually been approved, Government hopes that it may be in operation by 1968/69. With the completion of these two plants, and including the plant capacity already in operation at Lyallpur, the Province will have a total production capacity for phosphatic fertilizers of 77,500 tons of P_2O_5 . Present and proposed new capacities for East and West Pakistan are given in Table 2.

Future Surplus or Deficit

255. Given the estimates of demand noted above, and the present Government plans for installing new production capacity for nitrogenous and phosphatic fertilizers, it is possible to derive some indication of the degree

to which Pakistan will be able to meet its domestic requirements for domestic production. It should be borne in mind, however, that the many uncertainties which affect both the supply and demand projections make any estimates of net surplus or deficit position extremely tentative.

256. Nitrogenous fertilizers -- East Pakistan. Original plans for additional urea production in East Pakistan called for a plant with a capacity of 78,200 tons of N (170,000 tons of urea) located at Ghorasal, to come into production in 1969/70 and reach full capacity operation by 1970/71. Later revisions have centered on a single plant to produce 156,400 tons of N (340,000 tons of urea), which is expected to give savings in capital cost of one-third on a tonnage basis and some Rs. 60 per ton of urea on the cost of production. If it is decided to build this larger plant, it will be necessary to study the economics of distribution from a single point instead of two separated plants (producing the same quantity), the practicability of hauling the heavy equipment for the larger plant to the plant site, and other matters. It seems likely that such study, together with the need for plant design and construction tendering, would delay installation of the plant by a year. Assuming, therefore, that it comes on stream at half capacity by 1970/71 and full capacity by 1971/72, increasing imports of urea will be required through 1969/70.

257. Another alternative would be to start construction of the plant of 78,200 tons capacity of N which had been planned, with production beginning in 1969/70 and reaching full capacity operation in 1970/71. A second plant, of the same capacity, would then be constructed on a schedule to begin production in 1970/71 and reach full capacity operation in 1971/72. Comparison of the production results under these alternatives and the estimates of demand through 1974/75 are shown in Table 3.

258. Under the assumptions used here, there would be a slight advantage in Alternative II (two plants of equal capacity) because the earlier implementation of the first plant would begin to reduce the need for imports of urea by at least one year in advance of Alternative I, and would produce surpluses for export at an earlier stage. Of possibly greater importance is the fact that large-scale plants for urea production are relatively new, and even greater technical advances are expected. For example, pilot plants are being tested to eliminate the intermediate step of ammonia production in making urea from natural gas. This development would drastically reduce both capital and production costs. Alternative II would permit some flexibility in deciding the size and technology to be used in the next stage of expansion, with opportunity to take advantage of the latest technological developments. This alternative would also provide further opportunity to study the world export markets for urea and assess Pakistan's relative competitive position vis-a-vis other exporting countries.

259. Nitrogenous Fertilizers -- West Pakistan. Estimates of the surplus and deficit quantities of nitrogenous fertilizers in West Pakistan have been made on the basis of certain rough assumptions about the availability of supplies from proposed new production capacity. Specifically,

Table 3

NITROGENOUS FERTILIZER PRODUCTION AND DEMAND -- EAST PAKISTAN

(in '000 tons of N)

Year	Estimated Demand	Alternative I Single Plant <u>1/</u>		Alternative II Two Plants <u>2/</u>	
		Production	Surplus (+) or Deficit(-)	Production	Surplus (+) or Deficit(-)
1965/66	36	46	+10	46	+10
1966/67	48	46	- 2	46	- 2
1967/68	63	46	-17	46	-17
1968/69	81	46	-35	46	-35
1969/70	99	46	-53	85	-14
1970/71	118	124	+ 6	163	+45
1971/72	138	202	+64	202	+64
1972/73	162	202	+40	202	+40
1973/74	183	202	+19	202	+19
1974/75	204	202	- 2	202	- 2

1/ Single plant of 156,400 tons of N capacity (340,000 ton of urea) begins production in 1970/71 and reaches full capacity operation by 1971/72.

2/ First plant of 78,200 tons of N capacity (170,000 tons of urea) begins production in 1969/70. A second plant of equal capacity begins production in 1970/71.

it is assumed: one-half of an additional capacity of 30,900 tons of N (plants at Daudkhel and Multan) will be in production by 1967/68 and the rest by 1968/69; the Esso plant at Mari, with a capacity of 79,580 tons of N, will begin operation in 1968/69 and will be at full production by 1969/70; two remaining plants with a total capacity of 356,000 tons of N (at Kandhkot and Daudkhel) will begin production in 1970/71 and will be operating at full capacity in 1971/72. When these estimates of domestic production, which tend to be optimistic in view of the tentative nature of some of the production plans, are compared with estimates of demand in West Pakistan, the results are as shown in Table 4. This comparison indicates that imports of nitrogenous fertilizers will be required through the Third Plan, but that surpluses will be available subsequent to that period. This is because the two largest plants, which together would provide more than two-thirds of the total volume of nitrogenous fertilizers now planned for production in West Pakistan, are assumed to begin operation no earlier than 1970/71. As in the case of East Pakistan, this raises the question of Pakistan's competitive advantage in world export markets for urea, and point up the need to assess the export prospects carefully. On the other hand, it is also possible that domestic demand will grow more rapidly than has been projected in this report. A more accurate appraisal on both counts -- domestic demand and export possibilities -- would become feasible in one to two years' time as more experience is accumulated.

260. Phosphatic Fertilizers -- East Pakistan. The timing of additional phosphatic fertilizer production capacity is very tentative at this time, but this report assumes that the Chittagong plant presently under construction will begin operation in 1967/68 and a second plant at the same location will start production in 1969/70. The Khulna plant is assumed to begin production in 1970/71. The quantities involved are as stated in paragraph 251 above. This schedule is reflected in the comparison of demand and production shown in Table 5. The comparison shows that surpluses of P_2O_5 may be fairly large during the first years of the Fourth Plan, but the estimates of the West Pakistan position given below indicate the possibility of deficits in that Province during the same period. The raw material for phosphatic fertilizers must be imported by Pakistan in both Provinces. It would appear preferable therefore to schedule new production capacity in each Province in accordance with anticipated demand in each Province, rather than have surpluses in one which would have to be shipped to meet the deficits in the other. The size of deficits or surpluses will depend on whether farmers will actually begin to use more balanced applications of chemical fertilizers, for the assumptions used in these estimates anticipate significant improvements in the NPK ratio in both East and West Pakistan by 1974/75.

261. Phosphatic Fertilizers -- West Pakistan. Current plans call for additional capacity of 5,440 tons of P_2O_5 (32,000 tons of super phosphate) at Lyallpur, to be in operation by 1967/68, and additional capacity of 69,000 tons of P_2O_5 (150,000 tons of triple super phosphate) at Karachi. This report assumes that the latter plant will be in operation by 1968/69. The comparison of demand and production is shown in Table 6. As noted above, this comparison reveals a need to think seriously about even further phosphate production capacity in West Pakistan if the demand for phosphates (to balance the expected large expansion in nitrogen application) grows as projected.

Table 4

NITROGENOUS FERTILIZER PRODUCTION AND DEMAND--WEST PAKISTAN

(in '000 tons of N)

Year	Estimated Demand	Production	Surplus (+) or Deficit (-)
1965/66	106	64	(-) 42
1966/67	134	64	(-) 70
1967/68	171	80	(-) 91
1968/69	217	135	(-) 82
1969/70	275	175	(-) 100
1970/71	306	353	(+) 47
1971/72	341	531	(+) 190
1972/73	379	531	(+) 152
1973/74	422	531	(+) 109
1974/75	470	531	(+) 61

Table 5

PHOSPHATIC FERTILIZER PRODUCTION AND DEMAND -- EAST PAKISTAN

(in '000 tons of P₂O₅)

Year	Estimated Demand	Production	Surplus (+) or Deficit (-)
1965/66	13	-	(-) 13
1966/67	18	-	(-) 18
1967/68	25	15	(-) 10
1968/69	36	15	(-) 21
1969/70	50	70	(+) 20
1970/71	61	125	(+) 64
1971/72	74	125	(+) 51
1972/73	90	125	(+) 35
1973/74	109	125	(+) 16
1974/75	132	125	(-) 7

Table 6

PHOSPHATIC FERTILIZER PRODUCTION AND DEMAND -- WEST PAKISTAN

(in '000 tons of P₂O₅)

Year	Estimated Demand	Production	Surplus (+) or Deficit (-)
1965/66	8	3	(-) 5
1966/67	14	3	(-) 11
1967/68	26	9	(-) 17
1968/69	47	78	(+) 31
1969/70	85	78	(-) 7
1970/71	105	78	(-) 27
1971/72	130	78	(-) 52
1972/73	155	78	(-) 77
1973/74	195	78	(-)117
1974/75	235	78	(-)157

Recommendations

262. In compiling the information which was used in preparing the estimates of demand and domestic production of fertilizers, there was opportunity to observe the context within which fertilizers are being made available to farmers in Pakistan. Several recommendations for future policy and future operations seem appropriate in light of these observations, and these are briefly summarized in the paragraphs which follow:

a. Farmers in both East and West Pakistan tend to rely very heavily on nitrogenous fertilizers, although fertilizer trials indicate that a more balanced use of nitrogenous and phosphatic fertilizers would bring increased benefits to the farmers. Strong efforts should continue to be made to improve the NP balance for optimum results. Fertilizer trials have also established the fact that potassic fertilizers are required in East Pakistan, and therefore improvement in the NPK ratio is called for. The contribution of potassic fertilizers in West Pakistan is less clear at this time, and no firm recommendation can be made pending the completion of further testing.

b. In East Pakistan, the administrative organization of the EPADC could be changed in ways which would serve to strengthen the fertilizer sales activities. For example, with the expected high turnover in fertilizers sales, there seems ample justification for a separate division in the EPADC to carry out all operations concerned with fertilizer procurement, distribution, and sales. Within such a separate division, one branch might be given responsibility for sales promotion, and be staffed with people who understand both the technical and sales problems. This branch would maintain contact with research and fertilizer trial activities being carried out by the Directorate of Agriculture and other agencies, would disseminate research findings as widely as possible, would advise and participate in advertising and sales promotion activities, and branch staff members would travel extensively in order to maintain a current, informed flow of reports on problems connected with distribution and sales promotion. There should also be a review of accounting and budgeting procedures in EPADC to determine how they can be revised to serve the purposes of commercially oriented organization rather than a government agency.

c. In West Pakistan, a mixture of private dealers and cooperative sales outlets seems preferable to reliance on cooperatives alone, since this would expand the number of retail sales outlets from which farmers can obtain fertilizers. Planning should therefore begin for a distribution system which will ultimately use private dealers for some part of the retail sales, and to establish a wholesaling agency which can acquire personnel with sales promotion, movement and storage, and technical competencies to carry out an effective fertilizer program. In this connection, the plans being prepared by ESSO for its sales and distribution system should be studied carefully as a possible model for adoption.

d. The present subsidized retail price to farmers seems necessary in light of the difficulties experienced in raising offtake in East Pakistan, and will probably be required as an incentive measure for at least five years more. Although the market appears to be in a more advanced stage of development in West Pakistan, it is difficult to estimate the extent of excess demand at the present subsidized retail price. It therefore seems prudent to defer any decision on reduction of the subsidy (and a consequent increase in price to farmers) until there has been an opportunity to test the market further with the increased supplies expected during 1966/67. There is also the possibility that the financial burden on Government due to the subsidy may be eased as new domestic production capacity comes into operation and produces fertilizers at substantially lower costs than at present.

e. The existing credit system for fertilizer purchase is extremely cumbersome, and should be revised to permit credit to have a greater influence on fertilizer sales. Possible lines of revision would include credit to the private dealers to enable them to lift stocks in advance of seasonal sales, and credit to the dealers which they could, in turn, extend to their individual customers.

f. There is need to study the fertilizer storage requirements in both East and West Pakistan more carefully than has been done so far. Storage capacity seems inadequate for the quantities of offtake anticipated by 1969/70, even including the additional storage called for in the EPADC's storage scheme for the Third Plan and the cooperative storage planned in West Pakistan. One alternative for consideration would be to shift a large part of the storage requirement to private dealers by offering loans for the construction of new storage space or granting discounts on the purchase of fertilizers for storage during off-peak months of the year. Quantity discounts might also be offered, and the combination of off-peak and quantity discounts might be structured in a way which would make it attractive to private dealers to construct storage adequate to take advantage of them.

g. There is need for improvement in procurement activities. Tender specifications should be prepared by people familiar with chemical fertilizers so that the quality and other special characteristics of bagging are appropriate to the handling and storage conditions in each province. Efforts to arrange financing for imports at least one year in advance of scheduled arrival deserve support. The proposal to bring fertilizer imports to East Pakistan in bulk should be discouraged.

h. Fertilizer names and instructions on use should be on the bags in Bengali (East Pakistan) and Urdu (West Pakistan) as an aid to understanding and to promote farmer acceptance.

i. Sales campaigns to increase fertilizer use should be initiated on a seasonal basis for maximum effectiveness. Such campaigns should have ample budgetary support, and should employ specialists in preparing advertising material which will attract the attention of farmers in East and West Pakistan. This calls for imaginative market research to determine the appropriate media and type of appeal which will be most effective in each area.

j. A fertilizer law to protect farmers against adulteration will be required as fertilizers sales begin to rise. Such a law might be patterned after those in effect in Germany and the United States.

Chemicals (Except Fertilizer)

263. At the end of the Second Plan period Pakistan was not self-sufficient in any of the basic chemicals although paradoxically some of the installed plants were working below full capacity. This is largely because, to be economic, a chemical plant must normally produce a range of products and by-products. Thus, if a plant can sell its main product but cannot dispose of its secondary products, it may have to restrict its total output. For example, one of the existing caustic soda plants, with a capacity of 60 tons per day, only produces about 20 tons a day because of the difficulty of disposing of the chlorine produced jointly with the caustic soda. However, as the processing industries become established and grow, demand for a wide range of chemicals will facilitate the establishment of a viable basic chemical industry.

264. The mission visited many of the chemical plants already in production as well as those under construction. The way in which local industrialists had shown resourcefulness and ingenuity in producing items themselves in order to overcome import restrictions was most impressive. However, where manufacture is technically difficult or where high standards in quality are necessary, there was a wide variation between different plants. The plants which had foreign participation and had thus received detailed assistance from experienced technicians were of a higher standard in every way than those dependent on advice from machinery manufacturers, general technical consultants, or on local skills and knowledge. As the Pakistan chemical industry grows and Pakistani technicians acquire wider experience, this contrast will diminish but there is no doubt that, at present, a foreign partner is invaluable.

Present Capacity and Targets

265. Soda Ash. An existing unit produces about 30,000 tons a year which is to be expanded to 40,000 tons. Two additional soda ash units were sanctioned during the Second Plan which will raise production to 136,000 tons in 1966/67. The target for 1969/70 is 172,000 tons. Pakistan has abundant raw materials for this product. It should become an export item.

266. Caustic Soda. The Second Plan production target was 35,000 tons but installed capacity by the end of the Plan was about 65,000. The target for 1969/70 is 90,000 tons. The joint product, chlorine will have an expanding use for insecticides and petro-chemicals.

267. Sulfuric Acid. The installed capacity by mid-1965 is 177,330 tons and the target for 1969/70 is 600,000 tons.

268. Other chemical products produced in Pakistan (other than fertilizer) include chemical dyes, pharmaceuticals, antibiotics and some petroleum derivatives.

General Prospects

269. Although a vast range of organic compounds can be obtained from raw materials available in Pakistan, the practical range is quite small owing to the present small market and the heavy investments necessary for many of the products. It is most important to make plans after full study particularly of the raw materials situation and the complexes to be built around them. One false start has already been made in erecting, in West Pakistan, a plant for the production of polyethylene based on the fermentation of molasses. This is clearly less economic than one based on ethylene obtained from the cracking of light naphtha, an oil refining product. Owing to the siting of the plant, ethylene will eventually have to be transported in tankers or piped over a distance of more than fifteen miles; in addition, all the fermentation equipment will be wasted. There are tentative plans for a similar plant, based on molasses, to be erected in East Pakistan and this proposal should be scrutinized more carefully before it is sanctioned. If a naphtha cracker is to be built in East Pakistan, production of ethylene from molasses would be uneconomic.

270. The mission is not able from a short study to give firm recommendations, but the general pattern that might be followed in developing a chemical industry would appear to be as follows:

<u>Origin</u>	<u>Primary Products</u>	<u>Intermediate and Final Products</u>	<u>Uses</u>
Natural Gas	Ammonia	Urea, ammonium sulphate, ammonium nitrate, etc.	Nitrogenous fertilizers
	Acetylene	Polyvinyl Chloride	Plastics
		Polyvinyl Acetate	Glues
		Methanol	Industrial Solvent
		Formaldehyde	Resins for Plastics and Glues
Light Naphtha (from crude oil refinery)	Ethylene	Polyethylene	Plastics
		Polyvinyl Chloride	Plastics
		Polyesters	Resins and fibers
		Styrene and Polystyrene	Plastics, rubbers, paint
	Propylene	Glycerine	Fibers and flexible glass (Perspex)

(Cont'd)

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		Methanol	Industrial Solvent
		Formaldehyde	Resins for Plastics and Glues
Light Naphtha (from crude oil refinery)	Ethylene	Polyethylene	Plastics
		Polyvinyl Chloride	Plastics
		Polyesters	Resins and fibers
		Styrene and Polystyrene	Plastics, rubbers, paint
	Propylene	Glycerine	Fibers and flexible glass (Perspex)

(Cont'd)

<u>Origin</u>	<u>Primary Products</u>	<u>Intermediate and Final Products</u>	<u>Uses</u>
Molasses (from sugar refinery)	Ethanol (Ethyl Alcohol)	Ethanol	Industrial solvent; Fuel
		Ketones, etc.	Industrial solvents
		Acetic acid	Industrial solvents
		Acetic anhydride Cellulose acetate	Rayon; plastics

271. An integrated plan is essential.

272. The chemical industry in the Plan has been divided into chemicals (including fertilizers) and petro-chemicals, the latter being chemicals derived from petroleum or from natural gas. It is not possible to determine the classification of an item unless we know from what raw material it is made. Nitrogenous fertilizers are normally made from natural gas and can properly be regarded as petro-chemicals while polyethylene, classified in the Plan as a petro-chemical, can be made from ethanol (obtained from fermentation of molasses) or from ethylene (made from light naphtha). Likewise, polyvinyl chloride can be obtained via acetylene from the methane in natural gas or from calcium carbide. Owing to Pakistan's need for fertilizers and substitutes for metal and its abundance of natural gas, together with surpluses of light naphtha and molasses, great emphasis has rightly been placed on investments in fertilizer plants and on those to produce polymers plastics and artificial fibers.

273. Fertilizer production has already been considered above. Only its financial implications will be included here to give a total picture of investment in the industry.

Third Plan

274. In the original Plan document, chemical and petrochemical industries represented a total planned investment of Rs. 2,296 millions, 17.8 per cent of that for all industries. Of this 2,296 million, 1,317 million was planned to be invested in the public sector and 979 million in the private sector. The planned investment in the public sector has since been reduced to Rs. 1,106 million. The allocation given in the "Hard Core" Industrial Investment Schedule is Rs. 1,292 million. The revised total is thus Rs. 2,398 million, about Rs. 100 million above the original allocation but with more emphasis on the private sector.

275. Private Sector. During the first nine months of the Third Plan, very few chemical investments were sanctioned in the private sector (only about Rs. 60 million out of an allocation of Rs. 1,016 million, given in the Hard Core Comprehensive Investment Schedule, i.e., 5.9 per cent). However,

the lending agencies affirm that they have many prospective applications particularly in the petro-chemical field, but these are awaiting a definition of Government policy on the ownership and siting of a naphtha cracker and production of intermediates from it.

276. Public Sector -- East Pakistan. Rs. 759 million has been allocated for chemical and petro-chemical public sector industries in East Pakistan. 48 per cent of this is destined for the fertilizer industry, 28 per cent for petrochemicals, and 24 per cent labelled for "Other new schemes." Only 11 per cent of the last group is earmarked for schemes already planned.

277. With the latest Government policy on fertilizer production, public sector investment may be approximately as follows:

	<u>Estimated Investment in Rs.</u>
Modifications to fertilizer factory	
Fenchuganj	2,782,000
Ghorasal factory for 340,000 tons	
of urea per year	250,000,000
Sulphuric Acid and Triple Super	
phosphate plant Chittagong;	
32,000 tons/year	20,900,000
Expanded to 120,000 tons/year	35,000,000
Triple Superphosphate plant Khulna	
120,000 tons/year	<u>54,375,000</u>
	363,057,000

The petrochemical plants and products envisaged are as follows:

Industrial Complex based on molasses	61,028,000
(250 tons Bakers' yeast per year	
5,000 tons Polyethylene per year)	
Plant to produce 3,000 tons PVC and PVA	
per year from natural gas	60,000,000
Synthetic Glass, Fiber and Rubber plants	<u>95,000,000</u>
	216,028,000

278. Other schemes specified in the Plan are:

	<u>Rupees</u>	
	<u>Allocation</u>	<u>Latest Estimate</u>
Streptomycin factory	20,400,000	26,430,000
D.D.T. factory	3,360,000	9,670,000
Insecticides/Pesticides plant	20,000,000	31,350,000
Dyestuffs	20,000,000	3,900,000
Sea salt/Soda ash complex	<u>20,000,000</u>	<u>26,230,000</u>
	83,760,000	97,580,000

This gives a total investment for the chemical industry of Rs. 677,000,000 compared with the Rs. 759,000,000 allocated.

279. Once the oil refinery at Chittagong is built, there will be a surplus of light naphtha which could be used to produce ethylene in a naphtha cracker much more cheaply than it can be produced from molasses. An alternative petrochemical scheme producing approximately the same range of products would need an investment program as follows:

	<u>Estimated Investment in Rs.</u>
1. Naphtha cracker and gas separation plants (To process 150,000 tons naphtha/year)	61,000,000
2. Plants for processing output of cracker to intermediates	<u>200,000,000</u>
	261,000,000

This gives a higher investment but would certainly yield lower cost products.

280. Public Sector -- West Pakistan. The proposed investment in the chemical and petrochemical industries in the public sector is considerably less than in East Pakistan amounting, in the revised allocations, to Rs. 346,725,000. Of this total, 87 per cent has been allocated to fertilizers, 10 per cent for petrochemicals and 3 per cent for all other schemes.

281. With the latest Government policy on fertilizer production, investments would be approximately as follows:

	<u>Millions of Rs.</u>	
	<u>Allocation</u>	<u>Latest Estimate</u>
1. Fertilizer Plant No. 2 at Mari	270,000,000	Now in private sector
2. Triple Superphosphate plant at Karachi 1,550,000 tons/year	-	65,000,000
3. Ammonium sulphate-nitrate plant in Daudkhel for 600,000 tons/year	25,600,000)	
4. Fertilizer plant in Salt Range	4,500,000)	35,000,000
5. Balancing of Multan project to give 29,700 tons Ammonium Nitrate and 16,500 tons Urea per year		<u>27,320,000</u>
	<u>300,100,000</u>	127,320,000

282. Allocations, in the public sector, for the petrochemical industries are confined to the naphtha cracker, it being assumed that the use of the gaseous products from the cracker will be in plants owned exclusively in the private sector. Thus, the proposed investment is as follows:

	<u>Millions of Rs.</u>	
	<u>Allocation</u>	<u>Latest Estimate</u>
Naphtha Cracker) Aromatic Recovery)	35,000,000	60,509,000

283. Other schemes are as follows:

	<u>Millions of Rs.</u>	
	<u>Allocation</u>	<u>Latest Estimate</u>
Tar distillation plant Daudkhel	1,375,000	1,675,000
Expansion of Penicillin plant Daudkhel	1,960,000	(1,960,000) ^{1/}
Expansion of Industrial Dyes plant Daudkhel	3,500,000	6,550,000
Tetracycline plant	<u>4,790,000</u>	<u>4,790,000</u>
	11,625,000	13,015,000

284. This gives a total of planned investment in chemicals and petrochemicals in the public sector of Rs. 200,844,000 as against Rs. 376,725,000 in the original plan. However, the Mari fertilizer plant which was in the original public sector plan has been transferred to the private sector. This project will require Rs. 270 million. The total estimate therefore exceeds the original allocation for the schemes still in the public sector program.

285. Conclusion. Thus, in the public sector, of the total allocated investment in the two Provinces of Rs. 1,106 million, about Rs. 878 million consists of planned projects. However, if a viable petrochemical industry is to be constructed in both provinces the mission would recommend an additional investment of about Rs. 45 million to base it on the by-products of petroleum refining rather than molasses.

286. The considerable expenditure on petrochemicals is in plants producing quantities too small to be really economic. Considerable economies could be made in both installation and production costs if some form of rationalization could be achieved. A possible solution could be,

^{1/} The penicillin plant at Daudkhel is excluded as it does not appear to the mission to be a viable project.

for example, that West Pakistan should make those products most economically produced as naphtha cracker derivatives, while East Pakistan should make those products most economically produced from natural gas and molasses. It is important that both East and West Pakistan should co-operate closely in planning the basic facilities.

CHAPTER 7

EQUIPMENT AND STEEL

Equipment

287. The industrial equipment industry, ^{1/} though still small, has expanded rapidly in recent years. The output of this industry grew at an annual rate of about 30 per cent during the Second Plan, increasing from 4.8 per cent to 8 per cent of the total manufacturing sector. The share of domestic production in total supply of engineering goods increased from 21 per cent in 1959/60 to 39 per cent in 1964/65 while the imports increased 2.4 times, maintaining practically the same proportion to total imports (31.6 per cent in 1959/60 and 33.6 per cent in 1964/65). Imports are shown in table 1.

288. Most of the development in the private sector has been in light metal products such as pumps, sewing machines, etc. The public sector, on the other hand, has concentrated mainly on ship-building, railway maintenance and defense equipment. A brief description of major workshops and facilities existing in Pakistan is given in Annex V.

289. Table 2 shows the growth pattern of the equipment industry. Somewhat different rates of growth have occurred in the three major segments of the industry (i.e. (a) mechanical machinery and equipment, (b) electrical machines and equipment, and (c) transport equipment. The production of electrical machinery and equipment, in 1964/65, rose to three times the level of 1959/60 whereas in machinery and transport equipment the outputs in 1964/65 were 2.3 and 4.5 times the levels attained in 1959/60). The utilization of capacity varied widely. In 1964/65 the utilization of capacity was 23 per cent in motor vehicles, 40 per cent in bicycle production and in ship-building, 80 per cent in transformer manufacturing and 90 per cent in the ship-repair branches.

Second Plan

290. During the Second Plan the emphasis was on the development of consumer durables. The allocation to the public sector, in consequence, was less than 10 per cent of the Rs. 223 million earmarked for the whole equipment industry. As no output target was given in the Plan, a comparison of achievements with targets is not possible. However, disbursements in the Second Plan only reached 31 per cent of the Plan target (table 3).

^{1/} "Equipment Industry" for the purpose of this report excludes production of home and office equipment and appliances.

Table 1

Import of Equipment - Pakistan^{1/}
(Rs. '000)

		<u>1960-61</u>	<u>1961-62</u>	<u>1962-63</u>	<u>1963-64</u>	<u>1964-65</u>
Machinery	All Pakistan	402,342	541,255	825,960	807,527	935,343
	West Pakistan	(278,811)	(356,865)	(635,040)	(611,555)	(628,148)
Electrical equipment	All Pakistan	174,397	174,484	262,779	255,457	195,570
	West Pakistan	(130,170)	(141,756)	(218,832)	(186,397)	(128,954)
Transport equipment	All Pakistan	254,492	316,348	339,960	478,582	670,439
	West Pakistan	(221,363)	(267,497)	(288,522)	353,605)	(493,028)
Total of equipment import	All Pakistan	831,231	1,032,087	1,428,699	1,541,566	1,801,351
	West Pakistan	(633,344)	(796,118)	(1,142,394)	(1,151,557)	(1,250,130)
Total import	All Pakistan	3,188,000	3,109,000	3,819,000	4,429,961	5,374,235
	West Pakistan	(2,173,000)	(2,236,000)	(2,800,000)	(2,981,314)	(3,672,452)
Total Equipment Import (as percent of total import)	All Pakistan	26.5	33.2	37.4	34.9	33.6
	West Pakistan	29.1	35.6	40.8	38.6	34.0

^{1/} Source: Import Statistics - Statistical Bulletin - C.S.O.

Table 2
Growth Pattern for Equipment Industry in Pakistan^{1/}
(Million Rs.)

	1959/1960 ^{2/}				1964/1965				1966/1967			
	Prod.	Im	Ex	Cons.	Prod.	Im	Ex	Cons.	Prod.	Im	Ex	Cons.
1. Machinery & Equipment ^{3/} (except electrical equip.)	64.5	551.0	1.0	614.5	144.5	935.3	8.2	1171.6	167.0	1435.0	16.0	1586.0
2. Electrical Machine and equipment ^{3/}	64.7	74.2	-	138.9	212.6	195.6	5.8	550.1	405.0	508.0 ^{4/}	12.0	901.0
3. Transport equipment	84.2	152.7	7.2	229.7	385.3	670.7	4.5	809.7	566.0 ^{5/}	850.0	25.0	1391.0
4. Total of equipment sector	213.4	777.9	8.2	973.1	842.4	1801.6	18.5	2630.4	1138.0	2893.0	53.0	3878.0
5. Total of all industrial activities	4458.1	2461.0	1843.0		9268.4	5374.2	2420.2					
6. Share of equipment sector per cent	4.8	31.6	0.4		8.0	33.5	0.8					

^{1/} a. Production figures for 1959/1960 are based on industrial censuses.

b. Import and export figures are drawn from foreign trade statistics.

c. Projections for 1966/1967 were made by the Mission.

^{2/} For the year 1959/1960 import of machinery covers also electrical machinery.

^{3/} Electrical machinery and equipment includes also electrical appliances.

^{4/} Only imports for large power projects are included.

^{5/} It is assumed that: (a) shipyards will continue to operate not below the level of March 1965
(b) motor vehicle assembly plants will import CKD vehicles and also increase domestic content of vehicles.

This low level of capital outlay is attributable in the fact that investments required for the creation of new capacities were over-estimated and, as capacity was generally under-utilized, potential investors demurred. The slow administrative mechanism for processing applications for investment in the industry and the absence of well established relationships between local entrepreneurs and their foreign partners were other constraining factors.

Table 3

Investments in Equipment Industries Compared
with the Planned Expenditures 1/

	(Rs. million)		Actual	
	Planned Investments <u>2/</u> (All Pakistan)		Invested Amount (All Pakistan)	
	Public Sector	Private Sector	Public	Private
Agricultural machinery & tools	-	13.0	-	5.2 <u>3/</u>
Stationary & marine diesel engines	-	15.0	-	8.0 <u>4/</u>
Textile machinery & spares	-	11.0	-	7.2 <u>5/</u>
Oil expellers	-	5.0	-	n.a.
Pumps	-	9.0	-	5.2 <u>6/</u>
Machine tools	2	18.0	7.2 <u>7/</u>	6.0
Machines n.e.s.	4	13.0	1.15 <u>8/</u>	
Machinery	6	84.0		
Wires & cables	-	15.0	0.57 <u>9/</u>	6.2
Motors, switchgear, transformers, fans, etc.	-	30.0	0.433 <u>10/</u>	31.0
Electrical equipment	-	45.0		
Shipbuilding and repairs	15	20	11.0	5.0
Automobile spare parts	-	6	-)	17.0
Automobile repair & assembly	-	10	-)	
Miscellaneous transport equipment	-	5	-	8.0
Bicycles and parts	-	10	-	8.0
Transport equipment	15	51		

1/ Sources: a) The Second Five-Year Plan (1960/65) (Including Revised Estimates), November 1961

b) Annual reports of W.P.I.D.C. and E.P.I.D.C.

c) List of investments financed by PICIC

d) Annual reports of individual firms and interviews with individual firms.

2/ Investment figures refers only to expenditure on fixed assets and do not include provision for working capital.

3/ It includes tractors assembly also.

4/ Investments in the plants manufacturing various products (like Ittefag foundry), distributed to the goods according to their weights in total production.

5/ Including investments for manufacture of spare parts for jute mills.

6/ It only covers those investments made explicitly for production of pumps.

7/ It includes cost of preparation of feasibility studies (Rs.900,000 all together), and expenditure actually made for the Machine Tool Plant Karachi but it does not cover funds already committed for the Machine Tool Factory in Karachi.

8/ This is the expenditure related to the preparation of Heavy Mechanical complex.

9/ It covers the cost of project preparation for East Pakistan.

10/ It is the cost of project preparation in both East and West Pakistan.

291. Perhaps even more significant the requirement for marginal and technical skills to establish and operate plants in this field was underestimated. These skills developed more rapidly in electrical equipment than in most other sections of the industry. Efforts made to improve performance in public sector plants were not very effective. The main attention of top-level officials was on preparation of future projects.

Third Plan

292. As noted earlier, the Third Plan envisages some shift in emphasis from the development of consumer goods industries to capital goods. The Plan proposes an investment of Rs. 1.7 billion in equipment industries which is 13.2 per cent of the total investment envisaged for the industry sector. The share of public investments in equipment industry is raised from 10 per cent in the Second Plan to 43 per cent in the Third. Production targets, however, are available for only the machine tool and heavy machinery complex, the heavy electrical complex and wire and cable production.

293. The current status and planned expansion of the principal segments of the equipment sector are now discussed.

Mechanical Equipment

294. This field is predominantly composed of private firms in West Pakistan which presently employ about 10 thousand workers. 1/ The growth of production is shown in table 4. It has developed slower than the electrical and the transport equipment industries. This is because of the diversity of production attempted and lack of integration. Different branches of the industry developed on an ad hoc basis and the moving force behind those lines that developed most was the availability of foreign technical know-how.

<u>1/ Employment in Mechanical Equipment Industry</u>	<u>1959/60</u>	<u>1962/63</u>	<u>1964/65</u>
Total employment	6,800 <u>a/</u>	8,500	9,200
Prod/per man employed-year	Rs.5900	7750	9500

a/ Including foundries and re-rolling mills total employment would reach 10,900.

Source: Interviews with individual firms and also with the officials of C.S.O.

Table 4

Value of Production^{1/2/}
of Machinery and Equipment Industry
(In Thousands of Rs.)

	1959/60	1962/63	1964/65
1. Agricultural machinery and appliances <u>3/</u>	9,353	13,388	14,900
2. Diesel engines <u>4/</u>	11,040	12,209	14,600
3. Pumps & compressors <u>5/</u>	6,754	9,361	12,400
4. Textile machinery <u>6/</u>	6,277	7,931	9,400
5. Wood-working machinery	1,850	2,600	3,200
6. Metal-working machinery and machine tools	3,100	6,894	7,800
7. Construction machinery	1,600	2,100	4,200
8. Steel structure & fabricated steel products ^{7/}	6,659	10,233	14,422
9. Industrial plant equipment <u>8/</u>	1,590	4,244	10,680
10. Others	<u>4,043</u>	<u>6,624</u>	<u>8,752</u>
Total <u>9/</u>	44,478	72,861	96,274

- 1/ Source: a) 1959/60 Census of Manufacturing Industry - C.S.O., 1962.
b) 1962/63 results of industrial census received from C.S.O. and adjusted according to interviews with individual firms.
c) 1964/65 based on interviews with individual firms.
- 2/ Apart from 1959/60, production figures of P.O.F.-WAH are not included.
- 3/ Agricultural tractors are also included.
- 4/ It includes also production of diesel engine parts and spares. Approximately 30% of production indicated above corresponds slow-speed diesel engines.
- 5/ Including all tube-well equipment production figures cover for 1959/60 all producers even very small ones whereas other years only large producers (employing more than 100 workers) have been considered.
- 6/ Including machinery and parts for textile as well as jute mills.
- 7/ Including lifting equipment such as overhead cranes etc., and also transmission and distribution towers.
- 8/ Industrial plant equipment cover all equipment used for production of other goods and not including any of the groups above like sugar mill, cement mill equipments, chemical plants equipment, heat exchangers, etc.
- 9/ Total differs from the figure stated in the general table because it does not cover production of foundries, re-rolling mills, pipes etc., unless they are used in one of the above mentioned manufacturing activities.

295. The utilization of capacity which varies greatly from plant to plant averages 55 per cent, the textile machinery and the metal working machinery units having the lowest figures. Save in certain branches, such as pumps where the industry is already well entrenched, the machinery and equipment industry in Pakistan is in an embryonic stage of growth. Lack of technical know-how and managerial competence are major problems. The relationship between local and foreign firms has not always been smooth. The quality of products manufactured in Pakistan is good though prices are at least 35 per cent higher than the landed cost of similar imported products.

296. Resources earmarked for the machinery and equipment industry in the Third Plan amount to Rs. 607.0 million of which Rs. 360.0 million constitute the share of the private sector. 2/ Close to 40 per cent of the investment is planned for textile machinery and machine tool units. The ratio of projected capital outlay between the West and East Pakistan is 1.4 to 1. It appears, however, that the private sector may be loth to make substantial investments in the machine tool branch so long as government engages in the construction of large units; the expected investment by the private sector in the textile machinery industry is also very doubtful. The past experience of Pakistan also gives no assurance that private sector investment in the east wing will be realized. It would not be wrong, therefore, to conclude that there will again be a considerable shortfall of private investment as compared with the Plan target.

2/ Breakdown of the investments expected from private sector during the plan period is as follows: (Rs. '000)

	East Pakistan		West Pakistan		All Pakistan	
	New	B & M ^{1/}	New	B & M	New	B & M
Machine tools	25,000	1,500	43,900	3,500	68,900	5,000
Diesel engines	15,500	1,500	17,500	3,000	33,000	4,500
Agricultural equipment	9,000	1,000	16,500	4,500	25,500	5,500
Tractors & parts	12,000	-	12,500	3,000	24,500	3,000
Construction & mining machine	7,500	-	15,000	2,000	22,500	2,000
Pumps	12,500	900	8,000	5,500	20,500	6,400
Boilers & compressors	5,000	-	5,000	-	10,000	-
Oil expellers	5,000	-	5,500	2,500	10,500	2,500
Textile machinery	39,800	8,000	30,000	17,500	69,800	23,000

^{1/} Balancing and modernization.

Source: Comprehensive Industrial Investment Schedule for Third Five-Year Plan Period, 1965/1970.

297. Large projects in the machinery and equipment industry are being proposed by the E.P.I.D.C. and the W.P.I.D.C. as follows:

	(Millions of Rupees)			
	<u>Total Investment</u>	<u>Foreign Exchange Component</u>	<u>Total Output</u>	<u>Foreign Exchange Savings</u>
a) machine tool factory, Karachi	65.0 <u>1/</u>	39.0	5.0	n.a.
b) machine tool plant, Dacca	238.7	154.4	103.0	83.9
c) diesel engine plant, Dacca	7.1	3.9	11.8	9.9
d) heavy mechanical complex, West Pakistan	100.0	-	n.a.	n.a.

1/ The first phase.

a) The construction of a machine tool factory was started in 1964 in West Pakistan. The formulation of the project rests on the experience of India rather than on a thorough market study. It is not yet decided what type of machines the plant will produce, the intention being to start with machines of simple design and provide for built-in flexibility in production. Based on recent import figures a machine tool plant of the size envisaged may attain capacity operation in seven years provided it caters to the needs of the eastern as well as the western provinces. The feasibility report underscores the importance of training and standardization. An early start of the training center is recommended. The mission has reservation on the adequacy of preparation as well as the possibility of organizing an efficient operation in the short run. Contribution to GNP and foreign exchange saving are also likely to be small in the next few years. Immediate decisions on future management and the source of know-how is also in order.

b) Machine tool project for East Pakistan rests on dubious market estimates. 1/ East Pakistan market will not be able to absorb the output for a long time. The range of products envisaged is predicated on the availability of requisite competence in design, a skill which is hard to come by in Pakistan. Diversity of items to be produced will increase unit costs. Material costs in the feasibility study seem inordinately low. There may be some grounds for the steel casting and forging unit. However, C.I. foundries

1/ Total import of machine tools into Pakistan was around Rs. 26 million in 1964/65 of which Rs. 6.3 million went to East Pakistan. Domestic production that year was around Rs. 7.8 million and would bring total supply to about Rs. 34 million. Total market of machine tools in East Pakistan in 1964/65 was probably under Rs. 8.0 million. It should be kept in mind that this amount includes all sorts of specialized equipments also.

in East Pakistan are presently under-utilized and incur substantial losses, the ratio of loss to sales proceeds being 53 per cent. As a machine tool plant is presently under construction in West Pakistan, it is advisable to postpone the execution of the project.

c) A plant to manufacture diesel engines primarily for pumping sets and small river craft is proposed by E.P.I.D.C. There appears to be enough market for diesel engines on the proposed scale. Before making a start on the project a revision of the original scheme should be made taking a more realistic view of the supply of parts and components from other new projects. The scheme is based on the assumption that all proposed plants (e.g. heavy mechanical complex, machine tools etc.) will be realized at the foreseen times, thus it assumes indigenous supply of forgings, castings etc. will be available at the time when they are required. The postponement of some of the other schemes is advisable. Investment estimates seem unrealistic because of little provision for buildings and working capital.

d) The limited material made available to the mission on heavy mechanical complex, to be built in cooperation with the Chinese government, does not permit a sound project appraisal. The amount of capital outlay as well as the planned production lines are such that no profitable venture is possible, particularly if one considers the implicit duplication with the existing production capacity to manufacture sugar mill equipment, hydraulic equipment and equipment for chemical industry in both the public and private sectors. Taking cognizance of the technical complexities involved in the manufacture of equipment for cement and paper mills, the plant will have to produce simple equipment already being manufactured by the existing units. The size of the plant is very large and based on the experience of Brazil and Argentina under-utilization of capacity appears inescapable. Revision of the scheme with respect to size, production-mix and factor supply is highly recommended.

298. Electrical Machinery. 1/ The industry as defined in this report consists of nine private firms of which a small unit is located in East Pakistan. These factories manufacture small and medium size transformers, switch gear and low horsepower motors. 2/ Despite a deliberate effort on the part of government agencies, such as WAPDA and Karachi Electric Supply Corporation, to buy domestic products, the capacity of the industry is under-utilized. Nevertheless, the industry has made very rapid progress in the recent past (table 5).

1/ "Electrical equipment industry" for the purpose of this study covers only equipment necessary for power generation, transmission, distribution and industrial use. Thus manufactures of instruments, lighting equipment, and home appliances are not included.

2/ It manufactures a range of 11/0.4 KV. transformers up to 1,500 KVA, with some occasional insignificant production of higher voltages and ratings; motors up to 50 HP. and switchgear of 11 KV. with a maximum rating of 350 MVA. At present one firm manufactures 11 KV. circuit breakers; a second firm is planning to take up this item.

Table 5

Growth of Electrical Equipment Industry in Pakistan^{1/}

(in Rs. '000 at current prices)^{2/}

	1961-62	1962-63	1963-64	1964-65
Production ('000 Rs.) ^{2/}				
Transformers	4,324	5,464	15,075	19,279
Motors	656	1,581	4,766	10,968
Switchgears	5,213	6,140	8,865	13,643
Total	10,913	13,165	28,606	43,890
Value added ('000 Rs.)	3,606	4,735	11,700	16,110
Employment ^{3/}	1,160	1,569	2,588	3,362

1/ Source: C.S.O. and interviews with individual firms.

2/ At current prices; total production taking into account various price increases and valued at 1961-62 prices, was as follows:

	<u>1961-62</u>	<u>1962-63</u>	<u>1963-64</u>	<u>1964-65</u>
Production value ('000 Rs.)	10,913	12,100	25,200	38,500
Index	100	110.5	230.0	352.0
Index of production of all electrical goods (Source: C.S.O.)	100	94.6	150.0	212.0
Total industrial index (Source: C.S.O.)	100	116.0	129.5	157.0

3/ a. Ratio of staff to plant worker has been as follows:

	<u>1961-62</u>	<u>1962-63</u>	<u>1963-64</u>	<u>1964-65</u>
	1/4.6	1/6.1	1/5.7	1/6.0

b. Average salary and average wages including fringe benefits have been as follows:

	<u>1961-62</u>	<u>1962-63</u>	<u>1963-64</u>	<u>1964-65</u>
Av. salary (Rs.)/man-month	343	379	435	431
Av. wage (Rs.)/man-day	3.4	3.3	3.9	4.0
General cost of living index number for industrial workers in Lahore (Statistical Bulletin, 1948, 49=100)	124.08	120.33	127.13	125.33
Real wages (Rs.)/man-day (based on 1961-62 prices)	3.4	3.42	3.81	3.67

299. Recent imports of electrical equipment to Pakistan is of the order of Rs. 56 million a year. ^{1/} At present domestic production provides 60 per cent and 52 per cent respectively of the total supply of motors and transformers. Though a noteworthy effort has been made to export electrical goods, the earnings are still small. The price of electrical equipment exported by Pakistan to the Middle East market compares favorably with those of European suppliers. No doubt the export bonus scheme is an important contributory factor to this favorable position. The export of electrical items is expected to total Rs.12 million in 1966/67, of which the export of electrical equipment as defined in this report would approximate Rs. 3 million.

300. Conditions under which the industry operates are not conducive to a competitive operation. The import of items produced at home is totally banned. There has also been an agreement among domestic producers regarding their respective shares in the market. Consequently prices of domestic produce as compared to c.i.f. prices of similar foreign-made goods is high, switchgear and transformers being 35 per cent and 25 per cent higher. In the case of motors, price differences average 35 per cent and widen with the size of the motor. Table 6 provides a more detailed comparison of prices.

301. A major problem faced by the industry is the supply of domestically produced semi-finished goods which are poor in quality and high in price. In recent years the Karachi shipyard developed a sizeable foundry. There is still a great need for quality casting and forging capacity to meet the growing requirements of the industry. The price paid by the electrical equipment industry for castings is very high, the prices for even uncomplicated pieces being twice the German price. The supply of standard parts such as bolts, nuts, etc., is not sufficient and the quality is very poor, the price of ordinary bolts and of nuts being 3.3 and 2.4 times the comparable prices in Germany. Thus the development of a supply industry with requisite quality and efficiency to meet the basic requirement of equipment industry with respect to castings and forgings as well as providing standard hardware is of paramount importance.

302. In addition to the difficulties experienced in obtaining semi-finished goods, the industry also suffers from high raw material costs. All raw materials are imported. The Administrative procedure that is involved in obtaining import licenses necessitates the holding of large stocks. Most firms prefer to keep very high inventory to protect themselves against future difficulties in obtaining imports. Thus the ratio of inventories to total sales in Pakistan is 100 to 120 per cent compared with 10 per cent in Germany. This calls for a thorough examination and overhaul of the licensing procedure for the

^{1/} Imports of certain items of electrical equipment have run as follows:
('000 Rs.)

	<u>1961/62</u>	<u>1962/63</u>	<u>1963/64</u>	<u>1964/65</u>
Electric generators	14,482	12,593	15,791	18,625
Electric motors	8,464	8,397	11,004	7,321
Transformers	16,108	21,419	17,582	17,508
Insulated cables	6,782	12,558	19,634	17,545

Table 6

Comparison of Prices of Electrical Equipment Produced in Pakistan with Other Countries^{1/}

Type of Product	Pakistan (Rs.)		Pakistan Imports C.I.F.(Rs.)	India (Rs.) Factory Cost	Ratio Pakistani Cost/ Indian ^{3/} Cost ^{3/}	Ratio Pakistani Factory Cost/C.I.F. Price
	List Prices	Factory Cost				
<u>Motors^{2/}</u>						
1 HP.	354	267	198	230	1.16	1.35
2 HP.	456	360	254	275	1.31	1.31
3 HP.	513	400	305	334	1.20	1.31
5 HP.	646	485	363	394	1.23	1.33
7.5	750	595	405	505	1.17	1.47
10	990	737	507	588	1.25	1.45
15	1,375	1,030	650	792	1.30	1.58
20 ^{3/}	1,735	1,461	910	955	1.53	1.61
<u>Transformers</u>						
200 KVA	9,000	8,000	8,100	8,890	0.9	0.99
250 KVA	11,000	9,300	9,000	8,670	1.07	1.03
500 KVA	18,000	15,000	12,900	15,850	0.95	1.16
750 KVA	24,500	20,000	17,400	22,800	0.88	1.15
1000 KVA	30,000	24,500	22,900	27,800	0.88	1.07
1500 KVA	35,000	30,000	26,100	28,900	1.04	1.15

- ^{1/} Source: a) For Pakistani Products prices are based on the information supplied by individual firms.
b) Prices (expressed all in Pakistani Rupees) for Indian products are taken from Tariff Commission's Report on Protection of Electric Motors (1963) and adjusted according to increase in raw material prices, especially copper, in the world market. It is assumed that copper prices increased 1.8 times since 1963, which caused an increase in electrical equipment prices of around 4%, with another 2% increase applied for "other expenses".

^{2/} The motors (1450 rpm) up to 5 HP are all totally enclosed, 4-pole, fan-cooled, squirrel-cage motors; 5-20 HP motors are 4-pole, screen-protected, drip-proof, squirrel-cage, types.

- ^{3/} Differences of prices for motors are greater than for transformers. This can be explained on two grounds:
a) motor prices are higher compared with transformers because of higher domestic content and the high cost of indigenous casting and lack of efficient foundries.
b) higher capacity motors compared in the table above are produced by the firm which has very poor management and runs very inefficiently.

electrical machine and equipment industry. Due to import arrangements such as commodity tied economic and barter agreements prices of raw materials may be higher than competitive international prices. Though raw material cost is high compared with equipment exporting countries - e.g., 55 per cent higher than in Germany - it compares favorably with costs in countries at a similar stage of development, being only 4 per cent higher than in Brazil and 32 per cent lower than in India. No doubt customs duties and sales taxes are major factors that affect such costs.

304. Wages and salaries are, however, quite low as compared with equipment exporting countries. However, this is partly offset by low productivity. Though the productivity of labor has increased it is still 50 per cent of that in Germany, the wages being only 15 per cent of the level in Germany. However, the most important element in the cost structure is the price of raw material.

305. The expansion of the existing firms has hitherto been financed chiefly from the earnings of the enterprise and only partly by obtaining loans from development agencies. Thus it appears that entrepreneurs in Pakistan have the requisite motivation to save and to invest. But they lack many of the technical and organizational skills needed for managing a modern industrial plant. In particular they are deficient in engineering and managerial skills needed for planning and carrying out production programs. Although family ties may contribute to the accumulation of capital, they often preclude the recruitment of the most efficient personnel.

306. Technical competence in designing new products is in very short supply and as the relationship between the foreign firms and domestic firms, in joint ventures, has not worked out well it is advisable to provide further training facilities as well as employ fresh graduates to get on-the-job training in the industry.

307. Total investment in the electrical machine and equipment industry as foreseen in the Third Five-Year Plan is Rs. 394 million. The shares of the public and the private sectors in this total are Rs. 168 million and Rs. 226 million respectively, the greater proportion of public sector investment being intended for East Pakistan.

308. According to the Plan, the private sector would manufacture consumer-durables and the public sector heavy electrical equipment. In the Industrial Investment Schedule investment for the production of motors and transformers by the private sector is Rs. 12 million for 1965/70 of which Rs. 5.5 million is for new capacity for motor production in East Pakistan and the rest for balancing and modernizing existing facilities in both the wings.

309. Established firms have a much more ambitious investment outlook than is actually reflected in the Industrial Investment Schedule. In addition, several other private firms including foreign enterprises of world reputation, are interested in initiating schemes for the manufacture of transformers, motors, and switchgear in Pakistan. Though the Government has demurred in authorizing new projects, some firms have tried to invest in such fields as low tension equipment. Private investment may indeed be higher than the estimate given in the plan.

310. The major projects sponsored by the P.I.D.C.'s in the public sector is given below:

	Proposed Projects (In million Rs.)	
	<u>Total Investment</u>	<u>Foreign Exchange Component</u>
a. Heavy Electrical complex in West Pakistan	101.9	51.3
b. General Electric manufacturing plan in Chittagong	72.5	28.0
c. Electrical Wires and cable manufacturing plant in East Pakistan	34.3	13.2

311. a. The heavy electrical complex in West Pakistan is designed to manufacture transformers, motors, diesel generators, traction motors, switchgears and related equipment. It would employ 1,176 workers in the first year and 1,846 in the fourth year. According to the feasibility study, the plant would be run at a loss for the first three years and realize a profit of Rs. 12.3 million which is about 12 per cent on the invested capital in the sixth year on the basis of protection of 40 per cent.

312. The envisaged capacity and the range of products need careful examination as they are based on the ambitious investment programs of the WAPDA's and the railways and as there is a duplication with existing industry, especially in the field of distribution transformers, which now suffers from under-utilized capacity. Further, some of the products (capacitors and diesel generators) may still be attractive to private investors. Products such as traction motors are highly sophisticated in terms of existing competence in the industry, the market would also depend on production in Pakistan of the other mechanical parts of railway equipment. In addition, the demand study in the feasibility report raises many questions. The sales value in the feasibility study is based on prices equivalent to 1.4 times the c and f cost of imports. It assumes that raw materials will be available at internationally competitive prices. The project report argues that return on investment will not be high, but the project will save foreign exchange. The earnings projections assume an output per worker twice that of the most efficient existing unit. Investment per worker is almost ten times higher than these prevailing in established industry generally. Calculations of foreign exchange savings may well be over-stated.

313. b. An electric manufacturing plant is proposed for East Pakistan to manufacture transformers, motors, generators for train lighting and battery charging, switchgear, switch-brakes, and various other equipment. The proposed production plan is much more diversified even than the one planned for West Pakistan. Assuming that the construction of the factory would be undertaken in 1965/66, the full production capacity on a single-shift basis is estimated for 1970/71. The value of output given in the table is based on the assumption that selling price of goods will be around 38 per cent higher than the f.o.b. price of comparable products at U.K. ports.

314. The capacity of the plant is much in excess of the investment program of EWAPDA and it therefore appears to be over ambitious. Based on EWAPDA investment plans, even the single-shift capacity will not be fully utilized. The feasibility study is not only weak in estimating demand, but also in its estimates of the prices and physical requirements of major inputs, particularly raw materials. According to project estimates, raw materials constitute 37 per cent of total costs in the third year and 34 per cent in the fifth year of operation. In the sixth year raw material costs are projected to drop to 30 per cent of total costs. These projections seem unrealistic according to current experience which averages 69 per cent in West Pakistan and 66 per cent in India. The overall rate of return on the project, even based on overly-optimistic assumptions is low. The scheme would involve duplication of existing industry and would conflict with its expansion program. A reconsideration of the entire scheme is, therefore, recommended.

315. c. EPIDC proposes a plant to manufacture about 6,000 tons of insulated cables and wires in the first stage. The project is expected to be completed in 18 months after the scheme is approved and to reach full plant capacity in the third year of its operation. Planned capacity seems high, given the present consumption and projected growth in the demand for cables and wires in East Pakistan. The production line is sound, and with appropriate adjustments in phasing the scheme, it should yield satisfactory results.

Transport Equipment Industry

316. Automotive Industry. There are four companies, all private and located in West Pakistan, that assemble commercial vehicles. Two also assemble passenger cars in significant numbers. All the firms except one started operations recently. The output of the industry approximated 3,100 commercial vehicles and 400 passenger cars in 1964. 6,500 commercial vehicles were produced in 1965. Total investment, excluding the installations engaged in servicing and also in assembly from semi-knocked down conditions, is able to turn out 20,000 vehicles in a year. Thus the capacity utilization in 1965 was only 30 per cent. Since a relatively small amount of investment and production is required to break even in the assembly business, the firms are operating profitably in spite of a great deal of over-capacity.

317. According to the statistics available, the number of trucks and buses registered in Pakistan increased between 1950-63 at an average rate of 10.6 per cent per year. Of the total of around 45,000 commercial vehicles, 75 per cent are in West Pakistan. Increase in the number of vehicles is shown in Table 7.

Table 7

Number of Vehicles - All Pakistan

<u>Year</u>	<u>Passenger Cars</u>	<u>Buses</u>	<u>Trucks</u>
1960	63,417	10,264	18,604
1961	72,104	10,934	20,911
1962	78,863	13,334	23,888
1963	87,412	14,224	28,916
1964 (April)	n.a.	15,173	30,268

Source: Market for buses and trucks in Pakistan - PICIC and PIAC, September 1964.

The total fleet of passenger cars is estimated at present to be around 95,000 units. Considering the variety of makes and models, the size of the fleet (commercial vehicles as well as passenger cars) is not large enough to justify the production of components and parts. There has been a tendency to establish facilities to produce parts and components but there is again the danger of excess capacity. It is very desirable to consolidate the fleet and reduce the number of makes and models in order to supply parts and components domestically. However, such a development seems unlikely for some time to come.

318. Since the existing industry is concentrated in West Pakistan, the Third Plan envisages heavy investments in the motor vehicle industry in the East Wing. As a large number of applications have been made to set up assembly plants, the amount of the Plan investment may be reached or even surpassed. The target set for the private sector in components and parts is Rs. 26.5 million. However, the regional distribution is not likely to be realized. The attitude of the Government in limiting the number of plants for assembly as well as for the manufacture of parts and components is sound.

319. The size of bus and truck fleet will still be limited by 1970, and the demand is estimated to increase from 6,000 units a year in 1965 to 8,750 units in 1970. Due to protection, the existing plants operate with very high profit margins. This suggests the need for a more liberal trade policy when foreign exchange resources permit.

320. Ship Repair and Ship-building Industry. Ship-building industry in Pakistan consists of three large government-owned ship and dock yard units, two in East and one in West Pakistan, with some smaller private ship repair and building workshops located mainly in East Pakistan. Karachi shipyard, which is the largest unit in the country employs 4,100

people and is also engaged in many general engineering works.^{1/} The yard incurred losses until 1964 when it made a profit of Rs. 200,000 for the first time. With the construction of 10,000 dwt. vessel as a part of an aid agreement with Yugoslavia, the yard's ship-building capacity was more fully utilized.

321. Khulna shipyard, primarily designed for docking, has been mainly engaged in the construction of tugs and barges of up to 700 tons and until 1963 it was operating at a loss. Khulna shipyard also tried to utilize its production capacity in engineering works. In 1964/65, Khulna shipyard utilized 44 per cent of its capacity as compared to 52 per cent in the case of the Karachi yard.^{2/}

322. One of the major problems affecting the ship-building industry is financial. In East Pakistan, new ships are built on the initiative and with the financial resources of the shipyard. Adequate financing for such operations should be provided.

323. The Industrial Investment Schedule foresees total investment of Rs. 189.0 million in ship repairs and building by the private sector in the Third Plan, of which Rs. 8.0 million is to be in small industries. The target is to build boats and repair ships with emphasis on East Pakistan. Total amount envisaged for the creation of new private sector capacity in East Pakistan (Rs. 119.0 million) may not be wholly spent because of the program proposed for the public sector. The increases in capacity planned for the public sector are as follows:

1/ Total business of Karachi shipyard (Rs. 27.5 million in 1964/65) composed of the following branches:

	(Rs. Million)	(Percentage)
Ship-building	8.2	29.9
Ship repair	4.1	14.9
Dry docking	0.8	2.9
Steel structure and engineering work	10.3	37.5
Foundries and galvanizing	4.0	14.8

2/ The production capacities of Karachi and Khulna shipyards were utilized in recent years in the following manner:

	1963/64		1964/65	
	Khulna Shipyard	Karachi Shipyard	Khulna Shipyard	Karachi Shipyard
Capacity utilization	39%	45.7%	44%	51.7%
Value of output (Rs. '000):				
Ship-building	4,508	9,271	5,989	8,217
Ship repair	1,171	4,678	1,110	4,903
Other works	1,380	10,370	1,104	14,374

- (a) A balancing and modernization scheme of about Rs. 3.0 million is proposed to install machinery at Khulna shipyard in East Pakistan. Though the capacity of the shipyard is not fully utilized at present, the scheme appears to be justified owing to the need for river craft.
- (b) An additional 350 feet dry-dock with an investment of Rs. 3.3 million is proposed so as to increase docking capacity in Narayanganj.
- (c) The Chittagong dry-dock project is basically a steel structure workshop rather than a dry-dock. Total investment has been estimated at Rs. 64.6 million, of which Rs. 33.8 million will be in foreign exchange. It is expected to employ 1,600 people in the final stage. Foreign exchange savings is estimated at Rs. 17.8 million per year. The profitability and the foreign exchange savings of the project is based on the production of engineering goods. The scheme does not take cognizance of the existing unused capacity in Khulna and Narayanganj shipyards. Such a dry-dock would have facilities for the repair of certain types of vessels for defense purposes. The scheme does not have sufficient economic justification and it would be advisable to postpone and review it after the completion of the steel mill.
- (d) A program to improve the efficiency of the Karachi shipyard by additional dry-dock and manufacturing facilities was started during the Second Plan. The proposed expansion now involves the creation of additional capacity in foundries and metal working lines which are not directly related to ship-building. Though it is always advisable to have capacity in engineering works other than in ship-building, so as to continue operation in case there is insufficient orders for ship-building or repair work, this should not be the ultimate aim or a permanent way of operation. In view of the growth of metal working industry in Pakistan, the establishment of a foundry and steel workshop may be justified. Before making heavy investments in ship-building and other engineering facilities, effort should be made to improve the efficiency of existing facilities.

Steel

Present Status of the Industry

324. The domestic iron and steel industry now consists of only private re-rolling mills.

325. The Second Plan included two partially integrated steel plants, one at Karachi with a planned (after several upward adjustments) initial ingot capacity of 450,000 tons per annum and the other at Chittagong with 250,000 tons initial ingot capacity. Construction of the latter project is under way and operation may start in 1968. This plant is in the public sector. The Karachi plant has not been started owing to delays in securing financing. It was assigned to the National Steel Corporation of Pakistan Ltd, a private corporation with State participation. Both these plants are to be based on imported pig iron and scrap. In addition, studies are being made regarding the feasibility of a plant based on domestic low grade ore at Kalabogh, in the northern part of West Pakistan, and some consideration is being given to a joint project with Afghanistan.

Demand

326. Imports of iron and steel^{1/} increased from about Rs. 400.0 million in 1960/61 to around Rs. 850.0 million in 1964/65. In terms of quantity they doubled, rising from around 500,000 tons in 1960/61 to 1,000,000 tons in 1964/65.

327. The composition of imports has changed significantly over the years. The increase during the early 1960's was mainly in rails and galvanized sheets. It was only after 1963/64 that the development of domestic metal working industries affected the composition of import demand. Though small in terms of output compared with imports, domestic re-rolling mills then began to produce some construction materials. Thus imports of blooms and billets increased in relation to rolled products. Also imports of plates and sheets increased because of the requirements of the domestic ship-building industry.^{2/} These two groups of items covered approximately 70 per cent of total iron and steel imports in terms of quantity as well as value in 1964/65 compared with 40 per cent of 1960/61.

328. Over 70 per cent of the total imports of iron and steel have gone to West Pakistan. This proportion would be more or less true on an item-by-item basis also, except for galvanized sheets and tubes - where the share of

1/ Excluding ferro alloys but including all semi-finished products, such as angles, bars, tubes, wires, fittings etc., and galvanized products.

2/ In 1964/65 imports of ingots, billets, blooms and the like reached Rs. 330.0 million (around 400,000 tons) and sheets and plates Rs. 240.0 million (about 230,000 tons).

East Pakistan is higher. Since the capacity and the production of re-rolling mills are several times larger in West Pakistan than in East Pakistan, one can conclude that 70 to 80 per cent of total consumption is in West Pakistan. Thus the planned production in the two steel-making projects mentioned above is reasonably consistent with the division of demand between the two provinces

Second Plan Allocations

329. Since the Government felt that the best ultimate solution would be to base a steel industry on domestic iron ore and coal, the Second Plan put some emphasis on further research on the quality of indigenous iron ore at Kalabagh and included a pilot plant to produce luppens from the ore. However, the Plan also made provision for the expenditure of Rs. 200.0 million on the Karachi Plant and Rs. 100.0 million for the Chittagong mill. It was expected that 70 per cent of total steel requirements could be met by these two projects and a foreign exchange saving of Rs. 45.0 million a year could be realized. The financing of the whole scheme (including the proposed pilot plant at Kalabagh) was to consist of Rs. 170.0 million from government sources and Rs. 155.0 from the private sector.

330. During the plan period there were successive amendments of the schemes with respect to scale and investment as well as ownership. Toward the end of 1960 the East Pakistan government commissioned an agency of the Japanese Government to study the feasibility of establishing the plant in East Pakistan to be financed under a Japanese loan. The initial cost estimate was Rs. 114 million (Rs. 75 million foreign exchange) emerging from this study for the 100,000 ton plant. When tenders were received in 1962, however, the cost was reappraised at Rs. 138 million (excluding land, civil works and some other items).

331. Several points were overlooked during the early stages of the project which will very likely present problems in the future. The technology (open-hearth furnaces) is already obsolete and the site chosen has several disadvantages particularly with respect to further expansion. For example, it has limited river frontage and thus the total amount of raw material to be unloaded cannot exceed a certain limit.

332. In 1962 it was decided that the capacity of the plant should be increased to 150,000 tons (the 100,000 ton mill being deemed uneconomic) and the cost was then re-estimated at Rs. 271 million. Work on the project started in 1963. Expenditures through 1965 already reached Rs. 260 million so that it is evident that total costs will much exceed Rs. 271 million. A survey has now been made aimed at increasing output of the mill to 250,000 tons a year ingot capacity. This may still be small for economical operation.

333. The total cost of the expansion from 150,000 tons to 250,000 tons is estimated by EPIDC at Rs. 109.2 million of which Rs. 73.8 million will be in foreign exchange. Thus a total investment of at least Rs. 400 million will be required for the 250,000 ton mill. According to the actual expenses incurred up to now and the expected expenses necessary for the completion of the project, mill investment will be \$420/ton/year ingot for a capacity of 150,000 tons. The expansion proposed will bring this down to \$370 which is still very high even compared with plants based on the same technology.

Experience shows that such a plant should be built for \$250/ton based on conventional methods and around \$200/ton based on advanced techniques. The capacity of the steel plant even after expansion will be much smaller than an acceptable economic minimum. The expansion, therefore, is hardly justified in view of additional investment. It might be advisable not to proceed with the expansion program until the present work is completed and the plant operated for at least 6 months or a year.

334. As noted above, no progress has been made on the Karachi plant so more of the 300,000 ton output contemplated for the end of the Second Plan was realized though the total amount allocated to the steel industry for the Plan has been almost entirely spent.

Third Plan

335. The Third Plan estimates the steel requirement by 1970 at a minimum of 1.5 million tons (1 million tons in West Pakistan and 0.5 million tons in East Pakistan) and foresees investments of Rs. 1,546 million in basic metal industries of which a very large portion will be in the steel industry. The target for domestic steel production set by the Plan is 1,200,000 tons by 1970 (900,000 tons in West Pakistan and 300,000 tons in East Pakistan). The Plan is based on the assumption that a steel mill of 500,000 tons capacity will be constructed in Karachi and be producing by about 1970. The Plan also proposes that consideration should be given to the setting up of a second steel mill in East Pakistan to meet the requirements that cannot be met by expanding the Chittagong steel mill project. It also includes provisions for a second mill in West Pakistan based on indigenous raw material.

336. The construction work, as far as the Chittagong plant itself is concerned, has been proceeding very closely in accordance with the time-table. But this is not true for the facilities necessary to operate the plant such as electricity supply, jetty and rail connection etc. Most important is the delay in construction of the transmission line which would connect the steel mill to the network of WAPDA. Even when the transmission line has been completed the cost of power would not be low but at least continuous service can then be expected. At the time of the mission visit the EPIDC officials were thinking of importing mobile units mounted on rail-cars to supply power to the steel mill for 8-10 months after it begins operations. Another

1/ The IIS foresees the following investments by the private sector in iron and steel:

	<u>Million Rupees.</u>		
	<u>East Pakistan</u>	<u>West Pakistan</u>	<u>All Pakistan</u>
Iron & Steel Production	70	180	250
Steel Foundries	9	15	24
Steel re-rolling including galvanized sheets	49.5	19	68.5
Ferro chrome and other ferro alloys	2.5	5.0	7.5
Total	131.0	219.0	350.0

bottleneck is the unloading facilities; the construction of the jetty has been delayed and cannot be completed before late 1967.

337. Meanwhile the start of the Karachi plant is at least a year behind schedule. Thus while so far as the demand estimates are concerned the expectation of the Third Plan is very much in line with the mission estimates, this is not true for the projection of supply.

338. More important, however, is our concern that uneconomic steel-making capacity, such as the Chittagong plant, will retard the expansion of steel using industries because of the high price of steel. While sympathetic with the desire of the Government to begin as soon as possible to save foreign exchange, clearly it would have been preferable to have delayed the start of that project until an adequate study could have been made of all aspects of steel production in Pakistan.

CHAPTER 8
OTHER INDUSTRIES

Sugar Industry

339. With a production of almost 23 million tons, Pakistan is fourth among the world's cane producers with nearly half the acreage of Cuba but less than 40 per cent of Cuba's production.

340. Three-quarters of the consumption of sugar is met from "Desi" sugar, mostly consisting of boiled evaporated cane juice. As a result the production of processed sugar is very low, reaching only 305,000 tons in 1964-65.

Production Incentives

341. The production of cane is greatly encouraged by government price policy. The selling price for cane is fixed at a high level. The price per maund^{1/} of cane, regardless of its final sugar content, has been set at Rs. 2.25 delivered at mill gate or Rs. 2.00 delivered at purchase centers. This has made cane very favorably priced compared to other traditional crops. This is illustrated in the following table:

	<u>Stripped Cane</u>	<u>Seed Cotton</u>
Yield per acre (In maunds)	395	7.5
Market value (In Rs.)	790	255
Approximate expenses (In Rs.)	<u>400</u>	<u>130</u>
Net income (In Rs.)	390 ^{1/}	125 ^{2/}

Based on average yields in West Pakistan.

^{1/} 12 month crop
^{2/} 6 month crop

342. Government also provides incentives for the expansion of refining capacity. Prior to 1961-62 all existing sugar mills had to deliver their production to government at a fixed price. This policy provided little attraction for new investments in the industry. Since 1961-62 the quota to be delivered to government was reduced to 75 per cent of the rated capacity (low in relation to actual output) of the mill for which the price was set at Rs. 51 per maund including an excise tax of Rs. 10.30. The balance could, then, be sold on the free market at a price that has ranged from Rs. 61 to Rs. 69 in recent years. For new mills, government quota is set at 25 per cent of the rated capacity for the first year and increases

^{1/} 27.2 maunds per long ton.

gradually with time. Partly as a result of this policy, sugar production jumped from 109,000 tons in 1960-61 to 189,000 in 1961-62, and to 271,000 in 1962-63 which is in excess of the rated capacity of the existing mills. This capacity, in the meantime, increased from 226,000 to 257,000 tons.

343. The reason why the production of white sugar has not kept up with the increase in installed capacity in recent years (Appendix table) is that (a) it takes about three full years for a new mill to be able to induce the planting of enough cane, within an economic radius, to allow it to crush for the approximately 150-day season necessary to reach rated capacity (considering Pakistan's low average sugar recovery rate of approximately 7.65 per cent); and (b) adverse crops during the past seasons have limited the over-all supply of cane.

Costs and Profits

344. The industry is now protected by complete banning of imports. Profits in sugar milling are high, reaching 30 per cent return on net worth for sugar firms listed on the Karachi stock exchange according to a recent study of the Planning Commission. White sugar produced in Pakistan is expensive. With the present world price of approximately \$60 per ton, sugar can hardly be considered as a possible export item. This is chiefly due to the high cost of the cane which represents over 72 per cent of the total cost.

345. Cost of production of a 15,000-ton output based on an 8.25 per cent sugar recovery and a full capacity production is given below (in rupees per maund of sugar).

Total cost of cane	27.28
Salaries and wages	2.15
Operational stores	1.93
Gunny bags	1.03
Insurance	0.15
Depreciation	5.19
Interest	0.26
Office and other expenses	<u>0.13</u>
Total	38.12
Less cost of molasses produced	<u>0.25</u>
Total	Rs. 37.87 or \$216 per ton

Source: Estimated by West Pakistan Industrial Development Corporation (PIDC).

346. After adding Rs. 10.30 excise tax to Rs. 37.87 production cost, the mills earn about Rs. 2.83 on the quota they deliver to government at Rs. 51 per maund, a return which is 5.1 per cent on Rs. 1,500 investment

Table 1

White Sugar Production Capacity in Pakistan

(in tons)

<u>Year</u>	<u>West Pakistan</u>	<u>East Pakistan</u>	<u>All Pakistan</u>
1947/48	11,000	38,500	49,500
1952/53	50,000	38,500	88,500
1957/58	85,000	73,500	158,500
1962/63	150,415	106,880	257,295
1963/64	188,815	106,880	295,695
1964/65	198,535	106,880	305,415

Production of White Sugar in Pakistan

(in tons)

<u>Year</u>	<u>West Pakistan</u>	<u>East Pakistan</u>	<u>All Pakistan</u>
1947/48	7,931	23,061	30,992
1952/53	47,590	30,833	78,423
1957/58	122,632	32,777	155,409
1962/63	196,229	74,931	271,160
1963/64	139,710	88,293	228,003
1964/65	154,977	76,231	231,208

needed to install a ton of capacity. In fact, under present circumstances, most of the mills' earnings come from their sales on the free market. However, in the long run, greater supply of white sugar should tend to depress the free market price. The following are some developments (besides the unpopular increase of the price of sugar or reduction of that of cane) which might improve the longer-run position of the industry:

- (1) the introduction of new types of cane with a higher sugar content;
- (2) the more extensive crushing of beet allowing the mills to run for a longer period and, therefore, to spread their fixed costs over a larger production;
- (3) the establishment of a fair cane/beet price system based on the final sugar content; and
- (4) the maximum economical use of the by-products such as bagasse, beet pulp and molasses.

347. A further factor that determines the rate of profitability is the period of cane availability which ranges between 150 and 200 days in West Pakistan, and 125 and 175 days in East Pakistan. Owing to the success achieved in growing beet in Peshawar, some mills in that area have started to install beet diffusion equipment, allowing them to operate extra 65 to 75 days and to improve greatly their profitability.

348. Second Five-Year Plan. The Second Plan aimed at producing 500,000 tons of white sugar by 1965. The installed capacity in mid-1960, was 226,000 tons and the production of white sugar, in 1959/60, was estimated at 150,000 tons. At the end of the Plan in 1965, the installed capacity totalled 305,415 tons and the production 231,208 tons (Table 1).

349. Third Plan. The Plan sets a production target of 640,000 tons of white sugar for the end of the Plan, of which 410,000 tons are to be produced in West Pakistan and 230,000 tons in East Pakistan. The Plan provides for an investment of Rs. 598 million in the industry. Considering that a total capacity of 365,000 tons was to be completed by 1965/66, the Third Plan expansion remaining to be financed would be about 275,000 tons. The allocation of Rs. 598 million for 275,000 tons gives an investment of Rs. 2,175 per ton of capacity. This figure seems excessive when compared to the approximately Rs. 1,500 cost per ton envisaged by WPIDC for the 15,000 to 18,000 ton Bannu Cooperative Sugar Mill in West Pakistan. As regards East Pakistan, Rs. 2,175 per ton of capacity may prove adequate considering the smaller size (10,000 tons) of the plants to be established and the generally higher construction cost. New mills are listed in Table 2.

350. By-products. The use made of the cane by-products in Pakistan is discussed in connection with chemical and paper industries. Molasses and bagasse are of considerable industrial significance. Alcohol is presently being distilled from molasses, while bagasse, which is widely used as fuel in the mills, is to be increasingly used as a raw material for the paper and board industries.

Table 2

Daily Cane Crushing and Beet Diffusion Capacity
of Sugar Industry in Pakistan - New Mills

	<u>Daily Cane Crushing and Beet Diffusion Capacity (tons)</u>	<u>Completion Date</u>
<u>West Pakistan</u>		
1. Bawani Sugar Mills, Badin	1,500	1965-66
2. Banmu Sugar Mills, Banmu	1,500	1965-66
3. Mirpurkhas Sugar Mills, Mirpurkhas	1,500	1965-66
4. Peshawar Sugar Mills, Peshawar - cane plant	1,500	1966-67
beet plant	1,000	1966-67
5. Adamjee Sugar Mills, Mianwalli	1,500	1966-67
6. Noon Sugar Mills, Sargodha	1,500	1966-67
7. Hussein Sugar Mills, Lyallpur	1,500	1967-68
8. Bhawalnagar Sugar Mills, Bahawalnagar	1,500	1967-68
9. Pasrur Sugar Mills, Mandi Bahadin	1,500	1967-68
10. Mehran Sugar Mills, Tando Allahyar	1,500	1967-68
11. Larkana Sugar Mills, Larkana	1,500	1968-69
12. Burhan Kingree Sugar Mills, Sanghar	1,500	1968-69
13. Thatta Sugar Mills, Thatta	1,500	1969-70
Total Capacity - West Pakistan:	Cane 19,500 Beet 1,000	
<u>East Pakistan</u>		
1. Harain Sugar Mills, Rajshahi	1,000/1,500	1965-66/ 1968-69
2. Jagte Sugar Mills, Khulna	1,000/1,500	1965-66/ 1968-69
3. 8 new sugar mills of 1,000 tons daily crushing capacity each	8,000	1967-68
Total Capacity - East Pakistan	11,000	
Total Capacity - All Pakistan:	Cane 30,500 Beet 1,000	

Paper

351. Since the early fifties, Pakistan has encouraged the development of its paper industry. The country still imports special types of papers and only newsprint is exported in commercial quantities. Because of the availability of cheap raw materials, such as bamboo, hardwood, etc., the paper industry developed initially in East Pakistan. In the West Wing the industry is based mostly on bagasse.

Production

352. Production of writing, printing and packing papers for 1964/65 is estimated at 47,000 tons, exceeding the Second Plan target of 43,500 tons. The rising tempo of educational and industrial development programs has created an expanding market for these products. Consumption, however, has been restricted by import controls. The Third Plan target reflects these demands and is set at 100,000 tons by 1969/70, a net increase of over 50,000 tons in the Third Plan; 65,000 tons will be in East Pakistan and 35,000 tons in West Pakistan. Per capita yearly consumption will be approximately two pounds which is still very low.

353. As for newsprint and mechanical paper, the Second Plan production target of 50,600 tons has not been reached. Production in 1964/65 is estimated at 42,000 tons. The Third Plan target is 100,000 tons, of which 65,000 tons will be produced in East Pakistan and 35,000 tons in West Pakistan.

354. At the end of the Second Five-Year Plan, the most important paper mills were the Karnafuli Paper Mills (East Pakistan), the Khulna Newsprint Mills (East Pakistan) and the Adamjee Paper and Paperboard Mills (West Pakistan). The Karnafuli is the oldest paper mill in the country. It was established in 1953 by PIDC and was subsequently sold to the private sector. Its capacity is 25,000 tons of writing and printing papers and 5,000 tons of wrapping papers. Bamboo is its principal source of local raw material. The mill is efficiently managed and operates at full capacity. The Khulna Newsprint Mills were also set up by PIDC in 1959, with a rated capacity of 23,000 tons of newsprint and 12,000 tons of mechanical print. During the Second Plan, the total capacity was increased to 50,000 tons, of which newsprint, mechanical print and light print accounted for 28,000, 12,000 and 10,000 tons respectively. This expansion was oriented towards producing higher quality newsprint of up to 40,000 tons and less of the other types of paper depending on demand conditions. The Adamjee Paper and Paperboard Mills started in 1955 as a paperboard manufacturing unit and has added to its original operations a plant to manufacture 2,800 tons of special papers such as cigarette paper, carbon base paper, airmail paper, etc.

355. To achieve the Third Plan target, some plants were already sanctioned or under consideration during the Second Plan; the most important of these are:

Table 3

Name	Sponsor- ing Party	Type of Product	Capacity (In thou- sand tons)	Raw Material	Expendi- ture (Rs.Mn)	Location
North Bengal Paper Mill	EPIDC	writing and printing	16.5	bagasse	80	East Pakistan
Sylhet Paper Mill	FIDC	writing and printing	15	reeds and grass		East Pakistan
Dohazari Pulp and Paper Mill		brown wrapping paper and duplex and tri- plex board	46 28	chemical pulp paper	190	East Pakistan
The Pakistan Paper Corpora- tion Ltd.	Private sector	fine writing and printing papers	31	bagasse		West Pakistan

Export Prospects

356. The mission's estimate of the cost of producing writing paper in a 30,000-ton mill in Pakistan plus a 10 per cent profit margin and costs of delivery f.o.b. is Rs. 1,550 a ton or \$225, assuming a 30 per cent bonus voucher. This is a little below the current world price of about \$230 a ton. However, world market prices are very competitive and the trend in growing nations is towards setting up paper industry based on bagasse or other easily available raw materials. Until now, all of long fiber pulp is imported from abroad. Pakistan should evaluate the economic possibilities of producing long fiber pulp and thereby increase the net foreign exchange earnings from the export of paper.

Cement

Second Plan

357. The cement production target for the end of the Second Plan was three million tons by 1965. Against this, the sanctioned capacity reached 3.5 million tons of which 2.4 million tons were installed in West Pakistan and 100 thousand tons in East Pakistan. Thus the Plan target was not reached and, in spite of imports, the supply situation in West Pakistan was unsatisfactory until 1964 with temporary shortages in the central and the northern parts of the province. These areas are now adequately supplied by Ismail Cement with 360 thousand tons capacity which started operations in 1964, and Pakistan Cement with 360 thousand tons capacity, that began production in February 1966. Meanwhile in the Karachi area, excess supply developed during 1965, resulting in a curtailment of production. Despite the fact that East Pakistan required substantial imports, this surplus could not be disposed of owing to the high costs of transportation and the Indo-Pakistan hostilities.

358. In East Pakistan, imports have grown steadily from 128 thousand tons in 1960 to 290 thousand tons in 1965. The latter figure would have been much larger had it not been for the carryover of 1964 imports. The deficiency in the eastern province is due to the lack of limestone and gypsum. The only existing factory, at Chattak, received its limestone from across the border in India by means of a ropeway. Since the Indo-Pakistan crisis in September, the flow has stopped and production has decreased substantially in spite of efforts to bring in limestone from distant deposits within the province.

Third Plan

359. The Second Plan experience shows that a development outlay of the order of Rs. 2,500 would, on average, generate demand for one ton of cement. On this reckoning, the estimated consumption of cement by 1970 is 6 million tons, of which 3.5 to 4 million tons will be in West Pakistan and 2 million tons in East Pakistan. The target for production capacity is also set at 6 million tons. Thus 2.5 million tons of capacity will have to be added to the capacity of 3.5 million tons already sanctioned as of the end of the Second Plan. The new capacity will be concentrated entirely in West Pakistan, unless new sources of limestone are located in the eastern province where a deposit at Bagly Bazaar is presently being evaluated. This limestone will have to be mined and not quarried since it is the underground extension of a chain of hills that originates in India. A 300 thousand ton clinker crusher, to use mostly clinker from West Pakistan, is presently planned for the Chittagong area.

360. An allocation of Rs. 540 million has been made for the cement industry in the Third Plan. On the basis of the 2.5 million tons of capacity to be constructed, this means an investment of Rs. 216 per ton, which is substantially higher than the unit capital cost recently incurred in Pakistan. Examples of the cost of erecting new plants and expanding capacity are given below:

Name of project:	Valika Cement (1964)	Ismail Cement (1964)	Zeal Pak Cement, (1967)
Type:	new plant	new plant	expansion
Process used:	dry	wet	wet
Total capital cost: (In Million Rs.)	50.0	58.4	82.5
Production capacity: (In Thousand Tons)	300	360	600
Capital cost per ton (In Rs.)	166.7	162.5	137.5

361. Since a substantial part of the capacity to be added in the Third Plan is likely to come from the expansion of existing mills, the capital cost per ton of new capacity assumed in the Plan should be reduced.

Problems

362. Even if the Bagly Bazaar deposit proves workable, its production will be limited by the size of the deposit of limestone and by inland transport difficulties. East Pakistan, therefore, will have to import cement and the most economic way of doing it appears to be the erection of clinker grinding plants, using clinker from the western province. The Karachi area would be the natural supplier. However, high production cost and the fact that it appeared unfair to have East Pakistan pay more than it would be paying for imports combined to deter a rapid rise in shipments to East Pakistan from the Karachi area.

363. The ex-factory price for cement produced in a new large-size plant in West Pakistan working at full capacity and packed in kraft paper bags, would work out at Rs. 80, including a 15 per cent profit margin. If Rs. 4 is added to cover the transportation cost to the port and the loading expenses, the f.o.b. price would approximate Rs. 84 per ton. This compares with a current international price of Rs. 53. Thus a subsidy would be required equivalent to a 40 per cent export bonus voucher.

364. As for central and northern areas in West Pakistan, the planned production capacity of two million tons by 1969 seems to be more than sufficient to meet the needs of these areas for some time, especially in view of the lower requirements of the Indus Basin project which will be declining rapidly during the Third Plan from the 300 thousand tons required in 1966. Should work on the Tarbela dam start in 1967, the peak of the consumption of cement for its construction will not be reached before 1971-72.

365. Export of any sizeable surplus from the central and northern parts of West Pakistan is inconceivable due to the high cost of inland transport. No new additional capacity should, therefore, be considered until the growth of demand in the area warrants an expansion.

Table 4

Imports of Cement
(in tons)

Year	West Pakistan	East Pakistan	Total
1954	12,892	67,601	80,493
1955	27,440	52,406	79,846
1956	12,562	19,055	31,617
1957	5,619	42,676	48,295
1958	40,000	87,084	127,084
1959	9,893	80,164	90,057
1960	92,410	128,000	220,410
1961	52,179	218,401	270,580
1962	6,900	90,903	97,803
1963	100,390	257,732	358,122
1964	146,765	902,265	1,049,030
1965 (Jan.-Nov.)	10,649	268,483	279,132

Table 5

Projected Cement Capacity in the Central and
the Northern parts of West Pakistan

(In Thousand Tons)

	Existing Capacity	Expansion	Total
Ismail Cement	360	180	540
Pakistan Cement	360	--	360
Kohat Cement	--	180	180
Margala Cement	--	210	210
Other Mills	<u>688</u>	<u>--</u>	<u>688</u>
	1,408	570	1,978

Table 6

Existing and Sanctioned Cement Capacity
in Pakistan

WEST PAKISTAN

Zeal Pak, Hyderabad

	<u>Year production started</u>	<u>Rated capacity per 300 days</u>	
1st unit (1 x 400)	1956	120,000	
2nd " "	1956	120,000	
3rd " "	1960	120,000	
4th " "	1963	<u>120,000</u>	480,000

Maple Leaf, Iskanderabad

1st unit (1 x 350)	1956	100,000	
2nd " (1 x 500)	1960	<u>150,000</u>	250,000

Associated Cement

(a) Wah -

1st unit (1 x 125)	1921	43,000	
2nd " "	1926	43,000	
3rd " (1 x 250)	1937	85,000	
4th " (1 x 300)	1951	102,000	

(b) Rohri -

(1 x 265)	1938	<u>90,000</u>	363,000
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Progressive Cement Industries

(a) Karachi -

(1 x 250) + (1 x 500)	1940	225,000	
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(b) Dandot -

(1 x 250)	1940	<u>75,000</u>	300,000
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Ismail Cement, Gharibwal

(2 x 600)	1964		360,000
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Valika Cement, Manghopir (Karachi)

(2 x 500) 1964 300,000

Pakistan Cement, Hattar

(2 x 600) Feb. 1966 360,000

Total West Pakistan 2,413,000

EAST PAKISTAN

Assam Bengal Cement, Chattak 100,000

Total Pakistan 2,513,000

Estimated shortfall in annual production in

some of the existing old cement factories 200,000

Net Total 2,313,000

Capacity Under Installation/Sanctioned

Zeal Pak, Hyderabad 600,000 tons production expected 1967

Ismail Cement, Gharibwal 180,000 " " " 1967

Kohat Cement 180,000 " " " 1969

Margala Cement, Sangjani 210,000 " " " 1969

Total 1,170,000

Grand Total 3,483,000 tons

ANNEX I

MANAGEMENT AND TECHNICAL TRAINING

1. The West Pakistan Institute of Management offers training programs for top, middle and junior management; conferences and seminars on important aspects and phases of management; counselling on specialized areas of management; and publishes the "Journal for Better Management". Courses are generally of short duration--one to four weeks and take place in afternoons only, the executive attending his own business in the morning where practical. For this reason, courses are held at various centers rather than participants all coming to Karachi where, in fact, there are excellent facilities. Training courses and seminars are held in the following subjects:

- General Management (human relations, organization planning and management practices)
- Personnel Management (labor turnover, the role of the trade unions, wage and salary administration)
- Financial Management (cost control, profit planning, accounts for non-accountants)
- Production Management (office organization and methods, production planning and control, plant layout and materials handling)
- Marketing Management and supervisory development.

2. The Institute is staffed with one foreign specialist in each main subject, each with two Pakistani counterpart specialists. Eminent outsiders lecture at the courses and occasional courses are run by outside institutions--for example, courses for top executives have been run entirely by professors from the Harvard University Graduate School of Business Administration. So far, more than 11,000 persons from 400 organizations in East and West Pakistan have attended training programs of the Institute.

3. The aim of the Pakistan Industrial Technical Assistance Center (PITAC) is to increase productivity by encouraging maximum utilization of available resources of men, machines, materials, power and capital. Its assistance is offered mainly to exporters or foreign exchange savers and, secondly, to producers of essential goods. No service is available to manufacturers of luxury goods for home consumption.

4. It has its headquarters in Lahore, and Production and Training Wings as well as Productivity Advisory Services in both Dacca and Lahore.

5. In the Productivity Advisory Facilities there are foreign advisers in all the main fields, each with two Pakistani counterpart advisers. The fields cover Management Development, Cost Accounting and Financial Management, Personnel Management, Marketing, Training, as well as special fields of technology such as Foundry Engineering, Leather Tanning, Center Training, Chemical Engineering, Ceramics, and Steel.

6. PITAC also operates workshops for different industries, specifically for technical training in its Production and Training Wing at Lahore. These consist of (1) Design Department, (2) Machine Shop, (3) Tool Shop, (4) Heat Treatment Shop, (5) Foundry, (6) Pattern Shop, (7) Sheet Metal and Welding Shop, (8) Blacksmith's Shop, (9) Protective Coating Shop, and (10) Inspection Shop. In Dacca, the Production and Training Wing is setting up the following workshops: (1) Design Department, (2) Machine and Tool Shop, (3) Heat Treatment Shop, (4) Foundry and Pattern Shop, and (5) Inspection Shop.

7. The Textile Productivity Cell is being formed in Lahore with the idea that it will work as a wing of PITAC. It will have five divisions manned initially by five foreign experts, each with two Pakistani counterparts who should be in a position to take over after two years. These experts will work in the fields of production control, cost control, labor management, maintenance, and sales management. It is aimed to train 40 personnel from the textile industry every eight months, hardly enough to make good losses by retirement, etc.

8. The Swedish Pakistani Institute of Technology has been set up as a joint operation of the Swedish and Pakistani Governments in order to produce technicians at middle level. Four separate institutes are being set up at Kaptai (East Pakistan), Gujrat, Landhi and Islamabad, and are giving courses in woodworking, metal working, electrical and mechanical technology. The Islamabad Institute is specializing in building industry activities. At Kaptai and Gujrat the intention is to produce technicians at the middle level and so the courses are fairly long. Full time courses are:

1. Two years for a certificate course;
2. Three years for a diploma course;
3. Fourth year for a few selected candidates in teachers' training course.

These are in accordance with the recommendations of the Commission on National Education.

9. The Landhi and Islamabad Centers are essentially for training tradesmen rather than technicians and have shorter courses of nine months only.

10. Initially, the institutes are for training only, but it is proposed that, attached to the Kaptai and Gujran Institutes, there will be production units to act as model factories for small-scale entrepreneurs, to provide further training in production control, to feed the local market with quality products at competitive rates and to earn a profit to contribute towards training costs.

11. The Investment Advisory Center of Pakistan is an adjunct of the Department of Investment Promotion and Supplies. Its object is to:

- (1) Assist PICIC and IDBP in the analysis of loan applications and investment proposals submitted by private parties;
- (2) Make studies of areas and sectors in which new private investment is desirable and feasible, within the purview of national development Plans, and to prepare concrete proposals;
- (3) Analyze projects of investors and translate them into concrete proposals as a basis of sound investment by entrepreneurs;
- (4) Up-grade the training of Pakistani technical personnel.

12. While this operation cannot be considered as direct training for management, correct preparation of projects involves the collection of information essential in the management of a business.

ANNEX II

ESTIMATES OF FERTILIZER OFFTAKE TO 1974/75

East Pakistan

1. Three alternative methods have been used to project offtake of NPK for the years 1969/70 and 1974/75. Each of these methods rests on a set of hypotheses or assumptions which are plausible in the context of the factors affecting the market for fertilizers in East Pakistan at the present time. All methods assume that there will be effort toward improvement in the distribution facilities in the Province. The methods, and the assumptions underlying their application, are given below.

2. Method I. This method is based on estimates of the quantities of fertilizer which will be used on different crops in the Province by 1969/70 and 1974/75. These are necessarily judgments, but they reflect partial progress toward the optimum applications determined in fertilizer trials which have been carried out in the Province. Greatest weight is given to fertilizer application on rice, because the present seasonal sales patterns indicate that a heavy proportion of the fertilizers currently used goes on rice crops. The detailed assumptions are as follows:

1969/70

- a) It is assumed that by 1969/70 an average of 30 lbs of NPK per acre will be used on aus and transplanted aman. It is further assumed that no fertilizer will be used on either broadcast aman or boro paddy.

4.9 million acres of aus (the area considered responsive)
+ 8.8 million acres of aman (full area considered responsive)

13.7 million acres
x 30 lbs NPK/acre

411.0 million lbs NPK = 183,482 L.T. NPK

- b) It is assumed that fertilizers will be used on these other crops:

Sugar Cane	345,000 acres at 50 lbs NPK/acre =	7,700 L.T.
Vegetables & Potatoes	415,000 acres at 10 lbs NPK/acre =	1,850 L.T.
Jute	1,700,000 acres at 10 lbs NPK/acre =	7,590 L.T.
Mustard & Tobacco	680,000 acres at 10 lbs NPK/acre =	3,035 L.T.
Tea	80,000 acres at 40 lbs NPK/acre =	<u>1,430 L.T.</u>

Total NPK = 21,605 L.T.

- c) It is assumed that fertilizers are not used on other cereals, pulses, one half the acreage under fruits and vegetables, or oil seeds other than mustard.
- d) Total rice application 183,500 NPK
Total other crops 21,600
Total NPK 205,100 L.T.
- e) It is assumed that the NPK ratio will be brought to 1:0.50:0.20 by 1969/70 as a result of conscious efforts by EPADC and the extension workers in the field. This yields the following estimates in terms of nutrients:

N = 120,600 L.T.

P₂O₅ = 60,300 L.T.

K₂O = 24,200 L.T.

1974/75

- a) It is assumed that the offtake of N will double from 1969/70 to 1974/75. This represents a compound rate of increase of about 15% per annum. The reason for this assumption is that new varieties of short-stemmed rice have just been introduced into East Pakistan, following their earlier development at the International Rice Research Institute in the Philippines. These varieties offer enormous possibilities for increasing yields, but require large quantities of nitrogen. Since this method of estimation assumes a large proportion of the fertilizers will be used on rice, it is consistent to assume that offtake of N will rise as the new varieties come into wider use.
- b) The balance in fertilizer use should also show continuing improvement; therefore it is assumed that by 1974/75 the ratio of NPK will become 1:0.65:0.40. This would give the following estimates in terms of nutrients:

N = 241,200 L.T.

P₂O₅ = 156,800 L.T.

K₂O = 96,500 L.T.

3. Method II. This method is based on the hypothesis that the most receptive market for fertilizer is among farmers holding between five and 12.5 acres of land. Experience in India indicates that this medium-sized landholding group has responded more actively than either the larger landholders or the very small landholders. The medium-sized landholding group

is likely to have cash for purchase of fertilizer, is most likely to be interested in new productive inputs because of the more commercial character of its agriculture, and is most likely to be creditworthy.

1969/70

a) It is assumed that by 1969/70 farmers holding five to 12.5 acres of land will be using an average of 30 lbs of NPK on their lands. This would be about one-third the recommended application rate. The distribution of land among different sizes of farms is taken from the 1960 Census of Agriculture. Farms between five and 12.5 acres in size comprised a total of 8.352 million acres.

b) 8.352 million acres (farms 5-12.5 acres)
 $\times 30$ lbs NPK

250.560 million lbs, or 111,857 L.T. NPK

c) It is further assumed that only one half of all other farms will use fertilizer, and that the average application rate on this remaining portion will be only 10 lbs of NPK per acre. This is a very conservative estimate, and would constitute about one tenth the recommended application rate in East Pakistan. The remaining area, according to the 1960 Census of Agriculture, is 13.374 million acres.

d) $\frac{13.374 \text{ million acres}}{2} = 6.687$ million acres
 $\times 10$ lbs NPK per acre

66.870 million lbs, or 29,853 L.T. NPK

e) Use on farms 5-12.5 acres in size = 111,900 L.T. NPK
Use on all other farms = +29,900

141,800 L.T. NPK

f) For the reasons given in Method I, it is assumed that the NPK ratio will reach 1:0.50:0.20 by 1969/70. This would result in the following estimates in terms of nutrients:

N = 83,400 L.T.

P₂O₅ = 41,700 L.T.

K₂O = 16,700 L.T.

1974/75

a) For reasons similar to those given in Method I, it is assumed that the use of N will double from 1969/70 to 1974/75, or

increase at an annual compound rate of about 15% per year. With rice as the major crop in the Province, the medium-sized farms will also be committed to this crop. Assuming that this group is the most progressive and responsive to new ideas, it would also be among the first to adopt the new rice varieties.

- b) As in Method I, the increase in nitrogen will be assumed to require continuing improvement in the balance of phosphatic and potassic fertilizers, and the ratio of 1:0.65:0.40 NPK is again used for 1974/75. This gives the following estimates in terms of nutrients:

N = 166,800 L.T.

P₂O₅ = 108,400 L.T.

K₂O = 66,700 L.T.

4. Method III. This method is based on a straight projection of nitrogen use at a constant compound annual rate of increase equal to the rate which was attained over the period 1961/62 to 1964/65, i.e. 21%. The major point this method has to recommend it is that it does rely on a rate of increase actually achieved in the past, and it states that what has been achieved can be maintained. Although it is a constant rate of increase, it calls for increasing additional quantities each year. It thus imparts elements of the more rapid acceleration in quantities of fertilizer used that seems to come in most countries after some point, and projects this as occurring before 1974/75.

1969/70

- a) Annual increases in offtake of N, at a rate of 21% per year, give the following estimates:

1965/66 36,400 L.T.

1969/70 78,000 L.T.

- b) As in previous methods, it is assumed that the ratio of NPK will be 1:0.50:0.20 by 1969/70. On this basis the distribution of fertilizers by 1969/70 would be as follows:

N = 78,000 L.T.

P₂O₅ = 39,000 L.T.

K₂O = 15,600 L.T.

1974/75

- a. Annual offtake of N by 1974/75, still using a rate of increase of 21 per cent per year, would be 202,300 tons.

- b. The ratio of NPK is again assumed to increase to 1:0.65:0.40 by 1974/75, which would result in the following estimates in terms of nutrients:

N	=	202,300 L.T.
P ₂ O ₅	=	131,500 L.T.
K ₂ O	=	80,900 L.T.

5. The results obtained by using the different projection methods are summarized in Table I for ready comparison.

West Pakistan

6. The annual compound rate of growth in nitrogen offtake in West Pakistan over the period 1960/61 to 1964/65 was about 27 per cent per year. Since there were shortages of fertilizers during 1964/65, and reports of sales at prices above the official retail price, offtake would have been larger and the rate of growth greater if supplies had been available in larger quantities. If the rate of growth of 27 per cent is applied to the 1964/65 offtake of 83,300 tons of N, the estimate of demand in 1969/70 would be 275,000 tons of N.

7. There has been very little use of phosphatic fertilizers in West Pakistan, but the results of fertilizer trials in the Province show that there would be economic returns to farmers from more balanced applications of N and P₂O₅ on most crops. There should thus be intensified efforts to promote the use of phosphates as well as nitrogen in the years ahead, and on this basis it is assumed here that the NP ratio will gradually increase and will reach 1 to 0.30 by 1969/70. This gives a demand estimate of 82,560 tons of P₂O₅ in 1969/70.

8. Esso Standard Eastern Inc. has made independent projections of demand for fertilizers in West Pakistan as part of its study of the feasibility of a urea plant in that Province. These were made by estimating per acre quantities of fertilizer, by crop, for the different regions of the Province, and applying these to the acreages likely to be covered by 1969/70. In general, this method resembles that used under Method I for East Pakistan, although the Esso projections were made in greater detail. The results were a projection of demand for 1969/70 of 270,462 tons of N and 86,830 tons of P₂O₅.

9. The Planning Department of the Government of West Pakistan has recently revised its estimates of fertilizer demand in 1969/70. The revision reflects a desire to raise Third Plan foodgrain targets from 8.6 million tons to 9.2 million tons by greater use of fertilizers. By assuming that 70 per cent of fertilizers used will go on foodgrain crops, the Planning Commission has estimated that requirements in 1969/70 will be 230,000 tons of N and 85,000 tons of P₂O₅.

10. Given the tendency for these three separate estimates to cluster around the figure of 275,000 tons of N and 85,000 tons of P_2O_5 , these have been adopted as the estimate of demand in West Pakistan by 1969/70. If one further takes into account the fact that strong efforts will be made to introduce Mexican wheat varieties into West Pakistan, and that this requires large applications of nitrogen to give significant yield improvements over local varieties, the high annual rate of increase in demand implied by these estimates is plausible.

11. For the period beyond 1969/70, it seems probable that the annual rate of growth in demand will decline somewhat. The most promising market areas will be the irrigated acreage in the Province, and fertilizer use on this acreage should be fairly widespread by the Fourth Plan period. Further expansion in demand will therefore come largely from farmers who are already using some fertilizer, but are beginning to use larger quantities per acre than in the past, and from higher cropping intensities. Demand from farmers using fertilizers for the first time should be less of a factor in the future total demand for fertilizers. The stimulus coming from initial adoption of the new Mexican wheat varieties will also be less, although gradual increases should continue as farmers move toward application at the optimum rates for the new varieties.

12. The estimates for 1974/75 are therefore based on the following assumptions:

a) The culturable irrigated acreage in West Pakistan will be about 32 million acres in 1974/75, and the average intensity of cultivation will be about 110 per cent. The total irrigated acreage cropped will thus be about 35 million acres.

b) Farmers will be applying an average of 30 pounds of nitrogen per acre on 35 million acres, or a total of 470,000 tons of N.

c) It is assumed that there will be continuing efforts to improve the balance in fertilizer application, and that by 1974/75 the NP ratio will be 1 to 0.5. The estimated demand for phosphatic fertilizer would then be 235,000 tons of P_2O_5 .

13. The estimated demand of 470,000 tons of N by 1974/75 implies a growth of about 12 per cent per year from 1965/70. Demand for fertilizers should continue to grow after 1974/75 as cropping intensities increase toward an ultimate level of about 135 per cent, and as the average application per acre rises toward the optimum levels for the different crops grown.

Table 1

Comparative Estimates of Fertilizer Offtake in East Pakistan

1965/66 to 1974/75

<u>Nutriends</u>	<u>1965/66</u>	<u>1969/70</u>	<u>1974/75</u>
	-- (in tons) --		
<u>N:</u>			
METHOD I	36,400	120,600	241,200
METHOD II	36,400	83,400	166,800
METHOD III	36,400	78,000	202,300
<u>P₂O₅:</u>			
METHOD I	12,900	60,300	156,800
METHOD II	12,900	41,700	108,400
METHOD III	12,900	39,000	131,500
<u>K₂O:</u>			
METHOD I	3,600	24,200	96,500
METHOD II	3,600	16,700	66,700
METHOD III	3,600	15,600	80,900

ANNEX III

FERTILIZER DISTRIBUTION, STORAGE AND CREDIT

East Pakistan

1. Distribution. The fertilizer distribution system in East Pakistan is undergoing a substantial change. Distribution was formerly the responsibility of the Directorate of Agriculture, and fertilizers were sold by Union Agricultural Assistants (U.A.A.'s) as one of their assigned duties, or by Union Multipurpose Cooperative Societies acting as retail agents for the Directorate of Agriculture. The arrangement was quite unsatisfactory for several reasons -- the U.A.A.'s have extensive administrative obligations in the form of weekly and monthly reports to prepare, they are expected to carry out all the extension work done in their unions, and each is responsible for a relatively large area. Given these factors, the U.A.A.'s had (or took) little time for the commercial duties of fertilizer and seed sales. The Union Seed Stores, where fertilizers and seeds were kept for sale, were often located inconveniently for farmers in the union, and were usually closed. Even if farmers went out of their way to buy fertilizers or seed, only rarely would there be a U.A.A. at the store to sell to them. The cooperatives apparently did not find fertilizer sales sufficiently remunerative to actively engage in the business, and over time have contributed relatively little to expansion of fertilizer use in the Province.

2. With this background of experience there came growing recognition that distribution through the Directorate of Agriculture was ineffective, and to the extent that U.A.A.'s did engage in fertilizer sales it probably detracted from their extension activities. The establishment of the East Pakistan Agricultural Development Corporation (EPADC) in 1961 came about partially to provide a source of supply for agricultural inputs independent of the Directorate. Early efforts were made to use the agency networks of private firms, e.g., I.C.I. and Burmah Shell, for local distribution of fertilizer under contract with the EPADC, but the EPADC and the private companies could not reach agreement on the terms under which this might be done.

3. The subsequent policy which has evolved now calls for sales to farmers by private sales agents appointed by the EPADC in each district. The EPADC will be responsible for procurement (from factories in East Pakistan and from abroad) and distribution to storage points located in each thana, from whence the private dealers will take delivery. Farmers can also buy directly from EPADC at these thana storage points, but it is expected that most sales will be by private dealers who will transport fertilizers to the more remote unions and market places.

4. The changeover from previous sales arrangements to the use of private dealers requires a careful stock inventory by the EPADC and establishment of a record-keeping and reporting system, in addition to the selection of private dealers. This will take time to accomplish, and the completion date of April 1967 is probably a realistic one. It seems clear that the continuous changes in the distribution arrangements in the recent past have had an adverse effect on fertilizer sales performance, in addition to the defects inherent in the previous arrangements. The indifferent performance of fertilizer sales over the last two years therefore cannot be taken as indicative of what might be accomplished in the future, since the reorganization which has been taking place has inevitably led to frictions and antagonisms between personnel of the EPADC and the Directorate, and these have militated against a better sales performance.

5. The EPADC has also attempted to organize its own staff to handle its portion of the fertilizer distribution system. The EPADC is, by its charter, an autonomous body which has to operate on a non-profit and non-loss basis, directed by a Board of three directors and headed by a Chairman. The latter is an experienced administrator and his position is equivalent to the rank of a Provincial Secretary of Government. Like any other government organization, the EPADC must adhere to governmental budget rules. Its financial operations are supervised by the Finance Department and its working policy is outlined by the Department of Agriculture. Other activities of the EPADC include management of mechanization of cultivation and irrigation projects, management of seed farms and nurseries, and of livestock farms.

6. Responsibility for fertilizers rests with the Supply Wing of the EPADC. Within this Supply Wing, however, the different functions relating to the fertilizer program are scattered among divisions dealing with other agricultural supplies, and no single division is concerned with fertilizer alone. The result appears to be diversification of responsibilities and difficulty in coordinating a program. Shifting the organizational pattern from an administrative one towards a more commercial and program-oriented pattern should improve the potential for achieving better sales performance.

7. Storage. There is a distinct seasonal peak in fertilizer demand during July to October, at which time one-half to two-thirds of all sales take place. The transport of bulky material is greatly hindered during the monsoon when large areas of the Province are inundated, and there is the further problem that imports of fertilizers may be delayed for any one of several reasons (e.g., shipping delays, congestion in ports, slowness in receiving allocations of foreign exchange). It is therefore necessary to have adequate storage facilities if stocks are to be available at the local level at the time of seasonal peak demand.

8. The EPADC has submitted a Third Plan scheme, "Construction of Additional Storage for Fertilizer Distribution," which will provide storage capacity of 144,000 tons by 1969/70. The total cost of the scheme is estimated to be Rs. 23.567 million (about U.S. \$4.949 million). One of its major purposes will be to replace the rented storage capacity now in use

(approximately 100,000 tons). Assuming that such replacement does take place, the total storage capacity available to the EPADC by 1969/70 will be 194,000 tons.

9. Considering the lack of transport facilities, the extent of annual floods, and the peaks in seasonal demand, EPADC godowns with a total capacity of 194,000 tons do not appear sufficient for an offtake in 1969/70 (in terms of fertilizers) which may be 350,000 tons or more. In districts with a high fertilizer offtake, one godown per thana is already creating a supply bottleneck.

10. Credit. The small size of the typical farm in East Pakistan, the low yields of the crops grown, and the difficulties experienced in moving toward a more intensive use of the land all support the presumption that there is little cash available in the rural sector with which to purchase new agricultural inputs, including fertilizers. Attempts have been made by the Government to estimate the credit "needs" of the Province, but these seem to be based on informed opinion more than on careful and detailed study of the credit system. It is undoubtedly true, however, that more credit, and on terms less expensive than those set by local money lenders, would provide incentives to farmers to use larger amounts of new productive inputs. The problems faced in realizing this objective include both the provision of adequate funds and the establishment of a workable system through which the funds can be channeled.

11. Credit for the purchase of fertilizers is now supplied by the Government through taccavi loans. The Agricultural Development Bank (ADB) has provided only a negligible amount for this purpose and is unlikely to expand fertilizer loans to any significant degree. Taccavi loans are funds which the Government has made available to the rural areas in the past for a variety of purposes, including relief from natural disasters. Recovery rates have been extremely poor, and to some extent taccavi has acquired a reputation as a Government grant, recovery of which is not really expected. Although allocation and administration of taccavi loans is carried out with the cooperation of the different Government Departments concerned, recovery is the responsibility of the Revenue Department. This latter Department is primarily concerned with collection of the land revenues, and due to its choice of priorities, inadequate staff, or some mixture of the two, has not been effective in following up the collection of outstanding taccavi loans.

12. The amount of taccavi loans to be available for the purchase of fertilizer is not known until after July 1, the start of the fiscal year. The time-consuming process of approving the loans to the farmers may take three months or more to complete, with the result that the loans may not actually be made until October. At that time the peak period of fertilizer demand will have nearly passed. This lengthy approval is required by the conditions of the taccavi loan sanction, which state that no individual will be permitted to receive a new loan unless he has repaid all of his previous loans. Further, no Union will be permitted new borrowings unless farmers

in the Union have repaid at least 80 per cent of all previous borrowings from taccavi funds administered through the Department of Agriculture. All new loan applications must therefore be checked against records of outstanding debts. These requirements are designed to encourage better recovery rates, but they do nothing to improve the facilities or procedures for recovery of taccavi by the Revenue Department. The probable result is that new loans go mainly to farmers who have not received taccavi loans before, while those with outstanding taccavi obligations are excluded.

13. The steps taken to approve fertilizer loans constitute a cumbersome process which makes timely receipt of the fertilizers by farmers most difficult to accomplish. The credit arrangement also requires that the private dealers invest their own cash in the fertilizer which is distributed under loan, and it may take several weeks before the dealer receives his payment. There are provisions whereby the private dealer can take his payment in additional fertilizers, but the timing of the original credit sale (near the end of the peak seasonal offtake) may make this option unattractive to dealers.

14. Despite the drawbacks to the present taccavi loan system, its use in recent years seems to have had some effect in increasing fertilizer offtake. The amounts involved were as follows:

1963/64	Rs.20.0 million sanctioned
1964/65	Rs.20.9 million sanctioned
1965/66	Rs. 9.0 million sanctioned

Fertilizer offtake during 1963/64 was the largest of any year to date, due to the special sales campaign carried out in that year as well as the sizeable taccavi loan allocated for fertilizer sales. The provisions calling for repayment of outstanding taccavi loans were relaxed, which probably speeded up the loan-granting procedures somewhat. Farmers were also required to take both nitrogenous and phosphatic fertilizers as a condition for getting a loan, which improved the NPK ratio of offtake during 1963/64.

15. Although Rs.20.9 million was sanctioned during 1964/65, Rs.3.9 million was not used. This was a political campaign year, and one explanation for refusal of farmers to take taccavi loans is that this was a form of political protest against the Government. It is also true that the fertilizer campaign of 1963/64 was not repeated, that the more stringent conditions concerning repayment of previous taccavi loans were reinstated, and local government officials were occupied with election duties. Whatever the cause, or combination of causes, fertilizer offtake dropped in 1964/65, and the volume of loans issued and used for fertilizers also went down.

16. Thus far in the current year, 1965/66, the volume of taccavi loans sanctioned has been reduced to Rs.9.0 million as a result of the general financial pressures on government resources due to the hostilities with India.

The Government of East Pakistan still hopes to raise total sanctions for the year to Rs.15.0 million, but this had not been approved by February 1966, when the Mission was in East Pakistan. Despite this reduction in credit for fertilizers, offtake for 1965/66 now seems likely to be at a level slightly higher than in 1964/65. This means that proportionately more fertilizers are now being sold to farmers for cash, and that more farmers are sufficiently convinced of the value of fertilizers to pay for them out of their own resources or to rely on sources of lending other than government loans. Cash sales accounted for 22 per cent of all off-take in 1963/64, and 32.5 in 1964/65. With a comparable total offtake in 1965/66, and taccavi sanctions less than half those of previous years, the proportion of cash sales should therefore be continuing to rise.

West Pakistan

17. Distribution. The fertilizer distribution system in West Pakistan has also undergone recent changes, but in a direction different from that in East Pakistan. From 1963/64 to July 1965, distribution was divided between the West Pakistan Agricultural Development Corporation (WPADC), the West Pakistan Industrial Development Corporation (WPIDC), and the Rural Supply Corporation (RSCC). The WPADC and WPIDC together distributed 75 per cent of all domestic production and 75 per cent of all imports, relying on a system of private dealerships for retail sales to the farmers. The remaining 25 per cent of domestic production and imports was distributed through local cooperatives supplied by the RSCC.

18. Since July 1965, however, the RSCC has been distributing 75 per cent of the total available supply of fertilizers through its associated cooperatives. The WPADC is allocated 25 per cent for distribution in its project areas, and for use in the promotion of improved seed in all parts of West Pakistan. The reason given for this most recent change is that it is a temporary arrangement to curtail black marketing in fertilizers by private dealers. Government felt that cooperatives would ration the current limited supplies more equitably among members and other farmers than private dealers would, without charging black market prices. Since stories of black market prices still persist, the Government's objective apparently has not been fully achieved. It is doubtful that the present reliance on the RSCC will be a permanent arrangement, although it will probably be retained as long as the supply situation remains one of shortage. Government expectations with respect to imports and domestic production indicate every intention of removing the shortage as quickly as possible, after which consideration may again be given to using private dealers as retail agents.

19. One element of private sales activity will become active when the Esso urea plant at Mari begins production in 1968. Esso will depend on its own distribution and sales organization to sell the output of the plant, and will support its sales effort by a technical service group of agronomists who will work with farmers to determine the appropriate fertilizer requirements in individual areas. The Government will not permit Esso to market

any imported fertilizer, but it can sell all that it produces at the Mari plant. Salesmen will assist farmers in obtaining credit through normal channels, but Esso will not provide any credit for fertilizer purchases.

20. Although the RSCC will bear the major burden of distribution for the near future, it is not well-equipped for this task. It does not maintain close check on the stock position of its cooperative outlets, and its reporting and control procedures are poor. It has no storage facilities of its own, and does not seem concerned about storage needs. The cooperatives are financially weak, but must pay in advance for fertilizers they receive from RSCC. This may require new loans to cooperatives from sources other than the RSCC. There are only 1,200 cooperatives currently engaged in fertilizer sales, or about one for every two unions in the irrigated areas of West Pakistan. This is inadequate to cover the total market area, and there are no other sources from which farmers can buy. The RSCC has a distribution plan which looks workable on paper, but one gets an impression that the organization does not have the staff or the support necessary to fulfill the functions it has agreed to carry out.

21. Storage. As noted above, the RSCC does not have any storage facilities of its own, but is planning to rent godown space in market towns when the need arises. Such space is generally poor in quality and small in size. For the remainder of storage needs, the RSCC will rely on godowns of the cooperatives. About 2,500 such godowns will be built for cooperatives during the Third Plan period, with capacities ranging from 50 to 175 tons. If one assumes the average capacity to be 100 tons, this would give a total of 250,000 tons of local storage space, plus whatever storage the RSCC is able to rent in different market centers.

22.- Using the West Pakistan Planning Department estimates of offtake by 1969/70 (e.g. 280,000 tons of N; 85,000 tons of P_2O_5 ; and 15,000 tons of K_2O), the actual volume of fertilizers handled could be upwards of 1 million tons. Although transportation problems are not as acute as they are in East Pakistan, there will be need to accumulate stocks at the local level in anticipation of seasonal peak periods. This problem has not been studied carefully (by the Mission or by RSCC), but it seems probable that the anticipated storage facilities will not be adequate to ensure availability of fertilizers to farmers in time for their peak requirements.

23. Credit. Fertilizer sales to farmers are presently for cash only, and lack of credit does not seem to be a factor affecting fertilizer use in West Pakistan at this time. As long as demand exceeds the available supply at the official price, additional credit for fertilizer purchases would contribute nothing. In this respect, the situation is quite unlike that in East Pakistan. Fertilizer credit has been issued through cooperatives in West Pakistan in the past. Cooperatives may grant credit to farmers up to amounts determined either by the share holdings of the borrower, or some multiple of the land revenue he pays. Cooperatives in turn borrow from the

Cooperative Banks. Although the RSCC fertilizer distribution plan stipulates that all fertilizer sales will be for cash, credit supplied by cooperatives is available for other agricultural inputs. Cooperative service societies still have a sizeable debt outstanding (about Rs.50 million) from earlier periods when fertilizer was distributed through them for credit.

24. Having noted that availability of credit is not a factor in the current situation, this does not imply that credit will not be required to achieve the offtake targets set for future years. Credit can be an important tool in helping farmers take full advantage of the new inputs which will be offered in the context of the agricultural development program now in progress. For example, water development will open opportunities for more intensive cropping, and new varieties will raise the yield potential of the major crops. Fertilizers, in adequate quantities, constitute a complementary input to improved water availability and new varieties, and credit may become critical in promoting fertilizer use under these changing conditions. Since the credit system in West Pakistan suffers from many of the same deficiencies and administrative problems as the system in East Pakistan, credit cannot become an effective device to strengthen the demand for fertilizer until some of the cumbersomeness of the system is eliminated. Credit system reform and revision requires more study than was possible for the purposes of this report. The point raised here is simply that the present situation of excess demand should not be interpreted as evidence that credit will always be a minor factor in the distribution of fertilizers in West Pakistan.

ANNEX IV

INDUSTRIAL FINANCING INSTITUTIONS

(A) Pakistan Industrial Credit & Investment Corporation Limited

1. The Pakistan Industrial Credit & Investment Corporation Limited (PICIC) was established in 1957 to encourage private industrial investments in Pakistan from both local and foreign sources, and to contribute to the formation of a capital market. PICIC may pursue these objectives by extending long- and medium-term loans, by taking equity participations, by underwriting and sponsoring equity and debt security issues, by guaranteeing loans and obligations, and by providing managerial, financial and technical services to private industry.

2. Resources. The authorized share capital of PICIC is Rs. 150 million, of which Rs. 40 million is subscribed and paid up. Sixty per cent of its equity is held by private Pakistani nationals, while the remaining 40% is held as follows:

USA	10.9%
UK	10.8%
Japan	7.3%
Germany	6.0%
IFC	5.0%

3. As of June 30, 1965, PICIC had accumulated reserves and retained earnings of Rs. 18.42 million.

4. Local Currency Resources. The Government granted PICIC two Rs. 30 million loans; the first in 1957, free of interest with a 30-year term, including a 15-year grace period; the second in 1961, bearing 4% interest with a 40-year term, including a 4-year grace period.

5. Agreement, in principle, has been reached with AID for a Rs. 30 million loan at 5% interest with a 20-year term, in which a 10-year grace period is included. Agreement, in principle, has also been reached with the Government for a third Rs. 30 million loan.

6. Foreign Lines of Credit. By December 31, 1965, PICIC had obtained loans totalling the equivalent of \$205.9 million from foreign sources. Detailed sources and applications of funds table is attached (Table 1).

7. In addition to these credits, PICIC had arranged for projects it sponsored, direct foreign equity and loan participations amounting to Rs. 53,353,000 and \$36,088,000, respectively, as of December 31, 1965. (Details are shown in Tables 2 and 3.)

Table 1

PAKISTAN INDUSTRIAL CREDIT & INVESTMENT CORPORATION LIMITEDStatement of Financial Assistance as at December 31, 1965

(Rs. '000)

NOTE: US dollars are
converted at Parity Rate

	Foreign Line of credit (\$ million)	Rupee equivalent	Amount sanctioned	Amount paid out	Amount of reimbursement obtained
I - LOANS					
IBRD	- 185	4.08	19,447	19,447	19,447
	- 236	9.93	47,300	47,300	47,300
	- 286	15.00	71,428	67,790	65,009
	- 330	20.00	95,238	67,581	67,200
	- 382	30.00	142,857	105,129	27,452
	- 421	30.00	142,857	61,552	25,295
DLF	- 15	4.20	20,000	20,000	20,000
	- 100	9.90	47,152	47,152	47,152
	- 194	7.50	35,714	27,762	18,000
Japanese	- I	4.96	23,662	23,662	23,662
	- II	2.49	11,895	11,895	7,667
	- III	3.00	14,286	14,286	1,429
German	- I	17.50	83,333	82,981	81,824
	- II	5.00	23,809	23,529	21,895
	- III	2.50	11,905	11,295	3,376
	- IV	2.50	11,905	4,800	
French		8.00	38,095	37,438	10,295
U.K.	- I	2.50	11,905	11,852	11,852
	- II (Ships)	7.84	37,333	35,514	7,071
Yugoslav		3.00	14,286	17,000	
Czechoslovak		3.00	14,286	14,000	
Polish		10.00	47,619	14,000	
Italian		3.00	14,286	15,062	
Pending allocation			85,233	4,867	4,867
		205.90	980,598	897,113	481,737
In rupees			36,166	35,266	35,266
TOTAL			933,279	523,926	517,003
WEST PAKISTAN			545,794	270,265	266,276
EAST PAKISTAN			183,845	123,445	122,969
KARACHI			203,640	130,216	127,758
TOTAL			933,279	523,926	517,003

Table 3
PAKISTAN INDUSTRIAL CREDIT & INVESTMENT CORPORATION LIMITED

Statement as at December 31, 1965
(in \$ '000)

Direct Loans from Abroad for PICIC Projects

Name of Project	Location	Amount under Agreement	Loaning Agency	Date of Agreement	L/Cs opened	Amount paid out
Ismail Cement Industries Ltd. (1st loan)	WP	4,000	IFC Washington	12-22-1961	3,926	3,724
Valika Cement Limited (1st loan)	KA	3,500	KFW Germany/GOP	8-18-1962	3,331	3,151
Hyesons Sugar Mills Ltd	WP	372	CDFC London	11-26-1963	372	-
Valika Cement Limited (2nd loan)	KA	2,000	KFW Germany/GOP	7-26-1963	1,830	1,781
Karnaphuli Rayon & Chemicals Ltd	EP	10,696	Eximbank Japan/GOP	9- 5-1964	10,696	5,700
Eastern Refinery Limited	EP	10,000	French Govt/GOP	11-23-1964	10,000	-
Ismail Cement Industries Ltd (2nd loan)	WP	1,260	IFC Washington	5- 5-1965	772	-
Crescent Jute Products Ltd	WP	1,950	IFC Washington	2-16-1965	1,944	1,116
Packages Ltd	WP	2,310	IFC Washington	4-30-1965	1,066	-
		<u>36,088</u>			<u>33,937</u>	<u>19,472</u>
	WP = West Pakistan	9,892			8,080	4,840
	EP = East Pakistan	20,696			20,696	5,700
	KA = Karachi	5,500			5,161	4,932
		<u>36,088</u>			<u>33,937</u>	<u>19,472</u>
	Total in rupees	<u>171,848</u>			<u>161,605</u>	<u>92,724</u>

8. Size of Loans. Since March 1963, PICIC's lower limit on new loans has been set at Rs. 1.5 million for foreign currency loans and at Rs. 2.5 million for local currency loans.

9. Exceptions are permitted for reasons such as expansion, balancing and modernization of enterprises which are already borrowers from PICIC.

10. Under its present policy, PICIC can invest as much as 20% of its net worth and subordinated loans in one company. This means about Rs. 22 million (\$4.7 million), however, PICIC endeavors to find financial partners when more than \$4 million is involved in one single operation.

11. The distribution of loans by size, as per Table 4, shows that the average size of loans sanctioned in 1965 is equivalent to Rs. 3.61 million which is lower than the 1964 average of Rs. 5.09 million, but still larger than 1957-63's Rs. 1.53 million. The increase in the average size of loans since 1963 is partly due to the raising of PICIC's lower lending limits then. The fact that 83.7% of the 1965 sanctions went to loans over Rs. 2.5 million, compared with 89.2% in 1964, indicates PICIC's continuing interest in large operations, without neglecting the smaller loans which amounted to 39 operations compared with only 14 in 1964.

Conditions of Loans

12. Interest Rate. The rate of interest PICIC can charge has been fixed by the Government at 6-1/2% on rupee loans and 7-1/2% on foreign exchange loans. However, due to higher rates of interest charged by the World Bank, PICIC has been authorized to charge, in turn, 8% on loans from this source.

13. PICIC's borrowers, in addition to interest, pay an appraisal fee of 1/2% of the loan amount, a commitment charge of 1/4% per quarter on undisbursed amounts, and bear the foreign exchange risk when PICIC has the same obligation in its original loan.

14. Term of Loans. PICIC does not normally extend loans for more than 12 years; most loans are, in fact, made for ten years or less, depending on the terms of the original loan obtained by PICIC.

15. Options. Loans to existing enterprises, with a paid-up capital of more than Rs. 2.5 million or to new enterprises with a paid-up capital of between Rs. 2.5 and Rs. 5 million, normally carry a right for PICIC to purchase for cash at issue price, new shares of the borrower, equivalent to 20% of the original loan amount, provided the company makes a public cash issue of shares during the life of PICIC's loan.

16. In the case of new enterprises with a paid-up capital of Rs. 5 million or more, PICIC obtains convertible debentures, embodying the option to convert at par, 20% of the original loan amount into new shares of the company for as long as the debentures are outstanding.

17. Loan Operations. Table 4 gives a summary of PICIC's loan operations during 1965. Up to December 31, 1965, PICIC had sanctioned loans in local and foreign currencies, with an aggregate value of Rs. 933 million, net of cancellations. Of this, 56 loans, sanctioned during 1965, totalled Rs. 202.1 million, which is about 10% lower than the Rs. 223.8 million sanctioned in 1964, but can be explained as a result of the Indo/Pakistan war during September, and the tight money policy prevalent during the first three quarters of the year.

18. Rupee and Foreign Exchange Loans. Rupee loans have traditionally been a minor part of PICIC's operations and, in fact, they total only Rs. 36 million since 1957, compared with Rs. 897 million in foreign exchange. The main reason for this is that PICIC's usually large clients can easily obtain their rupee requirements, if any, through renewable short-term credit from commercial banks or through the floating of shares, debentures or bonds on the local capital market.

19. What PICIC's clients need is foreign exchange. In fact, sometimes, they do not even need a loan in foreign exchange but simply the foreign exchange necessary to import equipment for their projects; the reason for their applying to PICIC is the general stringency of the foreign exchange situation in Pakistan, and the resulting very high premium (about 160%) which has to be paid for cash foreign exchange through the purchase of bonus vouchers.

20. Distribution of Loans by Industry. From Table 4, it appears that the share of food products and processing (29.5%) and that of cotton textiles and jute products (25.4%) have receded substantially from last year's 41.8% and 34.8%, respectively, reflecting the stage of development of the Pakistani industry and the trend towards new, diversified fields of activity. Engineering was an active field in expansion with 16 sanctions totalling Rs. 19.12 million as against three and Rs. 2.6 million, respectively, for 1964. Paper, paper products and printing increased its share of the sanctions from 3.6% in 1964 to 9.1% this year.

21. With the new expanded fertilizer and petrochemical program and the role the private sector is called upon to play in their implementation, we would expect them to become increasingly important in PICIC's activity in the coming years while, with the present high cement capacity installed in the western part of the country, this sector might lose some of its importance in new sanctions.

22. Geographical Distribution. PICIC has traditionally been more active in West than in East Pakistan, and the balance has been deteriorating in recent years. During 1958-60, the loan distribution between West and East Pakistan was 65% and 35%, whereas, in 1965 it was 88.8% and 11.2%. This imbalance, which is in part explained by easier and abundant business opportunities in West Pakistan, may have been accentuated by raising PICIC's lending floor limits in 1963.

Table 4

PAKISTAN INDUSTRIAL CREDIT & INVESTMENT CORPORATION LIMITED

Comparative Picture of Loans Sanctions
(rupees million)

<u>Industrial Category</u>	<u>1964</u>			<u>1965</u>		
	<u>No.</u>	<u>Amount</u>	<u>%</u>	<u>No.</u>	<u>Amount</u>	<u>%</u>
Cotton textile & jute products	20	78.0	34.8	10	51.32	25.4
Food products & processing	11	93.5	41.8	9	59.60	29.5
Engineering	3	2.6	1.2	16	19.12	9.5
Chemicals and pharmaceuticals	1	1.3	0.6	4	4.50	2.2
Cement, ceramics & glass	3	19.9	8.9	5	25.76	12.7
Paper, paper products, printing	3	8.0	3.6	6	18.33	9.1
Inland water transport & shipping	-	15.3	6.8	1	17.53	8.7
Miscellaneous	3	5.2	2.3	5	5.98	2.9
Total	<u>44</u>	<u>223.8</u>	<u>100.0</u>	<u>56</u>	<u>202.14</u>	<u>100.0</u>
<u>Size of Loans</u>						
Below Rs. 500,000	1	0.7 ^{1/}	0.3	17	5.89	2.9
Rs. 500,000 to Rs. 1,000,000	4	3.4	1.5	9	5.63	2.8
Rs. 1,000,000 to Rs. 2,500,000	9	20.2	9.0	13	21.53	10.6
Above Rs. 2,500,000	30	199.5	89.2	17	169.09	83.7
Total	<u>44</u>	<u>223.8</u>	<u>100.0</u>	<u>56</u>	<u>202.14</u>	<u>100.0</u>
<u>Geographical Spread</u>						
Karachi	14	63.8	28.6	18	38.67	19.1
West Pakistan (exc. Karachi)	23	131.1	58.5	28	140.90	69.7
East Pakistan	7	28.9	12.9	10	22.57	11.2
Total	<u>44</u>	<u>223.8</u>	<u>100.0</u>	<u>56</u>	<u>202.14</u>	<u>100.0</u>
<u>Nature of Projects</u>						
New/expansion	22	175.7	78.5	29	181.14	89.6
Balancing and modernization	22	48.1	21.5	27	21.00	10.4
Total	<u>44</u>	<u>223.8</u>	<u>100.0</u>	<u>56</u>	<u>202.14</u>	<u>100.0</u>
<u>Type of Loan</u>						
Local currency	1	0.9	0.4	1	0.40	0.2
Foreign currency	43	222.9	99.6	55	201.74	99.8
Total	<u>44</u>	<u>223.8</u>	<u>100.0</u>	<u>56</u>	<u>202.14</u>	<u>100.0</u>

^{1/} The amount is larger than Rs. 500,000 because in addition to one loan below Rs. 500,000 sanctioned in 1964, some previous loans in this group were increased.

23. We must, however, add that PICIC, since early 1965 had indicated its definite desire to participate in a substantial manner in the financing of a large urea plant in East Pakistan which, until now, has not yet materialized, and that PICIC's Board is now considering the sanction of Rs. 95 million for five 250-loom and two 500-loom jute mills. The implementation of these investments will not only help equalize the share of each province, but will contribute to giving the necessary momentum to the development of the private sector in East Pakistan.

24. Underwriting. In general, there have been relatively few public capital issues, and underwriting of such issues has been on a modest scale. In 1964, the total number of public share issues was 34, aggregating Rs. 639 million, of which only Rs. 58 million for 12 issues was covered by underwriting agreements.

25. As of December 1965, the total amount of PICIC's underwriting operations stood at Rs. 50.58 million, out of which Rs. 24.22 million was for the Sui Northern Gas pipeline alone in 1964 and the remaining Rs. 26.36 million was spread over ten operations. In view of the recent creation of the Investment Corporation of Pakistan, whose primary function will be the underwriting of new share and debenture issues, we do not anticipate much growth for this sector of PICIC's operations.

26. Financial Results. Summarized income statements of PICIC for the past seven years are shown hereunder (in rupees million):

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>
Gross income	1.6	2.8	5.3	9.0	12.2	19.5	27.9
Financial expenses	-	0.1	1.3	2.7	4.9	8.7	13.4
Administrative expenses	<u>0.9</u>	<u>0.7</u>	<u>1.2</u>	<u>1.6</u>	<u>1.9</u>	<u>2.0</u>	<u>2.2</u>
Income before tax	0.7	2.0	2.8	4.7	5.4	8.8	12.3
Income tax	<u>0.3</u>	<u>0.7</u>	<u>0.8</u>	<u>1.4</u>	<u>2.1</u>	<u>4.2</u>	<u>5.1</u>
Net earnings	<u>0.4</u>	<u>1.3</u>	<u>2.0</u>	<u>3.3</u>	<u>3.3</u>	<u>4.6</u>	<u>7.2</u>
Net earnings as % of:							
Net worth (beg. of year)	2.0%	6.5%	9.4%	15.1%	9.7%	13.1%	15.2%
Average share capital	2.0%	6.6%	9.8%	12.6%	10.9%	13.1%	18.0%
Dividends paid:	-	3.8%	5.0%	6.0%	6.0%	7.0%	7.0%
Dividend payout ratio:	-	56.8%	51.0%	47.6%	55.0%	54.5%	38.9%

27. The average cost of funds to PICIC has been increasing over the years as a consequence of the fact that an increasing portion of the funds with which PICIC operates consists of borrowings at a comparatively high rate of interest, 5.5-6%. The change in the average lending rate, average cost of borrowed funds, and average spread on such funds is shown below:

	<u>1962</u>	<u>1963</u>	<u>1964</u>
Average lending rate	7.30%	7.40%	7.45%
Average cost of borrowed funds	<u>4.23%</u>	<u>4.67%</u>	<u>4.93%</u>
Average spread on borrowed funds	3.07%	2.73%	2.52%

The increase in the average lending rate is explained by the increasing dominance of lendings in foreign currency at 7-1/2% over lendings in local currency at 6-1/2%. The narrowing of the spread is bound to continue as the dominance of high-cost borrowings over low-cost borrowings increases, unless the lending rate can be raised. The average spread on borrowed funds is not particularly high but appears, nevertheless, to be fairly satisfactory because of the high ratio of borrowings to equity.

(B) Industrial Development Bank of Pakistan

28. The Industrial Development Bank of Pakistan (IDBP) came into existence through the reorganization of the Pakistan Industrial Finance Corporation (PIFCO) in July 1961.

29. PIFCO was created in February 1949 with a paid-up capital of Rs. 20 million, of which 51% was subscribed by the Central Government and 40% by institutional and individual investors. During its 12 years of existence, PIFCO extended financial assistance totalling Rs. 293 million, of which Rs. 146 million (excluding administered loans) in the last year, when foreign exchange was made available for its operations. Of the total, 56% went to the jute and cotton industries, and the rest was spread over 33 other industries, including shipping, cement and glass. Though it could provide loans in any amount, PIFCO mostly entered into operations involving loans above Rs. 1 million.

30. PIFCO's main limitations were the restriction of its assistance to existing enterprises, and thus its inability to promote new ventures and lend against prospective assets and, except in its last year, its lack of foreign exchange resources.

31. In 1959, a "Credit Enquiry Commission" was formed to recommend ways and means of implementing a more comprehensive credit system, adapted to the new needs of the national economy. Among other things, the Commission found a lack of institutional arrangements for financing medium-scale enterprises. It recommended that PIFCO be reorganized into an industrial financing company catering mainly to the needs of medium-scale industry. The upper lending limit of the new institution should be Rs. 1 million, and it should be allowed to lend against prospective assets and to grant short-term credits to industry. The Commission's report also recommended that foreign exchange resources be made available to the new company. The Commission criticized both PIFCO and PICIC for lending only to large-scale industries and for their reluctance to go below Rs. 1 million.

32. The Commission suggested that commercial banks could grant medium- and short-term credit to small-scale enterprises, if the Small Industries Corporations (SIC) would provide the technical appraisals of the projects to be financed and would meet half the losses that might arise from such loans. However, commercial banks at that time were not yet prepared to cater to the needs of small-scale enterprises as envisaged by the Commission, mostly for lack of sufficient funds and trained staff; accordingly, the charter of the new institution, which was to succeed PIFCO, covered the financing of both medium- and small-scale industry.

33. The Industrial Development Bank of Pakistan Ordinance was promulgated on July 29, 1961. IDBP inherited the assets and liabilities of PIFCO. Its share capital was put at Rs. 30 million, of which a minimum of 51% is held by the Government.

34. The fields of activity defined in the IDBP Ordinance include the following:

- a. Long- and medium-term loans to existing and new industries within a schedule covering a wide scope of industries including tourism, films, newspapers, etc.
- b. IDBP may also lend for working capital purposes, but the working capital component of any loan may not exceed 25% of the total amount.
- c. IDBP may guarantee loans with terms up to 20 years, and underwrite capital issues with a time limit, however, for holding securities acquired as a result of an underwriting. IDBP may also subscribe directly to the equity of approved industrial concerns.

35. The IDBP Ordinance provided a loan ceiling of Rs. 1 million to limited companies, and Rs. 0.5 million for loans to, or participations in, other enterprises. Mining, jute, cotton and inland transport were exempted from the limitation. After several successive changes, the ceiling is now set at Rs. 2.5 million with the foreign exchange loans not exceeding Rs. 1.5 million, which is also the lower limit of PICIC's operations.

36. IDBP and PICIC have been granted the right to sanction new industrial capacity within the limitations of the Industrial Investment Schedule without prior reference to the authorities.

37. Financial Resources. As at June 30, 1965, IDBP's total available rupee resources stood at Rs. 88.7 million and outstanding commitments at Rs. 129.5 million, while disbursements for the previous year were Rs. 47.3 million against Rs. 55.7 million sanctions.

38. IDBP's foreign exchange resources usually come from allocations of foreign credits negotiated by the Government. Foreign exchange credits

aggregating Rs. 161.3 million were made available to the bank during 1964/65, while loans sanctioned during this period amounted to Rs. 131 million approximately.

39. Terms of Loans. On rupee loans, IDBP charges interest of 7-8% according to the size of the loan, the larger ones paying higher rates than the smaller ones. These loans are usually given for a period of 7-10 years and can be prepaid. The foreign exchange loans pay a uniform interest of 7-1/2%, with the repayment ranging from 10-15 years, usually based on the terms IDBP is able to obtain on the original loan. The exchange risk, while borne by the client, can be covered by the payment of 1/4% premium.

40. In addition, borrowers pay a 1/4% Technical Examination fee, a 1/4% Legal Documentation fee, and a 1% Letter of Credit charge for foreign exchange loans. All these fees and charges must be deposited in cash with the loan request documentation.

41. Appraisal Procedure. The basis for the evaluation of any loan request consists of an extensive questionnaire, covering in detail the financial and technical aspects of the proposed venture, and the security to be pledged against the loan. On the basis of this, a regional office of the bank carries out a detailed and comprehensive appraisal of the project and an evaluation of its marketing aspects in order to prepare a project appraisal report. This report is then submitted by the Manager of the Projects Department to a regional Staff Loan Committee, consisting of the Deputy Managing Director, the Chief Manager, the Deputy Chief Manager in charge of end use, the Manager of the Projects Department, the Chief Engineer and a costing accountant and financial analyst.

42. After examination and approval, if the amount of the loan is within the limits of the regional office (Rs. 200,000), it is passed directly to the regional Technical Advisory Committee (TAC); if it is above these limits, it has to be submitted for preliminary approval to the head office, which would, if approved, return it to the regional TAC.

43. TAC is composed of: the Secretary of Commerce and Industries of the Province, the Director of the Investment Promotion Bureau, the Chief Manager of IDBP, and four or more members selected for their technical capacities. If favorable, TAC prepares a Memorandum to the Board of Directors which is sent to the Managing Director in the head office for clearance and submission to the Board for sanction, after which the application is returned to the regional office and the client advised.

44. This lengthy sequence of processes is exceedingly cumbersome and, obviously, time consuming. The average time lapse between receipt of the application and the sanctioning of a loan is about six months, and much more if a case is not cleared on its first passage through one of the committees for lack of information. As a result of the extensive documentation required by IDBP and its time consuming sanctioning procedures, applicants often become discouraged.

Table 5

INDUSTRIAL DEVELOPMENT BANK OF PAKISTAN

Distribution of Loans Sanctioned by
Industries and Area from 1-8-61 to 10-2-66

	East Pakistan		West Pakistan	
	Local	Foreign	Local	Foreign
	Currency Rs.	Currency Rs.	Currency Rs.	Currency Rs.
1. Cotton ginning	-	-	400,000	24,290,059
2. Jute baling	600,000	2,377,500	-	-
3. Chemicals	4,325,000	1,888,900	5,662,000	16,450,660
4. Electricals	1,375,000	1,879,025	1,060,900	7,371,360
5. Food products	18,678,000	8,867,034	27,486,509	13,474,498
6. Engineering	7,750,000	12,320,216	15,419,341	24,423,673
7. Milling	1,909,000	2,487,500	3,585,000	12,313,000
8. Non-metallic mineral products	9,260,000	7,423,150	6,918,000	10,509,000
9. Mining	-	-	1,026,000	-
10. Natural gas and motive power	480,000	-	50,500,000	245,000
11. Paper and stationery	3,945,000	3,224,000	2,624,000	6,760,000
12. Cotton textile and jute	31,085,000	300,238,662	30,785,000	127,540,301
13. Rubber products	722,000	1,550,000	380,000	441,000
14. Leather and leather products	2,113,000	-	2,500,000	2,183,000
15. Road transport	5,227,000	-	7,992,000	-
16. River transport	20,934,000	6,577,800	-	-
17. Sea transport	900,000	-	11,928,000	18,236,657
18. Wood products	3,656,000	1,593,382	1,320,000	2,285,000
19. Oil storage and distribution	-	5,735,000	2,500,000	8,545,000
20. Film studio and production	6,659,000	1,745,200	7,029,000	6,413,368
21. Hotels	5,500,000	2,983,200	3,855,000	-
22. Surgical goods	-	-	300,000	-
23. Printing and publishing	3,156,000	3,321,168	7,675,000	6,931,662
24. Small scale industries	3,243,737	3,549,680	4,610,604	22,801,354
25. Miscellaneous	2,749,000	4,547,500	2,345,000	13,766,629
	<u>134,266,737</u>	<u>372,308,917</u>	<u>197,901,354</u>	<u>324,981,471</u>

Table 6

INDUSTRIAL DEVELOPMENT BANK OF PAKISTAN

Distribution of Loans Sanctioned by Industries
and Area from August 1, 1961 to February 10, 1966

	<u>East Pakistan</u>		<u>West Pakistan</u>	
	<u>Rs</u>	<u>%</u>	<u>Rs</u>	<u>%</u>
1. Cotton ginning	-	-	24,690,059	4.7
2. Jute baling	2,977,500	0.6	-	-
3. Chemicals	6,213,900	1.2	22,112,660	4.2
4. Electricals	3,254,025	0.6	8,432,260	1.6
5. Food products	27,545,034	5.5	40,961,007	7.8
6. Engineering	20,070,216	4.0	39,843,014	7.6
7. Milling	4,396,500	0.9	15,898,000	3.0
8. Non-metallic mineral products	16,683,150	3.3	17,427,000	3.3
9. Mining	-	-	1,026,000	0.2
10. Natural gas and motive power	480,000	0.1	50,745,000	9.8
11. Paper and stationery	7,169,000	1.4	9,384,250	1.8
12. Textile cloth and jute	331,323,662	65.5	158,325,301	30.2
13. Rubber products	2,272,000	0.4	821,000	0.2
14. Leather and leather products	2,113,000	0.4	4,683,000	0.9
15. Road transport	5,227,000	1.0	7,992,000	1.5
16. River transport	27,511,800	5.4	-	-
17. Sea transport	900,000	0.1	30,164,657	5.8
18. Wood products	5,249,382	1.1	3,605,000	0.7
19. Oil storage and distribution	5,735,000	1.1	11,045,000	2.2
20. Film studio and production	8,404,200	1.6	13,442,368	2.6
21. Hotels	8,483,200	1.6	3,855,000	0.7
22. Surginca! goods	-	-	300,000	-
23. Printing and publishing	6,477,168	1.3	14,606,662	2.8
24. Small scale industries	6,793,417	1.4	27,411,958	5.3
25. Miscellaneous	7,296,500	1.5	16,111,629	3.1
	<u>506,575,654</u>	<u>100.0%</u>	<u>522,882,825</u>	<u>100.0%</u>

45. In spite of this comprehensive appraisal procedure, IDBP's repayment performance has not been satisfactory, with arrears often due to miscalculation of the grace period necessary for the enterprise to start repaying its loan, and of the working capital required to carry out the operation. These results point out the need of IDBP to streamline its procedures and improve the quality of its appraisals.

46. Loan Operations. A summary of IDBP's sanctions from August 1, 1961 to February 10, 1966 is given in Table 5. During this period, IDBP has sanctioned loans totalling Rs. 1,209 million of which East Pakistan received Rs. 506 million and West Pakistan Rs. 523 million. Within the East Pakistan program, joint financing of jute mills with the East Pakistan Industrial Development Corporation (EPIDC) took an important place. This program has, until now, covered the establishment of 18 jute mills of 250 looms each at a cost of approximately Rs. 18 million each, of which IDBP provides the foreign exchange component of Rs. 10 million, while the local currency is provided as follows: EPIDC 20%, the promoters 50%, and public subscription 30%. The importance of this program lies in its promotion of local entrepreneurship with small initial capital.

47. EPIDC undertakes the setting-up of the mill and assumes the management until a substantial part of IDBP's loan has been repaid, after which the mill is to be handed over to the promoters who, by then, should have gained enough experience in the operation to run the mill. It is hoped that EPIDC, being then a minority shareholder, will divest itself of its holdings to the private sector.

48. Size of Loans. Table 7 shows a detailed breakdown of the size of IDBP's loans for the period from August 1961 to February 1966. Over 59% went to 187 sanctions averaging Rs. 3.26 million each, while 256 loans from Rs. 0.5-1 million received 17.75% and 2,085 loans of under Rs. 0.5 million received 23%. Preference for relatively well-sized projects is not limited to West Pakistan. Out of IDBP's foreign exchange sanctions for 1964/65 in East Pakistan, which amounted to Rs. 58.22 million, six sanctions in the jute and rope field totalled Rs. 43.8 million or about 75%, leaving for medium and small loans in the eastern province less than Rs. 15 million. This concentration is, of course, partly explained by the jute mills program with EPIDC.

49. There is little doubt, however, that the better return and lower risk involved in large operations are diverting IDBP funds away from the financing of medium and small industries, the very purpose for which IDBP was created.

50. Loans to Small Industry. IDBP was created in 1961 for the purpose of financing medium and small industries and has, therefore, become the official disbursing agency of local currency credits and for foreign exchange loans to small industry. In view of the relative risk involved in the financing of small industries, it is split between IDBP and the regional SIC. IDBP assumes only 25% of the risk and has a prior charge on

Table 7

INDUSTRIAL DEVELOPMENT BANK OF PAKISTANBreak-up of Local Currency Loans from August 1, 1961 to February 10, 1966

	<u>East Pakistan</u>		<u>West Pakistan</u>		<u>All Pakistan</u>	
	<u>No. of cases</u>	<u>Amount in rupees</u>	<u>No. of cases</u>	<u>Amount in rupees</u>	<u>No. of cases</u>	<u>Amount in rupees</u>
1. Up to Rs. 500,000	550	53,194,037	478	48,108,513	1,028	101,302,550
2. Over Rs. 500,000 to Rs.1,000,000	79	50,780,700	37	29,315,841	116	80,096,541
3. Over Rs.1,000,000	16	30,292,000	25	120,477,000	41	150,769,000
	<u>645</u>	<u>134,266,737</u>	<u>540</u>	<u>197,901,354</u>	<u>1,185</u>	<u>332,168,091</u>

Break up of Foreign Currency Loans from August 1, 1961 to February 10, 1966

1. Up to Rs.500,000	278	38,134,884	779	97,536,009	1,057	135,670,893
2. Over Rs.500,000 to Rs.1,000,000	42	30,948,206	98	71,908,158	140	102,856,364
3. Over Rs.1,000,000	72	303,225,827	74	155,537,304	146	458,763,131
	<u>392</u>	<u>372,308,917</u>	<u>951</u>	<u>324,981,471</u>	<u>1,343</u>	<u>697,290,388</u>

Grand Total

	<u>No. of Cases</u>	<u>Amount in Rupees</u>	<u>% of Total</u>	<u>Average Size</u>
1. Up to Rs.500,000	2,085	236,973,443	23.00	113,656
2. Over Rs.500,000 to Rs.1,000,000	256	182,952,905	17.75	714,659
3. Over Rs.1,000,000	187	609,532,131	59.25	3,259,530
	<u>2,528</u>	<u>1,029,458,479</u>		

the borrower's security. With a usual debt/equity ratio of 50:50, the fixed assets mortgaged as security would cover 200% of the total amount of the loan; therefore IDBP practically stands no risk of loss on its share.

51. In spite of this, it has been relatively inactive and has shown little interest in the small industries financing; its sanctions for the period from 1961 to February 1966, amounted to Rs. 6.8 million or 1.4% of its total sanctions in East Pakistan, while in the West they were Rs. 27.4 million or 5.3%.

52. This is explained by the fact that IDBP uses the same complex appraisal and screening methods for large, medium and small industries, in spite of the small amounts involved and the different nature of the small-scale enterprise. In view of the fact that the Small Industries Corporations carry out a complete feasibility study on the projects it sponsors to IDBP, and of the adequacy of the security it receives as collateral for its loans, a small industries financing division, to be created within IDBP, which would use a more adapted and simplified appraisal method and less time consuming screening procedures, could be instrumental in helping small industries in obtaining a better share in IDBP's loan operations.

53. Together with this, it is suggested that because of the present difficulties in the organization and the insufficient technical staff of IDBP, its lower lending limit should be set at Rs. 100,000, allowing it to develop its operations without further deteriorating their quality. Smaller loans would be handled by the Small Industries Corporations themselves or possibly with the assistance of commercial banks.

54. Geographical Distribution of Loans. The geographical distribution of sanctions given in Table 5, covering the period from August 1961 to February 10, 1966, shows that West Pakistan received about 51% of the total sanctions, 59.5% of the local exchange and 46.5% of the foreign exchange. The larger foreign exchange share of East Pakistan is partly attributable to the high foreign exchange expenditures involved in jute mills lately.

55. Distribution of Loans by Industry. As shown in Table 5, cotton textile and jute were IDBP's largest field of activity with 65.5% of the sanctions in East Pakistan and 30.2% in the West. By comparison, the contribution to the industrial sector of the GNP of the jute industry comes to approximately 15%, while that of cotton textile is approximately 29%.

56. Food products come in second place with 5.5% of the sanctions in the East and 7.8% in the West, while engineering comes next with 4% and 7.6%, respectively, for each wing of the country. The remaining 22 groups of industries received 25% in East Pakistan and 45.6% in West Pakistan. The better over-all distribution of sanctions in West Pakistan is, of course, due to the more diversified industrial activity in this province.

57. Repayment Performance. As of March 1966, IDBP's list of cases in which deferrals have been allowed, included 48 accounts with instalments due ranging from Rs. 300,000 in the largest case to Rs. 1,000 in the smallest. In addition to this, 77 loans, aggregating Rs. 8.5 million made for cotton ginning factories, have defaulted in payments, mostly because of the too short grace period allowed on the loans. Although not, so far, formally approved, in a substantial number of cases, deferrals may have to be allowed ultimately. Inclusive of such cases, deferrals could work out to about 8% of the portfolio.

58. A substantial number of deferrals is due to the inadequate grace period allowed to the entrepreneur, this, in turn, is due to the fact that, to some extent, IDBP bases the repayment of its loans on the maturities it will have to meet rather than on a realistic cash generation plan of the enterprise sanctioned; in addition to this, it would seem that IDBP definitely would need to improve the quality of its appraisals.

59. Financial Results. Summarized income statements of IDBP for the past four years are shown hereunder (in rupees '000):

	<u>1961/62</u>	<u>1962/63</u>	<u>1963/64</u>	<u>1964/65</u>
Gross income	6,273	9,709	13,263	18,181
Financial expenses	1,197	2,367	3,156	4,575
Administrative expenses	<u>1,343</u>	<u>2,260</u>	<u>3,722</u>	<u>5,629</u>
Income before tax	3,733	5,082	6,385	7,967
Provision for taxation	<u>1,680</u>	<u>2,225</u>	<u>2,750</u>	<u>3,539</u>
Net earnings	<u>2,053</u>	<u>2,857</u>	<u>3,635</u>	<u>4,428</u>
Dividend paid on share capital	3%	4.5%	4.5%	4.5%
Dividend payout ratio	43%	47%	37%	30%

60. While IDBP earnings have been constantly increasing, its dividend has been stable at 4.5% of the share capital, indicating an effort to improve the reserves position of the institution.

61. Though most of IDBP's loans are given against valid collaterals, IDBP's equity capital of Rs. 30 million and its total reserves of Rs. 13.2 million have become inadequate when compared to the size of its outstanding indebtedness, amounting to Rs. 798 million, giving the debt/equity ratio of 18.5:1 which, considering the present deficiencies in this organization, appears too high.

(C) Investment Corporation of Pakistan

62. In view of the need for larger long-term industrial investments required to meet the country's development program targets, it has become necessary to channel more private savings to the market for new capital issues. However, since the vast majority of the shares quoted on the national exchanges are closely held by a few large groups able to manipulate prices easily in a thin market, it was felt that to gain the confidence of the medium-class investors and direct their savings to the capital market from which they have been notably absent in the past, it had become necessary to create a new investment medium that would enlarge and stabilize the stock market operations in Pakistan.

63. The Investment Corporation of Pakistan (ICP) Ordinance was promulgated in February this year. ICP shall have an authorized capital of Rs. 200 million of which Rs. 50 million fully paid up; in addition to which it is expected that the Government shall provide long-term loans to assist the corporation in fully playing its role as a financing institution, until it can itself mobilize enough resources. A consortium of local private banks will make a major contribution to the financing of ICP's equity capital, and share the management of the corporation with the Government.

64. The ICP Ordinance gave it a very large scope of activities to carry out its program, that can be summarized as follows:

1. underwriting, managing, floating and distributing securities issues;
2. opening, maintaining and managing investors' deposits accounts;
3. engaging in securities brokerage; and
4. helping broadening the base of investments and promoting industrial development in Pakistan.

65. It is believed that until ICP acquires sufficient experience and competent staff in the different fields covered by its ordinance, it will concentrate mostly on the underwriting of new issues, a line already familiar in Pakistan.

66. The creation of ICP and its concentration on providing local currency will largely help financing medium enterprises, previously barred from floating new issues on the capital market because of the handicap of their size. ICP also is a welcome complement to the operations of the already existing financing institutions. PICIC has been especially short of local funds and, accordingly, could not develop adequately its underwriting operations, and in certain cases, where it was unable to arrange for the rupee funds necessary, it has had to delay projects. By filling

an existing gap in the local currency institutional financing, ICP could not but help further accelerate the development of the private sector and the broader distribution of industrial ownership in Pakistan.

(D) West and East Pakistan Industrial Development Corporations

67. The public sector industrial financing program is carried out by the East Pakistan Industrial Development Corporation (EPIDC) and the West Pakistan Industrial Development Corporation (WPIDC) which have resulted from the bifurcation, in 1962, of the Pakistan Industrial Development Corporation (PIDC), after more powers were given to the Provinces under the new constitution to carry out their development programs.

68. PIDC was originally established primarily with the object of promoting industrial enterprises which the private sector was either unable or unwilling to undertake. The policy of PIDC was to supplement rather than to displace private enterprise; the corporation therefore often refrained from setting up industries, even within its charter, which were receiving adequate funds from private investors. The emphasis of the corporation was essentially on the promotion of new industries, and efforts are made to attract private capital to share in some of its projects. PIDC, where feasible, transferred completed projects to private ownership and management; lately, in a move to widen industrial ownership, the PIDCs have tried, as much as possible, to divest to medium and small investors or groups of investors, such as farmers grouped into a cooperative to buy up a sugar mill to which, in turn, they would supply cane grown on their land; or the primary school teachers of East Pakistan given the opportunity of buying a substantial share in a jute mill.

69. In order to ensure the balanced economic development of the country, the PIDCs have attempted to rectify excessive concentration of industry in a few large areas, such as Karachi, Lahore and Lyallpur in West Pakistan, and Dacca and Chittagong in East Pakistan. The corporations have sought to locate their factories all over the country, subject to the reasonable availability of raw materials, labor and communications.

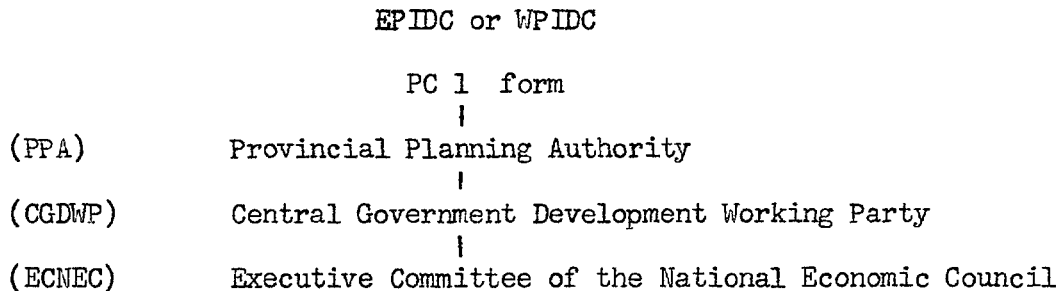
70. Whether private management is better than public management largely depends on the quality and capability of the people involved. It would, however, be true to say that while the PIDCs enjoy an advantage over private parties in financing and erecting factories, in line with the experience in other countries, private management with its own investment at stake has been more successful in reducing the costs of operations.

71. Financial Resources. Both PIDCs were set up with an authorized share capital of Rs. 10 million out of which only Rs. 4.5 million was issued and subscribed in full by the Government. The PIDCs, being government-sponsored organizations, receive most of the local currency for their projects from the Government's resources, and the foreign exchange requirements are also secured through the Government either under cash allocations or credits made available by foreign countries.

72. In East Pakistan, the funds the Government makes available are invested for its own account through EPIDC while in West Pakistan, WPIDC, since last year, receives only loans from the Government, for which it presently pays a 2% interest charge and is therefore allowed to keep all the income it receives from its operations. The introduction of this profit motive is expected to be an incentive towards improving the operations of the corporation.

73. Disbursement Procedures. In order to carry out surveys and feasibility studies, both WPIDC and EPIDC have revolving funds put at their disposal for this purpose. However, when the cost to be incurred in any single one of these operations is estimated to be over Rs. 100,000, a special permission has to be obtained from the Government.

74. To obtain the funds necessary to implement their projects, the PIDCs formulate their requirements on a "PC 1" form, which consists of a feasibility and viability study. This form is processed in the following manner, shown here schematically:



75. In the case of heavy industry, the PC 1 form is sent to the Heavy Industries Board, which passes it on to ECNEC directly. ECNEC is the highest authority for the sanctioning of projects within the Five-Year Plan.

West Pakistan Industrial Development Corporation (WPIDC)

76. Allocation of Funds. A total allocation of Rs. 588 million was made in the Second Five-Year Plan for the former PIDC's program in West Pakistan, which included Rs. 430 million in the large industries sector, and Rs. 158 million in the fuels and mineral sector, out of which Rs. 88 million was subsequently transferred to the private sector. Net of transfers to the private sector, the final WPIDC allocation works out as follows (in rupees million):

Industries Sector

Total industry		431.08
Transferred to private sector:		
Karachi Steel Mill	112.18	
Acetylene plant	30.00	
Steel re-rolling	<u>10.35</u>	<u>152.53</u>
WPIDC net industry allocation		278.55

Minerals Sector

Coal and salt mines		<u>71.27</u>
WPIDC net total allocation for the Second Five-Year Plan		<u>349.82</u>

77. Out of the net industry allocation, Rs. 186 million was for fertilizer, Rs. 32 million for shipbuilding and repair, Rs. 23 million for cement, Rs. 10 million for a coal tar distillation plant, and the remainder for foundries, engineering, and timber.

78. Utilization of Allocations. As against net Second Plan provision of Rs. 349.82 million, WPIDC utilized funds to the extent of Rs. 223.66 million for "within plan" schemes and Rs. 59.79 million for "outside plan" schemes. The outside plan schemes have been on a limited scale, because most of them were taken up late during the Plan, and their approval and allocation of funds by the Government took some time to materialize in view of the tight foreign exchange position of the country. Moreover, the buoyancy of the private sector in West Pakistan had a restrictive effect on WPIDC's operations. Table 8 shows physical production achieved during the Second Plan or that would be achieved during the early years of the Third Five-Year Plan, while Table 8 gives a detailed breakdown of the capital cost of projects under way by the end of 1965.

79. Operations. By the end of 1965, WPIDC's portfolio of investments in completed projects amounted to Rs. 674 million divided as follows:

1. 10 investments totalling Rs. 507.51 million entirely held by WPIDC, plus 4 preparatory surveys costing Rs. 14.81 million, that could lead to the creation of new projects; and
2. 15 investments - including the Sui Northern Gas Pipelines - jointly owned by the private sector (Rs. 159 million) and WPIDC (Rs. 152 million).

Table 8

WEST PAKISTAN INDUSTRIAL DEVELOPMENT CORPORATION

Physical Production Achieved by June 1965, or that
Will be Achieved During Earlier Years of Third Plan

<u>Name of commodity</u>	<u>Unit</u>	<u>Annual capacity by June 1965</u>	<u>New capacity by June 1967</u>
1. FERTILIZERS:			
a. Ammonium nitrate	tons	103,000	-
b. Urea	"	59,200	-
c. Ammonium sulphate	"	-	50,000
d. Superphosphate	"	-	36,000
2. CEMENT:			
a. Portland cement	"	120,000 ^{1/}	600,000 ^{2/}
b. White cement	"	-	15,000
3. COAL ^{3/}	"	1,125/day	1,075/day
4. CARPET	'000 sq.yds.	158	-
5. TIMBER PRESERVATION & SEASONING:			
a. Timber preservation and treatment	'000 c.f.t.	-	100
b. Timber seasoning	"	-	40
c. Transmission poles	no.	-	10,000
6. JUTE	tons	-	17,000
7. SUGAR	"	30,000/36,000	-
8. FIRE BRICKS	"	-	10,000
9. TABLE SALT	"	-	1,200
10. SHIPBUILDING	DWT	-	10,000/12,000
11. MACHINE TOOLS	million Rs.	-	40/45
12. CREOSOTE OIL	tons	-	750
13. ROAD TAR	"	-	500
14. PENCIL SLAT	no.	-	142,000

^{1/} 4th kiln at Zeal-Pak

^{2/} 5th and 6th kilns at Zeal-Pak

^{3/} Makerwal, Sor-range, Sharigh, Degari Mines

Breakdown by Industry of Investments in
Completed Projects as at December 31, 1965

	<u>No. of Projects</u>	<u>Amount Rs. million</u>	<u>% of total</u>
Chemicals and pharmaceuticals	7	345.63	51.3
Engineering	1	78.69	11.7
Mining and coal	2	20.28	3.0
Gas and gas transmission and distribution	4	116.90	17.3
Textiles and ginning	5	12.52	1.8
Cement	2	53.00	7.9
Sugar	4	32.42	4.8
Surveys and prospecting	<u>4</u>	<u>14.81</u>	<u>2.2</u>
	29	674.25	100.0%

80. The above breakdown by sector of WPIDC's holdings shows that 51.3% are in chemicals, fertilizers and pharmaceuticals; gas and gas transmission and distribution came in second place with 17.3%; engineering 11.7%; and cement 7.9%. However, these percentages will be extensively altered if and when WPIDC's projects under way will come into existence (Table 9). Investments in coal will amount to Rs. 92 million, fertilizer and chemicals Rs. 57.5 million, plus a new ammonium sulphate nitrate plant at Daudkhel with an annual capacity of 600,000 tons. Heavy engineering will receive the largest boost with Rs. 2,043 million, of which Rs. 1,499 million for the 500,000 tons Kalabagh steel mill; Rs. 111 million will go to cement and refractories and Rs. 31.4 million for a 17,000 tons jute mill at Jaranwala.

81. Dis-investments. Before the bifurcation of PIDC into two provincial units, the application of the dis-investment policy had already started, and PIDC sold holdings, amounting to Rs. 60.5 million, located in both wings of the country.

82. Since its creation in July 1962 WPIDC, in turn, continued this policy and has been able to sell a substantial part of its investments to private promoters, in certain cases even before production operations began. (Table 10 shows WPIDC's dis-investments from July 1962 to February 1966.) An acceleration of the dis-investments policy, whenever possible, should be applied to help finance the large requirements of new funds necessary to carry out WPIDC's role in the Third Plan.

83. Small Industry. On August 5, 1962, the West Pakistan Small Industries Corporation was absorbed by WPIDC, and it became its Small Industries Division (SID).

84. Since little had been done for small industry until then, SID concentrated mainly on the development and the establishment of the infra-

Table 9

WEST PAKISTAN INDUSTRIAL DEVELOPMENT CORPORATION

Capital Cost and Annual Capacity of Projects
Under-way as at December 31, 1965
(in Rs. million)

<u>Name of Project</u>	<u>Commodity</u>	<u>Annual Capacity</u>	<u>Capital Cost</u>
<u>I. COAL</u>			
1. Development Central Block Sor Range	Coal	1,000 tons/day	26.10
2. Development of Degari Mines, Degari	Coal	1,000 tons/day	38.10
3. Development of Sharigh Mines, Sharigh	Coal	450 tons/day	27.59
<u>II. FERTILIZERS & CHEMICALS</u>			
4. Expansion of Lyallpur Chemicals and Fertilizers Ltd., Lyallpur	Phosphate	36,000 tons	8.97
5. Expansion of Pak American Fertilizer Ltd., Daudkhel	A. sulphate	50,000 tons	35.00
6. Potash Fertilizer Factory, Dhariala	Potash fertilizer	17,500 tons	1.52
7. Coal Tar Distillation Plant, Daudkhel	Crabbote Oil	750 tons	2.50
	Road/tar/pitch	500 tons	
8. Expansion of Antibiotics (Private) Ltd. Daudkhel	Penicillin	10 million mega units	9.56
<u>III. HEAVY ENGINEERING</u>			
9. Pakistan Machine Tools, Landhi	Small to medium-size machine tools	Annual turnover of Rs. 45 million	116.20
10. Heavy Mechanical Complex	Heavy machinery equipment	Annual turnover of Rs. 45 million	281.00
11. Heavy Electrical Complex	Transformers switch-gear capacitors, motors & generators and control gear	Annual turnover of Rs. 45 million	143.87
12. Karachi Shipyard & Engineering Works Ltd. (Part I, Phase II)	i) Ship repairs ii) Shipbuilding iii) General steel construction iv) Diesel engine construction v) Foundry works	All kinds of running repairs of ships including underwater repairs Ships up to 10,000 tdw 6,000 tons/year if no shipbuilding work is in hand 20-30 engines/year of 112-204 HP Cast iron 20 tons/day, steel 10 tons/day non-ferrous 2 tons/day	3.20
13. Kalabagh Steel Mill, Kalabagh	Steel	500,000 tons	1,499.10
<u>IV. CEMENT AND REFRACTORY</u>			
14. Expansion of Zeal Pak Cement Factory Ltd. (5th and 6th kilns)	Cement	600,000 tons	98.70
15. White Cement Plant, Daudkhel	White cement	15,000 tons	7.10
16. General Refractories Ltd., Landhi	Fire bricks	10,000 tons	5.44
<u>V. JUTE</u>			
17. Crescent Jute Products Ltd., Jaranwala	Jute goods	17,000 tons	31.40
<u>VI. FOREST INDUSTRIES</u>			
18. Timber and Preservation & Treatment Plant, Havelian	Treated sawn timber Treated poles	100,000 cu.ft. 10,000 no.	1.35
19. Timber Seasoning Plant, Piranwala	Sawn timber	40,000 cu.ft.	0.45
<u>VII. SALT</u>			
20. Table Salt Mfg. Plant Warcha	Table salt	1,200 tons	1.24
21. Development of Rock Salt Mines and Quarries	Rock salt	The output will be increased after modernization	1.27
22. Installation of Mechanical Haulage at Kalabagh		The mule haulage will be replaced by mechanical haulage.	0.25

Table 10

STATEMENT SHOWING DIS-INVESTMENT OF THE WPIDC SHAREHOLDINGS TO PRIVATE PARTIES DURING THE PERIOD JULY 1962 TO FEBRUARY 1966

Name of Project	Date of Dis-investment	Description	Face Value of WPIDC investment	Sale price received	Details of Dis-investment																				
1. Sethi Straw Board Mills Ltd., Rahwali	7- 6-62	7,322 shares of Rs. 100 each	732,200	*	* PIDC holding of 52,287 shares was sold to M/s. Sethi Bros. Ltd. in 1961 but the delivery of the shares was given in instalments as under:- <table border="0"> <tr> <td>1.</td> <td>4-21-61</td> <td>-</td> <td>23,000 shares</td> </tr> <tr> <td>2.</td> <td>7- 6-61</td> <td>-</td> <td>7,322 "</td> </tr> <tr> <td>3.</td> <td>1- 6-62</td> <td>-</td> <td>7,322 "</td> </tr> <tr> <td>4.</td> <td>7- 6-62</td> <td>-</td> <td>7,322 "</td> </tr> <tr> <td>5.</td> <td>1- 6-63</td> <td>-</td> <td>7,321 "</td> </tr> </table> <p>Total: <u>52,287 shares</u></p> <p>Total premium amounting to Rs. 850,000 was paid by Sethi Bros. Ltd. An interest @ $4\frac{1}{2}\%$ on outstanding amount was also paid.</p>	1.	4-21-61	-	23,000 shares	2.	7- 6-61	-	7,322 "	3.	1- 6-62	-	7,322 "	4.	7- 6-62	-	7,322 "	5.	1- 6-63	-	7,321 "
	1.	4-21-61	-	23,000 shares																					
2.	7- 6-61	-	7,322 "																						
3.	1- 6-62	-	7,322 "																						
4.	7- 6-62	-	7,322 "																						
5.	1- 6-63	-	7,321 "																						
2. Zeal-Pak Cement Factory Ltd., Hyderabad	9- 8-63	200,000 shares of Rs. 10 each	2,000,000	4,360,000	Sold @ Rs. 21.80 per share to the National Investment Trust Limited.																				
3. Adamjee Industries Ltd., Nowshera	1-31-64	250 redeemable 'A') Class debentures of) Rs. 5,000 each)	2,500,000	2,500,000	Interest @ $4\frac{1}{2}\%$ received on these debentures for 6 years.																				
	2-29-64	- do -)																							
4. Bannu Woollen Mills Ltd., Bannu	8-28-64	500,000 ordinary shares of Rs. 10 each	5,000,000	6,000,000	Sold to Janana De Malucho Textile Mills Ltd., Kohat <table border="0"> <tr> <td>Total value</td> <td>-</td> <td>Rs. 6,000,000</td> </tr> <tr> <td>Down payment</td> <td>-</td> <td>1,500,000</td> </tr> </table> <p>Balance Rs. 4,500,000 would be paid in eight equal yearly instalments of Rs. 562,500 with interest @ 5% per annum on the outstanding amount.</p>	Total value	-	Rs. 6,000,000	Down payment	-	1,500,000														
Total value	-	Rs. 6,000,000																							
Down payment	-	1,500,000																							
5. Charsadda Sugar Mills Ltd., Charsadda	2-27-65	1,050	105,000*	121,800	* Premium @ 16/- per share.																				
6. Bawany Sugar Mills Ltd., Talhar	1964	-	-	-	WPIDC associated Ahmad Brothers Ltd., even before the establishment of the mill. A Promoters' Agreement was concluded between the Corporation and the said party on March 7, 1964 which provides for the formation of a public limited company with an issued capital of Rs. 10,000,000 to be subscribed as under: <table border="0"> <tr> <td>Ahmad Brothers Ltd.</td> <td>Rs. 4,000,000</td> </tr> <tr> <td>WPIDC</td> <td>1,000,000</td> </tr> <tr> <td>Public</td> <td><u>5,000,000</u></td> </tr> <tr> <td>Total:</td> <td>Rs. 10,000,000</td> </tr> </table>	Ahmad Brothers Ltd.	Rs. 4,000,000	WPIDC	1,000,000	Public	<u>5,000,000</u>	Total:	Rs. 10,000,000												
Ahmad Brothers Ltd.	Rs. 4,000,000																								
WPIDC	1,000,000																								
Public	<u>5,000,000</u>																								
Total:	Rs. 10,000,000																								
7. Crescent Jute Products Ltd., Jaranwala	1964	-	-	-	WPIDC associated Mohd Amin Mohd Bashir even before the establishment of the mill. A Promoters' Agreement was concluded between WPIDC and the said party on January 27, 1964 which provides for the formation of a public limited company with an issued capital of Rs. 12,000,000 to be subscribed as under: <table border="0"> <tr> <td>Mohd Amin Mohd Bashir</td> <td>Rs. 4,800,000</td> </tr> <tr> <td>WPIDC</td> <td>1,200,000</td> </tr> <tr> <td>Public</td> <td><u>6,000,000</u></td> </tr> <tr> <td>Total:</td> <td>Rs. 12,000,000</td> </tr> </table>	Mohd Amin Mohd Bashir	Rs. 4,800,000	WPIDC	1,200,000	Public	<u>6,000,000</u>	Total:	Rs. 12,000,000												
Mohd Amin Mohd Bashir	Rs. 4,800,000																								
WPIDC	1,200,000																								
Public	<u>6,000,000</u>																								
Total:	Rs. 12,000,000																								

structure necessary for the development of small industry, such as organized industrial estates, handicraft institutes, technical advisory centers, service and common facility centers, marketing and display centers, etc. In 1965, SID was separated from WPIDC and established as a separate West Pakistan Small Industry Corporation (WPSIC).

East Pakistan Industrial Development Corporation (EPIDC)

85. Allocation and Utilization of Funds. The Second Five-Year Plan provided an allocation of Rs. 652 million, including Rs. 18 million for fuels and minerals. As shown in Table 11, out of this original allocation, the Government approved outlays for Rs. 639.2 million, substantially altering the appropriations according to the priority given to each sector and project. EPIDC's total expenditure of Rs. 606.16 million during the Second Five-Year Plan shows a 95% utilization of funds, with expenditures during the last year more than quadruple those of the first year of the Plan, illustrating the striking expansion achieved, and the substantial increase in the absorptive capacity of the East Pakistan economy.

<u>Year</u>	<u>Expenditure</u> Rs. million	<u>% of Total</u>
1960/61	49.39	8.1
1961/62	70.47	11.6
1962/63	113.69	18.8
1963/64	167.02	27.6
1964/65	<u>205.59</u>	<u>33.9</u>
	<u>606.16</u>	<u>100.0</u>

86. Operations. Table 11 covers the breakdown by industry of EPIDC's disbursements, of which iron and steel received a major share of 30.5%, while chemicals and fertilizer were 27.6%, sugar 13.7%, and the jute industry in fourth position with only 12.6%. The distribution by industry has been strongly influenced by the implementation of the Chittagong Steel Works, Pakistan's first steel mill, with 150,000 tons (ingots) capacity, at a total cost estimated at Rs. 270.8 million. The construction and erection of the mill are proceeding on schedule and the project is expected to be completed by early 1967.

87. EPIDC has also engaged in launching 23 jute mills with 250 looms capacity each; a large number of these mills are set up in cooperation with the private sector. As noted earlier, IDBP has provided foreign exchange loans for 18 of them, jointly financed with EPIDC and private parties.

88. Additional capacity of 35,000 tons was installed in the sugar industry and 15,000 tons in newsprint, and a 10,000-ton hardboard factory was planned to start production this year.

Table 11

EAST PAKISTAN INDUSTRIAL DEVELOPMENT CORPORATION

Second and Third Five-Year Plans -
Total Allocations and Expenditures
(in rupees million)

<u>Name of Industry</u>	<u>Second Plan Allocation</u>	<u>Sanctions</u>	<u>Expenditure 1960-1965</u>	<u>Third Plan Allocation (tentative)</u>
Feasibility studies	-	-	-	10.00
Sugar	58.00	92.29	83.33	84.80
Paper and newsprint	50.00	66.06	57.98	288.74
Chemicals and fertilizer	244.40	175.90	167.61	325.73
Non-metallic (cement)	23.00	0.89	0.10	10.00
Shipbuilding and engineering works	25.30	19.50	15.01	135.73
Basic metal (iron and steel)	106.40	185.33	184.87	300.00
Manufacture of jute	115.00	76.03	76.09	35.00
Miscellaneous including cotton	11.90	16.25	15.64	
Fuel and minerals	<u>18.00</u>	<u>6.91</u>	<u>5.53</u>	<u>60.00</u>
	<u>652.00</u>	<u>639.18</u>	<u>606.16</u>	<u>1,250.00</u>

89. In the chemical field, the Fenchuganj urea fertilizer plant was completed during 1961. Progress was made in the implementation of a five-ton per day DDT factory at Chittagong. In the pharmaceutical field, where Rs. 34 million are to be invested in two units, anti-malarial drugs and other medicines will be produced by one, while the other, costing Rs. 26.4 million, will have a capacity of 20 tons per year of streptomycin, with completion scheduled for mid-1966.

90. EPIDC's tentative program for the Third Five-Year Plan, as detailed in Table 12, amounts to Rs. 2,250 million, including a carryover of Rs. 1,000 million to be spent: (a) on projects planned but not taken up during the Second Plan, and (b) on projects under completion. This would give average expenditures of Rs. 450 million per annum as against an average for the Second Plan of Rs. 121 million and disbursements of Rs. 205.6 million during 1964/65. The emphasis is again put on iron and steel, with Rs. 300 million allocated for the expansion of the Chittagong mill. Paper receives Rs. 288.7 million, mainly for a 150 tons per day pulp complex at Dahazari; the fertilizer allocation of Rs. 179.6 million may vary widely because of the interest of the private sector to participate in this field, and of the very large new fertilizer manufacturing program announced in February 1966. Jute receives the third smallest allocation with Rs. 35 million only, while on the cement side, if the Bagly Bazaar limestone deposits prove economically exploitable, the current expenditures might well top the Rs. 10 million allocated.

91. Dis-investments. EPIDC's present dis-investments policy is based on three principles. The first is to set an offering price for the shares by taking account of its market value, its net worth value, and a theoretical value based on accumulated interest of 6% minus dividends received, and choosing the highest of the three, if this appears feasible. The second principle is to give preference to East Pakistani "sons of the soil". This policy to spread local ownership of industry has discouraged West Pakistani investors from going to the East and, consequently, reduced EPIDC's dis-investment possibilities. The third principle is maximum participation of people of small means. This has not precluded the sale by EPIDC of some of its investments to large groups; however, emphasis is put on schemes allowing small investors to group together in cooperatives, mostly in the sugar and jute industries. Under this latter method, EPIDC retains the management for a specified period until a new private management team is trained to take over.

92. Accordingly, EPIDC's trend now is to associate, at the start of a project, with private entrepreneurs and, in the case of sugar and jute mills, EPIDC envisages that the equity capital shall represent the amount of the local currency expenditure, while the foreign exchange, which usually represents over 50% of the investment, shall be given as a loan to the mill by the Government or other financing institutions. The equity would then be shared as follows:

Associated (co-promoters)	50%
EPIDC	20%
Public	30%

Table 12

EAST PAKISTAN INDUSTRIAL DEVELOPMENT CORPORATION

Tentative Program for the Third Five-Year Plan
(in rupees million)

Iron and steel	300.00
Paper pulp and board	288.74
Fertilizer	179.60
Chemical and pharmaceutical	146.13
Heavy engineering and electrical equipment	135.73
Sugar	84.80
Gas and minerals	60.00
Jute	35.00
Cement	10.00
Feasibility studies	<u>10.00</u>
	1,250.00
Carryover from Second Five-Year Plan	<u>1,000.00</u>
Tentative Third Plan allocation	<u><u>2,250.00</u></u>

Table 13
EAST PAKISTAN INDUSTRIAL DEVELOPMENT CORPORATION

Government Income from Dis - investment up to February 28, 1966
(in rupees)

	<u>Date</u>	<u>Name</u>	<u>Amount</u>	<u>Amount due Feb.28/66</u>
I.	<u>DIS-INVESTMENT</u>			
a.	7.27.63	Karim Jute Mills Ltd.	795,000	-
b.	10.29.63	Chittagong Jute Mfg. Co. Ltd.	3,125,000	-
c.	8.15.64/ 3. 2.65	Rangpur Sugar Mills Ltd.	1,371,290	7,691
d.	8.15.64/ 3. 2.65	Thakurgaon Sugar Mills Ltd.	483,970	-
e.	8.15.64/ 3. 2.65	Zeal Pak Sugar Mills Ltd.	502,990	123,880
f.	1.27.65	United Jute Mills Ltd.	7,350,000	7,350,000
g.	1.21.65	Pak Jute Mills Ltd.	3,838,000	3,838,000
h.	6.29.65	Karnaphuli Paper Mills Ltd.	1,000,000	1,000,000
i.	-	Nishat Jute Mills Ltd.	800,000	800,000
j.	-	W. Rahman Jute Mills Ltd.	79,600	79,600
k.	-	Crescent Jute Mills Ltd.	<u>1,522,000</u>	<u>1,522,000</u>
			20,867,850	14,721,171
II.	<u>PREMIUM ON SALE OF SHARES</u>			
	7.27.63	Karim Jute Mills Ltd.	323,000	-
	10.29.63	Chittagong Jute Mfg. Co. Ltd.	1,562,000	-
	6.29.65	Karnaphuli Paper Mills Ltd.	980,000	980,000
	-	Crescent Jute Mills Ltd.	<u>1,076,920</u>	<u>1,076,920</u>
		TOTAL	<u>24,810,270</u>	<u>16,778,091</u>

93. The Government has set EPIDC's dis-investment target for the current financial year at Rs. 30 million out of which Rs. 13.76 million has already been concluded. When achieved, this target will represent about 15% of EPIDC's new investments during the same period. As shown in Table 13, EPIDC's dis-investments from July 1963 to February 1966, totalling Rs. 24.8 million, have not contributed much to the financing of EPIDC's new investments during 1963-65 totalling Rs. 372.6 million.

(E) West Pakistan and East Pakistan Small Industries Corporations
(WPSIC/EPISIC)

94. Introduction. The three successive Five-Year Plans of Pakistan have recognized the importance of small industry; however, so far the existing agencies have failed to provide the funds and incentives necessary to carry out the proposed programs.

95. Today, with the relatively high degree of industrial development attained and the relative concentration of ownership, a broadening of the industrial base becomes a desirable objective on socio-political grounds and as a means of promoting a greater degree of future competition. Furthermore, the rapid increase of population makes it an urgent matter to give more consideration to labor-intensive types of operations.

96. Hereunder is a table showing the average investment necessary to create a new job in different industries during the Second Plan:

	<u>Large Industry</u>		<u>Small Industry</u>	
<u>Low</u>	Footwear and apparel	Rs. 3,700	Footwear and apparel, rubber products, sericulture	Rs. 1,000
<u>High</u>	Petrochemicals	Rs. 40,000	Printing and publishing, basic metals, chemical products	Rs. 5,000
	National average all industry	Rs. 7,940	Small industry average	Rs. 2,500

97. Within its undoubted limitations and possibilities, small industry, if given enough financial support and incentives, could well make a significant contribution to a better use of Pakistan's large supply of manpower.

Table 14
EAST PAKISTAN SMALL INDUSTRIES CORPORATION

District-wise Concentration of Small Industrial Units, Number of Workers and
 Value of Fixed Assets and Production per Worker in East Pakistan - 1961

<u>Name of district</u>	<u>No. of units</u>	<u>No. of units per sq.mile</u>	<u>No. of workers in small industry</u>	<u>No. of workers/ 1,000 persons</u>	<u>Value of fixed assets per worker in rupees</u>	<u>Value of production per worker in rupees</u>
1. Chittagong	3,042	1.12	26,388	8.84	1,539.36	7,934.28
2. Chittagong Hill Tracts	118	.02	820	2.13	746.88	3,088.24
3. Comilla	873	.33	11,424	2.60	766.47	3,191.16
4. Noakhali	452	.24	3,642	1.52	1,590.97	8,665.59
5. Sylhet	1,005	.21	6,481	1.86	1,584.27	3,538.60
Chittagong Division	5,490	.32	48,755	3.57	1,354.75	6,204.26
6. Dacca	7,414	2.57	58,289	11.43	1,155.66	6,885.96
7. Faridpur	602	.22	5,125	1.61	1,246.13	2,709.77
8. Mymensingh	843	.13	8,511	1.21	2,229.52	8,831.66
Dacca Division	8,859	.74	71,925	4.70	1,289.18	6,818.61
9. Barisal	1,211	.28	9,525	2.23	1,470.45	4,255.41
10. Jessore	595	.23	3,416	1.10	1,943.72	4,438.32
11. Khulna	1,045	.22	10,445	4.26	1,488.43	5,833.54
12. Kushtia	450	.32	2,795	2.39	1,498.07	9,179.63
Khulna Division	3,301	.25	26,181	2.60	1,542.33	5,434.57
13. Bogra	372	.24	3,345	2.12	2,096.58	13,018.04
14. Dinajpur	371	.14	3,912	2.22	2,285.47	14,898.17
15. Pabna	1,222	.65	20,304	10.36	652.90	3,500.52
16. Rajshahi	808	.22	6,081	2.16	1,510.26	4,698.56
17. Rangpur	776	.20	5,916	1.55	2,500.75	18,301.04
Rajshahi Division	3,549	.26	39,562	3.33	1,344.56	7,830.22
East Pakistan	21,199	.38	186,423	3.66	1,353.63	6,678.23

West Pakistan Small Industries Corporation (WPSIC)

98. After a temporary merger with WPIDC, the West Pakistan Small Industries Corporation (WPSIC) was again established in September 1965 with its head office in Lahore. The new corporation is headed by a Board of Directors nominated by the Provincial Government. The corporation has inherited all the properties and liabilities of the former WPIDC Small Industries Division (SID).

99. Operations and Resources. During the Second Five-Year Plan, WPSIC's predecessors have been in charge of carrying out the ambitious development program of the small industry in the province.

100. The public sector expenditures were concentrated mainly on providing the infrastructure necessary to help implement the development program. The program included the building of nine industrial estates spread over the country, some of them to meet an obvious need, others as an incentive towards industrialization. These estates are at different stages of development, with only four of them almost completed. A number of centers were also established covering: service facilities, design, sales and display, common facilities, development-cum-training, and training-cum-production centers for carpets, wool, pottery, sericulture, stone and metal, leather tanning, wood working and other forest industries.

101. In December 1960, the Government issued a Small Industries Investment Schedule, visualizing investments of Rs. 91.95 million with a foreign exchange component of Rs. 58.7 million to be met mainly from the Government's own cash resources. The Government, in fact, provided from its own resources Rs. 6 million in foreign exchange and, in addition to this, foreign credits amounting to Rs. 35.25 million were provided by the U.K., Western Germany and IDA. Out of these foreign credits, only Rs. 15 million had been sanctioned and Rs. 5.73 million disbursed at the end of the Plan. On the local funds side, disbursements were Rs. 2.75 million. The main reason for this substantial shortfall was the inadequacy of the sanctioning and disbursement procedures.

102. To accelerate the development of small industries, it might be possible for WPSIC to reduce its dependence on IDBP and the Government by entering into new financing arrangements with local banks.

East Pakistan Small Industries Corporation (EPSIC)

103. EPSIC was established in May 1957 with the object of promoting development of small industries in the province, and was vested with the necessary powers to carry out the small industries program. EPSIC is an autonomous agency and was not absorbed by PIDC (as was the case with the Small Industries Corporation in West Pakistan). The corporation is managed by a Board of Directors, a Chairman and a Managing Director, all appointed by the Provincial Government.

104. EPSIC is an important instrument for the development of East Pakistan since small industry accounts for a large portion of the Province's total industrial production and employment.

105. In 1962/63, a survey was made in East Pakistan which revealed that there were already 21,199 small industries employing 186,423 workers, in addition to 312,341 cottage industries units. (Table 14)

106. EPSIC has a paid-up capital of Rs. 10 million, entirely subscribed by the Provincial Government. Originally, loans were made directly to small industry by EPSIC, until 1962 when IDBP was given the sanctioning and disbursement responsibilities. EPSIC's main sources of funds presently are the Government's allocations and IDBP for both rupees and foreign exchange, and it may also enter into financing agreements with any bank on a risk-sharing basis with the prior approval of the Provincial Government.

107. Operations. The total Second Five-Year Plan's Industrial Investment Program for East Pakistan was Rs. 398 million, out of which Rs. 273 million in the public sector and Rs. 125 million in the private sector; though no detailed figures are yet available, the small industries achievements did not live up to expectations due to many difficulties experienced, such as the lack of foreign exchange, the lack of local adequate credit facilities, and the difficulty of securing experienced technical personnel.

108. EPSIC undertook the ambitious program of setting up 19 industrial estates, out of which six are completed and have already housed a few factories, seven are at an advanced stage of execution, while the remaining six are still in the preliminary stage. Special facilities covering the silk industry and its technology, were established and common facility and service centers are being built, related to the following industries: textiles, hand looms, cane, bamboo, pottery, etc.

109. On the private sector side, the Plan envisaged investments of Rs. 125 million, however, due to the smallness of the amounts allocated by the Government and IDBP, EPSIC has been able to provide only Rs. 13.7 million in credits and associated financial services to 1,304 private parties in the province, of which only Rs. 3.65 million was in foreign exchange. Against these funds, investments by promoters are estimated at Rs. 16 million.

110. Presently, EPSIC reports holding in abeyance, for lack of loan funds, 1,800 applications involving investments of Rs. 130 million, half of which would be in foreign exchange. This illustrates the potential development of the small industry sector in East Pakistan if the necessary funds are made available.

111. EPSIC looks ahead to an expanded program during the Third Plan period. In fact, the Plan aims at achieving a new investment target of Rs. 500 million in the private sector; this means establishing 3,000 new enterprises and expanding and modernizing a major share of the existing

25,000 (approximately) small industries in the province, thus creating about 200,000 new employment. The Rs. 500 million is expected to be financed by Rs. 200 million from entrepreneurs and Rs. 300 million from credit institutions. In the public sector, EPSIC is to continue the development of infrastructure projects, such as technical management services, supply and marketing services, production facilities (prototype industries, common facility centers), training centers, information services, design centers, etc., together with carrying out the completion of the projects started during the Second Plan.

112. New Resources. In order to alleviate the chronic shortage of funds, EPSIC has taken steps that could render it, to a certain extent, less reliant on the Government and IDBP as exclusive sources of funds:

1. EPSIC obtained a loan of Rs. 10 million in the spring of 1965 out of AID PL480 rupee credits, expected to be released during the second half of this year. EPSIC hopes that AID will agree to release additional rupee funds and foreign exchange at the rate of Rs. 10 million and \$1 million per annum for the Third Plan period. The mechanics of loan disbursements and collection would be undertaken by private banks under EPSIC policy direction.
2. EPSIC is attempting to raise, through a consortium of five local banks, including IDBP, Rs. 50 million in the amount of Rs. 10 million from each bank, with IDBP providing the foreign exchange share. The funds would be managed by a Board grouping representatives of EPSIC and the participating banks. At the time of this mission, the outcome of the scheme was still undecided.

113. Advisory Services. In order to overcome the lack of trained technical personnel for counselling private industrialists and executing public sector projects, a Small Industry Advisory Service (SIAS) was started in 1965 by EPSIC with the help of advisors from the Stanford Research Institute, under a Ford Foundation grant. The aims of SIAS are to expand entrepreneurship and to help upgrade the management and technology of small industry in East Pakistan. SIAS will also provide training for EPSIC's personnel.

ANNEX V

BRIEF DESCRIPTION OF MAJOR PRODUCTION FACILITIES IN EQUIPMENT INDUSTRY

I. The Machinery and Equipment Industry

Public Sector

1. Dockyard and Engineering Works, Ltd. Narayanganj. This facility is controlled by E.P.I.D.C. and is designed mainly for repair of river vessels. It has a well-equipped machine shop, steel construction shop and also wood-working shop. Almost 800 persons are employed. Besides ship-building and ship repairs, it is able to perform all kinds of machinery repairs and manufacture pumps, lifts, cranes, vacuum pans for sugar mills, sugar-cane crushing machines and pressure vessels.
2. Khulna Shipyard was established by P.I.D.C. It started operation in 1957 and is now controlled by E.P.I.D.C. Besides ship-building and repair work it can produce various metal goods. It has a platter shop, a machine shop and a foundry. It employs around 950 persons.
3. Karachi Shipyard & Engineerings Works Ltd. was built by P.I.D.C. It started operation in 1957 and is the largest shipyard in Pakistan. The company is able to build ships of up to 10 to 12 thousand tons. The plant has a foundry and a galvanizing shop. The plant has been engaged in the production of transmission and distribution towers. It employs 4,272 persons. A major job in the field of hydraulic steel construction executed by the K.S. & E.W. was the fabrication of gates for Gudu Barrage on the River Indus in 1961.

Private Sector

4. Batala Engineering Co. Ltd. (BECO) in Lahore has a very diversified production line including steel re-rolling, manufacture of diesel-engines, machine tools, textile looms, pumps, agricultural implements, sugar mill equipment, electrical motors, bicycles, safes and cabinets, etc. and is the biggest private engineering works in Pakistan. The factory in Badamibagle, known previously as Mukand Iron and Steel Work, expanded in 1950 by the installation of Wagner Plant that was received as war reparations from Germany. With operation starting in 1963 at Ket Lakhp, sales of the company reached Rs. 67.3 million in 1964-65 and its total work force numbered 7 thousand, the output of re-rolling mills accounting for 60 per cent of the total sales. The license agreements between BECO and foreign firms are as follows:
 - a - Deep well turbines and pumps with Jacuzzi Broths. U.S.A.
 - b - Power looms with Iwama - Japan
 - c - Regulators, gates, hydraulic equipment with Terri - Italy
 - d - Bicycles with Gazelle - Holland
 - e - Diesel engines with M.W.M. - Germany
 - f - Electric motors with Newman - U.K.

5. K.S.B. Pumps was established 15 years ago as an affiliate of Batala. In 1959 the two companies separated. The company's two plants in Hasanabdal started to operate in 1965. The company has also a plant in East Pakistan. Total employees of the company number 300, of whom 170 persons are employed in the plant in West Pakistan and 80 in East Pakistan. Total investment in West Pakistan is about Rs. 4.5 million. The company produces centrifugal pumps, small turbines (6-7-8 inches) for tube wells, reflex valves, hand pumps, etc. The turnover of the plant in West Pakistan, in 1964-65, was Rs. 8.5 million. 74 per cent of the capital of the company belongs to foreign interests.
6. Ittefaq Foundry and Workshop Ltd. of Lahore which was established in 1940, is a very fast growing private enterprise in mechanical equipment field. It has a large foundry capacity and manufactures diesel engines, up to 200 hp, lathes, road-rollers, agricultural equipment and electric fans. It employs 1,200 people and has been operating at full capacity for a long time. Sales of the company amounted last year to Rs. 9.8 million. Total investment in the plant is estimated at Rs. 15 million. The company has expanded by ploughing back its profits.
7. Karimi Industries in Nowshera is another growing concern in the field of steel castings, forging, steel structural work and galvanized transmission line towers. Since its establishment in 1959 it has reached a sale of Rs. 7.2 million in 1965 compared with sales of Rs. 1.0 million in 1961. It employs 360 people working on a two-shift basis. It is one of the most important suppliers of quality steel.
8. Herman and Mohatta Ltd. Karachi are old established engineering works and were in existence before independence. They fabricate steel structures, passenger and goods lifts, tanks, vessels, parts for chemical plants, etc. Employees number 370.
9. Kohinoor Engineering Works, Kala Shah, Kaku has a steel fabricating shop for the production of pressure vessels. It is engaged presently in steel structural work required by the petrochemical and other plants of the same group.
10. Ispahani Marshalls Ltd., Chittagong has a workshop at Pahartali specialized in production of tea garden equipment, tea factory machinery, jute looms and road rollers.
11. Muhammadi Steel Rolling Mills, Chittagong has a steel foundry with an electric furnace of 5 tons capacity.

II. Electrical Machine and Equipment Industry

Private Sector

12. Siemens Pakistan Engineering Co. Ltd. - Karachi, has been producing distribution transformers of up to 1500 kva and motors of up to 25 hp in collaboration with S.S.W. and S & H Germany since 1963. Investment in fixed assets totals Rs. 8.5 million. 640 people were employed by the company in 1964-65 and they produced goods worth Rs. 9.2 million.

13. Johnson & Phillips (Pakistan) Ltd. - Karachi, was established in 1961 by Johnson & Phillips Co. Ltd. of London to manufacture switchgears as its chief product. The company employs 170 people (working one shift at present) and produces switchgears and circuit breakers of up to 11 kv. Total sales of the company in 1965 was Rs. 5.7 million and its investment is valued at Rs. 9.0 million.

14. Pak Elektron Ltd. - Lahore started operation first in 1956 in collaboration with AEG of Germany. Afterwards the company became completely owned by domestic interests. In 1965 the value of the sale of Pak Elektron reached Rs. 12.5 million and its labor force numbered 740 people. The company produces distribution transformers, up to 11 kv-1,500 kva; motors, up to 30 hp and switchboards, control boards for high and low tension and is now in the process of developing its own design capacity.

15. The Climax Engineering Co. Ltd. - Gujranwala which is a family enterprise was established in 1941, to produce tools, fans, etc. The company started on the basis of British licenses to produce motors in 1955 and transformers in 1956. At present The Climax Engineering has three major lines, namely distribution transformers, motors, electric fans, and is in the process of entering new fields such as air-compressors. Annual sales of the company are about Rs. 11 million and its employment one thousand.

16. Faizi Industries Ltd. - Gujranwala which is owned by the same family that controls Climax Eng. Co. Ltd. started operation in 1952 and reached a total sale of Rs. 4.3 million in 1964-65. The company produces L.T. and H.T. switchgears and fittings. It has a foundry that produces pumps and similar products. It employs 440 people and its investment is estimated to total Rs. 1.7 million.

Transport Equipment Industry

17. There are four companies in Pakistan which assemble commercial vehicles, (a) Ali Automobiles Ltd. assembles Ford products. Its annual capacity is 3 thousand but only one-third of this was used in 1963 and one-sixth in 1964; the allocation of foreign exchange being very limited in the latter year. (b) Ghandhara Industries Ltd. (GM products) has an annual capacity of 8 thousand units. In 1963-64 and 1964-65, 2,500 and 3,200 chassis were assembled respectively. Ghandhara Industries imported over two-thirds of their ckd units under the bonus voucher system and thus were not limited by foreign exchange allocations. For this reason this company is the only

firm that has maintained a relatively stable level of production. (c) Haroon Industries Ltd which formerly distributed Dodge products, has been engaged since 1962 in assembling them, its annual capacity being 5 thousand units. During the first two and one-half years of its operation, the plant assembled more than 1,800 trucks and bus chassis and 900 passenger cars. (d) Mack trucks of Pakistan Ltd. (Mack products), started operations in 1964. Its annual capacity is to reach 4 thousand units by 1969, also 53 per cent of its parts are to be locally manufactured by the same year. So far only 400 of the 670 licensed units have been assembled, and of the 400, only 205 have been sold. The table below gives comparative data on these companies.

	Share Capital	Investment (In million Rs.)	Sales	Net Profits	Profits Share Capital Per Cent	Employment Number
Ali	5.0	6.9	32	.7	15	502
Ghandhara	7.5	9.0	82	2.9	40	1,394
Haroon	8.7	10.6	52.8	2.4	28	440
Mack	19.2	4.9	4.0	probably negative	-	183
Total	40.4	31.4	170.8	6.01/		2,519

1/ Three firms.

18. There are five producers of scooters and triwheelers in Pakistan with capacity to produce 16,000 units a year. As of June 1965 there were 9 producers of bicycles and sanctioned production capacity is 300 thousand units a year compared with 25 thousand in 1958. BECO is the largest producer in the field.

19. In recent years imports of cycles into West Pakistan were banned and owing to foreign exchange shortages, total imports of cycles and parts shrank from Rs. 4.9 million, in 1961-62, to Rs. 2.2 million, in 1964-65.

20. According to the Industrial Investment Schedule, total investment in bicycles and bicycle parts during the Third Plan period will be Rs. 21 million which is about two-thirds of the existing capital assets of the industry. It seems in the context of capacity utilization of 32 per cent that fuller use of existing capacity should be the primary objective and that the execution of an ambitious expansion program should be avoided.

STATISTICAL APPENDIX

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Table 1

Gross National Product by Industrial Origin

(Factor Cost)

(Rs. million; 1959-60 prices)

<u>SECTOR</u>	<u>1949/50</u>	<u>1954/55</u>	<u>1959/60</u>	<u>1964/65</u>	<u>1969/70</u>
Agriculture	14,669	15,654	16,753	19,753	25,205
Manufacturing	1,433	2,220	2,930	4,671	7,525
Large Scale	(346)	(1,002)	(1,565)	(3,116)	(5,723)
Small Scale	(1,087)	(1,218)	(1,365)	(1,555)	(1,802)
All Other	8,364	10,034	11,756	16,255	23,017
	24,466	27,908	31,439	40,679	55,747

Table 2

Percentage Composition of GNP

(Value added by sector as a proportion of GNP, %)

<u>SECTOR</u>	<u>1949/50</u>	<u>1954/55</u>	<u>1959/60</u>	<u>1964/65</u>	<u>1969/70</u>
Agriculture	60.0	56.0	53.2	48.6	45.2
Manufacturing	5.8	8.0	9.3	11.5	13.5
Large Scale	(1.4)	(3.6)	(5.0)	(7.7)	(10.3)
Small Scale	(4.4)	(4.4)	(4.3)	(3.8)	(3.2)
All Other	34.2	36.0	37.4	40.0	41.3
	100.0	100.0	100.0	100.0	100.0

Table 3

Annual Compound Rate of Growth of GNP

SECTOR	1949/50 to 1954/55	1954/55 to 1959/60	1959/60 to 1964/65	1964/65 to 1969/70
Agriculture	1.3	1.4	3.4	5.0
Manufacturing	8.9	5.7	9.8	10.0
Large Scale	(23.7)	(9.3)	(14.8)	(13.2)
Small Scale	(2.3)	(2.2)	(2.6)	(3.0)
All Others	3.7	3.2	6.7	7.2
	2.7	2.4	5.3	6.5

Table 4

Industrial Growth (1959/60-1965/66)

	1959/60	The Second Five-Year Plan Period						Target Growth during Second Plan	Actual Growth during Second Plan	Target Growth during Third Plan
		1960/61	1961/62	1962/63	1963/64	1964/65 ^{2/}	1965/66 ^{3/}			
I. <u>Value added at factor cost (Rs. million) in 1959/60 prices</u>										
Large scale industry ^{1/}	1,565	1,767	2,083	2,344	2,670	3,116	3,427	+65%	+99%	+86%
Small scale industry	<u>1,365</u>	<u>1,402</u>	<u>1,439</u>	<u>1,477</u>	<u>1,515</u>	<u>1,555</u>	<u>1,596</u>	<u>+25%</u>	<u>+14%</u>	<u>+16%</u>
Total	2,930	3,199	3,522	3,821	4,185	4,671	5,023	+46%	+59%	+61%
II. <u>Growth Rates %</u>										
Large scale industry	-	12.9	17.9	12.5	13.9	16.7	10.0	10.5	14.8	13.2
Small scale industry	-	<u>2.7</u>	<u>2.6</u>	<u>2.6</u>	<u>2.6</u>	<u>2.6</u>	<u>2.6</u>	<u>4.6</u>	<u>2.6</u>	<u>3.0</u>
Total		9.2	10.1	8.5	9.5	11.6	7.5	7.9	9.8	10.0

^{1/} Estimates of large scale manufacturing have been recomputed on the basis of the New Index of Industrial Production and are not comparable with the previous series.

^{2/} Provisional.

^{3/} Tentative. These estimates have been prepared by the C.S.O., in consultation with the Planning Commission.

Source: Planning Commission

Table 5
Physical Targets and Actual Production for Principal Industries

Industry	Unit	2nd Plan Target	Actual Production in 1964/65	Achievement (4)/(3), %	3rd Plan Target 1969/70
(1)	(2)	(3)	(4)	(5)	(6)
Food Manufacturing:					
White Sugar	thousand tons	500	231	46% ^{1/}	640
Vegetable Ghee	"	50	95	190%	
Cigarettes	million	15,000	19,600	131%	30,000
Textiles:					
Cotton Yarn	million lb.	520	518	100%	720
Jute Goods	thousand tons	440	331	75%	920
Paper & Boards:					
Writing & Printing Paper	thousand tons	} 80	38.5	} 96%	100
Newsprint & Mechanical Paper	"		38.2		100
Boards (hard, particle, chip)	"		25		100%
Chemical Industries:					
Nitrogenous Fertilizers (in terms of ammonium sulphate)	thousand tons	550	469	85%	2,500
Phosphatic Fertilizers (in terms of triple superphosphate)	"	6.7	3	45%	550
Soda Ash	"	74	33.8	46%	172
Caustic Soda	"	35	10.2	29%	90
Sulphuric Acid	"	65	20.9	32%	600
Non-metallic Minerals:					
Cement	thousand tons	4,000	1,685	42%	6,000
Basic Metal:					
Steel	thousand ingot tons	350	0	0% ^{2/}	1,200

^{1/} 1964/65 was a poor year for cane. Production of sugar was 278 million tons or 56% of the Plan goal in 1963.

^{2/} It is expected that the steel mill at Chittagong with capacity of 100,000 tons will go into trial production in March, 1967. The other steel plant (at Karachi) envisioned in the Second Plan is under negotiation with the US Export-Import Bank.

Table 6

Profitability of Industry
(Based on accounts for 1963 of companies
quoted on the Karachi Stock Exchange)

(Rs. in millions)

Industry	Net Sales	Profitability in Relation to Sales			Provision for Tax	Net Profit	Net Worth	Net Profit as a % of Net Worth (6 as a % of 7)
		Profit before Tax	Profits before Taxes as a % of Net Sales (3 as % of 2)					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Textiles & Allied Products	615	87	14%	33	54	510	11%	
Jute Manufacture	388	63	16%	27	36	224	16%	
Cement	49	14	29%	5	9	77	12%	
Pharmaceutical & Chemical	70	13	19%	7	6	59	10%	
Engineering & Construction	228	16	7%	10	6	98	6%	
Fuel & Power	354	78	22%	32	46	397	12%	
Transport & Communication	276	16	6%	5	11	201	5%	
Sugar & Allied Products	92	22	24%	1	21	71	30%	
Miscellaneous	791	70	9%	39	31	416	7%	

Source: M. Baqai and K. Hag

Table 7
Index of Production by Major Industry Groups
All-Pakistan at Constant Prices
(1959-60=100)

Major Industry Group	Weight Sum=100	1960/ 1961	1961/ 1962	1962/ 1963	1963/ 1964	1964/ 1965
1. Food manufacturing industries, except beverage industries	8.5	107.5	147.7	195.0	147.4	192.5
2. Beverage industries	0.3	110.3	198.2	274.6	365.1	414.9
3. Tobacco manufactures	4.9	171.5	183.3	266.6	246.9	366.2
4. Manufacture of textiles	41.9	118.7	114.3	126.3	142.7	162.1
5. Manufacture of footwear, other wearing apparel and made-up textile goods	2.0	79.8	76.0	119.2	112.9	109.2
6. Manufacture of wood and cork, except manufacture of furniture	0.3	94.2	146.2	168.4	195.6	423.8
7. Manufacture of furniture and fixtures	0.2	129.8	132.6	140.0	223.8	394.3
8. Manufacture of paper and paper products	2.6	131.0	151.0	142.6	157.7	189.5
9. Printing, publishing and allied industries	2.4	113.7	159.9	161.1	169.2	182.3
10. Manufacture of leather and leather products, except footwear and other wearing apparel	0.9	102.9	115.5	137.6	171.9	197.2
11. Manufacture of rubber products, except rubber footwear	0.4	152.8	181.7	220.0	261.1	447.1
12. Manufacture of chemicals and chemi- cal products	8.7	104.6	103.0	124.6	142.3	184.5
13. Manufacture of products of petro- leum and coal	0.9	113.8	119.0	252.3	329.8	734.8
14. Manufacture of non-metallic mineral products, except products of petroleum and coal	5.0	129.5	151.2	164.9	177.7	182.6
15. Basic metal industries	2.5	144.4	168.9	143.1	212.4	252.9
16. Manufacture of metal products, except machinery and transport equipment	4.1	138.3	178.7	179.8	212.4	250.3
17. Machinery, except electrical machinery	2.1	138.0	180.1	161.8	216.5	224.1
18. Electrical machinery, apparatus, appliances and supplies	1.8	117.0	155.4	157.1	232.9	328.6
19. Manufacture of transport equipment	3.1	148.3	155.2	219.2	371.5	457.2
20. Miscellaneous manufacturing industries	7.4	113.4	141.8	160.5	175.4	189.6
Value Index		121.3	132.5	153.4	171.1	207.9
Yearly Rate of Increase		21.3	9.2	15.8	11.5	21.5

Source: Central Statistical Office.

Table 8
COMPARISON OF INVESTMENTS IN 2ND AND 3RD PLANS
(Millions of Rupees)

PRIVATE SECTOR

PUBLIC SECTOR

TOTAL

Group	2nd Plan Actual				3rd Plan				2nd Plan Actual				3rd Plan (Revised Allocation)				2nd Plan Actual				3rd Plan												
	Consumer Goods	Intermediate Goods	Investment Goods	Total	Consumer Goods	Intermediate Goods	Investment Goods	Total	Consumer Goods	Intermediate Goods	Investment Goods	Total	Consumer Goods	Intermediate Goods	Investment Goods	Total	Consumer Goods	Intermediate Goods	Investment Goods	Total	Consumer Goods	Intermediate Goods	Investment Goods	Total									
Food Manufacturing Except Beverage Industries SI No. 1-16 ^{1/2}	407			407	12%	590			590	7%	116			116	13%	221			221	7%	523			523	12%	811			811	7%			
Beverage Industries SI No. 17	20			20	1	10			10	-												20			20	-	10			10	-		
Tobacco Manufacturing SI No. 18-20	53			53	2	50			50	1												53			53	1	50			50	-		
Manufacture of Textiles SI No. 21-35	756	257		1013	29	1792	608		2400	30	77			77	9	52			52	2	756	334		1090	27	1792	660		2452	27			
Manufacture of Footwear & Other Wearing Apparel SI No. 36-38	19			19	1	50			50	1												19			19	-	50			50	-		
Manufacture of Wood, Cork, and Allied Products (except Furniture) SI No. 39-42				15	-	22			22	-				88		88	1					15			15	-	110			110	1		
Furniture and Fixtures SI No. 43-44						40			40	-																40			40	-			
Paper and Paper Products SI No. 45-49	264			264	8	150			150	2	58			58	6	434			434	13	322			322	8	584			584	5			
Printing, Publishing and Allied Industries SI No. 50	29			29	1	32			32	-				1		1	-					29			29	1	33			33	-		
Leather Goods (except footwear) SI No. 51-53	16			16	-	39			39	-												16			16	-	39			39	-		
Rubber Products (except footwear) SI No. 54-56		29		29	1	50			50	1												29			29	1	-	50			50	-	
Chemicals, including Fertilisers SI No. 57-76	61	379		440	13	62	386		448	5	339			339	37	926			926	28	61	718			779	18	62	1312			1374	13	
Products of Petroleum, Coal and Gas SI No. 77-80	122			122	4	200			200	2	18			18	2							140			140	3	-	200			200	2	
Petrochemicals SI No. 81-87	152			152	5	531			531	6				180		180	5					152			152	4	-	711			711	6	
Non-Metallic Minerals SI No. 88-99	9	212		221	7	27	632		659	8				289		289	9					9	212			221	5	27	921			948	8
Basic Metal Industries SI No. 100-106	33			33	1	1112			1112	14	185			185	21	394			394	1	218			218	5		1506			1506	14		
Metal Products Except Machinery & Transport Equipment SI No. 109-129	18	21	62	101	3	80	95	275	450	5	7			7	1	10			10	-	18	28	62	108	3	80	105	275	460	4			
Machinery except Electrical Machinery SI No. 130-140	4		67	71	2	20		340	360	4						390	390	12				4		67	71	2	20		730	750	4		
Electrical Machinery, Apparatus & Appliances SI No. 141-159	21	4	66	91	3	52	10	164	226	3				138	138	4						21	4	66	91	2	52	10	302	364	3		
Transport Equipment SI No. 160-164	3		68	71	2	17		352	369	4		19	19	2		140	140	4				3		68	71	2	17		492	509	4		
Miscellaneous SI No. 165-192	146	13	13	172	5	434	39	39	512	7	40	40	80	9	18	19	37	1				146	53	53	252	6	434	57	58	549	5		
TOTAL	1841	1222	276	3339		3467	3661	1170	8300		174	666	59	899		744	1869	687	3302		2015	1888	335	4238		4711	5512	1857	11,600				
Percentages	55	37	8	100%	42	44	14	100%	19	74	7	100%	23	56	21	100%	47	46	8	100%	36	48	16	100%	36	48	16	100%	100%				

Note: Where one group is divided between industry types, this division has been estimated by the Mission.
^{1/2} Numbers refer to classification in the Industrial Investment Schedule.
^{1/3} Does not include Rs. 628 million allocated for training, research and small industries' promotion.

Source: Planning Commission

Table 9

Proposed Expenditure on Industrial Development
During Third Plan Period^{1/}
 (July 1965 to June 1970)

(Millions of Rupees)

Industry Group	Public Sector			Private Sector			Total	%
	East Pakis- tan	West Pakis- tan	Total	East Pakis- tan	West Pakis- tan	Total		
Food manufacture	196	-	196	290	300	590	786	7.1
Beverages	-	-	-	5	5	10	10	0.1
Tobacco manufactures	-	-	-	25	25	50	50	0.6
Manufacture of textile	77	-	77	1,400	1,000	2,400	2,477	28.9
Footwear and apparels	-	-	-	28	22	50	50	0.6
Manufactures of wood and cork	120	1	121	10	12	22	143	0.3
Furniture and fixtures	-	-	-	15	25	40	40	0.5
Paper and paper products	484	-	484	50	100	150	634	1.8
Publishing and printing	-	13	13	16	16	32	45	0.4
Leather and leather goods	-	-	-	20	19	39	39	0.5
Rubber products	-	-	-	25	25	50	50	0.6
Chemical industries	680	342	1,022	205	243	448	1,470	5.4
Product of petroleum, coal and gas	-	-	-	80	120	200	200	2.4
Petrochemical industries	145	150	295	231	300	531	826	6.4
Non-metallic mineral products (cement)	169	152	321	250	409	659	980	7.9
Basic metal industries	279	155	434	162	950	1,112	1,546	13.4
Metal products industries	11	-	11	200	250	450	461	5.4
Machinery except electrical machinery	35	212	247	160	200	360	607	4.3
Electrical machinery, ap- paratuses and appliances	68	100	168	106	120	226	394	2.7
Transport equipment	306	25	331	250	119	369	700	4.5
Miscellaneous industries	25	17	42	272	240	512	554	6.2
Industrial estates	140	50	190	-	-	-	190	
Training	18	20	38	-	-	-	38	
Small industries promo- tional program	297	168	465	-	-	-	465	
Scientific and industrial research	50	75	125	-	-	-	125	
	3,100	1,480	4,580	3,800	4,500	8,300	12,880	100.0

^{1/} These are original Third Plan allocations. Revised allocations by industrial categories and provinces are not yet available.

Source: Planning Commission.

Table 10

Capital/Output Ratios^{1/}Deduced from 1960-61, 1961-62, 1962-63

	<u>Capital/Output Ratios</u>
Food Manufacturers	1.65
Beverages	1.50
Tobacco Manufacturing	1.08
Textiles	2.04
Textiles except Jute	1.68
Jute	0.66
Footwear and Garments	1.00
Wood, Cork and Allied Products	1.00
Furniture and Fixtures	1.65
Paper and Paper Products	2.04
Printing, Publishing and Allied Industries	1.05
Leather Goods (except Footwear)	1.36
Rubber Products (except Footwear)	1.89
Chemicals (including Fertilizers):	4.35
a. Fine Chemicals (drugs and cosmetics)	3.19
b. Heavy Chemicals (including fertilizers)	4.50
Products of Petroleum, Cork and Gas	2.51
Petrochemicals ^{2/}	3.88
Non-metallic Minerals	0.96
Basic Metal Industries	2.64
Metal Products (except Machinery and Transport Equipment)	1.89
Machinery (except Electrical Machinery)	2.67
Electrical Machinery and Apparatus	1.97
Transport Equipment	0.43
Miscellaneous: a. Consumer Goods	1.97
b. Intermediate Goods	0.43
c. Investment Goods	1.97

^{1/} Capital is total investment less working capital. Output is the total added value per year. A one and a half year time lag was assumed on average. The groupings in this table are based on the CSO classification of industries. Where the Plan subdivided these groupings further and ratios were available for the sub-groups a weighted average was used to obtain the ratio for the group as a whole.

^{2/} Estimated since no data were available to calculate the actual ratio.

Table 11

Comparison of Investment to Workers Employed
in Second and Third Plans

(Both on Same Basis of Rs/Worker)

Industry	Allocation			Allocation		
	Rs/Worker	Millions of Rs.	Workers in 1000's	Millions of Rs.	Workers in 1000's	
Food Manufacture	10,297	456	44.2	786	76.3	
Beverages	6,581	5	.8	10	1.5	
Tobacco	19,644	24	1.2	50	2.5	
Textiles	6,225	885	142.2	2,477	397.9	
Footwear & Apparels	3,716	12	3.2	50	13.5	
Manufacture of						
Wood and Cork	3,857	10	2.6	143	37.1	
Furniture & Fixtures	4,041	2	.5	40	9.9	
Paper and Paper						
Products	31,982	77	2.4	634	19.9	
Printing and						
Publishing	6,312	36	5.7	45	7.1	
Leather and						
Leather Goods	6,310	30	4.8	39	6.2	
Rubber Products	(say 6,000)	15	2.5	50	8.3	
Chemical Industries	13,627	667	48.9	1,470	107.9	
Production of Petroleum,						
Coal and Gas	(say 7,000)	-	-	200	28.6	
Petrochemical Industries "	40,000)	283	7.1	826	20.7	
Non-Metallic Minerals	12,965	334	25.8	980	61.7	
Basic Metal Industries	7,297	441	60.4	1,546	211.9	
Metal Products Industries	4,286	65	15.2	461	107.6	
Machinery (except						
electrical)	4,760	115	24.2	607	127.5	
Machinery - Electrical	7,974	75	9.4	394	49.4	
Transport Equipment	10,117	80	7.9	700	69.1	
Miscellaneous	9,628	113	11.7	554	57.5	
		3,725	420.7	12,062	1,422.1	
Average Investment Per Man		8,854		8,482		
TOTAL Investment						
above 10,000 Rs/Worker		1,921	52%	5,446	45%	
TOTAL Investment						
below 10,000 Rs/Worker		1,804	48%	6,616	55%	
		3,725	100%	12,062	100%	

Table 12

Jute Crop

	P.J.M.A.		Official Final Estimate			Pakistan Jute Association		Average PJMA, OFE and PJA Crop Th. Bales
	Trade Estimate	Garry- over Crop Th. Bales	Crop Th. Bales	Area Th. Acres	Bales per Acre	Area Th. Acres	Crop Th. Bales	
1948/49	300	6200	5479	1877	2.92	1900	5500	5727
1949/50	200	6500	3333	1561	2.14	1600	3300	4378
1950/51	1200	7000	6007	1711	3.51	1700	6000	6336
1951/52	500	7500	6331	1779	3.56	1800	6300	6710
1952/53	2000	8000	6823	1907	3.58	1900	6800	7208
1953/54	3500	4500	3610	965	3.74	1000	3600	3903
1954/55	1600	5300	4662	1243	3.75	1200	4700	4887
1955/56	400	6800	5592	1634	3.42	1600	5600	5997
1956/57	200	6500	5514	1230	4.48	1200	5500	5838
1957/58	500	6200	5701	1563	3.65	1600	5700	5867
1958/59	700	6300	6001	1528	3.93	1500	6000	6100
1959/60	1200	5400	5554	1375	4.00	1400	5600	5518
1960/61	200	4600	5625	1518	3.71	1500	4500	4908
1961/62	100	6900	6969	2061	3.38	2100	7000	6956
1962/63	1200	6300	5145	1723	2.99	1700	6600	6015
1963/64	1100	5900	5499	1700	3.23	1700	5900	5766
1964/65	700	5400	6550	1660	3.95	1700	5300	5750
Average	918	6194	5553	1590	3.49	1594	5524	5757

Table 13
Raw Jute
Acreage and Yields per Acre
 Official Final Estimate (O.F.E.)
 and Pakistan Jute Association (P.J.A.)

	Acreage (in 000 Acres)			Yield (Bales per acre)		
	O.F.E.	P.J.A.	Av:	O.F.E.	P.J.A.	Av.
1947-48	2059	2100	2080	2.32	3.24	3.28
1948-49	1877	1900	1888	2.92	2.90	2.91
1949-50	1561	1600	1580	2.14	2.06	2.10
1950-51	1711	1700	1705	3.51	3.53	2.52
1951-52	1779	1800	1790	3.56	3.50	3.53
1952-53	1907	1900	1904	3.58	3.58	3.58
1953-54	965	1000	982	3.74	3.60	3.67
1954-55	1243	1200	1222	3.75	3.92	3.83
1955-56	1634	1600	1617	3.42	3.50	3.46
1956-57	1230	1200	1215	4.48	4.58	4.53
1957-58	1563	1600	1582	3.65	3.56	3.60
1958-59	1528	1500	1514	3.93	4.00	3.97
1959-60	1375	1400	1387	4.00	4.00	4.00
1960-61	1518	1500	1509	3.70	3.00	3.35
1961-62	2061	2100	2080	3.38	3.33	3.36
1962-63	1723	1700	1712	2.99	3.88	3.48
1963-64	1700	1700	1700	3.23	3.47	3.35
1964-65	1660	1700	1680	3.95	3.12	3.54

Table 14

Average Price of Raw Jute
(1947/48 - 1962/63)

Season	Internal Price (Bottoms)	Export Price (Export Firsts)
	(Rupees per Maund)	
1947/48	24.25	45.41
1948/49	32.31	52.24
1949/50	20.87	51.75
1950/51	29.94	72.26
1951/52	28.37	76.17
1952/53	11.37	38.08
1953/54	22.00	44.92
1954/55	23.00	45.89
1955/56	28.25	41.01
1956/57	34.75	48.82
1957/58	31.50	48.34
1958/59	28.00	44.43
1959/60	33.75	50.29
1960/61	62.21	78.12
1961/62	42.48	55.17
1962/63	32.99	50.13

Source: The Pakistan Jute Association, Annual Report (1962/63).

Table 15
Raw Jute Export by Destination
(Tons)

	1950-51	1953-54	1956-57	1959-60	1962-63	1963-64
Europe:						
U.K.	698,544	731,845	740,987	753,860	797,287	737,120
Belgium	494,262	393,138	501,460	403,145	507,277	423,013
France	539,162	453,225	390,539	401,783	365,583	364,246
Italy	461,978	261,035	321,239	266,287	213,589	180,354
W. Germany	414,922	518,856	471,765	375,349	279,386	172,900
Greece	14,633	28,071	17,063	26,103	26,034	153,367
Portugal	55,653	16,277	33,375	66,497	97,664	122,700
Netherlands	100,486	65,706	86,670	74,477	83,428	95,600
Ireland	31,153	34,480	38,213	42,918	46,095	37,800
Austria	18,010	27,695	25,660	20,846	13,136	25,150
Sweden	41,938	32,368	32,160	26,308	31,699	14,246
Finland	84	1,519	2,054	3,269	1,565	1,243
	<u>2,870,825</u>	<u>2,564,215</u>	<u>2,661,185</u>	<u>2,460,842</u>	<u>2,462,743</u>	<u>2,327,739</u>
N. America:						
U.S.A.	706,070	300,940	309,329	307,662	252,542	358,760
Canada	21,487	16,260	4,986	58,549	30,074	54,040
	<u>727,557</u>	<u>317,200</u>	<u>314,315</u>	<u>366,211</u>	<u>282,616</u>	<u>412,800</u>
Asia:						
Japan	148,770	143,059	185,116	236,669	219,458	299,850
China	41,956	-	72,183	94,689	75,000	178,875
Burma	-	-	19,188	50,426	41,886	58,559
Philippines	6,373	23,013	39,937	62,050	19,964	47,292
Iran	-	-	-	-	-	27,552
	<u>197,099</u>	<u>166,072</u>	<u>316,424</u>	<u>443,834</u>	<u>356,308</u>	<u>612,128</u>
Union of S.A.						
Egypt	32,223	123,534	96,663	149,919	122,896	186,000
Malagasy Rep.	14,801	8,735	18,287	46,101	136,177	123,838
Port. W. Africa	-	-	-	-	-	46,782
British Afr. N.S.	-	-	7,317	16,730	26,936	30,634
	<u>47,024</u>	<u>132,269</u>	<u>122,267</u>	<u>212,750</u>	<u>286,009</u>	<u>410,858</u>
South America:						
Argentina	157,853	83,539	109,932	48,434	11,391	35,800
Mexico	-	1,680	300	4,557	2,628	185
W. Indies	-	2,250	5,592	8,993	31,662	11,760
	<u>157,853</u>	<u>87,469</u>	<u>115,824</u>	<u>61,984</u>	<u>45,681</u>	<u>47,745</u>
India	2,545,098	1,470,250	603,361	622,789	294,928	89,572
Australia	29,624	30,353	23,510	33,248	32,757	37,161
U.S.S.R.	40,046	82,620	50,370	125,140	98,168	370,944
Others	307,799	357,429	353,147	391,629	477,032	2,536
TOTAL	<u>6,922,925</u>	<u>5,207,877</u>	<u>4,560,394</u>	<u>4,718,407</u>	<u>4,336,242</u>	<u>4,311,483</u>

Table 16

Production of Jute Goods

	Average No. of Looms Working	Total Production in Tons	Production per Loom in Tons
1953	1,069	44,119	42.0
1954	2,350	53,250	22.7
1955	3,705	103,224	27.8
1956	4,656	142,364	30.6
1957	5,626	148,818	26.4
1958	6,603	172,075	26.1
1959	7,408	232,645	31.4
1960	7,840	264,674	33.7
1961	7,993	250,354	31.3
1962	8,460	286,394	33.8
1963	9,510	315,234	33.1
1964	9,571	280,490	29.3
1965 ^{1/}	11,223	365,101	32.5

^{1/} 10 months' basis

Table 17

Countrywise Comparative Export of Gunnies

(In Tons)

Sl. No. Countries	1 9 6 2--6 3				1 9 6 3--6 4			
	Hessian	Sacking	Others	Total	Hessian	Sacking	Others	Total
1. U.S.A.	31,565	9	906	32,480	24,617	-	7,745	32,362
2. E. Africa	1,593	17,347	8	18,948	2,053	16,087	59	18,199
3. W. Africa	141	18,567	14	18,722	540	29,149	10	29,699
4. Australia	647	32,562	137	33,346	2,169	46,265	139	48,573
5. Cuba	-	3,800	-	3,800	-	7,080	-	7,080
6. South Africa	15,160	22,599	124	37,883	14,548	16,902	509	31,959
7. Burma	115	11,087	325	11,527	197	14,908	-	15,105
8. Argentine	2,636	3	-	2,639	10,915	10	-	10,925
9. Peru	256	9,074	-	9,330	101	8,594	-	8,695
10. United Kingdom	5,014	3,480	92	8,586	5,486	3,125	66	8,677
11. Chile	-	4,608	-	4,608	-	5,624	-	5,624
12. Turkey	236	31	69	336	1,159	159	1	1,319
13. Canada	4,318	-	7	4,325	5,362	73	17	5,452
14. Brit. Guiana	-	30	-	30	15	504	-	519
15. Netherlands	366	3,714	-	4,080	320	3,037	6	3,363
16. W. Indies	-	3,193	-	3,193	56	2,284	-	2,340
17. Denmark	1,772	463	3	2,238	706	515	1	1,222
18. Iran	-	49	4	53	293	87	15	395
19. Uruguay	1,721	-	-	1,721	554	-	-	1,554
20. China	-	-	-	-	-	-	-	-
21. Eire	665	42	-	707	508	-	-	508
22. Ceylon	-	-	7	7	12	-	12	24
23. Nicaragua	28	1,409	2	1,439	149	998	-	1,147
24. Belgium	460	66	119	645	197	315	130	642
25. New Zealand	8	1,979	-	1,987	-	1,095	-	1,095
26. Singapore	24	103	380	507	-	3,610	564	4,174
27. Germany	110	848	18	976	268	819	26	1,113
28. Sudan	-	399	-	399	-	4,999	-	4,999
29. Indonesia	-	177	-	177	-	2,995	94	3,089
30. Other Countries	460	19,626	308	20,394	369	2,584	248	3,201
TOTAL:	67,295	155,265	2,523	225,083	71,594	171,818	9,642	253,054

Table 17 (Continued)

Countrywise Comparative Export of Gunnies

(In Tons)

Sl. No.	Countries	1964-65			1965-66 (6 months)			Total	
		Hessian Sacking	Others	Total	Hessian Sacking	Others	Total		
1.	U.S.A.	20,274	-	11,202	31,476	11,108	-	9,792	20,900
2.	E. Africa	3,871	22,848	46	26,765	7,271	14,146	134	21,551
3.	W. Africa	321	25,338	3	25,662	157	28,401	219	28,777
4.	Australia	2,008	23,416	81	25,505	880	20,436	82	21,398
5.	Cuba	-	22,691	-	22,691	226	18,456	-	18,682
6.	South Africa	-	-	-	-	-	-	-	-
7.	Burma	-	15,164	141	15,305	-	3,516	143	3,659
8.	Argentina	10,117	-	-	10,117	11,714	-	-	11,714
9.	Peru	29	8,106	-	8,135	16	1,987	-	2,003
10.	United Kingdom	4,554	436	212	5,202	5,286	1,669	117	7,072
11.	Chile	16	3,633	-	3,649	-	4,473	-	4,473
12.	Turkey	3,291	256	-	3,547	1,877	284	86	2,247
13.	Canada	2,613	-	31	2,644	1,407	-	-	1,407
14.	Brit. Guiana	-	2,247	-	2,247	-	1,787	-	1,787
15.	Netherlands	158	1,915	-	2,073	215	1,264	-	1,479
16.	W. Indies	-	1,789	-	1,789	-	846	-	846
17.	Denmark	655	527	-	1,182	-	-	-	-
18.	Iran	597	451	56	1,104	713	63	349	1,125
19.	Uruguay	1,093	-	-	1,093	584	-	-	584
20.	China	1,079	-	-	1,079	1,427	63	-	1,490
21.	Eire	922	-	-	922	-	-	-	-
22.	Ceylon	-	841	9	850	-	-	-	-
23.	Nicaragua	17	771	-	788	230	530	-	760
24.	Belgium	13	643	-	656	75	454	-	529
25.	New Zealand	17	507	-	524	-	672	77	749
26.	Singapore	-	12	292	304	-	-	-	-
27.	Germany	31	123	-	154	-	-	-	-
28.	Sudan	-	62	-	62	-	1,776	-	1,776
29.	Indonesia	-	-	-	-	126	1,596	263	1,985
30.	Hongkong	-	-	-	-	31	790	251	1,072
31.	Italy	-	-	-	-	-	823	-	823
32.	Cambodia	-	-	-	-	-	817	-	817
33.	Iraq	-	-	-	-	-	-	562	562
34.	Other Countries	11,224	8,829	662	20,715	1,040	2,487	566	4,093
TOTAL:		62,900	140,605	12,735	216,240	44,383	107,336	12,641	164,360

Table 18

Jute Looms

	<u>T o t a l</u>		<u>I n c r e a s e</u>	
	<u>Installed Capacity</u>	<u>Running</u>	<u>(Annual)</u>	
			<u>Installed</u>	<u>Running</u>
1952	2,087	572	-	
1953	2,237	1,565	150	993
1954	3,287	3,175	1,050	1,610
1955	4,748	4,234	1,461	1,059
1956	6,467	5,077	1,719	843
1957	7,012	6,175	545	1,098
1958	7,925	7,030	913	855
1959	7,964	7,785	39	755
1960	8,092	7,895	128	110
1961	8,384	8,091	292	196
1962	9,082	8,829	698	738
1963	10,433	10,192	1,351	1,363
1964	11,350	10,900	917	708
1965 Oct.	12,282	11,615	<u>932</u>	<u>715</u>
Average Increase/Year			784	849

Table 19

Area and Production of Cotton

(1947/48 - 1964-65)

Year July-June	Area (000 Acres)			Production (000 bales)		
	Pakistan	East Pak	West Pak	Pakistan	East Pak	West Pak
1947-48	3,103	55	3,048	1,120	11.4	1,109.0
1948-49	2,653	55	2,598	1,083	17.1	1,065.9
1949-50	2,799	55	2,744	1,255	17.1	1,237.9
1950-51	3,071	55	3,016	1,423	17.1	1,405.9
1951-52	3,374	56	3,318	1,418	17.1	1,400.9
1952-53	3,480	59	3,422	1,801	17.1	1,783.9
1953-54	2,928	58	2,870	1,440	17.1	1,422.9
1954-55	3,194	58	3,136	1,600	17.1	1,582.9
1955-56	3,529	52	3,477	1,691	17.1	1,673.9
1956-57	3,608	53	3,555	1,725	11.4	1,713.6
1957-58	3,641	51	3,590	1,720	11.4	1,708.6
1958-59	3,324	51	3,273	1,606	17.1	1,588.9
1959-60	3,370	52	3,318	1,657	17.1	1,639.9
1960-61	3,242	47	3,195	1,711	17.1	1,693.9
1961-62	3,488	39	3,449	1,840	17.1	1,822.9
1962-63	3,435	40	3,395	1,993	17.1	1,975.9
1963-64	3,672	38	3,634	2,370	16.00	2,354.0
1964-65	3,659	35	3,624	2,139	15.00	2,124.0
1965-66*	3,699	32	3,667	2,200	15.00	2,185.0

* Provisional

Sources: 1. C.S.O.
2. Pakistan Economic Survey, 1964-65

Table 20

Production and Yield
In Principal Cotton Producing Countries

Country	A r e a				Y i e l d			
	1961-62	1962-63	1963-64	1964-65a/	1961-62	1962-63	1963-64	1964-65a/
	1,000 hectares				Kilos per Hectare			
<u>North America</u>								
El Salvador	77	93	119	123	731	750	621	619
Guatemala	46	72	91	100	690	729	715	718
Honduras	4	6	9	14	844	786	750	801
Mexico	794	833	789	789	542	628	581	660
Nicaragua	75	94	115	133	739	776	810	936
United States	6,327	6,301	5,752	5,690	491	512	579	579
Others	57	49	45	41	-	-	-	-
Total	7,380	7,448	6,920	6,890				
<u>South America</u>								
Argentina	537	519	516	530	202	257	193	245
Brazil	2,226	2,226	2,327	2,428	243	220	219	196
Columbia	166	185	161	147	471	446	452	406
Paraguay	51	63	71	71	214	207	168	154
Peru	275	260	260	263	529	565	513	553
Venezuela	50	38	47	51	151	203	229	193
Others	23	23	27	27	-	-	-	-
Total	3,328	3,314	3,409	3,517	269	265	248	236
<u>Western Europe</u>								
Greece	206	206	231	140	473	435	404	479
Italy	22	22	16	15	242	177	327	317
Spain	319	346	263	197	333	316	368	386
Yugoslavia	9	9	10	10	195	200	266	229
Total	556	583	520	362	379	351	380	414
<u>Eastern Europe</u>								
Albania	23	22	24	26	284	295	313	288
Bulgaria	60	55	52	53	198	315	270	268
Others	-	-	-	-	-	-	-	-
Total	83	77	76	79	220	310	284	275
<u>U.S.S.R.</u>	2,335	2,387	2,480	2,461	655	622	708	721

Table 20
(Continued)

Country	A r e a				Y i e l d			
	1961-62	1962-63	1963-64	1964-65a/	1961-62	1962-63	1963-64	1964-65a/
	1,000 Hectares				Kilos per Hectare			
<u>Asia and Oceania</u>								
Aden	15	23	21	28	347	302	268	275
Afghanistan	81	101	132	162	214	257	288	234
Australia	13	12	8	20	159	151	310	428
Burma	189	223	247	271	120	87	66	72
China(Mainland)	4,249	4,047	4,168	4,452	214	231	244	268
India	7,719	7,973	7,947	7,932	114	135	143	129
Iran	384	405	405	405	300	228	284	268
Iraq	37	34	30	51	234	239	163	214
Israel	16	16	13	13	961	1,018	1,084	1,191
Korea, South	49	32	25	23	178	169	193	191
Pakistan	1,412	1,390	1,486	1,477	232	266	284	245
Syria	249	302	292	287	501	494	636	605
Thailand	53	55	57	57	239	219	230	230
Turkey	649	660	628	6 80	327	345	409	479
Others	80	56	56	56	-	-	-	-
Total	15,195	15,329	15,515	15,914	176	193	207	* 208
<u>Africa</u>								
Angola	36	36	30	32	131	212	179	135
Cameroon	64	68	73	73	188	208	223	238
Central African Republic	142	174	150	150	67	58	65	73
Chad	300	339	290	304	54	100	130	121
Congo(Ex. Belg.)	101	121	121	81	139	135	108	108
Ex-Fr. W.Afr. <u>1/</u>	121	162	182	182	85	98	108	119
Kenya	39	49	49	55	43	52	53	59
Mozambique	302	258	279	283	140	113	140	135
Morocco	8	9	15	17	372	520	289	437
South Africa	36	43	51	51	198	277	214	214
Sudan	476	448	441	449	456	363	231	337
Tanzania	192	192	202	202	160	203	235	262
U.A.R.	834	696	684	676	402	657	646	745
Uganda	839	730	815	870	41	90	85	89
Others	307	317	320	329	-	-	-	-
Total	3,797	3,642	3,702	3,754	207	256	236	267
World Total	32,674	32,780	32,622	32,977	300	318	335	341
Communist areas	6,720	6,555	6,771	7,036	367	373	414	429
Non-Comm. Areas	25,954	26,225	25,851	25,941	282	304	315	316

a/ Preliminary.

1/ Includes Togo.

Table 21

The Wholesale Price Index of Raw Cotton

(1956/57 - 1964/65)

(Base: 1959/60 = 100)

1956-57		98.36
1957-58		96.70
1958-59		86.20
1959-60		100.00
1960-61		109.11
1961-62		100.12
1962-63		96.73
1963-64		97.09
1964-65	July	98.36
	August	98.89
	September	103.39
	October	101.75
	November	102.87
	December	112.76
	January	115.09
	February	121.66
	March	131.69
	April	131.06
	May	126.44
	June	123.95
	July	122.19
	August	113.48
	September	104.28
	October	100.80
	November	104.32

Source: C.S.O.

Table 22

Average Raw Cotton Price (c.i.f.) Liverpool

(In Cents per lb.)

(Quality M 1")

Date: Year and Month	Comparable U.S. Variety	Pakistan 289 F
1962	28.62	32.35
1963	27.29	28.66
1964	26.96	27.82
1965		
January	27.28	29.36
February	27.39	31.36
March	27.42	32.03
April	27.49	33.07
May	27.54	33.45
June ^{1/}	26.53	29.38
July	26.70	28.34
August	26.17	28.74
September	26.22	28.45
October	26.28	28.07

^{1/} New crop.30.23 cents per lbs. is equivalent to
576 rupees/bale.

Table 23

Installed Capacity,
Cotton Looms and Spindles

(In Thousand Units)

	East Pakistan		West Pakistan		All Pakistan	
	Spindles	Looms	Spindles	Looms	Spindles	Looms
1950	108	2	182	3	290	5
1955	234	3	1449	23	1683	26
1956	283	3	1518	24	1801	27
1957	307	3	1568	25	1875	28
1958	320	3	1569	26	1889	29
1959	346	3	1582	27	1928	30
1960	359	3	1582	27	1941	30
1961	378	3	1620	27	1998	30
1962	422	4	1723	28	2145	32
1963	520	4	1896	30	2416	34
1964	616	4	1951	31	2567	35
1965 (Sept)	654	5	2045	31	2699	36
1970 ^{1/}	1300	20	2700	50	4000	70

^{1/} Plan Figures.

Table 24

Unit Productivity,
Looms and Spindles

Year	S p i n n i n g			W e a v i n g		
	Output per Spindle Hr. in lbs.	Production per Spindle in lbs.	Average No. of Spindle Hrs. Worked per year	Output per Loom Hour in yards	Production Per Loom in yards	Average No. of Loom Hrs. Worked per year
1948	0.04	167.7	4230	5.1	17,411.8	3460
1949	0.04	143.7	3670	5.6	18,489.0	3260
1950	0.037	148.4	3984	6.2	21,259.0	3420
1951	0.035	160.4	4495	5.7	21,277.6	3450
1952	0.037	169.9	4596	5.7	24,880.0	4400
1953	0.034	166.4	4861	5.1	25,754.6	4910
1954	0.038	172.8	4472	4.8	21,548.0	4538
1955	0.036	175.2	4810	4.5	25,147.1	4940
1956	0.036	180.6	4985	4.1	20,015.3	4984
1957	0.032	181.2	5582	4.0	21,082.0	5300
1958	0.028	195.1	6970	3.8	21,341.6	5420
1959	n.a.	215.7	n.a.	n.a.	22,090.5	n.a.
1960	n.a.	221.6	n.a.	n.a.	21,682.6	n.a.
1961	0.028	217.8	7560	4.0	23,301.2	6035
1962	0.029	212.6	7232	4.1	24,104.6	6080
1963	0.030	211.2	6938	4.05	23,545.0	5833
1964	0.030	208.3	6860	3.88	23,389.0	6120
1965 ^{1/}	0.029	204.9	6965	4.11	22,460.0	5530

^{1/} Based on 9 months.

Note: Total hours possible 168 hours per week for 49 weeks = 8232.

Table 25

Production of Cotton Textile by Quality in 1954-65

(In Million Yards)

	East Pakistan				West Pakistan				Pakistan						
	Fine and Superfine Quan. %	Medium Quan. %	Coarse Quan. %	Total Quan.	Fine and Superfine Quan. %	Medium Quan. %	Coarse Quan. %	Total Quan.	Fine and Superfine Quan. %	Medium Quan. %	Coarse Quan. %	Total Quan.			
1954									24.4	7	289.1	84	31.7	9	345.2
1955									28.6	6	356.9	78	67.7	16	453.2
1956									45.4	9	330.3	66	124.7	25	500.5
1957									56.2	11	246.9	47	223.9	42	527.0
1958	25.1	38	37.6	58	2.5	4	65.2	34.3	7	212.7	42	264.0	51	511.0	
1959	20.6	32	41.7	65	1.6	3	63.9	30.7	5	286.4	51	237.6	44	554.7	
1960	22.7	35	42.0	65	0.1	-	64.8	35.0	6	319.3	57	209.7	37	564.0	
1961	22.3	32	47.1	68	-	-	69.4	61.7	9	283.1	40	284.9	41	629.7	
1962	13.7	22	49.1	78	-	-	62.8	49.8	8	321.7	48	291.0	43	662.5	
1963	13.2	24	36.4	73	0.2	-	49.8	53.9	8	355.4	52	271.8	40	681.1	
1964	8.2	17	39.0	80	1.3	3	58.5	65.9	9	386.6	55	257.5	36	710.0	
1965 ^{1/}	9.4	21	34.4	75	2.0	4	45.8	61.6	9	355.1	51	277.5	40	694.2	

^{1/} Based on 9 months' output figures.

Table 26

Cotton Cloth Production by Process

(1954 - 1965)

(In Million Yards)

Year	Grey	Percent	Bleached	Percent	Dyed & Printed	Percent	Total
1954	268.7	77.8	38.6	11.2	37.9	11.0	345.2
1955	335.2	74.0	64.4	14.2	53.6	11.8	453.2
1956	323.7	64.7	89.6	17.9	87.1	17.4	500.4
1957	324.0	61.5	80.8	15.3	122.2	23.2	527.0
1958	326.2	56.6	106.9	18.5	143.1	24.9	576.2
1959	352.2	56.9	108.7	17.6	157.6	25.5	618.5
1960	383.6	61.0	102.0	16.2	143.2	22.8	628.8
1961	357.4	51.1	133.1	19.0	208.5	29.9	699.0
1962	386.6	53.3	113.9	16.4	219.7	30.3	725.2
1963	411.6	56.3	114.8	15.7	204.4	28.0	730.8
1964	412.1	54.3	111.9	14.7	234.5	31.0	758.5
1965	403.7	54.5	123.3	16.7	213.0	28.8	740.0

Source: Central Statistical Office.

Table 27

Variety-Wise Production of Cloth in Pakistan

Year	Fine Cloth					Medium Cloth					Coarse Cloth			
	Total	Total	Grey	Bleached	Dyed and Printed	Total	Grey	Bleached	Dyed and Printed	Total	Grey	Bleached	Dyed and Printed	
1954	345,247	24,447	20,120	1,809	2,518	283,112	221,119	35,723	32,270	31,688	27,487	1,139	3,062	
1955	453,237	28,629	21,804	4,056	2,767	356,927	252,691	57,415	46,821	67,681	60,748	2,874	4,059	
1956	500,384	45,375	28,956	10,979	5,540	330,299	187,147	73,354	69,798	124,710	107,629	5,235	11,846	
1957	527,048	56,233	22,579	17,847	15,807	246,924	128,636	48,713	69,575	223,891	172,779	14,296	36,816	
1958	570,225	59,387	19,833	23,939	15,625	250,159	112,018	65,987	72,144	266,679	194,432	16,970	55,277	
1959	618,534	51,278	20,652	14,175	16,451	328,098	172,071	74,255	81,772	239,158	159,444	20,274	59,441	
1960	628,795	57,732	32,022	12,548	13,162	361,253	199,996	72,772	88,485	209,810	151,550	16,677	41,583	
1961	699,035	83,985	23,051	33,139	27,795	330,176	144,043	75,452	110,681	284,874	190,312	24,559	70,003	
1962	725,234	63,450	13,135	23,319	26,996	370,852	187,514	73,824	109,514	290,932	185,990	21,788	83,144	
1963	730,832	67,134	21,359	24,948	20,848	391,842	217,645	69,126	105,071	271,836	172,552	20,766	78,518	
1964	758,455	74,078	18,190	23,669	32,219	425,648	299,971	70,753	124,924	258,729	163,852	17,381	77,496	
1965 ^{1/}	740,000	71,000	19,450	23,450	28,100	390,500	157,900	79,700	122,900	278,500	196,300	20,200	62,000	

Source: Statistical Section of All Pakistan Textile Mills Association, Karachi

^{1/} Estimated.

Table 28

Export of Cotton Piecegoods During 1956-65

(In Million Yards)

Year	United Kingdom		Other Countries		Total Export	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000' Yds.	'000' Rs	'000' Yds	'000' Rs	'000' Yds	'000' Rs
1956	9,137	6,793	10,391	7,272	19,528	14,065
1957	4,609	3,383	6,240	4,086	10,849	7,469
1958	3,582	2,020	1,992	2,052	5,574	4,072
1959	23,296	14,288	18,698	11,304	41,994	25,592
1960	38,324	26,124	37,630	27,054	75,954	53,178
1961	20,745	16,104	33,537	23,899	54,282	40,003
1962	43,261	28,877	40,909	23,859	84,170	52,736
1963	54,090	32,469	84,341	41,950	130,431	74,419
1964	50,778	32,928	136,781	81,571	187,559	114,499
1965 ^{1/}	50,495	31,540	140,025	91,495	190,520	123,035

Export of Cotton Yarn During 1956-65

(In Million lbs.)

Year	United Kingdom		Other Countries		Total Export	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000' lbs.	'000' Rs	'000' lbs.	'000' Rs	'000' lbs.	'000' Rs
1956	2,706	5,102	24,968	44,719	27,674	49,821
1957	2,812	5,835	37,652	71,105	40,464	76,940
1958	339	835	6,425	11,480	6,764	12,315
1959	1,238	2,089	81,290	120,793	82,528	122,882
1960	2,067	3,298	88,443	132,886	90,510	136,184
1961	581	1,198	14,372	26,763	14,953	27,961
1962	1,146	2,049	5,280	9,549	6,426	11,598
1963	356	451	36,084	62,137	36,340	62,588
1964	534	948	55,435	93,807	55,969	94,755
1965 ^{1/}	461	801	54,474	98,221	54,935	99,022

^{1/} Figures for 1965 are Provisional.Source: Cotton Textile Statistics, No. 12, Vol. IV, Dec. 1965