WEST BENGAL'S
APPROACH TO FIFTH FIVE YEAR PLAN (1974-79)

State Planning Board
Government of West Bengal
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FOREWORD

1. The guiding principles in formulating the approach to the 5th Five Year Plan for the State of West Bengal have been based on certain compulsive situations that are manifest in the State at present and can be itemised as follows :—

(*i*) Massive poverty—as against the all India average of 40% people below the poverty line (Rs. 20 per month at 1960-61 prices), in West Bengal this figure comes to as much as 70%.

(*ii*) The huge unemployment situation of the magnitude of 2.8 millions, excluding vast under-employment. The corresponding figure of educated unemployed would be about 2,00,000, of whom about 80,000 would be graduates or above.

(*iii*) The low productivity of food averaging at present about 1.2 crops per year and that too based on uncertain rain—fed Kharif crop

(*iv*) A relatively low index of power production and the miserable rate of village electrification of the order of 10% of the total number of villages.

(*v*) Tremendous industrial recession since 1965 and lack of industrial revival manifest at present in many other States.

2. In formulating the approach to the 5th Plan, an attempt has been made to seek remedies for the above constraints and plan for massive agricultural production, industrial regeneration, solution of the unemployment problem and other developmental strategies.

3. The previous four Plans in West Bengal suffered from progressive downward trends so far as financial outlay is concerned. In fact, the state financial outlay for the 4th Plan, viz. Rs.322 crores is lower in actual money value as compared to the 3rd Plan of Rs. 300 crores. It compares rather unfavourably even with Rs. 154 crores outlay in the 1st Plan if the price level is suitably adjusted

4. In order to overcome the above constraints of the natural economy of West Bengal, the required investment would come to Rs. 3240 crores for the Public Sector. The above figure also includes the required investments to meet the objectives of minimum need and employment programmes as envisaged in the approach paper for the 5th Plan. Such an investment is essentially realistic.

5. It should be emphasised that Rs. 322 crores is only West Bengal state-plan outlay. It does not take into consideration the central sector outlay which is of the order of about Rs. 850 crores. The total West Bengal 4th Plan outlay, therefore, is about Rs. 1200 crores. If this figure is accepted, it would be reasonable to assume that the total 5th Plan outlay of both central and state sectors would be double this sum i.e. Rs. 2,400 crores. In addition, the Planning Board had taken into consideration the prime necessity of providing for the minimum needs of the people in the form of primary education, health-care benefits, water supply, sanitation, housing, roads etc. which together come up to over Rs. 800 crores.

6. It would be seen, therefore, that in consideration of the special situation in West Bengal with its various problems and in view of the tremendous efforts necessary to uplift the sagging economy of

the State as well as to meet the rising expectations and provide for immediate basic necessities of life, the total of central and state plan of Rs. 3,240 crores is entirely reasonable.

To this must be added an outlay of about Rs. 1,458 crores (less Rs. 100 crores already accounted for in institutional finance) from the private sector. It brings the total plan-size to about Rs. 3,240 + Rs. 1,358 = Rs. 4,598 crores i.e. 4,600 crores.

7. It is necessary to mention that the existing practice of implementation of projects, conceived sectorally, through different Departments fails to obtain the gains derivable from inter-sectoral linkages of projects on the basis of an integrated plan. Therefore, without reducing the substance of the physical targets envisaged in this document, it may be possible to reduce the size of investments if inter-departmental co-ordination is attained through inter-sectoral integrated designs of plan projects. As far as possible, the State Planning Board has attempted to bring about such integration while computing the required financial outlay.

8. The Planning Board has been at pains to be as objective as possible in regard to the various plan projects and to identify the hard core of the development programmes which must be met during the 5th Five Year Plan. These exercises have been carried out as realistically as possible. The resulting framework has been embodied in the Approach Paper with the hope and trust that the relevant authorities will realise the force of the arguments as stated herein and consider the plan framework as entirely justified.

THE MECHANISM OF THE MULTILEVEL PLANNING PROCESS

1. The Planning process for the 5th plan was started with a Planning Commission document "Towards an Approach to the 5th Plan". The main points of departure of this Approach from past practices lie in emphasising the necessity of programmes for meeting the minimum needs of the people and for generating massive employment in addition to pursuing the programmes for normal development.

2. The minimum needs programme, as enunciated by the Planning Commission, includes elementary education, minimum public health facilities integrated with family planning and nutrition for children, rural water supply, home sites for landless labour, rural roads, rural electrification and slum improvement in the larger towns. Specific targets for each of these sectors for the 5th Plan have also been suggested.

3. Similarly, the employment programme is to be centred round the employment intensive projects, such as minor irrigation, soil conservation, area development, dairy and animal husbandry, forestry, fishery, warehousing and marketing, small scale industry, roads and special programmes for small and marginal farmers and landless labour etc.

4. With the identification of the above two programmes by the Centre, the first task before the State Planning Board was to assess the deficits in each of the sectors so that the targets suggested could be attained and secondly to indicate the implications for financial and physical resource mobilisation.

5. This document is concerned with presenting the needs of the state along with its financial implications without any reference as to whether the necessary resources may be readily available or not. While identifying the needs, the suggestions of the different departments dealing with the different sections as well as those of the different District Planning Committees have been taken into consideration

6. Only when such programmes become available from all the States will the Planning Commission be in a position to assess the total resources required on the national plan. The total requirement will then be adjusted by the Planning Commission against all the resources available. This exercise may need modifications of the earlier suggested targets. The sixth Finance Commission, in the meanwhile, would have submitted its recommendations regarding the sharing of national resources by the Centre and the States. At about the same time, the States on their part would be required to under take exercises to estimate the possible extent of mobilisation of internal resources.

7. The second round attempt will then start at the State level, the central point of which will be to match the employment and need based programmes against the total resources (Centre and State) that may be available. It is, therefore, obvious that many of the needs identified may have to be modified both in content and structure in terms of the total resources available.

8. The State Government Departments and District Planning Committees will again be consulted when the State takes up the problem of balancing the needs with available resources when the second round document becomes available from the Planning Commission. At this stage, the projects, both continuing and new, identified by the Departments and other agencies, will have to fit themselves within the total plan frame and objectives of the State. Such mutually interdependent planning process, involving the Government and the Planning Organisation, at the local, district, State and National level, is perhaps the most distinguishing characteristic of the planning process conceived for the 5th Five Year Plan.

CHAPTER I

BASIC STRATEGY OF THE FIFTH FIVE YEAR PLAN

BASIC STRATEGY OF THE FIFTH FIVE YEAR PLAN

1. *Preamble*

1.1 The developmental activities undertaken by the Central and State Governments since 1951 have led to appreciable growth in output and income. However, this growth, whether through direct production in the public sector undertakings or through provision of basic infrastructures like power and road etc. has, in the main, benefited only a small minority of our population and very few places in our country. The standard of living of majority of our population, and the level of development of major part of our country have remained almost as backward as ever. Contrary to our previous expectation, growth by itself has not percolated either to the economically lower stratum of the population or to the backward areas in our country. As a consequence, both inter-personal disparity in income as well as inter-spatial disparity in development have further increased. The most glaring manifestation of this anomaly is found in the colossal increase in the volume of unemployment and under-employment particularly during the last 7 years i.e. since 1965.

1.2 The basic approach to the Fifth Five Year Plan will therefore have to take into account the following issues—

(*a*) Designing the type of growth strategy that will include a direct attack on poverty and unemployment. The relationship between growth and efficiency on the one hand, and interpersonal and interspatial equity on the other will have to be explicitly defined.

(*b*) The major areas of development in West Bengal are the centres of large manufacturing industries and the backward areas are, in general, in the agricultural sector. Consequently the desired relationship between industry and agriculture for achieving growth with a more balanced regional development will have to be defined. This mutually advantageous and interdependent relationship between industry and agriculture if properly balanced will result in accelerated growth of both the sectors.

(*c*) The pattern of development of basic physical infrastructures (power, road etc.) at present does not lead to their most efficient utilization or to the equitable distribution of the fruits of development. Consequently the question of a basic review of the pattern of existing infrastructural development schemes will have to be considered. It should take into account the need for introducing a new socio-economic system helping acceptance of the new technology.

1.3 All the three issues posed above are integrally connected with each other and, therefore, will have to be solved simultaneously in one policy framework. This will constitute the basic approach to the Fifth Plan.

2. *Growth and equity*.

2.1 The paper "Towards an Approach to the Fifth Plan" from he Planning Commission, while reviewing the results of our planning efforts so far, pointed out that despite growth in per capita income through the planning effort, 'the absolute number of people below the poverty line today is just as large as it was two decades ago'. The logical conclusion from this very correct observation

should not merely be to add a few schemes for providing direct benefits to the poor for achieving some sort of equity, while trying at the same time to continue most of the schemes in the old way in the name of achieving growth.

2.2 Instead of merely adding a few schemes to achieve equity, it is necessary to evaluate the efficiency of the existing growth projects themselves. Have these growth projects been able to achieve the technologically feasible heights of development ? The huge idle capacity in industry in this capital scarce State, a very low level of utilization of capacity in the power generating plants despite severe power famine, negligible use of power even when made available at a huge cost in our rural areas, extremely high cost of large irrigation potentials going waste etc. all point to the glaring fact that we have so far been able to achieve only a small part of our growth potential.

2.3 Although the per capita income at the All India Level has increased during the past few years, in West Bengal it has actually decreased. Thus, while the per capita income in West Bengal, in 1960-61 prices was Rs 336 in 1965-66, in 1969-70 it roses slightly to Rs. 341 but in 1970-71 it actually went down to Rs. 339.

2.4 Again during the first three plans, i.e. from 1951-65, registered factory employment in West Bengal increased by only 35% : the corresponding rate of increase for the rest of India was 70%. However since 1965, while in the rest of India employment increased, though at a slow rate, the employment in West Bengal declined absolutely. The relevant data are given below.

Number of workers in Registered Factories in West Bengal and rest of India, 1951-1971

(in '000)

Year	West Bengal	Rest of India
1951	652	2,262
1965	880	3,802
1966	840	3,862
1967	832	3,916
1968	817	3,922
1969	791	—
1970	809	—
1971	838	—

2.5 A direct reflection of this fact is also found in the levels of industrial production. While for India as a whole the trend shows an increase, the trend for West Bengal shows a continuous decrease for the last few years for which data are available.

General index of Industrial Production, West Bengal and India
(Base : 1963-100)

Year	1964	1965	1966	1967	1968	1969	1970
West Bengal	106.6	112.8	104.8	103.1	104.4	99.3	
India	108.6	118.6	117.7	116.7	124.2	133.0	139.3

2.6 Similarly, if we look at the Calcutta port, we find that while the volume of goods handled by this port stagnated during 1951-52 to 1965-66, the same for five other major ports increased by more than three times. The relevant data are given below .

Volume of goods handled by six major Indian Ports 1951-1966

(in '000 tonnes)

Year	Calcutta	Bombay	Madras	Vizag Cochin Kandla
1951-52	9,736	7,600	2,190	2,988
1965-66	9,848	18,197	4,800	14,855

Further. the stagnation in the Calcutta port during this period has been replaced by rapid decline since 1966-67. In 1969-70, Calcutta port handled 6.1 million tonnes of goods while in 1970-71 this volum. declined further to only 6.01 million tonnes.

2 7 There are innumerable examples of such stagnation and decline in the economy of West Bengal The main point that needs to be appreciated is that the plan schemes in West Bengal have failed to generate even that level of limited growth which is observed in the rest of India, and hence the task before the Fifth Plan, is not just to add a few schemes aimed at equity to the overall schemes for growth, but to re-design the growth schemes themselves so that the growth potential is fully realised. These growth schemes themselves should be so designed as to achieve maximum possible equity. They should in addition be supplemented by schemes which would be primarily oriented toward providing the minimum needs of the people.

2.8 The total utilisation of the growth potential of an area requires a basic change in the present concentration of land ownership on the basis of which thrive the anti-productive institutions like rack renting, usury and speculative trading which in their turn have led to continuously increasing inequity in our rural areas. It is only such types of schemes that can achieve maximum possible production and employment at minimum possible unit cost. Such schemes will ensure both the participation of the people as well as the availability of the fruits of growth to them. The beneficiaries are also enabled to pay back the cost of development thereby ensuring accelerated tempo of development in all the areas. It is only through such types of schemes that one may realise simultaneously the objective of equity along with maximum growth. These schemes henceforth will be called CADP* projects. The establishment of a socialistic order in our country is dependent on the twin objectives of maximum growth combined with an equitable distribution of the fruits of such growth. This objective should constitute the corner stone of our approach to the Fifth Five Year Plan.

3. Industry and Agriculture

3.1 One of the important reasons for the crisis in industry in West Bengal lies in the backwardness of our agriculture. Contrariwise backwardness of our agriculture is due to the nature of the industrial complex we have inherited and the particular type of socio-economic institutional set up associated with it.

* CADP stands for "Comprehensive Area Development Project."

3.2 The backwardness of agriculture is manifested both in low productivity as well as in extremely high fluctuations of production. For example, the pattern with reference to raw jute, the main agricultural raw material for industry in West Bengal, may be clear from the table below :—

Productivity and Production of Raw Jute in West Bengal, 1964-65 to 1970-1971.

(In bales of 400 lbs).

Items	1964-65	1966-67	1967-68	1968-69	1969-70	1970-71
1. Production (in '000 bales)	3,618	2,853	3,823	1330	3370	2662
2. Productivity per hectare (No. of bales)	8.3	6.7	7.7	4.9	7.7	6.5

It may be seen that the fluctuation rate is often by more than 66 per cent. This high rate of fluctuation coupled with low-level of production perpetuates the existence and growth of speculative commerce.

3.3 The recession since 1965 in the Engineering Industry, by far the biggest and the most important industry in the State, was initiated by a fall in public sector demand for wagons etc. This was further aggravated by political instability and disturbed labour management relation. This fall in demand from public sector could not be substituted by demand from other sectors It can be shown that modernisation of agriculture can lead to the creation of a considerable increase in demand for industrial goods. A backward agricultural sector neither uses power, nor much of equipment or other industrial outputs. Further, the low productivity of the agricultural sector considerably reduces the demand for consumer goods, including consumer durables. It is evident, therefore, that rapid revival and transformation of our industrial-cum-technological base and simultaneous modernisation of agriculture are integrally connected with each other.

3.4. It may be mentioned here that in the Census Sector* industries, despite relatively huge productive capital investment, the growth in employment and income (value added) was meagre. The relevant data are given below.

Census sector industries in West Bengal, 1959-68 Capital, Income and Employment.

Year	Total productive capital (Rs. million)	Value added (Rs. million)	Employment (in thousand)
1959	3,770	1,87-	662
1965	12,480	3,545	880
1966	14,484	3.496	864
1967	...	...	...
(Provisional)	14,537	3,537	822
1968			
(Provisional)	12,999	3,359	746

* Factories employing 100 persons or more or employing 50 persons or more if using power.

During the six years, 1959-65, the increase in productive capital by Rs. 8,710 million led to increase in income by only Rs. 1,670 million and the increase in employment was only 2,18,000. This means that additional capital used for generating one additional employment was as high as nearly Rs. 40,000/-. Similarly, additional capital used for generating additional income of Rs. 1/- was more than Rs. 5.20

3.5. The above figures, however, must not be interpreted to mean that such a high dose of capital is required technologically for achieving additional employment and income. This is so because at least 50 per cent of the physical capacity created through capital investment remained idle during that period As such, it is physically possible, if there is no other constraint, to substantially increase output, income and employment with the already existing capital investments. Conversely, there is no assurance that an aggregate increase in capital investment will automatically lead to an increase in income and employment. It may be seen from the previous table that despite increase in investment during 1966, both income and employment went down.

3.6. Our immediate task should, therefore, be to assess the volume and type of additional raw materials and also power and transport required to utilise fully the worthwhile capacities in our industries now idle as well as to supply the required inputs for modernising agriculture. In addition, investments will have to be made in growth industries such as electronics, petro-chemical, etc.

3.7. The significance of a power generating station or a fertiliser plant etc., is to be seen in the massive employment and income they will help to generate in the agricultural field in the small-industries and in the tertiary sector. Acceptance of this concept will help us to fulfil the overall employment strategy and reap the benefit of starting late by adopting the most modern technological methods with the highest possible growth potential.

3.8. Modernisation of the rural areas will pave the way for remedying the present intense spatial concentration of industry in our State. It is known that most of our industries are located in two limited areas around Calcutta and Durgapur/Asansol. If we exclude the five Districts which contain those two areas, i.e. Calcutta, Howrah, Hooghly, 24-Parganas and Burdwan, eleven other Districts remain including the whole of North Bengal which together claimed in 1970 only 8.4 per cent of the total employment in the Registered Factories in West Bengal.

3.9. It is in this background that one may see the significance of modernisation of agriculture in creating a techno-economic base for dispersed industrial and servicing centres throughout the State. On the basis of greatly increased demand for industrial goods by the rural sector, it will be economically feasible to have a vast number of such centres. Further, such industrial centres will also be necessary to sustain and accelerate agricultural modernisation. Such industries along with those for which the existing backward areas have a resource potential and others which can be established on the basis of initial subsidy, will transform our entire rural area and its economy.

3.10. With the understanding presented above, the State Planning Board recommends the following for adoption as a general policy for development :

(*i*) Implementation of land Reform and other allied measures.

(*ii*) The credit policy of the Government should be redesigned to make even the indebted peasantry more credit-worthy.

(*iii*) Introduction of corrective measures for important commodities as may be necessary for equalising the fluctuations in supply and maintaining firmly the price line.

(*iv*) Achieving self-sufficiency in food grains and a substantially higher amount of other crops needed by the State such as cotton, oil seeds, etc.

(v) Achieving total modernisation of a substantial part of our agricultural economy for providing a massive volume of new employment and output

(vi) Establishing a large number of new modern industries for supporting agricultural modernisation and for producing industrial raw materials, lack of which now keeps a substantial part of already installed capacity idle, and for developing growth industries.

(vii) Encouraging the development of industrial units of all sizes and categories particularly where finance for their establishment may be available from financial institutions and other sources.

(viii) The massive relief operation for improving the environmental condition of the Calcutta metropolis should now be coordinated with a comprehensive plan which would transform and revitalize its role in the regeneration of the State economy.

(ix) In formulating any scheme for development, attention will have to be focussed on the maximum possible use of the assets created and on integration of all allied schemes. This will require mobilisation of the entire population in the development work guaranteeing the fruits of development to all. For sustaining that development and for extending that development to other areas, it will be necessary to make to the beneficiaries of development pay back the cost of development.

3.11 In addition, it will be necessary to lay emphasis on the essential items which will meet the basic needs of our people and create better life for them. These include minimum health care, basic free primary education for all children, easier facilities of communication, etc. The supreme necessity of controlling the population increase will have to be stressed and the underprivileged and the handicapped section of the people must receive their due attention.

3.12. On the basis of this background, the detailed strategy for the different sectors are presented in the following chapters.

CHAPTER II

HIGHLIGHTS OF THE MAJOR SECTORAL PLANS

AGRICULTURE

1. On the basis of integrating all the elements of new agricultural technology with the required changes in the socio-economic institutional set up, a massive increase in agricultural production and gainful employment have been planned for during the 5th and the subsequent two plan periods. The plan has been so designed that the poorer section of the peasantry including landless agricultural labour, may effectively participate in gains from this development.

2. On the basis of the prevalent demand norm of 0.45 kg of cereals per capita per day, a plan has already been drawn up to achieve self-sufficiency in food grains in our state within 1975. This will necessitate a production level of nearly 90 lakh tonnes of cereal by 1975.

3. The above demand norm, however, cannot take into account the actual cereal needs of the poorer majority of our population because the latter cannot now support their needs with money. The development strategy for the 5th Plan onwards will have to be such that the poorer section get adequate income for satisfying at least their minimum needs for food. It is visualised that in the initial period of 5 to 10 years, the need for cereals for the majority of our population will be about 1 kg p.c.p.d. Based on this assessment, it has been assumed that for West Bengal population as a whole, the average requirement will be of the order of 0.75 kg. p.c.p.d. With an income level higher than what has been planned for during the 5th and 6th Plan, most of our people will be able to strive for a more balanced diet with a gradually decreasing share for cereals and gradually increasing share of animal protein and other food items. The increased supply of animal protein food will, however, require a far more increased agricultural production for feeding the cattle and other animals.

4. The 5th Plan target is to increase food production by 50 lakh tonnes, in addition to 80 lakh tonnes likely to be achieved by 1973-74, necessitating a growth rate of out put by 10% per annum during the 5th Plan. At the end of the 5th Plan, the per capita availability will be nearly 0.60 kg per day If production can be raised at the same rate during the 6th plan, then the per capita availability would be 0.82 kg by 1984-85. The 5th plan will also have to ensure increased supply of industrial raw materials like jute, cotton or seeds etc.

5. A new and advanced strategy is, therefore, called for in order to meet this huge requirement and make the State self-sufficient in food production. This is feasilble at present if appropriate inputs and infrastructures are made available and if all the modern technological implements of food production are efficiently utilized. It is in this context that a new and advanced strategy of Comprehensive Area Development Project (CADP) has been put forward in our Approach Plan. The primary aim of this project is to increase food production to the level of 2.5 to 3 crops per year. Efficient land utilization of blocks of areas of about 10,000 acres each on an integrated basis is envisaged. The project presupposes that all the infrasturctures, such as, irrigation, availability of ground water and other sources of water, agricultural machinery, high-yielding variety of seeds, fertilizers, roads etc will be provided in the project area It is envisaged that all the farmers in the project area will actively co-operate in the use of their lands and participate in the endeavour. If necessary, legislative and administrative measures have to be taken to ensure that the scheme is not frustrated by recalcitrant elements. Credit will be provided for the use of the farmers at the initial stage. The crop will have to be hypothecated to the project authorities who will also arrange for its storage and marketing. The farmers will be re-imbursed for the large majority of the produce and a small minority part will revert to the authorities for meeting their expenses. Necessary finance will be obtained from the Government, financial institutions and from the farmers themselves who would be invited to participate in the share capital of the project on fairly lucrative interest basis. There will be a high-power State Project Board and each project area would be administered by a well defined project authority.

6. It is envisaged also that this kind of area development will lead to accelerated generation of agro-

industries and their servicing institutions, construction of roads, irrigation canals, numerous tube-wells, electricity and such other inputs which may be necessary.

7. Starting from 1972, one such project area will be developed in each district so that by the end of the 5th Plan, 25 lakh acres of cultivable land will be covered and by the end of the 6th Plan, 75 lakh acres, making a total of 100 lakh acres, which would be sufficient to produce more than enough food for the whole of the State.

8. It is expected that this massive project of intensive agricultural development will generate considerable employment which may be of the magnitude of at least 2 million during the 5th Plan. Other benefits would be diversification of our industrial structure, development of agro-based industries including fertilizers, petro-chemical complex, light engineering etc. It will also encourage decentralization of urban growth centres. The scheme is also intended to re-structure the prevalent socio-economic set up in the rural areas and will eliminate the evil trinity of rackrenting, usury and speculative commerce.

9. It is envisaged that the project will guarantee self-generating economy. The estimated profits arising from the project will be sufficient to pay back the loan with interest.

10. It is stressed that in the present compulsive situation in West Bengal, an operation agriculture programme of this nature is considered a prime necessity to combat the chronic food shortage, huge unemployment, industrial recession and massive poverty.

11. It should be made clear that the concept of Comprehensive Area Development Project (CADP) and intensive agricultural production in the area would be complementary of other agricultural development projects in the rest of the available agricultural land in the State which would also be activised as much as possible during the 5th Five Year Plan. As has been stressed before, operation area of these projects will be progressively increased every year so that in 12 years most of the cultivable land in the State would be covered by this project.

12. A massive development of animal husbandry, dairy, poultry, fishery, as also of other small industries will be an integral part of our agricultural programme both in the C.A.D.P. and in the non-CADP areas. This will lead to a more balanced food supply and will be instrumental in providing gainful employment, particulary to small farmers and landless labourers.

13. The type of development visualised will constitute a better base for a strong co-operative movement embracing all the peasants, particularly their bottom half, to participate and gain from the co-operative endvaour. It should, therefore, be possible to make a substantially larger effort to develop co-operatives which will be the real basis for the success of the development strategy visualised for the 5th Plan onwards.

FLOOD CONTROL, DRAINAGE AND IRRIGATION

1. Over the last 28 years no irrigation survey has been undertaken in the State of West Bengal. Similarly, no assesment of the hazards of flood or of the constraints of impeded drainage has yet been worked out on scientific lines. Consequently, contingent speculation and expedient programming have emerged repeatedly in the past as the basic style of operation in this area of West Bengal's economy and life. The management of water-resources of the State has so far been the responsibility of two separate departments of the Government.

2. The geographical situation is such that the sites suitable for temporary storage of monsoon run-off are generally located beyond the limits of the State. Therefore, flood control measures have come to consist of techniques suitable for confining flood water as far as practicable within the river bed.

Needless to say, such measures have proved ineffective repeatedly in the past. Almost every year, even the command areas for gravity flow irrigation get upset by annual flood-hazards. Such a situation calls for basin-wise management of water-resources involving as many states as have teritorial interests in such basins. Without such management structure, it may not be possible to ameliorate flood hazards in West Bengal to the extent that known technology would permit.

3. It is observed that the irrigation potentials from gravity flow system is a function of variations of rainfall within the basin. At the same time it is observed that the technique of gravity flow irrigation really subserves the purposes of flood-control, in the sense that it helps to spread the monsoon runoff over a large area. Out of 100 units of land annually irrigated through such a system, 93 units become available during khari (monsoon) season and the residual 7 units during post Khariff (Rabi) season. There is no potential for Khariff (Boro) irrigation. Such a situation calls for conjunctive use of lift and gravity flow irrigation in this part of the world.

4. The progress achieved in the area of lift-irrigation has been rather small. At the same time, there exist considerable uncertainties regarding evaluation of the potential ground water reserves. The investigational work done by the ground water division of the Geological Survey of India is substantial. However, these survey reports are not immediately meaningful to the users of this resource. At the same time no assessment has been made of the poentials that may become avilable for lift-irrigation from the areas affected by impeded drainage. Similarly, no attempt has been made to convert a part of the flood discharges to increase potentials for lift-irrigation in the post-monsoon season. Due emphasis will be placed in this regard in the 5th Plan

5. The most serious obstacle facing any programme of expansion of gravity-flow irrigation arises from shortage of power. Lack of progress of rural electrification arising from lack of development of generation and transmission capacities for electrical energy are the substance of the constraints under review. In the appropriate sectoral plans, due emphasis has been placed to overcome this obstacle during the 5th Plan.

6. In short, the strategy adopted in this area of the State's economy and life really attempts to integrate the various technological approaches for flood control, improvement of drainage and expansion of command areas of irrigation within a single comprehensive programme. The objective is to provide sufficient support to other relevant sectoral programmes as envisaged in this document.

POWER AND RURAL ELECTRIFICATION

1. The approach plan on 'power' emphasizes the requirement of the rural sector for fulfilling the demands of agriculture and irrigation in addition to normal growth of demand in the urban and industrial sector. If a satisfactory rate of rise in agricultural sector is anticipated along with a compatible rate of rise in productivity in the industrial sector, a massive growth rate of power to the tune of 15—16 per cent per annum must be envisaged

2. Consequently, an anticipated demand of 3,700 M.W. has to be met within the Fifth Five Year Plan period.

3. The emergency plans as devised to meet the shortfall during the Fourth Five Year Plan have been outlined. The advance actions to be taken right now for the Fifth Plan Projects such as Kolaghat Plants, Bandel-V and Santaldhi-III, IV and V Plants and DPL VI expansion have also been emphasized.

4. DVC area in West Bengal should be modified to cater for some of the rural sector demands. DVC must utilize the installed hydel capacity by enhancing the reservoir capacity which is now held up for lack of land acquisition efforts.

5. Transmission systems would cause future bottlenecks. Power will be generated but will not reach demand spots. This activity must be accelerated in the residual Fourth Plan period and completed by the end of the Fifth Plan.

6. Integrated maintenance schedule and coordinated load despatch from DPL-DVC-SEB-CESC systems should be attempted during the Fifth Five Year Plan period.

7. Two-third of the total villages (mouzas) is the target for Rural Electrification in the Fifth Plan.

8. Diesel sets and connected L. T. system in rural areas should be brought in wherever H. T. lines cannot be taken by the target date.

9. Revision of Tariff system has been suggested. There should be one tariff for the entire State.

10. CESC should be allowed to repair and to introduce new additions in their systems. Urgent overhaul of DPL is also necessary. This will increase 'firm' available capacity.

The outlay suggested in the Approach Plan is the minimum that is necessary to meet the rapidly increasing demand for power. If the requirements of the power generation and rural electrification are not met, it will mean disaster for the entire framework of the plan.

INDUSTRY AND MINERALS

1. Rapid modernisation of agriculture is the key task before the Fifth Plan. Its success will depend to a large extent on the growth of industries, especially those which can supply inputs to agriculture. Moreover, for achieving self-reliance, for transforming the colonial industrial base of the metropolis, and for utilising the tremendous growth prospects of modern science based industry, a huge investment will have to be made in the industry sector.

2. It has been tentatively assumed that to support the anticipated growth rate of agricultural output, and also to achieve the other objectives noted above, industrial productivity must grow in order that the level of income may increase at an optimum rate during the Fifth Plan period.

4. There are two principal sub-sectors for the "Industry and Mineral" sector. One sub-sector is necessary for meeting the needs and requirements of other sectors including agriculture and must be capable of sustaining the growth-rates anticipated in these sectors. The other one is directly employment oriented but in turn depends on the former sector for its input requirements.

The sub-sector that creates the infrastructure for growth includes : Iron and Steel, Petro-Chemical Complex, Oil Refinery, Fertilizer Complex, Transport Industry, Tube Mills, Cement Factories Shipyard, etc. Substantial outlay is necessary in these areas for supporting the demands of other sectoral plans. The employment-intensive programmes include : Agro-industries, Dairy and Fishery Programmes, Small-scale Industries, Cottage Industries, Forest-based Industries, Pharmaceutical and Phyto-Chemical Complex, Jute, Tea and Textile industries, etc.

Major portion of the investment in this sector is through private or joint enterprise. However, an outlay is necessary from the public sector for creating the infrastructure or for providing financial assistance to viable industries.

4. It is known that nearly 60 per cent of the total employment in industry is claimed by the non-registered small-scale units employing less than 10 persons, if using power, or less than 20 persons if not using power. Most of these units, however, are very small employing on an average 2.25 persons, including 1.88 persons belonging to the owner's family per unit. Total number of such units in 1966 was 5 lakhs and they employed 12.20 lakh persons. The most depressing fact about these sub-sectors of industry is its extremely low labour productivity arising from extremely backward technique of production Average labour productivity in this sub-sector is only about Rs. 600/- per year, and the fixed capital per labour is only Rs. 650/-. It is clear that what is called employment in this sub-sector contains a very large degree of disguised unemployment. Changing the nature of such employment, therefore, should become one of the tasks of the Fifth Plan.

5. So far as the registered factory sector is concerned, one of its basic malady is idle capacity. The actually realised capital-output and capital-labour ratios are thus far above than what is technologically possible. It is illogical in a capital scarce country to keep its scarce capital idle. To take effective steps for utilising that part of the idle capacity which it is socially worthwhile to use must become another plank of the industrial planning strategy for the Fifth Plan.

7. On this basis a tentative picture of what is likely to be achieved at the end of Fourth Plan and what may be considered to be the target for the Fifth Plan with respect to investment value added, and employment are presented in the Table below.

TABLE

ITEM	YEAR			Increase During Fifth Plan	
	1971-72	1973-74	1978-79	AMOUNT	
1. Investment (Rs. million)					
(*a*) Fixed Capital	11,000	13,000	25,000	12,000	..
(*b*) Working Capital	4,000	7,000	1,000	8,000	—
TOTAL	15,000	20,000	40,000	20,000	100
2. Value added (Rs. million)	4,500	5,500	11,000	5,500	100
3. Employment (in thousand)	2,000	2,100	3,000	900	43

It has been assumed in the Table that a 100% increase in investment will lead to 100% increase in value added, despite high capital intensity in new investments, through increased capacity utilisation. Though the volume of employment increase will be substantial (9 lakhs), the percentage increase during the Fifth Plan will be about 43 per cent only The main reason behind this relatively low rate of employment increase is that in the main employment providing sub-sector (viz. non-registered small-scale), the main emphasis has been the elimination of disguised unemployment in that sector. The position visualised may be clear from the estimated sub-sectoral break up given in the following Table.

8. In this table the entire industry sector has been broken up in the following three sub-sectors .—

(*i*) *Census-Sector*—covering all units employing 50 workers or more, if using power and 100 workers or more, if not using power. This sector is covered by annual Census.

(*ii*) *Sample Sector*—Covering the remaining registered factory sector, i.e. all the units employing 10 to 49 workers, if using power, and those employing 20 to 99 workers, if not using power. This sector is surveyed annually by taking a sample.

(*iii*) *Non-registered Sector*—covering all the units employing upto 9 workers, if using power and those employing 19 workers, if not using power.

ITLM	CENSUS SECTOR		SAMPLE SECTOR		NON-REGISTLRED SECTOR.	
	1973-74	1978-79	1973-74	1978-79	1973-74	1978-79
1. Fixed Capital (Rs. million)	11,500	21,500	700	1,800	800	1,700
2. Value Added (Rs. million)	4,250	8,000	500	1,400	750	1,000
3. Employment (in thousand)	650	1,100	225	400	1,225	1,500
4. Fixed Capital Per employee (Rs)	17,692	19,545	3,112	4,500	653	1,133
5. Value added per employee (Rs)	6,539	7,239	2,223	3,461	612	1,066

It may be clear from above that it has been visualised that the average labour productivity will increase in all the sectors, the increase being highest in non-registered sector followed by the sample sector.

9. The entire proposed investment will cater for employment on the one hand and will sustain growth requirements of other sectors on the other hand. The total outlay will be met from the public sector investment as well as from the private investments through sharing of equities if joint or by direct investment if publicly managed.

TRANSPORT SYSTEM

The basic fact about road development in West Bengal is that even the moderate norm set up in 1943, known as the Nagpur Norm, has not yet been achieved. The change in the traffic pattern required older roads to be reconstructed with stronger structures. At the same time, extreme localization of the sources of road building materials, inflation, shortages of transport services together with relatively small financial allocations are the factors responsible for the backwardness of the State in this regard. To make up this leeway and also to meet the minimum need of connecting all villages having population 1500 or more by all-weather roads, a massive investment on road building is envisaged during the 5th Plan period. Such massive road development will create employment opportunities with a high co-efficient of dispersion over the different parts of the State.

2. It is thought desirable to develop all the potential natural deposits of road building materials within the State. By making such locations accessible, additional employment potentials will be created. Such natural depositions are found all along the western parts of southern Bengal and also in the relatively backward areas of the State.

3. It is considered possible to decentralize the administrative mechanism of road building within the State. Such decentralization will permit attainment of the twin objective of connectivity and centrality within a relatively shorter period of time.

4. The necessity of developing inland water transport network in the southern part of West Bengal has been noted. Particularly, the Bhagirathi river and the tidal waters in the Sunderbans provide easy opportunities in this regard.

5. In addition, some new rail-road routes are required to be laid in West Bengal. The conjunctive development of rail-road and inland water transport systems will probably reduce the necessity of road connection to some extent.

6. It is thought desirable to organise goods transport, at least partly, within the State. Sector Such limited competition between the public and private sectors in the management of transport services will improve the health of the economy substantially. To further development of such an organised sector, it is considered necessary to introduce land-use control measures regarding utilization of truck-loading points. Some specified truck-loading points or terminals are to be set up and supported by law so that the cost of continuous urban renewal may be minimized in future.

7. With these above objectives, the 5th Plan outlay for this sector has been worked out.

HEALTH, FAMILY PLANNING AND SOCIAL WELFARE

1. Health care in urban and rural areas :

A critical study of the health care system obtaining in West Bengal reveals certain characteristics and contradictions.

West Bengal has 25,000 doctors at present as compared to 45 million people, giving a ratio of 1 doctor : 1850 people This ratio is much better than the all India standard of about 1 : 3500 at the present time. However, the imbalance of the distribution of doctors between the urban and the rural areas is more manifest in this State than in many others. Of the 25,000 doctors, about 17,000 are located in the urban areas and only 8,000 in the rural areas. Again, of the 17,000 urban area doctors, large majority of them work in Calcutta and its neighbourhood.

Major part of the emphasis in re-orientation of the health care system in the State should therefore be placed on rationalising the distribution of the doctors between cities and villages and in ensuring that the rural folk get at least the minimum of care for prevention as well as treatment of their diseases. Emphasis has therefore been placed in the plan not so much on the expansion of college education in medicine but on the training of para-medical personnel, auxiliary nurses and midwives, introduction of 3 year diploma course in medicine, utilisation of interns from the medical colleges on a compulsory basis in district, sub-divisional hospitals and large health centres and finally, if necessary, utilisation of the practitioners of indigenous system of medicine for work in the sub-health centres and rural areas.

It has been stressed that all these schemes for the aumgentation of the health care of the people may be made use of as and when necessary in our State.

By the end of the Fourth Plan, West Bengal will have reached the target of one Primary health centre and two Subhealth centres in each block. Many of the Primary health centres in this State are fairly large with 20-50 beds. All the Sub-health centres have also between 2-10 beds. Provision of one more of such large Primary health centres and two or three more of such Sub-health centres in each block would, it is expected, be sufficient to give cover to the whole population of the block area adequately

2. Medical Education :

During the last several years, medical education in the State has suffered tremendously. There are many reasons for this including political instability and indiscipline amongst students but one of

the prime factors has been the difficulties faced by the Calcutta University in managing a huge number of students in various disciplines and in holding the examinations properly as per schedule. The University has great difficulty in ensuring proper medical teaching and training and as such examinations have been postponed time after time bringing the whole system to chaos. The medical students in West Bengal are at present about 2 years behind schedule as far as their M. B. B. S. examinations are concerned and this is also true of the post-graduate examinations

It has been felt almost universally that the only possible solution for this very difficult problem is to have a separate Medical University which will cater to a relatively small segment of overall student population and may therefore be better geared to controlling education as well as the examination system.

3. Public Health Problem :

West Bengal has been the traditional seat of certain communicable diseases, eradication of which is considered an important priority in the Fifth Plan Such diseases include cholera and small-pox In addition there are large pockets where filarial infestation and leprosy are endemic. These will have to be tackled vigourously. Malaria eradication should be continued. Tuberculosis is an important health hazard for the State. There are 5,000 tuberculosis beds in the State. Instead of increasing the number of beds further, it is desirable to increase the tuberculosis clinics and centres, enlarge the scope of B. C. G vaccination and control tuberculosis more on a domiciliary basis.

4. Water Supply and Sanitation :

West Bengal has a very poor standard as regards supplying pure drinking water to its towns and villages. Besides Calcutta, only 23 municipal towns have piped water supply. Even in Calcutta itself the availability of pure water supply is limited to a small area of the city. These anomalies should be removed to a considerable degree in the 5th Plan. Majority of the municipal towns in the State should be provided with piped water and provision for pure water supply in large parts of the rural areas must be ensured.

Only 4 municipal towns in the State outside Calcutta have proper sanitary arrangements. Even parts of Calcutta have no sewerage system. It would be necessary to remedy this state of affairs in as large areas as possible.

5. Family Planning and Welfare :

West Bengal is one of the States, where family planning and welfare work have not gathered as much momentum as they should have done. If we are to reach the target of minimum population increase of 1.5% at the end of the 5th Plan, tremendous efforts will be necessary in the State in this direction. This will require availability of large number of properly motivated medical personnel, social workers, extension educators, etc. The concept of family planning should be extended to family welfare and the family planning centres should not only advise people regarding limitation of families but should also look after the children between 0-6 years as well as their mothers during the pre-natal and the post-natal periods. The Family Planning and Welfare Centres should be in charge of all immunisation programmes for children and will also be responsible for the supply of nutritious food and vitamins to the mothers and the children.

6. Social Welfare Sector :

West Bengal has suffered tremendously during the last 25 years because of the vicissitudes of national calamities as well as man-made hazards. Continued influx of refugees from East Bengal

which reached its climax during the whole of 1971, visitation of two wars and partition of the country have all left their permanent impact in this unhappy State. It is not to be wondered therefore that the number of destitutes and also of people below the proverty line in the State exceed the all-India standard.

In consideration of these factors, social welfare work in the State needs to be considerably augmented. Emphasis must be placed on the care of unwanted and wayward children, destitute women as well as of people who are blind, deaf, mute or otherwise under-privileged. Incidence of beggary in West Bengal is one of the highest in Calcutta. It is estimated that there are about 1,50,000 beggars in the State. Large number of destitude people flock to Calcutta, from neighbouring areas, districts or even neighbouring States. This problem of beggars and vagrants needs to be tackled for this State at an all-India level. The Government, the public and the voluntary organisations must co-operate for the solution of this problem. Mere provision of vagrants homes will not serve the purpose. These homes have become like orphanages. It is necessary to provide vocational education to these unfortunate people and try to rehabilitate them as far as possible.

EDUCATION

1. The expansion of education during the last two decades has not been uniform at the several levels. While higher education has expanded very rapidly, the pace has been considerably slow on the plane of school education. With a view to redressing the imbalance, it is proposed to make a considerable outlay on elementary education and to limit higher education to its normal growth and marginal expansion. It is felt, however, that particular attention should be paid to research.

2. While the time-bound objective for elementary education laid down in the constitution has remained unfulfilled, such expansion as has been achieved has been deficient in quality at all levels of education as manifested in falling standards and declining academic values. Moreover, expansion has been spatially disparate, organisationally defective and to a large extent irrelevant to social and economic needs. Further, educational expansion has so far failed to develop, to any palpable extent, the essential role of education in creating a system that reflects the ethos of the nation and in ensuring that spiritual values are not neglected in the process of achieving material prosperity.

3. For a balanced development of education in the State of West Bengal, the following schemes are proposed .

Elementary Education

4. For 100% coverage of children in the 6-10 age group, 16,000 additional schools would have to be established and 64,000 additional teachers appointed and for 50% coverage of children in the 11-14 age group 7,600 additional schools and 38,000 teachers would be required. To improve and maintain the quality of teaching, facilities would have to be provided for the training of teachers and an effective system of inspection and supervision instituted. For the improvement of enrolment and for counter-acting drop-out free supply of text-books and mid-day meal should have to be arranged.

5. Apart from the fact that the number of high and higher secondary schools should be increased to take care of additional enrolment, secondary education should be considerably more diversified and organised to function as terminal education for the generality of students and as the base for higher education for such students as may have calibre and aptitude for the purpose It is necessary to improve the quality and standard of education by providing for facilities of teacher training and effective supervision.

6. Technical Education

Education at the level of polytechnics requires to be re-organised by providing for training in selected useful trades and courses to meet the man power requirement in industry, agriculture and other sectors. The existing resources appear to be adequate for the purpose

7. University and College Education

In view of the expansion already achieved, it is not felt to be necessary to make any considerable additional outlay except for such provision as may be warranted for maintaining normal growth. Provision, however, is necessary for the expansion of research facilities, particularly in inter-disciplinary areas of science and the social sciences. The system of higher education in the state requires to be reorganised by decentralisation, by relieving universities of the burden of under-graduate education other than at the honours level and by the revision of curricula and examination systems. It would be desirable to make the well developed colleges autonomous so that they can develop their own pattern of education and hold examinations on their own.

8. Adult Education

The removal of illiteracy, it is suggested, be made effective by linking up adult or social education with the network of primary schools. It is felt that this system would lead to considerable development of manpower resources.

9. Separate measures are felt to be necessary in the segments of elementary as well as secondary education to provide incentives for the expansion of the education of girls.

10. Physical Education

Physical education is in a languishing state and can be rehabilitated by an organised effort on state-wide scale at all levels of educational institutions, village community and clubs etc.

Sectoral Plans :

- Agriculture including Dairy, Animal Husbandry, Fishery, Cooperatives and Land Reforms.
- Flood Control, Drainage and Irrigation.
- Power and Rural Electrification.
- Industry and Minerals.
- Housing, Urban and Regional Development including Tourism and Panchayats.
- Transport System.
- Health, Family Planning and Social Welfare.
- Education.
- Employment and Labour.
- Marketing and Price.

CHAPTER III

AGRICULTURE INCLUDING DAIRY, ANIMAL HUSBANDRY, FISHERY, COOPERATIVES AND LAND REFORMS.

1. Need

1.1 Population of West Bengal will be about 48 million by the end of the 4th Plan in March, 1974. Average requirement of cereal per capita per day is usually taken to be 0.45 Kg. On this basis, cereal need at the end of the 4th Plan will be of the order of 87 lakh tonnes, including normal wastage and seed requirements. However, most of the peasants and workers engaged in heavy manual work consume, when they have the money, about 1 Kg. per capita per day At the other extreme there are a few in the high-income group who may require only 0.25 Kg. p.c.p.d. Assuming on this basis that the daily optimum cereal requirement per capita will be 0.75 Kg. the following table summarises the total requirement at the end of the 4th and the 5th Plans on the two standards set forth.

TABLE

Standard of p.c.p.d. requirement.	Total cereal requirement per year (including seed & normal wastage) lakh tonnes.	
	March 1974	March 1979
0.45 kg.	87	98
0.75 kg.	140	162

With improvement in the standard of living, a gradually increasing part of our agricultural produce will have to be diverted for use of live-stocks so that we may substitute gradually larger part of our direct requirement of cereal by increasing the amount of milk and meat.

2. The Possibility

2.1. At the beginning of the 4th Plan, cereal production in West Bengal stood at 64 lakh tonnes. At the end of the 4th Plan, the figure is likely to be 80 lakh tonnes, indicating a deficit of 7 and 60 lakh tonnes respectively on the basis of the two standards mentioned above. If production increases during the 5th Plan at the rate prevalent during the 4th Plan i.e. at a rate of 4.6% per annum (compound) the difference at the end of the 5th Plan will be of the order of surplus of 2 and deficit of 62 lakh tonnes respectively.

2.2 This formidable deficit, on the basis of expected higher standard of consumption of the order of 70 lakh tonnes at the end of the 5th Plan must be recognised for two main reasons. The first is that this deficit is an index of the unfulfilled need of the under-privileged section of our population for their minimum food requirement. This big deficit, however, cannot get reflected in the market because the poor cannot support their needs with money. If we do not take into account this food need and confine ourselves to only that part of the need which can be translated into demand, we shall be failing to

provide the minimum needs of the people. Secondly, it is technologically feasible to-day to achieve a dramatic increase in food production, if appropriate inputs can be made available and a suitable socio-economic organisation can be brought into being that will assure the most efficient utilisation of modern technology. It is only this sharp awareness of the magnitude of deficit between need (not demand) and supply that would generate the required degree of urgency to move ahead quickly during the next seven year including the remaining period of the 4th Plan.

2.3 The strategy for increasing food production will have to be designed in such a way that particularly those who are below the poverty line can derive a substantially higher income. It is only then that they will be able to transform their need into effective demand. Any other strategy may lead to surplus in food production despite increasing hunger It is in this context that one may appreciate the urgent need of introducing radical land reform, and providing the middle and poor peasants in particular with the required technological means, including credit, with which they may augment the productivity of their land. This will have to be supplemented with an appropriate wage policy for agricultural workers, substantial portion of whom may remain landless even after introducing land reform.

2.4. It has been stated earlier that to fulfill the food need of the entire people, it will be necessary to double the food production during the 5th Plan involving a growth rate of 15 % per annum (compound). However, considering the constraints on industrial input supply such as fertiliser and power etc and also on the organisational ability to achieve the required socio-economic structural transformation, a growth rate of 10.2 % per annum is suggested as the target in the field of cereal production for the 5th Plan This will ensure an additional increase of food grain by 50 lakh tonnes by the end of the 5th Plan to reach the total level of 130 lakh tonnes which can assure, after providing 12½ % for seed and normal wastage, a little more than 0.56 Kg per capita per day Fuller satisfaction of cereal need may, therefore, have to wait till the 6th Plan.

2.5. The dimension of the task involved may be clear from the following facts. Average productivity of cereal is now about 1.22 tonnes per hectare (net), and this is expected to reach the level of 1.43 tonnes per hectare in 1974. Through comprehensive modernisation this can be increased to 5 tonnes per hectare involving about 2.7 crops per area per year. If such a level of productivity can be achieved then the required additional production of 50 lakh tonnes may be obtained from only 13 lakh hectares alone out of the total of 56 lakh hectares available in West Bengal.

2.6. The above target is sought to be reached by covering 10 lakh hectares in Comprehensive Area Development Projects (CADP) with compact area of 4,000 hectares each. There will, then, be 250 C. A. D. Ps during the 5th Plan producing 50 lakh tonnes cereal, i e. additional 10 × (5.00 — 1.43) or 35.7 lakh tonnes of cereal The remaining 46 lakh hectares then will have to produce 130-50 or 80 lakh tonnes denoting a productivity of 1.74 tonnes per hectare. Compared to 35.7 lakh tonnes of additional production proposed from 10 lakh hectares in the CADP area, the remaining 46 lakh hectares will be required to produce additional only 46 × (1.74—1.43) or 14.3 lakh tonnes. It is visualised that during the next 12-15 years the entire cultivated area in the state will be brought under CADP.

2.7. Higher productivity, along with a more equitable distribution of income in the CADP area, is proposed to be achieved by (*i*) removing the shackle of existing debt burden of the poor peasants to the mahajans which will enable these peasants to get cheap bank credit with hypothecation of crop, (*ii*) ensuring marketing of the entire produce through the project which will free the poor peasants from the grip of speculative traders and will also ensure repayment of loan, (*iii*) ensuring irrigation and drainage facility and also the required inputs to the entire project area which will minimise the cost of infrastructure per unit area or per unit of produce and also will maximise the level of productivity in the entire area, (*iv*) ensuring proper implementation of land reform laws and other allied laws for share croppers for minimum wage to agricultural labour which will guarantee equitable distribution of land ownership, a far better return along with security to the share croppers and agricultural labourers and abolition of rack renting, (*v*) ensuring total need of credit to the peasants

through pre-emption on rural bank and other institutional deposits for rural development which will also eliminate usury, (*vi*) ensuring an integration of all existing schemes on marginal farmer, small farmer, agricultural labourers, flood control etc. with the comprehensive development programme for the project area, and (*vii*) ensuring an integrated development of animal husbandry, small industry, servicing centre etc. Introduction of many of these measures will require new legislation as well as joint participation of farmers, State Government, Banks, Food Corporation, Fertilizer Corporation, and all other allied organisation in the management of the project.

2.8. Estimated total investment required for modernising the entire area of 10 lakh hectares, with compact blocks of 4,000 hectares each, will be of the order of Rs. 588 crores. This is equivalent to a cost of Rs 2.35 crores for each of the 250 projects. In addition, there will be establishment cost, cost of borrowing working capital and for providing crop insurance, risk fund, loan and interest repayment etc. Taking all these elements into account, total fund required for modernising agriculture in 10 lakh hectares will be Rs. 825 crores or Rs. 3.3 crores per project of 4,000 hectares. Broad itemwise expenditure for the proposed 250 projects will be as follows :—

A.	**Fixed Capital Investment :**			
1.	Minor irrigation. (Tubewell & Pumps)	Rs. 60 lakh	× 250 =	Rs. 1,50,00 lakh
2.	Village roads.	Rs. 20 lakh	× 250 =	Rs. 50,000 lakh
3.	Local power connection.	Rs. 6 lakh	× 250 =	Rs. 15,00 lakh
4.	Small Industry.	Rs. 29 lakh	× 250 =	Rs. 72,50 lakh
5.	Dairy, Poultry, Cold Storage.	Rs. 40 lakh	× 250 =	Rs. 1,00,000 lakh
6.	Land for marketing centre and grain gola.	Rs. 4 lakh	× 250 =	Rs. 10,00 lakh
7.	Area development. (levelling etc.)	Rs. 34 lakh	× 250 =	Rs. 85,00 lakh
8.	Others (Trucks, Tiller etc).	Rs. 42 lakh	× 250 =	Rs. 1,05,00 lakh
	Total Fixed Capital investment	Rs. 235 lakh	× 250 =	Rs. 5,87,50 lakh
B.	*Establishment and Contingency* (5 Yrs).	Rs. 30 lakh	× 250 =	Rs. 75,00 lakh
C.	*Working capital loan (short term).*	Rs. 65 lakh	× 250 =	Rs. 1,62,50 lakh
	GRAND TOTAL	Rs. 330 lakh	× 250 =	Rs. 8,25,00 lakh

It may be clear from above that a large part of the fixed capital investment required for the CADP is to be provided under different departmental "heads" of expenditure. Thus, in the overall expenditure pattern for all the sectors and departments, the investment required for village roads, local power connection, small industry and most of minor irrigation have already been accounted for. These together come to Rs. 96 lakhs ×250 or Rs. 240,00 lakhs So, an additional sum of Rs. 348 crores (588—240) of fixed capital investment and 5 year establishment cost of Rs 75 crores or a total Rs 423 crores need be provided for the development of 10,000 hectares. This is in addition to working capital loan of Rs. 163 crores.

2 9. Excluding the investments proposed for Small Industry, animal husbandry, etc and concentrating on agriculture alone, the proposed pattern of investment per hectare will be of the following order :

A.	Fixed capital investment.	:	Rs.	4,125 per hectare.
B.	Estb. and contingency.	:	Rs.	150 per hectare.
C.	Working capital loan.	:	Rs.	1,625 per hectare.

With this investment, it will be possible to have an agricultural output of Rs. 7,000 per annum at 1971-72 price level. With this gross income it will be possible to pay back annuity at 10 % for 10 years on loan advanced for fixed capital and establishment cost as well as the whole of working capital with 10 % interest, and the cost of maintenance of fixed assets. The position will then be a follows :

A. Gross income per hectare.		:	Rs.	7,000
Deduct	(*i*) annuity at 10% for 10 years on Rs. 427-5	:	Rs.	685
	(*ii*) working capital.	:	Rs.	1,625
	(*iii*) 10 % interest on working capital.	:	Rs.	163
	(*iv*) maintenance of fixed capital at 3%.	:	Rs.	124
	Total Deduction	:	Rs.	2,597
	Or Say.	:	Rs.	2,600
B. Net income per hectare.		:	Rs.	4,400

The wage component (including the imputed wage of family labour) of the above net income will be Rs. 1,400 and the remaining Rs 3,000 will be net surplus Through the provision of livestocks, poultry etc. the income of landless and poor agricultural families may be increased further.

2.10. The most important aspect of the CADP project, from the financial point of view, is that it will be able to pay back the entire loan with interest, short term as well as long term, which will include even the fund advanced for establishment cost and even then there will be a sizeable income increase for all the peasants, including landless peasants. As such this project may not only claim funds under the minimum needs and employment programme but also those under SFDA, MFAL, operation flood, drought prone programme, C. S. R. E. etc. as well as from Banks, etc. For poorer farmers bank advances can be had with lower rate of interest. Moreover, all the above programmes including that of bank advance to private agriculturist, will then be economically viable through their integration with the overall area development programme of CADP.

2.11. It has already been mentioned that this 10 lakh hectares to be covered by CADP will account for additional 36 lakh tonnes of cereal by the end of the 5th Plan, and the remaining additional (50-36) or 14 lakh tonnes will be produced in the remaining 46 lakh hectares resulting in average productivity of 2.32 tonnes per hectare. Through protective irrigation, introduction of HYV seeds, and a better supply of fertilizer, it will be possible to achieve this target.

2.12. Assuming that fertilizer need per hectare per crop in terms of nutrients is 64 Kg. of N, 43 Kg of P, and 43 Kg. of K, the total fertilizer need for 10 lakh hectares of CADP with a cropping intensity of 2.7 will be :

N	=	1,72,800	tonnes
P	=	1,16,100	tonnes
K	=	1,16,100	tonnes
Total	=	4,05,000	tonnes.

Assuming further that in the remaining areas of 40 lakh hectares, only 25% of the requirement will be used and the average cropping intensity will be 1.5, the total requirement of nutrients will be of the order of 2.6 lakh tonnes. Of this overall total of 4.05 + 2.60 = 6.65 lakh tonnes, 2.83 lakh tonnes will be N, 1.91 tonnes P, and 1.91 lakh tonnes K

Against this requirement, one may look at the capacity of two proposed fertilizer plants at Durgapur and Haldia. These are as follows :

	N	P
Durgapur	1.52	—
Haldia	1.52	0.76
Total (lakh tonnes)	3.04	0.76

As entire K is to be imported, it may thus appear that with feasible expansion programme in fertilizer production, the agricultural development programme visualised is quite feasible at least *vis-a-vis* fertilizer supply.

2.13. If the total 10 lakh hectares (roughly about 7,500 villages) are to be irrigated through electric pumps, total connected load will have to be of the order of 1,000 MW. With a staggering of demand this may be satisfied with a generating capacity of 750 MW. A total generating capacity of 1500 MW, which will assure 750 MW to the remaining other areas, may, therefore, be needed for the rural area within the 5th Plan. It may be mentioned that there is already a programme of electrifying 10,000 additional villages during the 4th Plan.

2.14 Total direct demand on engineering goods for the 10 lakhs hectare CADP area may be of the order of 350 crores during the 5th Plan of which Rs. 125 crores may be on pumps and tubewells and Rs. 200 crores for capital equipment for power generation and distribution etc For the whole of rural West Bengal, the corresponding figure may be of the order of Rs. 650 crores for five years or Rs 130 crores per year.

2.15. In terms of physical targets, the above programme, including that on CADP ,will lead to an increase in cereal production from 80 lakh tonnes in 1974-75 to 130 lakhs tonnes in 1979-80. This will involve provision of assured perennial irrigation to 10 lakh hectares in addition to protective and partly perennial irrigation to most of the other areas. The increase in production of other crops may be of following order.:—

Crops	Estimated level at the end of 4th Plan	Target for the 5th Plan
Jute ('000 bales)	3500	4500
Oilseeds ('000 tonnes)	70	140
Sugarcane (t") (Gur)	150	200
Pulses (t")	400	500

21.6 Increasing in cropping intensity from 1.22 to 2.7 in 10 lakh hectare CADP and to 1.5 in remaining 46 lakh hectares during the 5th Plan will mean that gross area under cultivation will increase from 67 lakh hectares to 96 lakh hectares, i.e additional 29 lakh hectares. Assuming that 17 man-days of labour are required per hectare and 250 man-days of work per year per worker denotes full employment for him, then total additional employment generated will be equivalent to full time employment of 20.3 lakh persons, a part of which will be new employment and the remaining part will mean reduction or elimination of under-employment to a larger volume of presently under-employed workers.

2.17. *Dairy :* A massive dairy development programme is an integral part of the CADP and it must be introduced in other areas also which will be covered by CADP later. This programme is proposed as a part and continuation of the "Operation Flood" project initiated by the National Dairy Development Board and approved by the National Commission of Agriculture. The National Commission on agriculture strongly recommended the linking up of SFDA and MFAL projects with Operation Flood and State Dairy Schemes, as these programmes are best suited to the small and marginal farmers and also the landless labourers. The scientific management of the envisaged modern dairy system need a highly organised supervision and management service. As such, a concentrated and integrated management system implied in CADP can alone take up this responsibility with allround economy and efficiency. The same infrastructure of roads, electricity, tubewells, drainage, crop rotation, godowns, transport, marketing, etc. will result in integration of all these schemes.

An allocation of Rs. 50 crores for the projects in the CADP area and an additional Rs. 50 crores for other areas may be needed for dairy and other allied development during the 5th Plan.

2.18. While Cattle Development will form an integral part of the dairying and milk supply Programme, other animal husbandry Programmes like development of poultry, duckery, piggery, sheep farming and fodder development will also need to be developed to a sizeable extent to serve as subsidiary occupations for marginal farmers and landless agricultural labourers. The veterinary programme during the Fifth Plan will be to provide a high quality health cover in adequate measure throughout the State.

2.19. *Fisheries :* Fish is a major item of consumption in West Bengal. It is consumed widely by the State. However, only 30 per cent of the total supply of fish is produced within the State. The remaining 70 per cent is supplied by a number of other States, far and near, most of whose population do not consume fish but earn richly from the transactions with West Bengal. The potential water area suitable for cultivation of fish within the State was reduced considerably after partition. The existing water area with its present level of productivity per acre, is inadequate for meeting the State's requirements of fish. It may be possible to increase the supply of fish substantially if the productivity of water area is raised through available scientific methods. A programme has been drawn up for revival of derelict tanks and other fishing areas, extensive cultivation of seedlings through seed farms, research work on improved breeding of fish etc. to impart a big push to production of fish from inland waters. There is also an ambitious scheme for developing fishing in marine waters in the Bay of Bengal. A Fisheries Corporation has been active in the State. The projects mentioned above would need allocation of Rs. 20 crores during the Fifth Plan.

Co-operatives

2.20. The schemes on co-operation cover, (*i*) short term credit, (*ii*) long term credit, (*iii*) agricultural credit (relief and guarantee) fund, (*iv*) co-operative and development fund, (*v*) marketing, (*vi*) processing and coal storage, (*vii*) fishery, (*viii*) consumers co-operative, (*ix*) housing co-operatives (*x*) transport co-operatives (*xi*) labour co-operatives, (*xii*) unemployed engineers' co-operative, (*xiii*) education and training for co-operative workers and officers. All these activities will require an allotment of Rs. 22 crores if funds are available.

2.21. Much of the above activities will overlap with the CADP scheme. Indeed CADP itself is a higher form of co-operative with a number of regulatory and restrictive measures both for the optimum utilisation of the costly infrastructures and inputs as well as for ensuring regular flow of credit and its repayment by way of control over the marketing of produce The Co-operative Sector should be allowed a greater share of the marketing of main agricultural produces as well as of distribution of fertiliser along with agro-industries corporation limited.

2.22. The close integration of the CADP projects with the co-operative department of the Government is likely to rejuvenate the so far undeveloped co-operative movement in West Bengal. Ultimately a situation will arise when CADP will no longer need the element of statutory compulsion. The people within the CADP will be used to the co-operative way of life and simple voluntary co-operative agencies will be enough to run their life and business.

2.23 It was mentioned earlier that introduction of land reform and other allied measures is an essential component of the visualised rural modernisation programme. For an orderly introduction of these reforms, a systematic data base covering at least the following items is urgently needed :—

(*i*) data on record of rights,

(*ii*) data on existing debt along with their sources and terms,

(*iii*) data on existing normal marketing channel and its effect on prices paid and received by actual growers,

(*iv*) data on the extent of availability of irrigation by source and cost,

(*v*) data on the level of agricultural wage and availability of work in different seasons,

(*vi*) data on terms of share cropping etc.

2.24. Preparation and revision of record of rights has already been started in five districts. The remaining nine districts excluding Purulia (where revisions settlement operation is in progress) should also be covered.

2.25. Operations mentioned above will require a total expenditure of Rs. 4-crores.

2.26. The total outlay under the head 'agriculture, dairy, fishery, co-operative and agricultural statistics during the 5th Plan is shown in the following table, if funds are made available.

Rs. Crores

	Min-needs	Emp Scheme	Others	Public	Private	Total
1. Agriculture :						
(*a*) Minor Irrigation		100	100	100	100	200
(*b*) Village road	10	40	—	50	—	50
(*c*) Local power connection	10	—	5	10	5	15
(*d*) Small industry	-	35	37	35	37	72
(*e*) Area development (levelling etc.)	—	60	25	60	25	85
(*f*) Trucks, Trillers etc.	—	—	105	105	—	105
(*g*) Others (normal programme)	—	—	110	110	—	110
(*h*) Est. charge for CADP	-		75	75	—	75
(*i*) Working capital loan	—	—	170	—	170	170
2. Dairy, Cold Storage. Animal Husbandry, Poultry & Veterinary service	-	50	50	50	50	100
3. Fishery	—	20	-	20	—	20
4. Forestry (Shown under Industry Sector)						
5. Co-operative	—	—	23	15	8	23
6. Statistics, land records	—	—	45	45	—	45
	20	305	745	675	395	1070
Deduct expenditure on items 1 (a to e) under min-needs, employment scheme and public investment only which has been included under other heads.	20	235	—	253	—	255
	—	70	745	420	395	815

CHAPTER IV

FLOOD CONTROL, DRAINAGE & IRRIGATION

1. Introduction :

The geographical situation of West Bengal is such that functions related to control of floods, improvement of drainage conditions and extension of irrigation facilities require an integrated approach. However, water resource management in West Bengal has so far been the responsibility of two ministries, viz. the Irrigation & Waterways Department and the Agriculture Department. The various issues related to flood-control are the exclusive responsibility of the I & W Department. The same department looks after drainage and gravity-flow irrigation. But some gravity-flow irrigation schemes costing upto Rs. 2.0 lakhs and some drainage schemes costing upto Rs. 50.0 thousand each are undertaken by the Agriculture Department. This Department also undertakes exclusively all lift-irrigation projects using deep-tubewells, river lifts, shallow tubewells and also dug wells. Apart from these government agencies, there is also private sector management of different sources of irrigation.

All the above mentioned agencies have achived varying rates of growth in the sphere of irrigation. A rough idea of the gross irrigation potential created upto the end of 1970-71 can be obtained from Table -4.1.

TABLE 4.1

Date Line : 1970-71

Sources	Gross command area (Lakh Acres)
IRRIGATION & WATERWAYS DEPARTMENT	
(*a*) Major and Medium Irrigation	19.38
(*b*) Minor Irrigation	0.38
AGRICULTURE & C. D. DEPARTMENT	
(*c*) Deep Tubewells	2.25
(*d*) River Lifts	1.50
(*e*) Shallow Tubewells	1.50
OTHER SOURCES	
(*f*) Private Canals (Old figures)	9.87
(*g*) Tanks (Old figures)	8.35
(*h*) Wells	0.40
(*i*) Miscellaneous	3.25
GRAND TOTAL	46.88

Source of Information : Mid-term appraisal of the 4th Plan (1970-70) Govt of West Bengal Agriculture Department.

It is, however, difficult to know, or substantiate with data, how much of this irrigation potentials get upset by annual flood-hazards. Excepting for the district of Purulia, flood and drainage problems exist in varying degrees in every other district of the State. As most of the rivers are rainfed, as the gradients between the Himalayas and the plains change abruptly, as widespread deforestations in past have affected the thalweg of all rivers coming from the Chhotnagpur plateau, and as the tidal plains merge imperceptibly with the riparian plains, West Bengal faces all kinds of hazards from impeded drainage and destructive floods. As most of the sites suitable for storing the seasonal run-off temporarily are generally located beyond the geographical limits of the State, flood control measures are ordinarily adopted with a view to confine the flood water as far as possible within the river bed by constructing flood embankments, spurs, etc. However, such measures have proved ineffective repeatedly in the past and in consequence have added to the drainage problems. The loss of irrigation potentials is just one of the many instances of the damage so caused.

The command areas of irrigation facilities appear to fluctual annually. Probably this is an external manifestation of variations of rainfall in this part of the world. Rainfall is variable not only from year to year but also from place to place. As the irrigation potentials from gravity flow system are products of rainfall within the given thalweg, the annual variations of command areas of the different gravity-flow irrigation systems within the state indicate the level of uncertainty in this regard. Some relevant information in this context is obtainable from Table 4.2 where the command areas of four continuously expanding schemes have been shown for the last decade. Such a situation really calls for conjunctive use of ground and surface water. However, such an integrated technology has not yet been achieved. In working out our strategy for the 5th Five Year Plan, the possibility of realizing such an integrated strategy between ground water and surface water, between flood amelioration, drainage and irrigation has been worked out in further details.

2. Anticipated achievement during the 4th Plan period.

2.1 *I & W Department:*

(i) *Flood control & Drainage*—The total provision of Fourth Plan in this regard was Rs. 1,055.00 lakh. By the end of 1972-73, the total expenditure will be Rs. 1,209.94 lakh. This means, that additional funds will be necessary to meet the deficit in 1972-73 and to continue work in 1973-74.

In Table 4.3 achivement or physical targets reached in this context are shown. The total length of embankments as well as drainage canals will increase to 105.87 and 100.58 against 1965-66 base (100). The area protected, however, will increase to 110.37 over 1965-66 base (100).

(ii) Irrigation—Minor, Medium & Major—The total provision for 4th Plan in this regard was Rs. 1,800 lakh. But it is expected that by the end of 1972-73 a sum of Rs. 1,817.56 lakh will be spent. This will mean that additional funds are necessary for the remaining part of the 4th plan.

In Table 4.4 the achivements by physical targets reached in this context are shown. Over 1965-66 base (100) the area under minor irrigation will increase to 197.18, that under major and medium irrigation will increase to 141.33 and that under total irrigation will increase to 142.53.

We may, however, note that the infrasturucture created by such developmental efforts, such as, irrigation is being utilised by the people. But against such use, commensurate revenue is not collected. This will become evident from Table 4.5 which reveals the picture over the last decade.

TABLE 4.2

Actual Irrigated Area (Lakh Acres)

Source	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
MAYURAKSHI PROJECT	4.75	4.77	4.93	5.28	5.16	5.41	5.40	5.46	5.51	5.73
D. V. C.	6.49	6.50	6.76	6.89	7.11	7.28	7.52	7.79	8.05	8.62
MIDNAPUR H. L. CANAL	0.97	1.10	0.99	0.94	0.97	1.02	0.96	0.98	0.98	1.01
MINOR IRRIGATION	0.17	0.18	0.19	0.20	0.16	0.19	0.18	0.15	0.12	0.16

Source of Information : Working Group of S. P. B. on Surface. Water Irrigation.

TABLE 4.3

Physical targets reached (4th Plan)-Flood Control & Drainage

District	Embankment (Km constructed)		Towns (Nos) Protected		Drains (Km constructed)		Area (Hec.) protected	
	1965-66	1973-74	1965-66	1972-74	1965-66	1973-74	1965-66	1973-74
Darjeeling	4.00	7.00	2	2	—	—	3329	4429
Jalpaiguri	125.37	148.79	4	4	—	—	130360	160000
Coochbehar	64.41	150.00	4	4	—	—	26280	42000
W. Dinajpur	45.00	80.00	—	2	5	10	5000	9000
Malda	225.00	270.00	2	3	15	18	40000	42000
Murshidabad	1200.00	1350.00	2	2	15	28	250000	300000
Nadia	225.00	227.00	2	2	30	50	75000	76000
Birbhum	10.00	160.00	—	—	2	2	2150	36000
Burdwan	150.00	176.00	1	2	50	95	120000	140000
Bankura	15.00	15.00	—	—	—	—	2000	2000
Purulia	—	—	—	—	—	—	—	—
Midnapur	6400.00	6580.00	2	2	400850	402950	400000	402000
Hooghly	900.00	920.00	3	5	210	225	60000	65000
Howrah	1205.00	1240.00	6	8	306	320	50000	51000
24-Parganas	4000.00	4100.00	6	10	650	800	900000	950000
West Bengal	14568.78	15423.79	34	47	402132	404495	2065219	2279429

Source : I W Department

TABLE 4 4

Physical targets reached (4th Plan)-Irrigation (000 Hec) gross

District	Minor Irrigation		Major & Medium		Total	
	1965-66	1973-74	1965-66	1973-74	1965-66	1973-74
Darjeeling	1.61	2.93	—	—	1.61	2.93
Jalpaiguri	6.10	10.00	4.51	7.32	10.61	17.32
Cooch Behar	0.19	0.97	—	—	0.19	0.97
West Dinajpur	—	0.78	—	0.60	—	1.38
Malda	—	—	—	—	—	—
Murshidabad	—	—	62.15	67.13	62.15	67.13
Nadia	—	—	—	—	—	—
Birbhum	1.25	1.25	213.50	235.60	214.75	236.85
Burdwan	—	—	327.98	380.67	327.98	380.67
Bankura	4.09	5.72	58.80	380.67	327.98	380.67
Purulia	0.64	3.47	—	6.25	0.64	9.72
Midnapore	2.41	7.00	68.64	187.85	71.05	194.00
Hooghly	—	—	—	—	—	—
Howrah	—	—	4.38	5.93	4.38	5.93
24 Parganas	—	—	—	—	—	—
West Bengal	16,29	32,12	739,96	1045.79	756.25	1077.91

Source : I & W Department.

TABLE 4.5

Revenue Return (irrigation) I & W Deptt.

(Rs. crores)

Year	Revenue Due	Revenue Collected
1961-62	1.15	0.20
1962-63	1.15	0.86
1963-64	1.18	0.61
1964-65	1.19	0.98
1965-66	1.20	0.56
1966-67	1.21	0.72
1967-68	1.25	0.62
1968-69	1.29	0.68
1969-70	1.54	0.54
1970-71	1.64	0.47
TOTAL	12.80	6.24

Source: SPB Working Group on surface water irrigation.

2.2. Agriculture & C. D. Department :

The components of total responsibility of this department in the present context are as follows :

(i) Deep tubewells ;

(ii) River lift irrigation ;

(iii) Surface water irrigation schemes costing upto Rs. 2.0 lakh each and surface drainage scheme costing upto Rs. 50.0 lakh each ;

(iv) Re-excavation of derelict tanks ,

(v) Shallow tubewells ;

(vi) Small irrigation schemess costing upto Rs. 10,000 each ;

(vii) Supply of small horse-power diesel pump sets ;

(viii) Dugwells (executed in drought prone areas).

The 4th Plan financial allocation was follows

	Objective	(Lakh Rs.)
1.	Deep tubewell	480.02
2.	River Lift irrigation	1100.00
3.	Minor irrigation	200.00
4.	Tank irrigation	116.00
5.	Private tubewells including filter points	377.00
6.	Small irrigation	75.00
7.	Purchase of debentures of land Mortage Banks & Agriculture Refinance Corpn.	100.00
8.	Loans & subsidy for dugwells	18.00
9.	Lift Irrigation by supply of pump sets	175.00
10.	Supply of pumpsets for use by cultivators	—
11	Survey & investigation of ground water and surface water resources ...	100.00
12.	Scheme for strengthening extension and administration under C. E. (Agri.).	10.00
	TOTAL ...	2751.02

Out of this allocation, by the end of 1972-73, Rs. 2,300.29 (lakh) is expected to be spent leaving a spill-over of Rs. 450.73 (lakh) for the last year of the 4th Plan period.

(i) **Deep tubewells.**—The physical targets achieved upto June 10, 1972 are shown in Table 4.6. The original target for the 4th Plan period was to sink 1000 units. The revised target is 600 units. On account of paucity of funds it is difficult to affirm at this stage if this target would be fulfilled at the end of the current plan.

(ii) **River-lift irrigation:** The physical targets achieved upto June 10, 1972 are shown in Table 4.7. Installation of 400 units was chosen as target for the 4th Plan. Financial constraints make it difficult to affirm the fulfilment of the target at present.

(iii) **Surface irrigation and drainage schemes :** As many as 20 Minor Irrigation schemes and 42 Minor drainage schemes have so far been completed. Taking the current continuing schemes, the total number to be completed by the end of 1972-73 will be 10 minor irrigation schemes and 90 minor drainage schemes. The target for 1973-74 is not yet fixed.

(iv) **Derelict Tank improvement :** The physical targets achieved is not known. It is proposed to improve 150 such tanks in 1972-73 and 250 nos. during 1973-74.

(v) **Shallow Tubewells :** The 4th Plan target was to sink 35,000 shallow tubewells including filter points. Before the beginning of the 4th Plan, 12503 nos. were executed (end of 1968-69). The physical progress achieved and anticipated is as follows:

During	1969-70	...	5860	nos.
	1970-71	...	6862	nos. (approx.)
	1971-72	...	6000	nos. (approx.)
	1972-73	...	3750	nos. (anticipated)
	Total :	...	22472	nos.

TABLE 4.6

Physical achievement—Deep tubewell irrigation—as on 10.6.72

District	Nos. Drilled.	Nos. electrically energised	Nos. Diesel energised	Nos. completed in all respects	Irrigation Command Area (000 acres)		
					Pre-khariff	Khariff	Rabi
Darjeeling	1	—	1	1	—	—	—
Jalpaiguri	33	--	33	33	0.08	0.2	0.07
Cooch Behar	15		3	3	0.1	0.1	0.1
W. Dinajpur	96	---	90	73	0.6	1.5	1.5
Malda	84	52	--	52	1.2	9.5	2.2
Murshidabad	264	229	—	229	7.0	1.0	10.9
Nadia	469	448	--	446	12.1	8.5	24.2
Birbhum	26	25	1	22	0.5	3.3	1.5
Burdwan	195	191	---	184	4.8	9.4	10.3
Bankura	59	56	–	52	0.8	0.9	1.5
Purulia	—	--	--	--	--	--	--
Midnapur	99	72	1	57	2.3	1.9	3.3
Hooghly	168	137	--	133	2.4	9.7	5.7
Howrah	59	29	1	18	0.9	0.5	0.4
24 Parganas	188	168		166	7.3	18.8	15.4
West Bengal	1756	1407	130	1469	40.08	65.3	77.07

TABLE 4.7

Physical achievement—River-lift irrigation—June 20, 1972

District	Nos. installed	Nos. run on diesel pump	Nos. completed in all respect	Irrigation command area
Darjeeling	1	1	—	Not known
Jalpaiguri	7	7	—	Ditto
Cooch Behar	17	17	—	Ditto
W. Dinajpur	60	60	1	Ditto
Malda	125	125	—	Ditto
Murshidabad	104	104	—	Ditto
Nadia	67	67	7	Ditto
Birbhum	35	35	2	Ditto
Burdwan	101	101	13	Ditto
Bankura	48	48	—	Ditto
Purulia	9	9	—	Ditto
Midnapore	130	130	—	Ditto
Hooghly	152	152	9	Ditto
Howrah	30	30	—	Ditto
24 Parganas	57	57	2	Ditto
West Bengal	943	943	34	Ditto

Source—Agric. Deptt. — Mid-term Appraisal.

(vi) **Supply of pumpset :** Up to the end of 1968-69, the total number of diesel pumpsets distributed stood at 15,545 (cumulative). The 4th Plan target was to distribute 25,000 such sets. The physical progress achieved and anticipated is as follows :

During	1969-70	..	6356	nos.
	1970-71	..	5337	nos.
	1971-72	..	11300	nos. (approx.)
	1972-73	..	1875	nos. (anticipated)
	Total	..	24858	

(vii) **Survey and investigation of ground and surface water resources :** A small unit is trying to obtain proper understanding in this regard. Out of the quantum of work required in this context, only 5% has been completed during the last 2 years.

3. Critique of Achievements in irrigation

(a) Irrigation :

(i) In the absence of any irrigation survey in the state during the last 28 years no clear picture about the area receiving irrigation, net or gross, is available. The figures given in this paper are estimates basically.

(ii) The potentials of gravity-flow irrigation are limited to khariff and rabi seasons alone. No pre-khariff irrigation is possible from this system. The ratio between khariff and rabi irrigation works out to be 93.7 i.e. for every 100 units of irrigation water available in a year, 93 units go for khariff season. This clearly shows that gravity flow irrigation is abjectly dependent on rainfall. This also shows that the technique really subserves the purposes of flood-control in the sense that it helps to spread the monsoon run-off over a large area. Two points emerge from this situation, viz.,

(a) that flood control technique should be integrated with gravity-flow irrigation wherever possible :

(b) that ground-water resources should be tapped and integrated with gravity-flow irrigation as a supplementary system with a view to obtain a perenial infra-structure for multiple cropping.

(iii) The tubewells are better situated in the sense that they provide irrigation during pre-khariff, khariff and rabi seasons in the ratio of 22:36:42. This means that out of 100 units of irrigation water available in a year, 22 units go to pre-khariff season and 36 & 42 units from khariff and Rabi season respectively.

(iv) The progress of lift irrigation clearly shows inefficient return of investments. For example, only 87.52% of the deep tubewells were energised as per Table—4.6 and only 83.65% of these were laid with distribution channels etc. Regarding river-lift irrigation, the situation is still worse. From Table 4.7 it is clear that only 0.36% of the units had complete infrastructure in 197.2. The situation calls for better planning. The distribution lines should be constructed before the lift irrigation set is energised and the gap between the two should be kept at the minimum.

(v) The gravity-flow channels are without any lining, and the loss incurred thereby is estimated to be 30%. At the same time, in no part of the command area have the field channels been constructed. There again the loss incurred is great. This clearly indicates that substantial benefit can be obtained by controlling the distribution of water in this regard.

(vi) The inter-district disparity in the development of irrigation potential is clear. Particularly in the North Bengal districts and also in Purulia and 24Parganas it is very low. While in North Bengal, the Teesta Barrage scheme emerges as a solution, in Purulia and 24-Parganas gravity-flow irrigation cannot be immediately introduced. Here lift irrigation emerges as an answer. But in Purulia, tubewell irrigation has low prospect of development on account of the solid lithology of the terrain. However, recent ground water investigations indicate that dug-wells of large diameter sunk into lithomerge on the valley sides with suitable energisation can meet the requirement of irrigation to a great extent. But progress made in this direction has been negligible.

(vii) The progress achieved by Agriculture Department in expanding irrigation potential clearly shows that the Department requires considerable strengthening to execute the work at their disposal.

At the same time, it is noticed that the revenue due from the users of existing facilities remain substantially unrealised. The situation with gravity-flow irrigation is not very much better in this respect. Unless adequate arrangements are set up to recover the investments made, the programme becomes socially and economically vulnerable.

The above limitation can be overcome through diverse manners, part of which is technological and the other part concerns institutional changes. During the Fifth Five Year Plan due emphasis should be laid upon these aspects of management.

4. **Fifth Plan Targets.**

The objectives are to realise the following :

(a) Moderation of floods,

(b) Improvement of drainage conditions,

(c) Extension of gravity-flow irrigation through major and minor area-operations,

(d) Extension of the area under lift and minor irrigation,

(e) Increasing utilisation of flood discharges to enhance potentials for both gravity-flow and lift irrigation, and,

(f) Initiation and continuation of investigation and research on scientific water-resource management.

It will be possible to utilize the programmes for flood moderation and drainage-improvement to increase irrigation potentials of the State. Gravity-flow irrigation command areas will require conjunctive use of lift-irrigation to provide perennial irrigation. In the proposed CADP, the target is to attain (through an organised use of institutional and private efforts) a net irrigated area of 22 lakh hectares or a gross irrigated area of 50 lakhs hectares. The total irrigation potential as in 1970-71 in the State has been 19 lakh hectares (gross). To attain the above objectives an investment of Rs. 352 crores is desirable, subject to availability of funds. The financial lay-out may be classified as follows :—

Project	To meet the objectives of Basic Minimum needs and employment (Rs. crores)	Growth (Rs. crores)
Flood Moderation	78	
Drainage Relief	59	
Gravity-flow irrigation	—	74
Lift & minor irrigation	134	
Irrigation & Research		

This allocation envisages public-sector investment only of the following order :

State (in Rs. crores)	Centrally sponsored (in Rs. crores)	Central	Private
141	211	nil	nil

CHAPTER V

POWER AND RURAL ELECTRIFICATION

1. Introduction :

'Power' is an essential economic ingredient for developing the requisite infrastructure for both agricultural and industrial progress. This is an admissible overhead expense. Though capital intensive, it must be designed as surplus oriented in order to avoid the paralysing consequences of its shortage on economy as encountered in the State of West Bengal at present. Although similar crisis in power is also experienced in other parts of India, the implication of such crisis in West Bengal is much more as the economic status of West Bengal is critical at the moment after many agonising years of chaos and uncertainty and the state is just attempting to launch a number of booster projects for development of agriculture, irrigation and industry in order to provide employment to the multitude of unemployed. Adequacy of power is a pre-requisite for all such ventures. From the present generating system in the State, the availability of power is so marginal that it cannot absorb any outage or eventualities. Establishment of a power station and associated transmission and distribution system is a time consuming process and takes much more time then the establishment of industrial undertakings which consume power. The need for phasing the power planning ahead of development or industrial projects is paramount and needs no emphasis but is often overlooked and ignored.

The essential focal point of the State's Fifth Five Year Plan is employment and welfare to the largest possible cross-section of the people. It has been observed that almost sixty percent of the total working population are cultivators and agricultural labourers. Considering the tertiary employment in this sector, it may be assumed that $\frac{2}{3}$rd of the working people of the State are working in the agricultural sector. If modernisation of agriculture is carried out, substantial in-sector employment become feasible and this has been the main theme of West Bengal's Fifth Five Year Plan.

Accordingly, priority has to be given to requirements of the necessary infrastructure that can sustain such crash planning in the agricultural sector. 'Power' is the most important ingredient, besides fertilizers and improved seeds, without which the entire programme may get jeopardized. Hence during the time of forward-planning and forecasting, this particular objectivity must be borne in mind in addition to catering for normal progress in other sectors.

2. Background of Power Supply in West Bengal

A multi-agency system is responsible for power generation and distribution in the State of West Bengal. These include (i) Calcutta Electric Supply Corporation (CESC), (ii) West Bengal State Electricity Board (WBSEB), (iii) Damodar Valley Corporation (DVC), (iv) Durgapur Projects Limited (DPL) besides a few smaller units like APCO or Dishergarh Power Co., etc.

CESC, a private licensee, generates some quanta of power, purchases power from co-lateral agencies and is responsible for distribution in the specific area of Calcutta Metropolitan District. It is responsible for these activities until the end of the Fifth Five Year Plan through the renewal of its lincense but is forbidden to install additional capacities to meet the growing demand Thus, the prima-facie responsibility of meeting the power demand vests in WBSEB, DVC and DPL.

If this system is to generate power there should be provision for maintenance and overhaul of its derated systems or for planning topping systems in order to augment the derated and aging power plants of the concern.

In the interest of the State, which is so much hungry for power, CESC system should be revitalized and co-ordinated into the State-grid system.

The role of DVC in meeting the demand of power in the Damodar Valley and outside the Valley is also to be investigated in greater details. Being tripartite body, sharing of its power is a logical corollary. To what extent this power will be available for inside-valley demands for the country-side lying in West Bengal and for Calcutta or other urban and industrial locations must be firmly ascertained. For a long period, DVC is meeting the extra demands of CESC and WBSEB and similarly of Bihar SEB. Unable to meet the inside-valley demand, frequent interruption due to outage of plants and availability of less saleable firm capacity is already creating disastrous conditions in the mining belts and also in the industrial growth centres located in the valley. Unless DVC capacity is also extended parallel to the expansion programmes of other agencies, a balanced growth will not be possible in the inside valley and outside valley areas. It must be admitted that on practical considerations, water-tight distribution only in the valley from DVC will not be possible and also is not desirable.

WBSEB, an autonomous body, set up by the State Government is responsible for generation and distribution for the rest of the State, i.e. in all areas except those covered by DVC (in the Damodar Valley areas), CESC (Calcutta Metropolitan areas) and DPL (a small area in Durgapur). At the initial stages, the activity of WBSEB was limited to distribution of power along with a few isolated schemes of power generation instead of attempts for large-scale ventures. Electrical traction of railways and increased demand of certain industrial sectors necessitated the establishment of Bandel Thermal Power Station. But, at this stage almost all the resources had been used up and very little could be done for transmission and distribution system to be spread throughout the State. As a result, this state lagged considerably in the activities of rural electrification programme compared to many other states of India.

DPL was established by State Government for production of cokes and exploitation of by-products from the coke-oven. The power supply facility initially included was intended for utilisation of surplus coke-oven gas and the extent of such facility was marginal. But subsequently this facility was substantially expanded.

The problem of power supply in North Bengal is more acute compared to status of lower Bengal. Due to the failure of Jaldhaka Hydro-electirc project, this part of the State is passing through acute power crisis and remains backward in all respect. Urgent palliative measures have to be taken immediately including installation of package units and diesel generation sets. But all these measures are inadequate and do not solve the broader aspects of providing the infrastructure capable of sustaining developmental industrial or agricultural activities in North Bengal.

The Fourth Five Year Plan envisaged large power output and the planning of Santaldih was initiated. The first 120 MW unit at Santaldhi will be commissioned by June 1973 followed by a second 120 MW unit by 1974. Thus an augmentation of 240 MW is envisaged against a huge deficit of almost 340 MW already existing. This deficit includes considerable amount of suppressed demand as well as demand for normal growth and expansion both in the urban and rural sectors. If the DVC load is to be shunted back to the valley and the derated capacities of CESC are to be covered, the deficiency with which Fifth Plan period beings will be

alarming. All prospects of planned activities in the co-lateral sectors of agriculture, irrigation and industry for the Fifth Five Year Plan will appear gloomy and may get jeopardised. This is the reality of facts and background status with which forward planning for power generation in the State of West Bengal will have to be planned.

It is to be remembered that power demand is ever increasing and our scarce resources when allocated, require identification of correct priority in all developmental efforts and 'power' is the foremost of all candidates for resource allocation.

3. Present Status of Power Generation in West Bengal

The Fourth Plan provides a total outlay of 8072 lakhs of rupees on power projects with an estimated total capacity of 625 MW generation and provisions for transmission and distribution and rural electrification programme (1050.00 lakhs). The plan outlay for Fourth Five Year Plan is indicated in Table 5.1 and Table 5.2.

TABLE 5.1

Plan Outlay for Fourth Five Year Plan

(Generation)

Sl. No.	Name of Schemes	Original Outlay	(Lakhs) Revised Out-lay (1972)
(1)	Santaldih Thermal Power Project 2 × 120 MW.	3,808	3,808
(2)	Jaldhaka Stage 1 (2 × 9 and 3rd 1MW)	—	286
(3)	Little Ranjeet Project (2 × 1 MW)	—	64
(4)	Bandel Thermal Project	—	85
(5)	Jaldhaka Hydel Project Stage II (2 × 4 MW)	244	10
(6)	Rammam Hydel Project (2 × 7 MW)	130	15
(7)	Kurseong Stage II (1 × 1 MW & 2 × 0.5 MW)	21	82
(8)	Package Plant (Chapramari)	160	55
(9)	Emergency Diesel set. for North Bengal.	—	96
		4,363	4,501

TABLE 5.2

Fourth Plan Outlay for Transmission and Distribution Including Rural Electrification

Sl. No.	Scheme	(Lakh) Original Outlay	Revised Outlay
1.	Transmission & Distribution	1,163	1,163
2.	EHV (220 KV) and Associated Projects	901	1,278
3.	Normal expansion and extension of existing grid	375	375
4	Testing Laboratory Equipment	20	20
5.	Carrier Communication Projection and load despatch equipment	150	150
6.	Rural Electrification	1,050	1,050
7.	Survey and Investigation	50	40
		3,709	4,076
	Total of Table 5.1 and Table 5.2	8,072	8,577

In view of acute power crisis and huge shortfall of power supply during the annual plan periods of Fourth Plan, the outlays have had to be further augmented to meet the requirement of funds for the 3rd and 4th sets of the Santaldih Thermal Power project and for extension of associated 220 KV transmission line of Durgapur/Kasba along with an installation of 220 KV substation at Kasba. Funds will be also required for augmentation of the lines and substation of voltages lower than 220 KV for distribution of power available out of 3rd and 4th sets of the Santaldih project. Advance action including confirmed orders with financial advances would have to be committed in order that these sets are made available during the Fifth Five Year Plan.

To improve the power supply position in North Bengal, a scheme for installation of Diesel sets of less than 1 MW each at different places in North Bengal has also been envisaged.

For improving the power supply position during the peak demand hours when load-shedding becomes disastrous for industrial efforts in the Calcutta industrial region, it has been proposed to install two Gas Turbines having a total output of 40 MW.

Thus it has been necessary to have proposals for additional outlays during the remaining period of Fourth Five Year Plan which, if admitted, will be as shown in Table 5.3.

For augmentation of the power system in the north of Ganga, installation of a 240 MW power station has been proposed at Dalkhola under Central Sector. Though no provision has been shown in the State outlays, being the Central Sector, for this project in the State's Fourth Plan, yet provision for necessary transmission lines from this power station for distribution in the different parts of North Bengal, has been included in the Fourth Plan scheme.

All the schemes mentioned in Table 5.3 have been proposed in order to tide over the power crisis in West Bengal during the last lap of the 4th Plan. However, initiation and completion of these projects are dependant on the sanction of the outlay proposed additionally under the 4th Plan. If this financial outlay is not made available during the 4th Plan period, the entire amount will have to be shown as spill-over to the 5th Five Year Plan.

TABLE 5.3

Additional outlay in fourth plan (Proposed)

			(Lakhs, Rs.)
A. Additional Schemes not under 4th Plan but taken up during the 4th Plan			
1. Santaldih 3rd & 4th	2	120 MW	1650
2. Associated Transmission and Distribution Lines			551
3. Scheme for augmentation of Power Supply in West Bengal			255
4. Rural Electrification			150
5. DPS-VI : advance action			160
TOTAL			3766
B. Additional emergency schemes proposed to be carried out in 4th Plan period.			
5. Additional Rural Electrification Scheme, under (RC)E			23.12
6. Diesel Generation Scheme for North Bengal.			201
7. Gas Turbine	2	20 MW	700
8. Diesel Generating sets for Lower Bengal.			340
TOTAL :			3713
C. Other non-plan outlay			
10. Centrally sponsored schemes			
(*i*) Inter-state Transmission line			151
(*ii*) 400 KV line (Addl.)			400
11. REC Programme on Rural Electrification.			1365
12. Agricultural Dept.'s Programme for Deep-Tubewell and River Lift Irrigation			173
13. State Expenses for Salt Lake City Extension			250
14. Advance Expenditure for Generating Stations, Bandel V, Kolaghat I & II			1500
TOTAL :			3999
Say :			4000 Lakhs

4. STATEMENT OF PROGRESS OF POWER PROJECTS UNDER 4TH PLAN

4.1 Report on the Progress of Projects in the Fourth Five Year Plan

(1) Santaldih Power Plant Projects

A thermal power scheme to generate 1000 MW (ultimate capacity) power by installing some turbo-alternator sets at Santaldih in the district of Purulia was formulated during the Third Five Year Plan. In 1967, Planning Commission accepted in principle the scheme for installing four units of 120 MW each turbo-generating set. The estimated cost of 4×120 MW sets in 1967 was Rs. 75 crores. Owing to the constraint of financial resources, action for implementation of the projects with 2×120 MW turbo-generating sets was taken in hand in 1967. The estimated cost of the project with two units was approximately Rs. 47 crores.

Due to acute power crisis and an apprehension that serious shortage of power may occur towards the end of the Fourth Plan, the State Government approved installation of 3rd & 4th sets of 120 MW each also in the middle of 1970 so that the sets are commissioned towards the end of the 4th Plan or the beginning of the 5th Plan period. Action has also been taken for placing the orders for 3rd and 4th units as well as for their civil constructional work. The revised costs for all the projects now stand at Rs. 8,700 lakhs. A statement of the financial involvement is shown in Table 5.4.

TABLE 5.4

Santaldih Plants

(Rupees in Lakhs)

Sl. No.	Item	Total Cost	III Plan Expense.	IV Plan Revision.	Expenses 69-70 to 71.72	Expenses 72-73	Expenses 73-74	Spillover 5th Plan
1.	Unit I & II	4700	806	3808	2441	910	457	86
2.	Unit III & IV	4000	—	*1650	200	710	740	2350
						Total Spillover		2436
						Say :		2500

*If this amount is not available during the 4th Plan, the total spill-over will be 4150 lakhs.

4.2 Jaldhaka Hydel Project & Jaldhaka Hydel Project 3rd Set.

The construction of the Jaldhaka Hydel Project has been completed with the exception of the barrage and 2 units of 9 MW each have been commissioned since June, 1967. The construction of the barrage was to be completed by the end of 1968 but the unprecedented floods of October, 1968 and December, 1969, which damaged the barrage and hydel sets heavily, intervened. Repair work in connection with the flood damage is now complete and construction work for 4th and 5th Spillways is nearing completion. Following the floods Jaldhaka river carried heavy silt during the monsoon for which the sets had to be closed down during the rainy season.

Work in connection with installation of the 3rd unit to augment the generation capacity of the power station is in progress. The set was to be commissioned by the end of 1971.

Revised cost of the project (3 units of 9 MW each) is Rs. 15.34 crores of which Rs. 12.48 crores was spent before the 4th Plan and Rs. 2.86 crores have been included in the revised 4th Plan.

Jaldhaka Hydel Projects Stage II

The project envisages utilisation of tailrace water of Jaldhaka 1st Stage Power Station by constructing water conductor system comprising open channel and some portion of tunnel and a drop of about 220 ft. The power station is proposed to be located about half a mile downstream the confluence of Jhalung Khola with Jaldhaka. The power station will generate about 8 MW of firm power at 50% load factor. The output of this station will be injected into the existing 60 KV transmission line between Paron and Chapramari. The scheme has however been deferred in view of the unhappy experience with Jaldhaka Stage I Project stated above. The

problem is under study with detailed examination in collaboration with C. W. & P. C. The estimated cost of this project is about Rs. 275 lakhs and a token provision of Rs. 10 lakhs has been made under the Fourth Plan period to enable starting the work from 1973-74 on successful results of the investigation and study.

The overall financial status is shown in Table 5.5

TABLE 5.5

Jaldhaka Projects

Sl. No.	Item	Total Cost	III Plan Expenses	IV Plan Outlay	Expenses 69-70 to 71-72	72-73	73-74	Spill-over 5th Plan
1.	Jaldhaka—I	1534	1248	286	224	62		
2.	Jaldhaka—II	275	-	10	--	--	10	265

4.3 Little Rangeet Hydro Electric Project

The project site is situated in the district of Darjeeling and about 50 KM away from Darjeeling town. Construction was undertaken from the year 1956. The scheme consists of construction of (i) diversion weir and intake, (ii) flume path & through, (iii) forebay, (iv) steel penstock and (v) power house building including tail-race for installation of 2 nos. of 1 MW each pelton wheel Hydro Generating sets. The firm generating capacity is 1 MW at 50% load factor with equal amount of additional generation during monsoon period. The financial status is shown in Table 5.6. All major work of this scheme has been completed.

Table 5.6

Little Rangeet Project

Item	Total cost	III Plan Outlay	IV Plan Outlay	(lakhs) Expenses 69-72	72-73	73-74	Spill Over
1. Little Rangeet	102	38	64	62	2	---	---

4.4 Rammam Hydel Project :

Rammam, a tributary to Great Rangeet in Darjeeling District has its origin near Phalut in the Himalayan Range at an altitude of 11,500 ft. The approximate power potential of the river is over 100 MW to be harnessed in four stages. The present scheme envisages harnessing the water resources of Rammam river (ultimate capacity) at 50 per cent load factor. But owing to paucity of fund and difficulty of immediately transporting heavy machinery to such high altitudes

the scheme has been divided into two stages. In the initial stage Lodhama Khola which has comparatively lower gradients and gentle bed slope will be harnessed by constructing a weir and open channel type water conductor system. The output from this stage has been estimated at 14 MW at 50 per cent load factor. The implementation of the latter stages of this scheme will be taken up subsequently. The estimated cost of the Project (2 × 7 MW) was Rs. 850 lakhs. For preliminary expenditure on this scheme a token sum of Rs. 15 lakhs has only been provided in the Fourth Five Year Plan. The financial status is shown in Table 5.7.

TABLE 5.7

Rammam Hydel Project

Sl. No.	Item	Total cost	III Plan outlay	IV Plan outlay	Expenses			Spill Over
					71-72	72-73	73-74	
1.	Rammam Hydel Project	850		15	—	—	15	835

4.5 Chapramari Packaged Thermal Power Station:

Jaldhaka being the only major power source for North Bengal the interruption in supply of power to the three North Bengal districts is rather frequent causing general resentment among the public and the industrial consumers. It is, therefore, felt necessary to arrange back-up power source for the North Bengal grid so that any failure of supply from Jaldhaka due to natural calamities does not adversely affect the whole of North Bengal. In view of the above, it has been planned to dismantle and shift four 1.5 MW Packaged Thermal Units from Dishergarh and reinstall the same somewhere in North Bengal.

The total capital outlay for this scheme was estimated at Rs. 160 lakhs. But the actual fund requirement to finance the scheme will be around Rs. 55 lakhs as generating units and some surplus stores etc. are already available. The scheme is expected to be completed by 1973 provided the fund is available in time. Table 5.8 shows the financial status.

TABLE 5.8

Chapramari Thermal Station

Sl. No.	Item	Total Cost.	III Plan	IV Plan outlay	Expenses			Spill over to 5th Plan
					69-72	72-73	73-74	
1.	Chapramari Package Plants.	55	—	55	5	35	15	—

4.6 Kurseong Hydel Scheme Stage II:

The present installed capacity of Kurseong Hydel Power station is 1.2 MW. It is now proposed to harness additional power potential of Richington Khola to the extent of 2 MW by utilising the tail-race discharge of the present power station augmented by the discharge of

few other tributaries of the same river and drop of about 962 ft. The power station will be located near the confluence of Richington Khola with Balasun River above high flood level. The output of this station will be injected into the 33 KV Siliguri|Darjeeling Grid. Estimated cost of the scheme is Rs. 82 lakhs and a provision of Rs. 82 lakhs has been proposed in the 4th Plan The work such as construction of roads, staff quarters etc. is expected to be started within the current year and other Civil work of the project will be commenced simultaneously. The financial status is shown in Table 5.9.

TABLE 5.9

Kurseong Hydel Scheme : Stage II

Sl. No.	Item	Total cost	III Plan	IV Plan outlay	Expenses			Spill Over
					69-72	72-73	73-74	
1.	Kurseong—II	82	—	82	5	50	27	—

4.7 Emergency Diesel Power Generation Scheme in North Bengal:

To meet the shortage of power in North Bengal, the WBSES has taken up implementation of a number of emergency Diesel Power Generation Schemes in North Bengal as a short term measure at a capital expenditure of about Rs. 96 lakhs which was not originally included as such in the Fourth Five Year Plan. The provision has been proposed in the revised outlay during the Fourth Plan. The financial status is indicated in Table 5.10. Besides an additional outlay has also been proposed during 4th Plan.

TABLE 5.10

Emergency Diesel sets in North Bengal

Sl. No.	Item	Total cost.	III Plan outlay	IV Paln outlay	Expenses			Spill over
					69-72	72-73	73-74	
1.	Diesel Sets (Plan)	96	—	96	65	31	—	—
2.	Addl. Scheme for North Bengal	201	—	201	—	201	—	—

If this outlay is not made available in the 4th Plan, there will be a spill-over of 201 lakhs.

4.8 Transmission, Distribution, Testing & Communication, Load Despatch, Inter-state lines.

(a) Transmission & Distribution Project :

The scheme envisaged construction of 220 KV extra high voltage transmission lines with associated high voltage net work for transmitting power in bulk from Santaldih Power Station to Calcutta and the neighbouring industrial area. (i) One 200 KV line will be drawn from Santaldih to Howrah (250 KM). (ii) Another 220 KV line will be drawn from Santaldih to Durgapur (100 KM) with 200|132 KV substations at these places. The scheme also includes

the erection and augmentation of associated 132 KV, 220 KV lines and associated substations for transmitting and distributing additional quantum of power to different areas and also for increasing reliability of supply. The following is the proposed target set out for the Fourth Plan period.

		New	Augmentation
1.	220 KV lines	350 K. M.	—
2.	132 KV lines	283 KM	110 KM
3.	132 cables	6 ,,	6 ,,
4.	66 KV lines	101 ,,	—
5.	33 KV lines	783 ,,	—
	Substation		
1.	220 KV substation	400 MVA	
2.	132 KV	257	185 MW
3.	66 KV	28	38.5 ,,
4.	33KV	104	80 ,,

(b) Normal Development & Extension of Existing Grids :

This scheme is to erect now high, medium and low voltages distribution lines and also to set up new substations and augment the existing distribution lines and substations for meeting the demand of new prospective consumers.

The following target has been fixed for the Fourth Plan Period:

		New	Augmentation
1.	11 KV lines	600 KM	100 KM
2.	L. T. Lines	200 KM	50 KM
3.	Substation	50 MVA	30 MVA

(c) Testing, Communication & Load Despatch :

The WBSEB has not yet been able to organise any Central load despatch Station. The communication system between the WBSEB's headquarters and different power stations and important substations is also not fully developed. In the present scheme it has been proposed to set up a Central Control and Load Despatch Station with extending facilities of communication between various power stations and important substations. In addition, provision has been made for telemetering important measure ends over the power line carrier channel from different power stations and important substations to WBSEB's Central Control Station. Besides, to extend the facilities of testing laboratory expansion programmes various instruments need to be purchased for which provision has been made.

TABLE 5.11

Transmission & Distribution (including Load Despatch, normal expansion & EHV projects) and Inter-State project.

(Lakhs)

Sl. No.	Item	Total cost	III Plan	IV Plan outlay	Expenses			Spill over
					69-72	72-73	73-74	
1.	Transmission & Distribution	3379	423	2966	1226	651	1089	
2.	Addl. T & D for Santaldih III & IV.	992		551	1	389	161	441
3.	Central Scheme							
	(*i*) Inter State	121		151	54	58	39	
	(*ii*) 400 kv line (Addl).	900		400		100	300	500
						Total Spill over		941

The spill-over will be 1933 lakhs if this outlay is not made available in 4th Plan.

4.9. Survey & Investigation :

Extensive investigation has to be undertaken and carried out for developing the hydro power sites in North Bengal Zone. During the Fourth Plan period it is proposed to take up a part of the Rammam Hydel Project. After implementing both the phases of Rammam Stage II, the other schemes on the same river may also be taken up for harnessing power to the extent of additional 60 MW. Bulk of the above generation can be transmitted to the Central and Southern regions of the State. Provision has been made for investigating the feasibility of implementing other Hydel Projects in North Bengal. The financial position is shown in Table 5.12.

(d) Inter-State Lines :

The W.B.S.E. Board has already taken in hand erection of two inter-state 132 kv D|C lines namely (i) Alipurduar—Bongaigaon link (25 KM line within W. B.), (ii) Purnea—Siliguri link (128 KM Line within W.B.).

So far as the West Benagl State Electricity Board is concerned both these inter-state lines with associated substation works are expected to be ready by the middle of 1973.

Besides these, joint project report by DVC and WBSEB for 220 KV inter system S|C tie lines between (i) Santaldih and Chandrapura (ii) Chandrapura—Waria and (iii) Waria—Durgapur has been sent to CW & PC for approval. The financial status of all the above projects are depicted in Table 5.11.

TABLE 5.12

Survey and Investigation

(Lakhs)

Sl. No.	Item	Total Cost	III Plan	IV Plan outlay	Expenses			Spill over
					69-72	72-73	73-74	
1.	Survey and Investigation	40	—	40	11	9	20	

4.10 Rural Electrification Project :

Till 31st March, 1969, only 2433 villages were electrified out of 38,454 villages (or mouzas) in West Bengal. The original target for village electrification during Fourth Plan was 3,100 for which Rs. 10.5 crores was provided in the Fourth Five Year Plan. During the three years from 1969-70 to 1971-72, 829 villages were electrified under the Plan and an expenditure of about Rs. 4 crores was incurred for this purpose. Programme for 1972-73 was electrification of 971 villages under the Plan, but only Rs. 1.5 crores has been provided in the Plan for 1972-73 which is very inadequate for the purpose. Recently the Government proposed to electrify 10,000 additional villages by December 1973. Against this, funds for about 5000 villages are expected to be available from the Rural Electrification Corporation Ltd. by 1974 as supplementary finance outside the Plan. For the remaining 5000 villages and to meet increased expenditure additional resources will be required before December, 1973. The statement of progress regarding Electrification of villages is shown in Table 5.13.

TABLE 5.13

Progress of Rural Electrification Programme (No. of villages)

Item	III Plan	69-70	70-71	71-72	April-June '72	Total
Planned Programmes	2433	246	277	306	219	3481
Nonplan Programme	—	—	10	56	465	531
				Total		4012

During the 4th Plan period there was a proposal to electrify 3100 villages and energize 10,000 shallow tubewells at an estimate of Rs. 1,050 lakhs under plan fund. Table 5.14 would show that against this sum, only Rs. 250 lakhs (approx)has been spent upto 31.3.72. There is a provision of Rs. 150 lakhs only for expenditure during 1972-73. The balance of 650 lakhs is intended to be spent during the remaining period of the 4th Five Year plan.

The Rural Electrification Corporation Ltd. has given assurance of electrification of 5,000 villages by the end of the 4th 5-Year plan. The Government of West Bengal has promised to electrify at least 10,000 villages by the end of December 1973. If this commitment is to be kept, an additional resources of 2,050 lakhs must be allocated during this period. The complete financial status of Rural Electrification programme is indicated in Table 5.14.

TABLE 5.14

(Lakhs)

Sl. No.	Item	Total cost	III Plan	IV Plan outlay	Expenses			Spill Over
					69-72	72-73	73-74	
1.	Rural Electrification under 4th Plan	1050	—	1050	250	250	650	
2.	Addl. Non-4th Plan R. E. Scheme	—	—	150	—	150	-	
3.	REC — Scheme	—	—	1365	27	400	938	
4.	Addl. REC Scheme proposed	2312	—	2312	—	1922	390	

TABLE 5.15

Target and achievements in Rural Electrification Programme

	IV Plan Target	Achievement upto March 1972	Villages to be covered during the rest of 4th Plan.
	No. of villages	No. of Villages	
Plan	3100	829	2271
REC	5215	66	5149
			Total : 7420

Since March, 1972, 219 villages have been electrified under plan sector along with 465 under REC and non-plan sectors only within 3 months. If this tempo in kept up, it may be possible to reach the target within the 4th Five Year Plan period and no spill-over would be necessary (provided the financial resources are made available, as noted earlier).

4.11. Additional Non-Plan Outlay during 4th Plan to tackle power-crisis and other Sectoral Special demands.

Several additional outlays have been proposed to tackle power-crisis on an emergency basis.

To improve the power supply position in lower Bengal, a scheme for installation of some Diesel Sets of less than 1 MW each at different places is envisaged.

For augmenting the power supply position during peak-hours in the South Bengal region before power from Santaldih Thermal Power Station is received, it has been proposed to instal 2 Gas Turbines having a total output of 40 MW.

If resources for item 4 of Table 5.14 is not made available during the IV Plan period, electrification target of 10,000 villages by the end of the IV Plan period will not be reached and bulk of this outlay will form a spill-over sum for the project in the 5th Five Year Plan. The achievement against the targets is not encouraging due to lack of availability of funds and lack of phy-

sical resources and planning as evident from Table 5.15. However, great effort is being made to make up the deficiency during the remaining period of the 4th Five Year Plan. Requirement of additional funds during the Fourth Plan period has to be made for this purpose.

Besides the State has to incur expenses for the electrification of the Salt Lake City ot Calcutta.

The Department of Agriculture also requires power supply to energize deep tubewells and operate river lift irrigation in the non-plan sector from agricultural budget.

Besides advance actions have to be taken for placing orders for Bandel V, Kolaghat I and II and DPL VI in order that these stations are made operating during the 5th Five Year Plan. The total financial outlay for these projects is indicated in Table 5.16.

TABLE 5.16

Lakhs

Sl. No.	Item	Total cost	III Plan	IV Plan outlay	Expenses 69-72	Expenses 72-73	Expenses 73-74	Spill Over to 5th Plan
1.	Salt Lake City Electrification	—	—	250	97	128	25	
2	Power supply to deep tubewell & river lift-irrigation	—		173	112	38	23	
3.*	Gas Turbine	700	—	700		700		
4.*	Diesel generating for South Bengal	340		340		340		
5.*	Augmentation of power supply in West Bengal.	—	—	150		150		
6.*	Advance expenditure on Bandel V, Kolaghat I & II	-	—	1500		570	930	

* If the outlay is not available under 4th Plan, these will become spill-over to 5th plan.

OVERALL AVAILABILITY OF POWER AT THE END OF 4TH PLAN

5.1. Review of Capacities of Individual Systems

(a) DVC System

The installed capacity and the firm capacity as well figures of power (MW) supplied to West Bengal both inside the valley and outside the valley are shown in Table 5.17.

TABLE 5.17

Availability from DVC System

Year	Installed Capacity (MW)	Firm Capacity (MW)	To West Bengal	
			Inside valley (MW)	Outside valley
1972-73	1061	640	12	135
1973-74	1181	749	17.3	135

It is observed from the table that less than 25% of the firm capacity is supplied from the DVC system to West Bengal, both inside the valley and outside the valley (including CESC).

(b) WBSEB—DPL—CESC—System in Lower Bengal

Lower Bengal is served by three agencies besides some import from DVC. The installed capacities of CESC are getting derated at a very fast rate being very old and as proper replacements are not being carried out. The firm capacities of all the Units under WBSEB, DPL and CESC Systems serving lower Bengal are indicated in Table 5.18 between the years 71-72 and 73-74 i.e. upto the end of the 4th Five Year Plan.

TABLE 5.18

WBSEB - - DPL - - CESC SYSTEM FOR LOWER BENGAL

Item	1971-72	1972-73	1973-74
INSTALLED CAPACITY			
(a) WBSEB :			
(*i*) Gouripore	29.25	21	21
(*ii*) Farakka	3	3	3
(*iii*) Bandel	320	320	320
(*iv*) Santaldih			120
(*v*) Dissergarh			
(b) CESC			
(*i*) Mulajore			
(*ii*) New Cossipore } De-rated Capacity			
(*iii*) Southern			
(*iv*) Cossipore			
(c) *DPL*	285		
FIRM CAPACITY			
(a) WBSEB			
(*i*) Gouripore	12.97	6.0	6.0
(*ii*) Farakka	1.37	1.0	1.0
(*iii*) Bandel	218.40	218.4	218.4
(*iv*) Santaldih	–		
(*v*) Dissergarh	–		
(b) DPL	163	163	163
(c) CESC			
(*i*) Mulajore	99	99	99
(*ii*) New Cossipore	177	177	177
(*iii*) Southern	41	41	41
(*iv*) Cossipore	3	3	

(c) WBSEB System Along with Imports in North Bengal

The North Bengal areas are served mainly from hydel stations beside a few diesel generating sets and thermal package units. Since 1971-72, some amount of power is also imported from neighbouring states as shown in Table 5.19.

TABLE 5.19

North Bengal Power Availability

(MW)

Item	1971-72	1972-73	1973-74
A. Installed Capacity			
1. Thermal	—	—	—
2 Diesel			
(*a*) North Bengal	9.14	8.88	4.50
(*b*) Maldah West Dinajpur	4.08	2.50	2.50
3. Hydel			
(*a*) Jaldhaka	18.00	27.00	27.00
(*b*) Bijanbari	0.30	0.30	0.30
(*c*) Little Rangeet	2.00	2.00	2.00
(*d*) Kurseong	1.24	1.24	1.24
B. Total Firm Capacity			
(*a*) Monsoon Periods	10.92	19.24	24.44
(*b*) Dry Periods	19.92	24.24	20.74
C. Imports			
(*a*) Monsoon Period	4.3	4.3	7.3
(*b*) Dry Period	1.8	4.3	7.3

5.2 Overall Power Availability at the End of 4th Plan:

The entire DVC—WBSEB—DPL—CESC System's overall firm capacity to supply power to meet the needs of both lower and upper West Bengal is indicated in Table 5.20.

TABLE 5.20

**Overall Picture of Firm Power*

(MW)

System	1972-73	1973-74
1. DPL	163.0	163.0
2. DVC		
(*a*) Inside Valley	12.0	17.3
(*b*) Outside Valley	40.0	40.0
(*c*) CESC Area	95.0	95.0
3. WBSEB	225.0	**334.0
4. CESC	260.0	257.0
5. North Bengal	19.24	*24.44

*Monsoon data for North Bengal has been taken and import has been excluded.
** Includes power from Santaldih I.

A special exercise has recently been carried out to determine the quanta of available power based on an idealized re-scheduled maintenance programme for WBSEB—DPL system. The analysis indicates a fluctuation of firm capacity from 736 to 891 MW for WBSEB—DPL—CESC System for lower Bengal only. Taking the lower value of 736 an admissible overall firm capacity (based on maximised and optimum maintenance schedule) for whole of West Bengal at the end of the 4th Five Year Plan is 1,006 MW. This includes 109.2 MW for Santaldih and DVC power provided to West Bengal areas.

As a compromise estimate, it may be stated that the overall firm capacity for power availability in entire West Bengal at the end of the 4th Five Year Plan is **950 MW.**

5.3 Availability of Power vis-a-vis Demand at the end of 4th Plan :

The demand has been estimated from an analysis of Power Survey. Table 5.21 shows the demand of power in West Bengal as estimated.

TABLE 5.21

Demand analysis upto the end of the 4th 5-Year Plan

(MW)

	Item	72-73	73-74
1.	Demand in Lower Bengal (Excluding CESC area)	328.20	425.1
2.	Demand in Upper Bengal	34.35	56.03
3.	Demand in DVC Valley	249.00	271.00
4.	Demand in CESC area	572.00	610.00
	Total Demand	1183.55	1362.30
	Total Availability (Table 5-20)	814.24	930.74*

* Includes Santaldih 1.

Another analysis has been carried out from CW & PC forecasting study. Table 5.22 shows the energy consumption in million kwh (Demand) in West Bengal.

TABLE 5.22

CW & PC Estimate of Total Demand

Item	71-72	72-73	73-74
Energy Demand (Million KW H)	5390	5725	6060
MW Demand (Firm Capacity)	1078	1145.0	1212
Firm Availability (MW)		814.24	930.72
Deficit		330.76	282.74

6. FORECASTING OF POWER DEMAND: SPB VIEWS

6.1 Estimate of Power Demand according to CW & PC Studies.

The central water and Power Commission completed a detailed study recently and the electrical energy required by 1978-79 for the entire country has been estimated to be 1,25,000 million kwh as shown in Table 5.23. Assuming the domestic & commercial consumption to be the base (Unity), the figures for other sectors are also indicated.

TABLE 5.23

Energy Consumption in 1978-79 (*All India*)

	Item	Energy in M Kwh	Index
1.	Domestic & Commercial	14,903	1.0
2.	Public lighting	1,156	0.078
3.	Public water Works & Sewage Pumping	2,587	0.174
4.	Industries	87,854	5.90
5.	Traction	3,250	0.22
6.	Irrigation	14,971	1.005
	Total :	124,721	
	Say :	125,000	

The same source has also estimated the power demand in Million Kwh for the State of West Bengal and this is shown in Table 5.24

Thus even a conservative estimate of demand made by CW & PC shows that State's 5th Five Year Plan begins with a net deficit of 282.74 MW. The estimate of Table 5.21 coupled with DVC's estimates indicate a net deficit of 431.56 MW. Even if, Santaldih II is commissioned, the deficit remains quite large, anything between 160 and 300 MW. Hence, the 5th Five Year Plan's power account for the State of West Bengal opens with a negative balance of almost 300 MW. It is an alarming situation in view of the fact that the momentum of crash programmes in the agricultural sector and Rural Electrification Programmes are going to be more intense than what have been anticipated in all of these estimates.

The index figures of 1978-79 for West Bengal when compared to All India Characteristic show an interesting deviation as seen from Table 5.25.

TABLE 5.25

1978-79 *Index with Domestic & Commercial as unity*

	Sector	West Bengal	All India
1.	Domestic & Commercial	1	1
2.	Public lightings	.04	.078
3.	Public water Works	.149	.174
4.	Industries (L. T. & H. T.)	3.65	5.90
5.	Traction	0.23	0.22
6.	Irrigation	0.10	1.05

TABLE 5.24

WEST BENGAL

Estimate of categorywise Energy consumption in Million kwh.

	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79
1. Domestic & Commercial	986	1083	1191	1312.2	1445	1590	1745	1920
2. Public Lighting	39	43	47	52.8	58	64	71	79
3. Public Water Works	152	169	188	209.5	226	244	264	285
4. L. T. Industries	295	313	333	354	382	412	445	482
5. H. T. Industries	3529	3705.5	3861.5	3995.1	4440	4930	5470	6050
6. Traction	348	352	356	360	380	400	420	440
7. Irrigation	41	59.5	83.5	110.1	126	144	165	190
TOTAL :	5390	5725	6060	6393.7	7057	7784	8580	9446

When the ratio of demand of domestic to irrigation is 1:1 for all India growth, the same for West Bengal is 10:1. The progress in rural electrification so far is very low in West Bengal and this can not be expected to remain so low for the 5th Five Year Plan period.

According to estimates of the above programme, about 40 lakhs acres would be irrigated with water drawn from subsoil within the plan period for which about 6 lakhs of shallow and deep tubewells would be necessary. This will have an immediate installed demand of almost 2,000 MW. Assuming a diversity factor of 1.80* the power demand for irrigation for the intensive area programmes alone would be 1,100 MW.

Besides, for lift Irrigation and other schemes, it will be necessary to install about 1,78,500 pumps of assorted sizes. The total requirement of installed power will be 650 MW and with a diversity factor of 1.80 the demand in the irrigation sector will be about 360 MW. Thus, the total demand at the end of 5th plan in the agricultural and irrigation sectors alone is:

Intensive Area Development (Agriculture)	.. .. ..	1,100
Lift Irrigation	.. .. ..	360
	Total ..	1,460
	Say ..	1,500 MW

The calculations for load forecasting have been carried out based on Table 5.26 in all items excepting in the sector of agriculture and irrigation. On the aforesaid basis, the total demand load will be about 3,707 MW as shown in Table 5.27.

Converted to MW capacity, the C. W. & P. C. energy figures lead to the data shown in Table 5.26.

TABLE 5.26

Demand capacity in 1978-79 for West Bengal (CWC & PC)

T. D. Loss : 19%
Load Factor : 0.60

	Sector	M W Capacity
1.	Domestic & Commercial	436
2.	Public lighting	17.4
3.	Public water works	65.0
4.	Industries	1590.0
5.	Traction	99.0
6.	Irrigation & Agriculture	42.6
	Total	2250.00

The actual anticipated demand in the agricultural and irrigation sector for West Bengal in 1978-79 has been estimated to be different from Table 5.26 and is discussed in Art. 6.2.

* A high D. F. has been used, because these systems would ot draw simultaneously all the energies and peaks may be widely apart.

6.2. Estimate of Power Demand in the 5th Five Year Plan :

An intensive area development programme has been proposed in the rural sector in 5th Five Year Plan in which considerable emphasis has been put on agriculture and irrigation. A tremendous demand would be generated in rural sector due to the spreading of the benefits of electricity into the countryside, primarily for increasing agricultural output along with other incidental advantages. Cheap power in rural areas creates a demand for power for processing of agricultural products and for small scale and cottage industries. The potentialities of lift irrigation can also be fully exploited if power is made available.

TABLE 5.27

SPB Estimates for Power Demand in 1978-79

	Sector	Demand (MW)
1.	Domestic & Commercial	436.00
2.	Public lighting	17.40
3.	Public Water Works	65.00
4.	Industries	1590.00
5.	Traction	99.00
6.	Irrigation & Agriculture	1500.00
	Total	3707.00

Against this demand, the total installed capacity including 50% of DVC system is shown in Table 5.28.

TABLE 5.28

Probable Installed Capacity in 1978-79

	System	Total capacity (MW)
* 1.	WBSEB (Lower Bengal)	804
† 2.	WBSEB (North Bengal)	33.1
3.	CESC (De-rated)	234
** 4.	DVC (50% basis)	530
5.	DPL	255
	Total :	1856.1

* Includes Santaldih I & II

** CTPS additions excluded

† Includes diesel sets & Package Units

The total shortfall in 1978-79 would be about 1,851 MW.

Against this, the planned provisions for the following projects shown in Table 5.29 have been suggested.

TABLE 5.29

Project	Capacity (MW)	Remarks
1. Santaldih III & IV (2 × 120)	240	Already action taken in 4th Plan.
2. Bandel V (1 × 200)	200	
3. Kolaghat (2 × 200)	400	One unit may not be possible in 5th Plan
4. D P L VI (1 × 200)	200	
5. Santaldih V (1 × 200)	200	Not available in the 5th plan
6. Gas Turbines & Other Plants	50	
Total	1290	

Out of the above projects it may not become possible to install 400 MW in 5th Plan which would mean a provision for only 890 MW (say, 900 MW) only against a shortfall of 1,851 MW demand.

Suggestions to Narrow Down the Short-fall

Simultaneous actions should be taken to enhance DVC system and also to revitalise CESC system.

The following DVC projects if initiated in 4th plan can bridge the gap to some extent in 5th Plan:

TABLE 5.30

DVC Additions

Panchet Hydel II	40 MW
Waria (Durgapur)	200 MW
Chandrapura VI	120 MW
Bokaro (2 × 200) (addl)	400 MW
Total :	760 MW

If 50% of this load is supplied to West Bengal, another about 400 MW may be made available.

If CESC's derated system is restored by installing new boilers or by arranging for topping systems, another substantial supply can be made within the 5th Plan period.

If 30% power of Dalkhola (central) is made available within the 5th plan then about an additional 120 MW will be made available.

Thus, if all the projects of WBSEB, DVC, DPL, Dalkhola and revitalisation of CESC are simultaneously carried out, then there is a likelihood, that the tremendous shortfall envisaged in the 5th Five Year plan of West Bengal is some-what met.

Similar advance section should also be taken for more projects in Sixth plan including serious attempts to have more Hydel projects in North Bengal including Teesta Hydel Schemes.

6.4 Financial Outlay for meeting the Power Demand of 5th Five Year Plan :

The following financial outlay is necessary in the 5th Five Year Plan including spill-over from 4th Plan.

TABLE 5.31

WBSEB Projects for 5th Five Year Plan

Item		Outlay (crores)
1. *SPILL-OVER*		
(*a*) Santaldih		24.36
d Rammam Hydel		10.95
Distribution		9.41
	Total	44.76
	Say	45 crores*

* The total spill-over will be 85 crores if the outlay for the schemes listed in Table 5.3 are not made available in the 4th Plan period.

Item		Outlay (crores)
NEW SCHEMES		
1. Generation Bandel V. Santaldih V. Kolaghat I, II, & DPL VI, (Table 5.29) 5 200 MW		154.00
2. Transmission & Distribution		60.00
3. Testing, Control & Research		1.00
4. EEG & Normal Development		10.00
5. Survey & Investigation		2.00
6. Rural Electrification		100.00
	Total	371.76
	Grand Total	372 crores

The outlay will be 412 crores, if the projects of Table 5.3 become spill-over schemes for 5th Five Year Plan.

The requirements of DVC and Dalkola (Central sector) along with their necessary T & D Systems would demand an additional outlay of about Rs. 200 crores, of which West Bengal's apportion would be about 50% i.e. an additional outlay of 100 crores of West Bengal's count.

TABLE 5.32

Total Outlay for 5th Plan Power for West Bengal

Sector		Outlay (crore)	Outlay if items Table 5.3 becomes spill over
1. State (WBSEB and DPL)		372.00	412
2. Central (DVC & Dalkhola) (50"„ Power for W. Bengal)		200.00	200
3. Private (CESC)		30.00	30
	Total	602.00	642
	Say	600 crores	640 crores

7. APPROACH SUGGESTED FOR POWER PLANING IN WEST BENGAL

7.1. Basic Objective :

The basic objective of power utilisation has so far been to feed the demands of industrial sector and urban requirements. The 5th Five Year Plan envisages a big boost in the irrigation and agricultural sector. This will need a re-orientation in approach for development of power. This, in turn, would imply a different apportioning pattern between various activity sectors demanding power. An increased amount of power should be assigned for rural economy for fulfilling the demands of agriculture and irrigation. This amount requires to be substantially changed in view of providing employment through small scale industries and agro-economic acitivities of rural sector. However, normal growth in urban demand pattern inclusive of demands of large and medium scale industries must not be ignored. The increase in all other sectors would be assumed to increase in normal manner to which the anticipated demand of agricultural and irrigation sectors must be added.

7.2. Strategy of Maximised Power Availability :

7.2.1 The multiple agency system, if operated in an integrated manner in West Bengal, an improved maintenance schedule can be developed. This would give a maximized firm capacity of existing installed plants.

7.2.2 The area covered by DVC Valley in West Bengal is very small. This area should be extended so that certain parts of demands of area development programmes in the extended DVC-Valley can be supplied from the increased supply of DVC System.

7.2.3 All projected plants for Bandel V, Kolaghat I, and II, DPL VI and Santaldih V must be installed within the plan period and all necessary advance actions should immediately be taken.

7.2.4 DVC System should be allowed to expand involving Panchet Hydel II, Waria, and CTPS VI and addl. units of Bokaro.

7.2.5 Capacity of DVC at Panchet and Maithon must be enlarged. The dams have been designed and built with such contingency in view. For want of acquisition of lands, these objectives cannot be fully utilized. With 104 MW of installed capacity of hydel sets in DVC, the firm capacity is as low as 27 MW.

7.2.6 Transmission lines of Durgapur|Bandel and Durgapur|Howrah and Santaldih off take Systems must be completed as early as possible. Otherwise, even if Santaldih power is ready, it will not reach the demand spots and growth centres.

7.2.7 A central load despatch system for the entire state and another for the entire Eastern Region should be initiated. This will remove some imbalance of distribution system.

7.2.8 Teesta and other hydel projects should be persued in right earnest so that at least in the 6th plan these projects can be included.

7.2.9 Load forecasting and feed back smoothing must be regularly carried out during the plan period and provision should be incorporated for such activities.

7.2.10 Provision of steel, cement and other materials must be made on priority basis to meet the demands of power sector.

7.2.11 As the foundation work of DPL VI is ready, importation of the unit is recommended to tide over the present crisis.

CHAPTER VI

INDUSTRY AND MINERALS

1. Introduction

In conformity with the basic approach to the 5th Five Year Plan, topmost priority must be assigned to production of inputs for the agricultural sectors. In addition all potentials for employment must be utilized in the resource based and non-resource-based industrial sectors to sustain the required growth rate.

All the above approaches will be integrated with the total plan to achieve the following :-

(i) To bridge the demand and supply gap at both State and National levels of several basic requirements;

(ii) To contribute directly and as well as indirectly to State's income; and

(iii) To utilise State's resources at an optimum level.

The State has a fairly developed base for capital goods inclusive of iron and steel industry. The State is also fairly capable of consuming durable and non-durable consumer goods, However, there is enough scope for strengthening this sector for further development and capacity utilisation. Industries based on agriculture (like Jute and Tea) are also fairly developed. They too offer scope for expansion, modernisation and diversifications particularly in the jute industry sector.

The State has fairly rich forest wealth which requires to be developed in big way particularly in North Bengal.

The strategy for industrial development as enunciated above should be :—

(a) Establishment of resource-based industries which are non-existent in the State.

(b) Establishment of non-resources based industries in the area where local physical resources are lacking but a large skilled and educated unemployment exists.

(c) Development and expansion of growth industries already existing in the State.

(d) Modernisation and diversification of jute, textile and similar industries.

(e) Consolidation of metal based, agri-based and mineral based industries.

(f) Expansion, development and modernisation of cottage industries in the small scale sector including agrobased, textiles, ceramic, choirs, metal-based etc.

The growth of West Bengal economy in the last few years has been retarded because of the deterioration of law and order, lack of harmony in industrial relations, shortage of raw materials, want of transport facilities, and lack of initiative for investment. Further, equalisation of price of steel and coal all over the country has also retarded the agglomerating economy and natural advantages of West Bengal. In many other aspects West Bengal is at a disadvantageous position because of existing selective price differential policy.

Besides, the capacity of existing industry is not fully utilised for lack of raw material, transport, market and credit facilities. If these problems can be solved along with attempts for revival of sick and closed industries through solving of problems of power, raw materials, transport credit and better management, the employment potential will substantially increase.

Though pioneer in earlier days in chemical and pharmaceutical industries, lack of heavy chemical complex and essential phyto-chemicals have crippled the West Bengal chemical industries. Substantial effort has to be made in west Bengal for developing growth industries in order to generate more industries in turn. Another important area of development namely electronic industry requires immediate attention because of huge consumer demand.

The scope of self-employment in small and cottage industries and trading is substantial. Ancillary industries have suffered because of recession in the large industrial sectors where the volume of orders declined from Rs. 1394 crores in 1955-56 to Rs. 598 crores in 1969-70. If a vigorous growth of the large scale industry is anticipated, a spurt in small industry sector of ancillary type will follow resulting in the creation of more employment.

Modernisation of agriculture being the focal point of the 5th Five Year Plan from the point of view of mass employment in rural sector, it is imperative that sufficient provision for fertiliser, pesticides, improved seeds, improved agricultural implements and provision for irrigational pumps and tubewells must be made. These in turn, will generate demands in certain sectors of industrial production and expension. If the productivity in agriculture can be improved, it will not only provide employment in agricultural sector but will also act as stimulus to industrial activity.

After due consideration of the factors mentioned above a programme for specific industrial development possibilities in West Bengal has been tentatively drawn up as indicative measure. A consolidated aggregate picture of the investment, employment potential, net out put, other requirements for suggested developments has been presented at the end.

2. INDUSTRIES BASED ON AGRICULTURE, LIVESTOCK AND FOREST RESOURCES.

In this part, the discussion relates to the prospects for the development of those industries which utilise agricultural livestock and forest resources.

2.1 Industries Based on Agricultural Raw Materials.

2.1.1 Jute Industries :

Production of jute textile in West Bengal reached a peak in 1962 to about 12 lakh tonnes which fell to about 8.9 lakh tonnes in 1969 but since 1970 is picking up again rising to a total of 9.5 lakh tonnes. This trend has continued in 1971. The total area under jute cultivation in West Bengal stood at 475.0 thousand hectares and the quantity produced was 27.7 lakh bales of 200 kgs. in 1970|71.

This is a cash crop and earns considerable foreign exchange. The fluctuation of area cultivated as well as the amount produced depends on several factors inculding :-

(i) Prevalence of advance payment system through middlemen,

(ii) Absence of guaranteed minimum and economic price,

(iii) Absence of irrigation.

State Trading in raw jute has already been introduced in part,but fixation of "fair" price for raw jute is the most important thing that would influence production of this crop.

Jute industry is a colonial heritage and is running with out-dated and out-moded equipment. It is desirable that a few public undertakings on modern lines with diversified production in jute sector should be started in West Bengal. In addition, loans should be given to existing units for modernisation.

It is proposed that Rs. 6 crores be invested to set-up 3 Jute mills on modern lines under joint venture or through private investment under joint venture or through private investment.

2.1.2 Textile Industry :

The production of cotton yarn and cloth have declined and textile industry has become sick in the State of West Bengal

Item	Unit	Production	
		1969	1970
Cotton Yarn	Million Kg.	43.4	39.8
Cotton Cloth	Million Meters.	176.5	151.1

The main reason is non-availability of sufficient cotton at competitive price. An appreciable price differential exists in cotton between Western India and West Bengal.

In the Sector of Public Undertaking, Kalyani Spinning Mill requires additional investment to get over its difficulties.

KALYANI SPINNING MILLS LTD.

The Company is running at a loss since 1967 due to various maladies. The Government is aware of the maladies and has taken some steps to rectify them. It has two units, one at Kalyani and the other at Habra. The cost per spindle of Kalyani Unit is 20 paise and that of Habra Unit is 30 paise. There are approx. 50,000 and 26,000 spindles at Kalyani and Habra Unit respectively. According to techno-economic survey conducted by the State Government cost per spindle should not exceed 10 paise. In 4th Plan period Rs. 16.7 lakhs was sanctioned for installation of 9,240 spindles for the Habra Unit. It is expected to be installed during the 4th Five Year Plan period which will considerably reduce its cost per spindle.

There is surplus capacity in the blow room of Kalyani Unit. It has surplus hands in the finishing section. It is, therefore, proposed to instal additional 13,200 spindles in Kalyani Unit in 5th Five Year Plan period at an estimated cost of about Rs. 40 lakhs.

The ring-frames of Kalyani Unit are of certain design. Experience has shown that they are incapable of running at a speed exceeding 8,000 R. P. M. Modern machines of other make can have a speed of 14,000—15,000 R. P. M. This accounts for low productivity rate of Kalyani unit and is adding to the operational losses. The total requirement of the company would be Rs. 1.62 crores.

Serampore Co-Op Mills

The textile mill at Serampore would require an additional investment of 0.38 crores to make it viable which may be allotted if funds are available.

Large Scale Textile Industry

The cotton textile industry in West Bengal is suffering from a chronic handicap of supply of cotton from other States. This State should initiate use of synthetic fibres for textile industry. A provision of Rs. 30.00 crores may be made for such large scale textile and rayon industry.

(Crores)

Projects	Public Investment Minimum need	Employment	wth	Private Investment
Kalyani Spinning Mills			1.62	
Serampore Co-op. Mills			0.38	
Textile & Rayon Mills			—	30.00
		Total	2.00	30.00

2.1.3 Tea Industry :

The industry suffered a setback in 1969 but since then it has not only recovered but has surpassed previous production figures.

	Million Kg. 1969	1970
Production of Tea (including Green tea)	87..4	103

The tea industry has its problems. There are large undertakings and as well as small undertakings.

Speculation in tea industry and withdrawal of capital from some plantations and factories have created concern. Suitable remedical actions are necessary.

2.1.4 Sugar Industry :

Production of sugar was only 11.1 thousand tons in 1970. It is desirable that a few Sugar factories be located close to the sugarcane areas of the State. These factories should be started in the public sector after examining the economics of such units. A sum of Rs. 2 crores may be required for starting new venture or for restarting the closed ones.

2.2 Industries Based on Livestock :

2.2.1 *Poultry* :

In the public sector, it is recommended that the West Bengal Dairy and Poultry Development Corporation be allowed to establish a Central Breeding Farm of quality birds, both broilers and for meat and also to improve the quality of birds for table and for hatching eggs during the 5th Five Year Plan at an estimated cost of Rs. 7 lakhs.

This farm should be located at Kalyani where a feed-mixing plants is under process. It is desirable that a district cattle farm of 50 cattle in each farm and a poultry farm of 200 layers each should be started in the 8 districts where there is no State Poultry at the moment. The approximate cost will be Rs. 75 lakhs. So the total expense on livestock industries would be Rs. 82 lakhs.

2.2.2 Tannery :

Shoe industry and tannery are one of the promising sectors but development of these industries would be considered under small scale sector.

2.2.3 Milk Products :

The industry connected with Dairy and Milk products has been discussed under a separate heading.

2.2.4 Woolen Industry :

In the district of Darjeeling there is scope for development of woolen industry. A spinning mill for weaving and spinning should be set up in Darjeeling with a capacity of 1,000 spindles and 200 looms. This can turn out 2.25 lakh kgs. of yarn and 2 million metres of woolen cloth. This unit may have to import some longfibres for mixing. An investment of 50 lakhs in public sector is desirable for the project after a feasibility study has been made.

2.3 Forest Based Industries :

The production figures of paper and matches which are some of the principal forest based industries, besides furniture making etc. in the small sector are shown below :

Item	Production			
	Million Kg.		Million gross boxes	
	1969	1970	1969	1970
Paper	70.6	73		
Match			7.1	7.1

The demand and supply (1972-73) of forest products are shown for various outputs :

Item	Current Annual Demand	Current Supply
1. Match wood ..	50,000 m^3	7,500 m^3
2. Plywood ..	75,000 m^3	7,500 m^3
3. Constructional furniture	6,75,000 m^3	1,85,000 m^3
	8,00,000 m^3	2,00,000 m^3

In the sector of pulpwood for pulp and paper industries, the total annual demand is of 1,75,000 tonnes as against supply of 30,000 tonnes in 1971-72.

The anticipated development of forestry upto the end of 4th plan is indicated in the following table :

TABLE

Target and Achievement of Forest Development

(X 000 Hectares)

Item	Target	Expected Achievement 1973-74
1. *Forests :*		
(*i*) Working plans	507	507
(*ii*) Quick growing plantation.	13.90	15.60
(*iii*) Economic plantations.	26.30	26.30
(*iv*) Fuel wood plantations.	..	—
(*v*) Farm Forestry.	0.60	0.25
(*vi*) Others		
2. Soil Conservation.	121.50	121.50
3. Soil Consolidation.	7555.26	7555.26
4. Rehabilitation of degarded forests	3.25	3.25
5. Afforestation (intensive and extensive)	37.25	37.25

The total expenses envisaged under forestry programme in 5th Five Year Plan may be about 5.50 crores if funds are available. Out of this outlay, 3.00 crores will be employment intensive while 2.50 crores will fall under minimum need programme for essential projects like soil consolidation, soil conservation etc.

Besides, a number of wood-industries can be set up in the adjacent locations where afforestation work have been undertaken, particularly in the districts of Bankura, Purulia, Sunderbans and North Bengal. A few factories can be set up with the available timber from the forests of Dooars for making plywood board, and rayon pulp to feed the fibre industry. A sum of Rs. 50.00 crores may be allotted for setting up of these industries.

(crores)

PROJECT	Public Investment		Private Investment
	Minimum Need	Employment	Growth
Forestry	2.50	3 00	
Forest based Industry			50.00

The overall investment pattern of the industries based an agriculture, live stock and forest resources is summarised in the table below:

SUMMARY

Industries based on Agriculture, livestock and Forestry

	Public Investment			
	Minimum Need	Employment	Growth	Private Investment
1. Jute Mill				6.00
2. Textile		2.00		30.00
3. W. B. Dairy & Poultry Corporation.	0.82			
4. Sugar Mills	---	---		2.00
5. Woolen Industry	---	---		0.50
6. Forestry & Forest Based Industries	2.50	3.00		50.00
TOTAL	3.32	5.00		88.50

3. Chemical and Allied Industries:

In the 4th Five Year Plan, projects for Haldia Refinery Fertilizer complex and associated Petrochemical industries have been initiated. Besides, in the State Sector, Durgapur Projects and Durgapur Chemicals are also some of the past efforts. Another Fertilizer complex has been initiated at Durgapur.

3.1 Fertilizer:

Consumption of chemical fertilizers in the state is steadily rising. In 1970-71, about 2 lakh tonnes of fertilizers have been consumed.

In the 5th Five Year Plan, it is expected that with the great leap in the agricultural sector, the demand would be for 9 lakh tonnes of fertilizer. It is essential that in addition to already existing capacity of 4 lakh tonnes of fertilizer at Durgapur and Haldia, a new capacity of 5 lakh tonnes be created in order to satisfy the needs of agriculture. An amount of Rs. 100 crores will be necessary for an additional Fertilizer plant having a capacity of about 5 lakh tonnes of fertilizer. This is one of the most priority items in the industrial planning of West Bengal if the emphasis in agricultural sector is to succeed.

3.2.1 Oil Refinery at Haldia:

The oil refinery at Haldia should be expanded to a capacity of 7 million tonnes from the existing capacity of 3.5 million tonnes with an additional outlay of about 120 crores.

3.2.2 Petro-chemical complex at Haldia:

The Petro-chemical complex during the 5th Five Year Plan at Haldia may consist of:

1. Low and High density Polyethylene.
2. Ethylene Oxide|Glycol.

3. Poly Vnylechloride.
4. Styrene|Polystyrene.
5. Vinyl Acetate Monomer.
6. Acetic Acid.
7. Glycerine.
8. Propylene Oxide.
9. PVC and co-polymers plant.
10. Phenol Formaldehyde.
11. Polyester Resin.
12. Nylon 6 and 66.
13. Tyre chord plant.
14. Phthalic Anhydride Plant.
15. Phenol Plant.

An additional outlay of about 400 crores is necessary during the 5th plan at Haldia. This complex would help to generate many ancillary chemical and drug industries.

3.3 Public (State) Undertakings :

The following schemes are proposed for consideration :

3.3.2 Coke Oven Plant :

Expansion of batteries of Coke Oven Plant was previously agreed in principle by the Government of India who also promised to provide funds for the purpose. The schemes were not taken up for execution due to overall recession in the country and lack of demand for coke in the market. The demand for coke has since looked up and it is desirable to instal another 2 batteries of 29 ovens each in the Coke Oven Group of plants of Durgapur Projects Ltd. at an estimated cost of Rs. 5 crores. It is mentioned in this connection that some of the Coke Oven batteries are worn out and they may require major repair or replacement within next few years. It is therefore imperative that 2 more batteries should be set up at Durgapur so that coke production does not go down at any point of time.

3.3.3 Blast Furnace along with steel melting, casting and Arc Furnace :

It is proposed to set up a Blast Furnace Plant along with steel melting, casting and Arc Furnace in order to create inplant demand for coke and power. Although there is high demand for B. P. Hard Coke in the market now, such demand may not be there for all time to come and hence the necessity for setting up the Blast Furnace Plant with provision for steel making upto the billet stage by continuous process. The proposal has already been examined by the Durgapur Projects Limited Board and Central Design and Engineering Bureau of Hindusthan Steel Limited and is being asked for a feasibility report on the subject. The cost of the scheme may involve Rs. 24 crores, subject to feasibility reports.

3.3.4 Durgapur Chemicals Limited :

Durgapur Chemical Limited is also providing infrastructure facilities to the major chemical industries of the State by manufacturing basic chemicals required for a large number of ancillary industries. It also utilises the by-products of D.P.L. for manufacturing basic chemicals.

Expansion and improvement of this project would necessitate provision of an amount of Rs. 15 crores (Rupees fifteen crores) in the Fifth Five Year Plan after suitable feasibility study and subject to availability of resources.

SUMMARY

Chemical and Allied Industries

Invest (Rs. crores)

Item	Growth Projects	Private
1. Fertilizer Plant.	100	- -
2. Oil Refinery at Haldia.	120	-
3. Petro-Chemical Complex.	—	400
4. Durgapur Projects.	29	
5. Durgapur Chemicals.	15	——
Total	264	400

4.0 Pharmaceutical Industries

Two strategies are proposed to be taken up during the Fifth Five year Plan for development of Pharmaceutical Industries, viz: (i) expansion of drug industries and its ancilliaries and antibiotic plants, (ii) establishment of phytochemical complex.

Establishment of Phtoy-chemical Complex involves lot of employment being labour intensive and requires immediate attention. The utilisation of the medicinal and aromatic plant resources in West Bengal will be very helpful for the economic development of the State, better public health and medical care of the people and also for substantial increase in employment.

In the first phase, in order to manufacture Caffeine from the tea prunnings, the tea waste may be taken up by using modern technological improvement for the extraction process of Caffeine. Adequate quantities of the required raw materials are available or can be produced from the tea plantations in North Bengal area or from the adjoining State of Assam.

Another important line of development is the manufacture of emetine from Ipecac roots (after taking into account the already licensed and installed manufacturing capacity in the private sector). Simultaneously, increased cultivation programme of Ipecac roots should be intensively taken up.

There is also good prospect for the manufacture of :

1. Digitalis glycosides from *D. Purpurea* and *D. Lanata.*
2. Reserpine and total alkaloids from *Raulfia serpentina.*
3. Menthol and peppermint-oil from *Montha species.*
4. Camphor from Ocimum *Kilimandacharicum.*
5. Lemon grass oil and cibial from *Cypogen citratus.*
6. Diosgenia from *Diosocorea yarns.*

7. Ergot alkaloids etc., from *Ergot sclerofiaria.*
8. Atropine from *Atropa acuminota.*
9. Hyoscyamine from *Hyoscyamus species.*
10. Papin from *Carica papaya.*
11. Isabgul from *Plantago species.*

Sufficient quantity or the raw materials for all these items are not available at present to feed the proposed phytochemical factory. However, through extended and intensified scheme of cultivation, economic production of all these essential medicinals would be made possible in the rich soil of West Bengal.

Production of quinine from Chinchona species is already a well-established industry in West Bengal and considerable technical know-how is available in this matter in the State. This could be profitably utilised for the establishment of a proposed phytochemical plant in North Bengal.

For a viable and economic unit, it would be necessary to draw up a Master Plan for phytochemical development in North Bengal based initially on the production of Caffein, Quinine, and Emetine. Supplementary production of some of other plant materials and products therefore must be aimed at according to a phased programme, leading to a steady growth of a broad based drug industry in the State of West Bengal.

Small Drug Farms should be established for the large scale production of papain from Carica papaya and isabgul from *Plantago ovata* (Plantago species) in Midnapore, Bankura, Durgapur and other districts. These farms can also take up intensive cultivation of lemon grass for lemon grass oil and camphor yielding, *O. Kilimandsoaricum* as hedge plants.

A testing and research laboratory for pharmaceutical industry should also be established so as to act as an adjunct of a phytochemical unit for quality control and research purposes and also for pilot-plant research specifically related to the manufacturing programme of the phytochemical unit. The drug industry has got many limitations as regards availability of raw materials from Western Region of our country. Due to price differential, the industry suffers a great handicap. In spite of these retarding conditions, there is a great scope for expansion and modernisation of the drug industry.

It is desirable that besides encouraging private enterprises for establishment of new units with licences and credit facilities, a Pharmaceutical Industrial Estate can be set up. In the proposed Industrial Estate, not only small drug manufactures will be housed, but also manufacturers of ancillary goods such as ampoules, cartons, boxes, etc.

A total investment in the phyto-chemical complex and drug industry sector of Rs. 5 crores is envisaged out of which the Government may provide infrastructure facilities.

A antibiotic plant can be set up in North Bengal, as the temperature of Teesta water in its upstream is comparable to the temperature of Ganges water in Hrishikesh and this plant can be set up in the joint sector and a total investment of Rs. 5.00 crores can be envisaged.

SUMMARY

Scheme	Investment (in lakhs)			
	Total	Minimum Need	Employment	Growth
1. Phyto-chemical Complex & Industrial Estate.	500	—	500	—
2. Antibiotic Plant	500	—	—	500
Total :	1.000	—	500	500

5. Small and Medium Scale Industries Including Cottage Industries

5.1 *Introduction*

In the Fifth Plan strategy medium scale industries as well as cottage and small scale industries will have to be assigned the priority they deserve along with agriculture. The current thinking of many of the developing States is to earmark certain percentage of States' development budget for the growth of medium, small and cottage industries. The priority to small cottage and medium scale industries have been revised. The table below will show the figures of allocations for small scale industries in the annual plans during the Fourth Plan period of our State.

(Rupees in thousand)

State Outlay (Industries) (4th Plan)	Village & S. S. I. Sector.	Percentage of allocation
3,22,07,80	6,13,19	1.89

Annual Plans.	State	S. S. I. (Proper)	Percentage of allocation
1969-70	55,43,90	32.79	.6
1970-71	51,36,38	30.09	.6
1971-72	66,63,39	46.81	7
1972-73	73,50,00	68.51	.9

A huge backlog of unemployed labour force has been carried over the successive plan periods. The agriculture sector is also nearly satuarated from the employment point of view. A revision of the existing pattern of inter-sectoral priorities is therefore called for.

Of the total additional employment to be generated in the manufacturing sector, the share of small scale and medium scale industries sector in future will have to be very large. The existig pattern is likely to change in future. These sectors of industry will increase not only in number but also will share more and more in the total volume of industrial production as well as employment.

One of the principal aims of our efforts during the plan period is a large increase in employment. In an underdeveloped country like ours an increase in gross national product does not connote an automatic increase in the volume of employment. So our main aim during the plan period should be to switch on to the employment oriented schemes.

In consideration of the above premises, the amount necessary in the cottages, small and medium scale industries sector, if funds permit should be about 60 crores.

It is expected that the multiplier effect of this large public investment in the small scale sector will generate balance in private investment.

5.2 Dispersal of Industries

In formulating the guide lines in the Fifth Five Year Plan another feature that has to be reckoned with, is the extreme polarisation of industrial growth that has taken place during the

previous plan periods. Spatial distribution of economic activities has, by and large, remained unbalanced. A number of liberal incentives and facilities for bringing out rapid industrial development are necessary to bridge this imbalance. In this new set of incentive schemes, special emphasis has to be given for the growth of industries in backward areas and new growth centres.

The Planning Commission and the Government of India have also declared the whole of West Bengal except Calcutta, Howrah and 24-Parganas as industrially backward areas. The Government of India have, however, only selected the districts of Bankura and Purulia as a specially backward areas for the purpose of 10 per cent central subsidy. It seems necessary that the Central Government should declare the other districts also as selected backward areas for the purpose of 10 percent subsidy.

To effect dispersal of industries, the State Government is contemplating the opening of Industrial Estates at Durgapur, Barjora, Kalyani, Ranaghat, Krishnanagore, Haldia, King George Dock and Siliguri. Besides the State Government is contemplating development of new industrial areas in places like Kharagpur, Haldia, Purulia and Kolaghat, etc. Our immediate programme should be to construct either commercial estates or industrial estates in each district unfulfilled. The impact of the rural industries project must be encouraged. The emergence of widespread enterprenuarship is however, yet to be pronounced. The extreme limitation of the number of such projects and the paucity of resource under command of the project authorities have no doubt acted as a great retarding factor. Registered factories of West Bengal are concentrated in two small strips around Calcutta and Asansol-Durgapur area. These two small strips claiming only 1.5 persent of the total geographical area of the State accounted for 93 per cent of the registered factory employment.

To remove this snag and to stimulate a planned growth, the State Government is taking steps for dispersal of Industries. Viewed from socio-economic standpoint the programme of dispersal of industries is bound to foster a blanced pattern of industrial growth. The programme involves the establishment of a number of industrial urban complexes. This, in turn, calls for area development project and creation of the requisite infrastructure for encouraging the emergence of enterpreneurship in the selected areas. Mere earmarking of industrial areas and development of infrastructure therein will not by itself encourage the growth of enterpreneurship in the selected areas. This will also necessitate the lure of certain incentives for the new industries in such areas. Recently the State Government has announced that an adequate provision of funds for this programme is a necessity if the growth of local enterpreneurship is to be stimulated. Under this programme infrastructure facilities like roads, water and electricity have to be provided in the growth areas. An edequate fund to the tune of about 10 crores be provided for the purposes.

5.4 Employment Schemes

The large problem of unemployment in West Bengal cannot be tackled in the Governmental field alone. A new approach and a shift in emphasis of increasing scope of self-employment opportunities both in agriculture and industries sectors have to be provided for. More employment for the local people has to be found out. The resources of the state will prove meagre to meet these two requirements. The indentification of growth centres, area development works servicing, training and other promotional schemes of allied nature are proposed to be taken up during the course of a 5th Plan.

To meet the credit needs of the expanding small & medium scale sector during the 5th Plan period more and more resource to institutional funds will be necessary. The funds under the B.S.A.I. Act should be allowed to meet the requirements of the small units.

In the rural sector of our economy, handloom, sericluture and handicrafts occupy an important place in providing employment to a large number of people who are either unemployed or underemployed. Under the 5th Five Year Plan provision for these sectors should be so made as to ensure their effective roles in providing more employment to the rural floks.

5.5 Handloom

This industry occupies a very significant place in providing employment to large number of people. Through a policy of reservating and Govt. support this industry took a big stride in the post independence era. In West Bengal there are about 1,60,000 handlooms of which 77,000 are (approx.) under the cooperative fold. Our programme of assistance principally comprises supply of working capital, share capital, improved appliances, subsidy on sales of cloth, etc., restricted to the cooperative sector only. The volume of assistance in comparison to need is very insufficient. Production of handloom cloth at present is estimated to be about 200 million yards, i.e. 5 yds. per day per loom, bulk of which is contributed by the privated sector. In the Fifth Plan period it will be desirable to raise the production target to 300 million yds.

It is desirable to assure distribution of yarn to the handloom weavers and marketing of the products should be assured.

5.6 Powerloom

The powerloom industry is expected to play in important role in the economy of West Bengal. One powerloom unit generates 3.5 employment. At present there are 7,200 powerlooms in West Bengal and in course of the remaining two years of the Fourth Five Year Plan, we propose to install 4,000 more powerloom. There should be a target of another 10,000 powerlooms for the Fifth Five Year Plan.

The textile industry in West Bengal is passing through a period of crisis. While other raw materials like iron, steel and coal has got All India fixed price, the price of yarn has not been standardised. This has put the textile industry in West Bengal in great handicap. The whole of the eastern part of India is also in a great disadvantageus position. It is desirable that there shall be an All India Price for cotton.

In West Bengal the powerloom generally produces course variety of dhoties and saris. In Western India powerloom products compare well with the products of the composite mill sector. This deficiency is due to the lack of various facilities such as dyeing, bleaching and calendering. Unless we can diversify our production in the powerloom sector, this industry has no future. It is for this very reason, we should establish adequate number of dyeing, bleaching and calendering plants either in the public sector or in the cooperative sector.

5.7 Sericulture

In the sericulture sector, the total area under mulberry cultivation is 5,580.46 hectares. If the acreage under the mulberry cultivation is increased there will be a consequential increase in the production of silk and in the employment of underemployed agriculture labourers. So in the Fifth Five Year Plan sericulture should be given its due importance.

5.8 Handicrafts

West Bengal can be proud of its heritage of handicrafts since the Mughal age. Murshidabad is famous for ivory works. Midnapore is famous for horn products. Mat is produced in Midnapore and 24-Pgs. in large volume. The clay models of Krishnagaar and Teracotta of Bankura have gained international fame. In the Fifth Five Year Plan positive steps should be

taken to boost up production of these handicrafts as they are the easy earners of foreign exchange and as they provide enormous job opportunities to the village craftsman.

5.9 Rural Industries Programme.

In this state four R.I.P. areas are functioning, viz. at Darjeeling, Barasat, Durgapur and Tamluk. It is desirable to extend this programme in four other districts. These extensions will go a long way in effecting an intensive development of industries in several parts of the State.

The State Government has already started an intensive campaign in several districts of West Bengal to stimulate the growth of local enterpreneurship in the areas. In the ensuing plan more such campaigns are proposed to be organised frequently.

5.10 Setting up of Industrial Estates and Industrial Areas.

The WBSIC proposes to set up an industrial estate as a pilot project during 1972-73. A notable feature of this industrial estate will be its functional character. It is felt that for all these estates, the WBSIC will provide a common facility centre in the form of raw material, production and/or storage arrangements. Each of these estates will be specialised in one or two products groups only. These product groups will be based upon one category of raw material only.

Side by side with the "common facility centre" an industrial estate should be set up either as both fully owned subsidiaries or as a joint venture in the small scale sector. These companies will be engaged in manufacturing activities. They will be provided will rented sheds and will be expected not only to create employment potential but also to contribute to the finances of the WBSIC in due course. They will also be expected to provide leadership to the sector of the industry with which they are associated. These companies will be spread out mainly in the backward districts of West Bengal.

Small scale industrial units require assistance for getting their raw material in bulk either directly or in collaboration with the State Trading Corporation of India. This will considerably reduce the financial burden on the small scale units. Provision for infrastructure has to be made for this purpose.

5.11 Employment and Outlay in Small Scale and Cottage Industries.

For providing employment in the urban areas as well as in the new industrial and servicing centres, catering to the needs of modernising agriculture, there are immense scope for developing modern but labour intensive small scale industries. Capital per unit of labour in these industries may be as low as Rs. 5000 which is a small fraction of what is required even for otherwise essential modern large scale industry. A programme for creating new employment for at least one lakh persons may be initiated under the 'Employment programme'. Total investment on this account will, therefore, be on the order of Rs. 50 crores. It may be mentioned that the entire resulting employment will be productive and add to the growth of the economy.

Total outlay (crores)

Item	Central	Private	
	Minimum need/employment	State	Private/others
Medical Scale as well as Cottage & Small Scale Industry	60	--	450

The apportioning of funds between the medium scale and Small scale & Cottage industry will be done later on. The investment for most of the medium scale industries as well as for small scale industries will come through private investment or joint venture.

6. Agro-Industries.

6.1 *West Bengal Agro-Industries Corporation Ltd.*

This Corporation was incorporated in 1968 with an authorised share capital of Rs. 2.00 crores which was subsequently increased to Rs. 3.00 crores. The contribution of the State Government was 31 per cent and that of the Central Government 49 per cent. It has been proposed to increase the share capital of this Corporation from Rs. 3.00 crores to Rs. 5 crores.

The Present activities of the Corporation are as follows :

(1) Sale of tractors, power tillers and agricultural implements,

(2) Sale of fertilisers, seeds and pesticides.

(3) Establishment of Custom Service Centres.

(4) Setting up of Cold Storage.

(5) Establishment of Agro-Service Centres.

(6) Distribution of pump sets.

(7) Collection of instalment dues against the supply of pump sets under the hire-purchase scheme from Corporation's own fund.

During the 5th Five Year Plan period all the above mentioned activities are proposed to be intensified and it is also proposed to start some Agro-based Industries. The targets for different trading activities of this Corporation during the 5th Five Year Plan period are as follows :

6.1.1. Distribution of tractors, power tillers and other agricultural implements.

As more irrigation facilities and scope for multiple cropping are being provided, the farmers are taking to mechanisation of agriculture. In the last year of the 5th Five Year Plan it is estimated that 300 tractors and 200 power tillers would be sold by the Corporation to the farmers of the State. A tentative target for sale of tractors, power tillers during the Fifth Year Plan is shown below :

	1974-75	1975-76	1967-77	1977-78	1978-79
1. Tractor	300	300	350	350	400
2. Power tiller	400	400	450	450	500

6.1.2. Sale of seeds, fertilisers and pesticides :

The demand for seeds, fertilisers and pesticides is increasing in this State. The demand for fertilisers in the 5th Five Year Plan period will increases further as more irrigation facilities will be provided and the farmers will take to multiply cropping on arger scale. Correspondingly, demand for seeds and pesticides will also go up.

6.13. Establishment of Custom Service Centre.

This corporation has at present 14 custom service centres in the different districts of the State with 53 tractors and 14 power tillers, 35 threshers and 10 Knapsack power threshers for hiring to the farmers. It is proposed to increase the number to 20 during the current financial year in order to cover the remaining districts of the State During the 5th Five Year Plan period It is proposed to strengthen these custom service centres by providing more tractors, power tillers, threshers and power sprayers and also by creating facilities for repair, servicing and maintenance of tractors, power tillers, pumping plants, etc. It is desirable to invest, if funds permit, Rs. 25 lakhs for the 5th plan period.

6.1.4. Setting up of Cold Storage.

This Corporation has already taken over the Kanainatsal cold storage in Burdwan and it is proposing to take over the Garbeta cold storage. In the 5th Five Year Plan it is proposed to set up some new cold storages.

6.15. Establishment of Agro-Service Centres.

This scheme has been taken up at the instance of the Govt. of India with two objectives, namely, to offer self-employment to the unemployed graduates and diploma holders in engineering and agriculture and to provide tractors, power tillers and pumping plants and other agricultural machinery as well as sale of seeds, fertilisers and pesticides through these centres. During 1971-72, 80 unemployed enterpreneurs were selected who are now being given training and already 12 of them have set up Agro-Service centres. It is proposed to select 100 unemployed graduates diploma holder in agriculture and engineering in 1971-72. It is also proposed to select 100 such enterpreneurs during each of the 5th Five Year Plan period for which the annual requirement of fund will be Rs. 1.5 lakhs during the 5th Five Year Plan which will be reimbursed by the Government of India.

6.2 Other Agro-Based Industries :

(i) *Manufacture of Agricultural Implements.*

By 5th Five Year Plan there will be sizeable population of tractors and power tillers in West Bengal and there will be demand for agricultural machinery drawn by tractors and power tillers. It is proposed to manufacture disc harrow, cultivators, cage wheels, trailers, etc. The estimated requirement of fund is Rs. 10,00,000.

(ii) *Manufacture of Power Tillers.*

With the lowering of ceiling of agricultural holdings and availability of more irrigation, there will be greater demand for power tillers. It is proposed to set up a factory for production of power tillers during the 5th Five Year Plan period. The requirement of fund for setting up a factory for production of power tillers is estimated to be Rs. 30,00,000.

(iii) *Manufacture of Diesel and Electric Pumping sets.*

It is proposed to take up the manufacture of diesel engine|electric pumping sets in collaboration with a reputed firm. The requirement of fund for setting up a factory for production of diesel|electric pumping sets is estimated to Rs. 1,00,00,000.

(iv) *Agro-Aviation.*

Aerial Spraying of pesticides and sometimes Urea on crops like jute, wheat, paddy, etc. are becoming necessary in view of the extreme damages sometimes caused by insects. This Cor-

poration proposes to acquire a few Helicopters for aerial spraying. The estimated requirement of fund for this project is Rs. 40,00,000.

(v) *Ginning Plant.*

Cotton cultivation has been taken up in the coastal districts of West Bengal during the Rabi season and appears to be promising. There are at present two Ginneries in West Bengal—one set up by a private enterprise and the second one by the State Cooperative Marketing Federation. As cotton cultivation increases, there will be need for more ginning plants. This Corporation proposes to set up a ginning plant. The fund required for this plant is estimated to be Rs. 2,00,000.

(vi) *Bulk Blending Plant.*

At present there is scarcity of fertilisers. But it is expected that during the 5th Five Year Plan the position will improve much and there will be availability of the nitrogenous, phosphatic and potasic fertilisers in sufficient quantities to enable this Corporation to set up a Bulk Blending-Plant for preparation of fertilisers mixture so as to help the farmers to get balanced fertilisers. The fund required for setting up a Bulk Blending plant is estimated to be Rs. 10,00,000.

(vii) *Workshop.*

During the 5th Five Year Plan the population of tractors and power tillers in this State will increase and it will be necessary to set up Workshops at different places for servicing and repairing of tractors, power tillers, etc. It is therefore proposed to set up Workshops at Kalyani, Tarakeswar and Burdwan. The estimated requirement of fund for setting up of Workshops in Rs. 8,00,000.

(viii) *Ware Houses.*

A provision of 0.60 crores should be provided if funds are available for construction of ware houses for Ware House Corporation.

SUMMARY

crores

Item	Minimum Need Programme	Employment Programme	Growth
1. West Bengal Agro-industries Corporation	--	—	5.0
2. Agro-Industries	-	2.60	--
Total	—	2.60	5.0

7. Mineral Development & Mining Industry :

7.1 *Cement* :

West Bengal is the only state where there is no cement factory. The demand for cement requirement of the State would be enormous in West Bengal due to CMDA, Hooghly Bridge, Metro Project of Calcutta and hundreds of other development projects.

It is proposed that two cement factories be initiated under 5th Five Year Plan—one at Jhaldah, based on local resources and another at Durgapur based on slags.

The outlay required would be Rs. 10 crores, if funds permit, in the 5th Plan with a target capacity of 10 lakh tons.

7.2 Tungsten :

The tungsten deposits of Purulia needs full utilisation and an extraction and processing plant should be set up with an investment of about Rs. 2.00 crores.

7.3 Mineral Development :

It is proposed that a mineral development Corporation be set up in the State for taking care of the natural resources of the State. The development of Birbhum China clay, black stone gravel quarry for road metals should be undertaken. An overall provision of Rs. 15.00 crores be made for such kind of general mineral development work and related industries.

SUMMARY

Mining & Mineral Development (Crores)

Project	Public Investment			Private investment
	Minimum need	Employment	Growth	
1. Cement	—	—	—	10.00
2. Tungsten	—	—	2.00	—
3. Mineral Development.	—	—	—	15.00
		Total	2.00	25.00

8. Electronic Industries :

With the Development of the different industrial complex in West Bengal during the 5th Five Year Plan, it is also necessary to draw special attention to the scope of development electronic industries in West Bengal.

It has been decided that television will be set up in Calcutta by 1973. With the decision of setting up television in 1973, the scope of developing electronic industries in the State has widened to a large extent. The Department of Electronics has granted licences to two firms in West Bengal for production of 5,000 television sets. There is much larger scope for this as the demand for Television sets would be at least 50,000 in Calcutta. Further with the development of science and technology, there will be a rapid growth in the field of electronics and tele-communication system which in turn will create a huge demand for the electronic goods almost regularly.

In the Western region of the country electronic industries have developed to some extent but in this part of our country specially in West Bengal, the development of electronic industry is almost non-existent. This state of things should not be allowed to continue further specially because of the fact that West Bengal State has got all the necessary infrastructure including trained personnel for encouraging the growth of electronic units in the State.

The production of radio receivers, capacitors, transistors, relays and printed circuits, wires and cables necessary for the electronic industry must be given proper emphasis by setting up different electronic industrial complexes in the West Bengal State during the 5th Five Year Plan. This will not only help the State and finally our country to meet with the challenges posed by the rapid development of the electronic and tele-communication system but also open up export market in the international level.

Moreover, it is anticipated that a huge number of educated and technically qualified young men and women that exists in West Bengal will be properly marshalled, inducted and motivated to the challenges of the new generation of electronic industries. It will take only two months to induct young men and women with school final background to the production processes of electronic industry. Thus, a huge work force will be an integral part of the development of electronic industry.

Considering all the factors of the electronic industries, it is desirable that two electronic industries should be set up in West Bengal. One of them may be a large industrial undertaking in the public sector and the other would be an industrial estate producing a number of ancillary electronic products. The total investment will be in the order of 20 crores.

SUMMARY

(Crores)

Sector	Minimum Need Programme	Employment Programme	Growth Project	Private Sources
1. Electronics	–	10.00	—	10.00
TOTAL :		10.00	—	10.00

9. Mechanical and Metallurgical Industries :

9.1. *Iron and Steel :*

There has been some decline in the production of iron and steel products as evident from this table below :

(Lakh Tons)

Item	1969	1970
Pig Iron	22.6	11.6
Steel Ingots	16.4	14.3
Finished Steel*	11.1	10.1

Exclude unregistered Reroller's data.

This trend is unfortunate as the demand of steel in West Bengal will increase tremendously due to the following impending committed activities :

(i) CMDA constructions

(ii) Metro Rails in Calcutta

(iii) Hooghly Bridge

(iv) Power Plant's Expansion Programme (Each MW needs 100 tons of steel at least)

Thus during the Fifth Five Year Plan period demand of steel in West Bengal would rise to almost 2 million tons per year which is about 38 per cent of entire country's present capacity. Without iron and steel, the ambitious 5th Five Year Plan would not materialise. Power, Steel, Cement are the three most important requirements for all developmental affects.

West Bengal's quota in Iron & Steel is decreasing every year. This is affecting the metal-based industries adversely. The following programmes are desirable at the last lap of the 4th Plan in order to make the mechanical and metallurgical industries grow and expand in West Bengal.

Action Programme for 4th Plan Prior to Launching of 5th Plan

PROJECT	ACTION
(1) Durgapur Steel Project	Expansion from 1.8 m. ton output to 3 m. ton output.
(2) Durgapur Alloy Steel Project.	(*a*) Expand the capacity (*b*) Change the Product mix to make the plant viable
(3) Purulia Alloy Steel Project	Should begin in right earnest and must be commissioned by the Middle of 5th Plan.

These advance actions if taken now, would not seriously disturb the material balance for the projects that are now being envisaged for the 5th Five Year Plan. The projects include :

(Rs. crores)

Projects	Public Investment	Private Investment-Joint
1. Establishing 2 Ore-based Electro-steel units (Capacity of 1 lakh ton each).		20
2. Establishing 3 mini Steel plants (20,000 to 30,000 tons capacity)		15
3. Establishing factories for Moped. Scooter and Transport Lorries.		10
	TOTAL	45

9.2. Public Undertakings in Mechanical Industry Sector :

The agricultural expansion programme will need usage of power tillers to a large extent. With this view the Westinghouse Saxby Farmer's activity must be diversified. This firm was taken over by State Government in 1969 when it was about to be closed down.

It manufactures sophisticated Vacuum Brake, Air Brake, Mechanical Signalling, Electrical Signalling, Electro Mechanical Signal and Point Machines which are primarily consumed by Indian Railways. A large number of components required for the manufacture of the above items are required to be procured from outside and certain fabrication and electro-plating works are also executed by outside agencies.

The State Government has so far advanced a sum of Rs. 1.55 crores to this organisation and Railways advanced Rs. 90.00 lakhs for enabling the Company to procure raw materials. As a result the monthly sale of the Company has exceeded to Rs. 15 lakhs in the month of June while it was only Rs. 2|3 lakhs a few months back. It is expected to reach break even point within January, 1973 when its monthly sale is likely to exceed Rs. 21 lakhs. A provision of a small sum of Rs. 15.70 lakhs only is required to be made in the 5th Five Year Plan under the following heads:

1. Power Tiller Project
2. Rubber Moulding Project
3. Extension of Smithy Shop
4. Re-opening of Cast Iron Foundry
5. Electro-plating project
6. Bakelite Moulding Project
7. Expansion of Foundry

A total investment of 0.16 crores would be necessary if funds are available.

9.3. Tube Mills :

The entire agro-irrigation scheme as envisaged in 5th Five Year Plan would need 4,20,000 shallow tube wells and 1,80,000 deep tubewells. If shallow tubewells are in the average 50 m deep and deep tubewells 300 m deep than the tube requirements in the area development programme alone would be :

(a) 75 mm bore : 21 million metre length

(b) 200 mm bore : 54 million metre length

This very large demand can be met at present from mostly out of state resources. It is proposed that a tube mills plant must be set up in West Bengal in the joint sector to meet this huge demand with a capacity of 5 million capacity at least.

(Rs. crores)

Project	Capacity	Investment From Private Sector
1. Tube Mills (Two)	Total 10 million m. length.	

9.4. Haldia Shipyard :

West Bengal possesses skill and experience for ship-building activity. Besides, the expansion of Garden Reach Workshops, it is also necessary to initiate a Ship-building yard at Haldia which would be capable of building large-draft shipping vessels. This would fill up the large demands of shipping capacity for export activity. An investment of about Rs. 40.00 crores would be necessary for this shipyard.

SUMMARY

(Rs. crores)

Item	Minimum need	Employment	Growth	Private Sector
1. Iron & Steel				45
2. Saxby & Farmer			0.16	
3. Tube Mills				5
4. Haldia Shipyard			40.00	
		Total	40.16	50

10. Electrical Industries :

The electrical industry has got to expand fast in order that the projected programme in the following sectors are not hampered.

(i) Rural Electrification Programme

(ii) Irrigation and Agricultural Expansion Programme

(iii) Power Rise in terms of installed capacity of Generation by at least 1,200 MW

This will mean a very large demand on :

(i) Transformers, both large and small sizes

(ii) About 0.7 million electric motors of assorted sizes

(iii) Transmission Towers, Poles etc. of various types

(iv) If 20,000 villages are to be electrified the required number of electric bulbs and accessories would be very large.

The present capacity of the electrical industries will be entirely insufficient to meet the demands (even partially) generated in the 5th Five Year Plan.

It is suggested that a public undertaking in the central sector for producing large transformers and 18 H. P. motors must be set up, besides the expansion of existing private capacities.

(Rs. crores)

Project	Minimum need	Employment	Growth	From Private Sector
1. Heavy Electrical (Transformer)			25.00	
2. Motors				10.00
3. Lamps, Fans, Transmission System.				20.00
Total	—		25.00	30.00

II. Sick-Industries and Their Revival :

11.1 Introduction :

5th Five Year Plan envisages an exercise for creating as much employment potential as possible. Sick and closed industries are idle capacities which if revived will produce employment without capital expenditure of large nature.

Sickness has been found to be due to :

(i) Market conditions:—
  (a) lack of workload,
  (b) distress prices,
  (c) fall in realisation.

(ii) Unsatisfactory labour relation:—
  (a) indiscipline,
  (b) disruption in production,
  (c) loss in recovery.

(iii) Material scarcity :—
  (a) idle capacity,
  (b) increased cost with alternatively procured raw material (usually in Black Market for lack of quota).

(iv) Mismanagement :—
  (a) lack of training,
  (b) lack of cost consciousness,
  (c) injudicious capital outlay.

(v) Malpractices :—
  (a) lifting of money,
  (b) unaccounted disbursements,
  (c) accumulation of outstandings.

Out of all these factors, more attention has generally been paid on (i) and (ii). It is considered that condition (i) would improve during 5th Five Year Plan. Political stability would also bring lot of improvement in conditions stated in (ii). However, the most serious deterrent factors can be related to conditions (iii) and (v). To improve the constraint with regard item (ii) need-based quota system and feasibility of organising raw material banks must be given careful consideration in 5th Five Year Plan.

Item (v) means that for certain dishonest enterprises, it is sometimes profitable to become sick. They lift their own money and resources and replace it by public investment. These concerns find various means by which they manage to get sick. Serious notice must be taken of such cases where coupling of out-of-state sick industries with affluent in-state industry by the managements make the affluent industries also sick. Such coupling of industries must be looked into and if necessary should be forced to delink.

11.2 The position likely to be reached by the end of the 4th Five Year Plan :

11.2.1 The attached statement giving the relative variation in the number of working factories in West Bengal from 1967 to 1972 and the number of closures cases that occured during those years gives the trend (Table in Page 95).

11.2.2. The total employment in working factories in West Bengal declined from 1967 to 1971 by about 60,000. The average number of factories which ceased work annually during each of these years is 163. However against an annual average of closure of about 200 units during the preceeding five years, closure of only 60 units was registered during the first half of 1972. The annual rate of closure may thus fall to 100 units per year in future.

11.2.3. While closure is an ascertained fact, sickness is not. There neither is nor can be any census of the sick units, but it may be observed that the occurrence of sickness in industrial units is no less extensive than closures.

11.2.4. Managements often prefer closure to lockouts and where closure is due to labour dispute, re-opening of units is achieved by conciliation. This accounts for the largest number of cases of re-opening. In other cases, reconstruction after take over or by agreement becomes necessary.
11.2.5. From March 1972 to June 1972, 7 units involving about 10,000 workers were taken over under the law and reopened. This does not include LLSCO.

11.2.6. Upto the end of June 1972 against 331 application received by the IRCI during the first year of its activity, assistance was sanctioned in 47 cases; disbursement, however, was made in 29 cases, involving about 27,000 workers. This includes one sick unit which alone accounts for 9,000 workers.

11.2.7. The closed units that re-opened either by take over or by agreement between the management and the IRCI would account for the restoration of employment of about 20,000 workers out of the 37,000 workers who were unemployed on this count.

11.2.8. Inspite of vigorous concilliation activities and reconstruction and take over of units under the Industries (Development and Regulation) Act, there are at present 493 closed units involving about 40,000 workers.

11.2.9. Allowing for possible intensification of activities of the IRCI and the State Government in this field and taking into account the likely rate of fresh closure cases, it is estimated that West Bengal will have a backlog of at least 320 closed units involving 20,000 workers at the end of the 4th Five Year Plan. There will also be fresh cases of sickness, apart from those falling sick during the current Plan and adding to idle workload in the 5th Five Year Plan.

11.3. Identification of the problems requiring immediate attention :

11.3.1 The more important of the already identified causes of sickness and closure of industry area :

(1) Inadequate equity base and an unfavourable equity debt rate.
(2) Inadequacy of management and mal-practices.
(3) Scarcity of raw material.
(4) Labour indiscipline and its politicalisation.
(5) Neutralisation of locational advantages.
(6) Security-oriented conservative banking facilities.

11.3.2. The present approach to the problem calls for total re-orientation in the methodology of rehabilitation of the sick Industries. Injection of loan capital is not enough; reconstruction in collaboration with the present management may also not succeed in many cases and unless labour assures productivity, the entire exercise may come to nothing. The extent of unutilised capacity accounted for by closure and sickness is enormous in West Bengal and without special allocation of raw material to the State any talk of revival will also be unrealistic.

11.3.3. Amongst the sick and closed units by far the largest number are in the small scale. Their revival has to be arranged through take over and amalgamation. This would necessitiate a holding company which the State has not yet set up. The IRCI which has confined its activity mainly to West Bengal during its first year will gradually extend its activities to other States and West Bengal may not get half as much attention as now. The State will require its own machi-

nery for taking care of the uncovered area. Moreover, IRCI is yet to aim at emerging as a holding company for such of the reconstructed units which have been deficient in management.

11.3.4. Another problem of the small scale units is undue pressure on their liguidity position because of delayed payment by their patrons in the large scale sector. This can be remedied if only there is a Central Organisation for marketing.

11.4. Remedial Measures :

11.4.1. Immediate attention will therefore have to be given to the following directions :

(a) Setting up of a managerial cadre without proprietory interests in the units ;

(b) Selecting units for revival which are likely to be economically viable and taking them over finally in the public sector, if the management has been inefficient or corrupt ;

(c) Accepting the death of the remaining units due to uncontrollable causes including a change in the pattern of demand but not before an attempt to utilise the land and building for setting up a new product at the site has failed :

(d) Bringing the taken over textile units under the management of a State Textile Corporation set up with an authorised capital of Rs. 500 lakhs and the non-textile units under a State Industrial Rehabilitation Corporation with an authorised capital of Rs. 500 lakhs ;

(e) Arranging marketing through a State Marketing Board of Corporation which should be set up particularly in the interest of the industry in the small scale ;

(f) Arranging easy flow of raw material into the reconstructed units from a raw material bank which should have assurance of enough supplies from the Centre ;

(g) Requiring the Centre to allow freight subsidy on raw materials which have to be shipped|railed from the West Coast by way of compensating West Bengal industries for the loss of their geographical advantages in coal and steel ; and

(h) Requiring the Commercial Banks to develop a more liberal attitude in allowing banking facilities to the closed and sick units.

11.4.2. During the 5th Five Year Plan the total number of units requiring assistance in all sectors of industry is not likely to be less than 20,000 per annum, assuming that there is a gradual rise of demand for the goods produced. This will call for an investment of Rs. 1,000 lakhs per year or Rs. 50 crores for the 5th Plan period. If coal and tea are also to be brought within the purview of this line of activity as a measure of:—

(a) Restoration of employment and welfare of the workers and

(b) Increased economic activity by the productive utilisation of the idle capacities.

11.4.3. With the two suggested Corporations, with a capital of Rs. 500 lakhs each, it should be possible to attract bank and institutional finance to ensure an investment of the order of Rs. 50 crores during the 5th Five Year Plan. This investment should be concerned under employment generating programme.

OUTLAY

(Rs. Crores)

Item	Minimum Need	Employment programme	Growth
Sick Industries	—	10.00	—
Total	—	10.00	—

TABLE

Yrs.	* Registered New Factories		Total number of Registered factories existing at the end of the Year (31st Dec.)		Number of Closures	
	No. of factories	No. of persons proposed to be employed	No. of factories	No. of persons employed	No. of cases	No. of persons affected.
1967	154	8477	6151	8,65,297	123	10,153
1968	160	7901	6151	8,50,287	140	28,668
1969	157	6304	6099	7,91,379	182	32,105
1970	99	3015	6038	8,08,573	321	73,617
1971	113	4270	6027		142	44,483
1972					60	4,972 (upto 30.6.72)

* Source Factories Directorate
** Source Labour Directorate.

12.1 Aggregate Picture:

The economic implications of the industrial possibilities in West Bengal during the 5th Five Year Plan period as it emerges from the aforesaid proposals is presented in the table below.

TABLE

Aggregate Picture of Investment Pattern in the Sector of Industry and Mineral Development.

(Rs. Crores)

	Area of Investment		Public Investment		From Private investment.
			Employment.	Growth	
	Industries based on Agriculture, livestock forest resources.	3.32	5.00	—	88.50
2.	Chemical & Allied Industry		—	264.00	400.00
3.	Pharmaceutical industries		5.00	5.00	—
4.	Medium, Cottage and Small scale industries		60.00	—	450.00
5.	Agro industries		2.60	5.00	—
6.	Mining and Mineral based industries		—	2.00	25.00
7.	Electronic industry		10.00	—	30.00
8.	Mechanical & metallurgical industries		—	40.16	50.00
9.	Electrical industries		—	25.00	30.00
10.	Revitalisation of sick & closed industries		10.00		
11.	Strengthening IDC for undertaking projects both in the joint & public sector @ 15% of total private Investment excluding small sector but including some medium sector industries			100.00	
	Total	3.32	92.60	441.16	1063.50

12.2. Approach suggested for industrial Planning of 5th Five Year Plan :

The focal point of the 5th Five Year Plan being the extensive area development projects in the agricultural sectors in order that rural economy is boosted and large employment potential is created at the country side, the emphasis of industrial planning has got to be shifted to the production of essential items required for developing the necessary infrastructure of which the dominant demands are :

(i) Power,

(ii) Fertilizer,

(iii) Pesticides,

(iv) Pumps, motors and tubewells (shallow and deep),

(v) Warehouses and Cold Storages,

(vi) Agro-industries.

Hence the following strategy has got to be adopted on priority basis.

12.1.1. Generating capacity of electricity as well as the rural electrification work must be extended at a very fast rate in order that the agricultural projects to be undertaken can be made possible.

12.2.2. Fertilizer demand will rapidly increase, hence the capacity of Haldia refinery should be extended immediately in order that a third Fertilizer Plant of substantial capacity can be established.

12.2.3. Emphasis must be made on growth industries inclusive of petro-chemical complex and electronic industry in order that a large number of ancillary chemical industries can be set up for absorbing educated unemployed persons.

12.2.4. The demands of pumps and electrical motors will be huge. The industries producing these items should be expanded.

12.2.5. The demands of tubes for shallow and deep tubewells should be partially made from the State ventures. Two Tube Mills are being proposed.

12.2.6. West Bengal pharmaceutical industries should be helped so that the raw materials are obtained at competitive prices. A phyto-chemical complex and a pharmaceutical industrial estate has been proposed besides an antibiotic plant in the Central Sector.

12.2.7. The agro-industries needs strengthening. A power tiller project is necessary in the State Sector.

12.2.8. Small Scale industries being the largest employment generating system must be given proper emphasis. Arrangements should be made for providing assistance in procurement for raw materials.

12.2.9. To meet the rising demand of cement, it is imperative that two cement mills must be established during the early period of the 5th Five Year Plan. It may be noted here that West Bengal is the only major state where there is no cement mill until now.

12.2.10. The infra-structure of the electrical industry must be geared up to meet the requirement of the Fifth Five Year Plan. A heavy electrical factory for production of large transformers is proposed in the central sector.

12.2.11. The financial organisations specially set up to help industrial undertakings including sick and closed industries must be reinforced in order to support them with longterm easy loans.

12.2.12. Last and not the least the entire industrial activity is entirely dependant on availability of steel. The quota of Steel for West Bengal must be substantially increased. The capacity of Durgapur Steel, IISCO, Durgapur Alloy Steel, must be expanded to a considerable extent. The Alloy Steel Plant at Purulia is proposed under joint sector. Besides, several smaller size steel plants should be established under joint sector in dispersed manner throughout the State. In the steel industry, an improved product-mix should be attempted in order to meet the requirements of the plan without up-setting the viability.

12.2.13. Another sector sick and closed industries specially for West Bengal, if revitalised by taking certain measures, will become an improtant generating agency.

12.2.14. The problem of unemployment in West Bengal with consequent restlessness of the youth resulting in political instability and disorder is basically related to the poor growth rate of the states' economy both in the agricultural and industrial sectors. Development of modernised agriculture is also dependant on industrial infra-structure. Hence, industrial development in West Bengal in a planned manner necessitates a sense of urgency which if overlooked will jeopardise all attempts and objectives of the 5th Five Year Plan.

CHAPTER VII

HOUSING, URBAN AND REGIONAL DEVELOPMENT INCLUDING TOURISM AND PANCHAYAT

A. Housing

1.1. There is reasonably good information on the extent of housing deficits in the Calcutta Metropolitan District and in few other urban areas. But there is no adequate data on housing needs in the rural areas. An early effort of the Government will be to obtain such information. As a result, the data used in this section of the report are derived mostly from the CMD situation.

1.2. Clearly the major obstacle to any significant improvement in the housing of the city's population is poverty. It is this poverty which prevents them from translating their acute needs into demand for housing. The basic way out lies evidently in the removal of poverty itself. But the situation has become such that methods will have to be found to provide at least some immediate relief to the people so that they can engage seriously in the fight against poverty. Hence, while paying central attention to the overal plan for the task of fighting poverty, there will have to be some programme for housing and shelter even before poverty can be eliminated.

1.3. This brings up the problem of housing which arises from the supply side. In 1961, there were 13.9 lakhs of housing units in the CMD, and it was estimated that an additional 2.2 lakhs would have been required to eliminate overcrowding and provide adequately for the houseless population. During 1961-71 decade, new pucca construction was not even built at a rate to accommodate population growth, let alone make any dent on the shortage of 1961. During the decade it is estimated that about 25,000 new pucca units were built annually, whereas production should have averaged 37,000, simply to accommodate new growth. Thus, housing shortage in the CMD is increasing. Of the several problems on this side, the following may be mentioned. The first is the scarcity of building materials. Even the midterm Appraisal of the national forth Plan mentions the shortages of steel and stack coal for burning bricks as two of the main causes hampering the supply of a bigger volume of housing. The speculators thriving on the shortage have further aggravated the supply position. The second bottleneck is in terms of high land price, particularly in the urban areas. Speculation in urban land price and an enormous increase in landless labour in the rural areas have made 'land' a very scarce commodity to the majority of our population. Here the shortage is not always in terms of physical non-availability, but in terms of socio-economic forces preventing the majority to make use of the land even when it is otherwise physically available.

1.4. The third bottleneck arises due to the "housing standards" prescribed by the Government for public housing for the poorer section. It is true that a floor space of 280 sq. ft. the current minimum standard, is much better than a floor space of say 150 sq. ft. However, the following basic points must be taken into consideration in fixing the minimum standards:

(a) The rent of 280 sq. ft. is much higher than that of 150 sq. ft.

(b) The subsidised rent is often much higher than the maximum paying capacity of the majority of the poor.

(c) Public funds being limited, higher the housing standard, lower will be the number of housing units built.

(d) It is possible now to satisfy only a small part of the housing need of the poor.

It is, therefore, clear that a lowering of the standard of the size of housing unit either in floor area or in ceiling height will make possible a larger supply and bring them nearer to the poorer amongst the poor rather than as it is now, to the richer amongst the poor.

1.5. The fourth bottleneck lies in providing only incentives without any compulsion to the factory owners to build houses for the workers they employ. In the plantation labour housing scheme, for example, the Government provides 37-½% of the cost as subsidy, 50% as loan, and only 12-½% of the cost need be invested by the plantation owners. Similarly, in the dock labour and industrial housing scheme, 25% comes as subsidy, 50% on loan and only the remaining 25% need be invested by the Dock Labour Board. This is, however, subject to an unrealistic ceiling on cost per housing unit and this will have to be revised. Despite these liberal incentives, the progress of housing under those schemes has been far from satisfactory. In ten years, 1961-62 to 1970-71, only 742 houses for plantation labourers, 2,693 tenements for industrial workers, 5,648 houses under LIG housing scheme, 5,220 houses under slum Clearance Scheme were built. Compared to need, these are evidently not much. Appropriate legislative compulsion on an All India level along with incentives may produce a far better result. Until the problem of poverty itself is solved, i.e. as long as there will remain a large section of people who cannot afford to pay economic rent even for the lowest standard housing unit, the programme for subsidised public and semi-public housing should be continued. But in executing this programme, care will have to be taken so that the benefit of subsidised housing reaches first to the poorer amongst the poor. Care will also have to be taken to minimise the cost of providing housing units so that with the existing resource constraint, we may build largest possible number of houses.

1.6. The fifth bottleneck was, till recently, lack of suitable organisation in this State which can make use of the Institutional funds from LIC etc. It may be mentioned that while in Bombay, 90% of private housing is being built by co-oprative societies to which finances are more readily available, in our state such an endeavour in still in its infancy. This means that even some people in the middle-income group who can pay back institutional loan are now deprived of the facilities due to lacunae in existing organisation. The scope of subsidised housing being not unlimited, we shall have to try our best to increase housing supply with economic rent based on the paying capacities of the borrower themselves. The achievement in these spheres are likely to be significantly improved with the setting up of the new Housing Board.

1.7. There are 32.5 lakhs landless agricultural workers in West Bengal. In addition there are 40.0 lakhs cultivator which include landless share-croppers. It is estimated that the total size of landless agricultural labourers now will be of the order of 40 lakhs living in 30 lakh families. Even assuming that 50% of them are without home sites, the total need for home sites and homes for this category only will be about 15 lakh homes. At the rate Rs. 1,500 per home with land, total outlay will have to be Rs. 225 crores. Minimum needs for home site and house for 50% of landless families will therefore be Rs. 225 crores. However, Rs. 115 crores is being provided in the Fifth Plan to meet immediate needs of this class of people.

1.8. The crucial question of housing strategy is how to distribute the investment in housing across the array of housing needs by income group. In accordance with the Government's policy of meeting minimum needs, it would appear that the lion's share of housing investment should go into providing shelter to the lowest income groups. But the question is by no means this simple. For example, one of the critical aspects of the housing situation is the inadequate rate of

construction as has been noted earlier. To sink all Government housing investment into construction for the lowest income groups would provide the least volume of housing for the money because private savings and institutional money would not be involved. If the objective is to maximise housing construction then the Government should devise policies, using Government money as incentive, to channel as much private saving and institutional money into housing construction as possible. Furthermore, in the calcutta situation, a high percentage of persons with secured employment are inadequately housed ; one could argue that to increase the productivity of the society, such persons should be adequately housed. Obviously, some sort of compromise must be struck to arrive at a balanced housing strategy.

1.9. To seek a balance between maximising housing construction on the one hand and biasing the production for low income groups on the other is desirable but delicate task. An important aspect of the Housing Programme proposed is the provision of subsidies that will enable lower-middle income groups to obtain housing on a hire purchase basis. This is based on the conviction that there is a reasonable ability to pay for housing among many families if some money adjustments in financing and in lowering production costs are made. It is believed that large numbers of families can be housed with only a modest infusion of public resources.

1.10. With this background, the following policy guidelines are recommended in the field of housing :-

(i) Reduce costs in housing construction by large scale production, lowering space standards and using modern methods of industrialized prefabrication.

(ii) Take effective steps to increase substantially the supply of building materials and design new type of indigenous materials for housing construction.

(iii) Take advantage of the economics of scale in land development by housing higher residential densities than have been used in recent schemes.

(iv) Intensify use of suitable vacant or partly used land for residential purposes.

(v) Institute a system of mortgage financing with the nationalised banks and funds from the Life Insurance Corporation and the Housing and Urban Development Corporation.

(vi) In certain high cost locations provide subsidy to reduce the interest rate from 8 per cent to 5-¾ per cent.

(vii) Take appropriate steps to ensure that the plantation and factory owners build houses for their own workers.

(viii) Develop suitable organizations like Cooperatives amongst the middle-income group, who can pay economic rent to avail of the opportunity of institutional finance.

(ix) Take effective steps for ensuring proper maintenance of housing and other infrastructure being provided.

(x) Take steps to so modify the Land Acquisition Act that it becomes expeditious to acquire land for public purposes.

1.11. The complementary aspect of Government's strategy should be an intensive multi-phased programme for the low-income groups.

The components are :—

(a) An expansion of the "Slum Programme" if pilot projects in the Fourth Plan period prove it to be an efficasious weapon in the slum improvement and rehousing arsenal.

(b) An extension of the Bustee Improvement Programme as a complementary measure to all of the bustees of Metropolitan Calcutta with the final aim of their subsequent re-development.

(c) The building of new low-cost settlements which provide a decent, if very simple, living environment at low-cost in which self-help housing might be built.

(d) The building of low-income group subsidised Government housing in "infill" locations, that is, Government owned sites in the built up areas of the city.

1.12. These two basic approaches (paras 1.10 and 1.11 above) of housing strategy assume that middle and upper-income group housing will be produced in sufficient quantities through the processes of the market. This may well be an over-optimistic assumption for the simple reason that the acquisition of suitable building sites is extremely difficult except in certain parts of the city. Thus, it may be necessary for Government through an urban renewal programme to assemble small parcels into buildable sites and transfer them to private entrepreneurs for building. It should be emphasised that any land so acquired by Government would not be resold but only leased ; title would infinitely rest with Government.

1.13. In addition, Government should press two schemes for the low-income groups :

(a) a programme designed to meet the needs of single workers in Calcutta, particularly the male workers, many of whom live in messes with completely inadequate housing space. Research has shown that for rentals as low as Rs. 10.00 per man per month exclusive of land cost, new and sanitary housing can be built for men who choose to live in groups in the messing system; and

(b) the second programme is the provision of shelter for pavement dwellers. The intent here is to provide minimum night time shelter which space could be used for hawkers' markets in the day time. This is an idea which must be experimented with before it can be expanded into a programme. But it is the only idea for dealing with this difficult problem which seems to hold out any hope of viability.

1.14. Although there is no similar programme for other urban areas in the State, it can be reasonably presumed that this programme would be followed roughly elsewhere. Obviously, relative emphasis will shift depending on the situation. Thus, for example, in Durgapur the industrial workers are reasonably well housed, whereas workers in the tertiary sector are, for a relatively prosperous town, extraordinarily badly housed. Likewise the Bustee Programme is probably unique to Calcutta and perhaps the men's hostel programme. But the general thrust of the hire purchase programme on the one hand, and low-income group housing on the other, would be carried forward in the other urban areas of the State.

1.15. In rural areas Government will press for much greater use of the Government of India's proclaimed Housing Scheme. More importantly, Government will set into motion a subsidised loan scheme for home improvement and for new housing.

But it should be noted that in the villages of West Bengal the provision of safe portable water and the sanitary disposal (or use) of human and animal waste is more important than the housing unit itself. Therefore, as set forth in other parts of this report, Government will move aggressively for the provision of water and sanitation in the villages.

B. Urban and regional development.

2.1. The urban situation in West Bengal has certain distinguishing features. One of these is the relatively lowest rate of percentage increase in urbanisation in West Bengal during the present

decade as compared to other States in India. Another aspect of the same phenomenon is manifested in the far greater spatial concentration of urban population in West Bengal compared to other States. Excluding West Bengal, by far the highest differential in the population size between the biggest and the next biggest urban area in a state is seen in Maharashtra. In that state, greater Bombay is bigger in population size by nearly seven times as compared to Poona urban area. The corresponding ratio in West Bengal between Calcutta metropolitan district and Durgapur is higher than thirty. This acute spatial concentration of urbanisation in West Bengal is not only depriving the greater part of West Bengal of required urban facilities and thereby increasing the regional disparity in development, it is also placing the Calcutta urban situation under very serious stress.

2.2. The main reason for the crisis in the Calcutta situation lies in its sagging, and in many respects declining economy. This crisis has been further aggravated by the abnormally bad condition in her physical infrastructure slums, roads, water supply and sewerage etc. which are the results of long neglect by Public Authorities. The situation in these respects has become so grave as to threaten the very existence of the Calcutta Metropolis and along with it her entire hinterland in Eastern India.

2.3. The current Development Programme for the Calcutta Metropolis is a response to this crisis. It is a programme to overcome an array of accumulated deficiencies. Significant new development can take place only in conjunction with a massive drive to eliminate these deficiencies. This point cannot be overstressed. For, if Calcutta and West Bengal is to turn the corner toward economic recovery and enter a period of new and sustained growth, then the CMD Programme must be continued in the Fifth Plan period.

2.4. However, certain observations are called for at this stage in general terms on the nature of the current CMD Programme, so that a better strategy can be evolved for the Fifth Plan. Firstly, the characteristic of the programme mix is mainly oriented towards basic urban infrastructure like water, drainage, sanitation and transport. Although the programme includes allocations for education, health and housing, relatively less in physical and financial terms are likely to be achieved in these sectors than in the forementioned sectors. This may easily be explained by the fact that some kind of system plans exist for these sectors, namely water supply, sewerage and drainage, and traffic and transportation from which it was easier to identify specific projects for inclusion in the programme. But no such system plans exist for the other sectors. Hence a suitable adjustment of the programme-mix may be attempted in the next plan with a view to create more impact and evoke more response; especially, when suitable health and education schemes require less gestation periods and are also educated employment generative. Secondly, if the investments now being made are to be fully and effectively utilized over a reasonable life time, then programmes of maintenance must be immediately devised and got into motion. The fragmented administrative structure of the metropolis has neither the fiscal resources nor the trained manpower to maintain the projects being built in the current CMD Programme.

2.5. The strategy for future metropolitan planning will have to be developed as much on the conventional theoretical approach to comparable similar situations elsewhere as on the experience grained from the on-going programme. Some elements are discernible :—

(a) The existing system plans (one on the municipal services and the other on transportation) will significantly influence the structure of the CMD over the coming decades. But correlated with them no integrated plan for the restructuring of the metropolitan area expressed in terms of concrete projects exists today. Designing a structural framework for a new metropolis within which to fit projects will require serious and concentrated planning efforts from now on. The New Hooghly Bridge and the forth-

coming Underground Railway will introduce significant changes in the Calcutta land market. These major new investments provide an immense opportunity for reshaping Calcutta, as also its other corollary of speculation in land market. Physical planning for the metropolis will, therefore, has to contend with the problem of identifying measures to improve the environment without inhibiting new economic growth.

(b) In the wake of CMD development an important planning aspect which has come to limelight is that sub-metropolitan area planning has assumed tremendous importance. Areas immediately outside the central city within the CMD have been exposed to great private and popular demand for organised and planned development. This trend was already noticeable during the last decade, and has been accentuated by the very fact that infrastructure development is taking place elsewhere in the adjacent areas. This has given rise to sporadic and haphazard private development of which CMD contains a sizeable number of examples already. Such sub-metropolitan area planning should, therefore, emphasize on spatial integration of the basic services that are being provided today with a view to provide for new growth within these areas.

These two steps are certainly inter-linked but not necessarily inter-dependent up to a point. The two tasks can be performed simultaneously. The three possible points of take-off in these tasks are :—

(i) To examine the status of the new transporation routes or significantly improved routes that are committed in the Fourth Plan ;

(ii) To examine the bi-polar argument of the basic development plan for Calcutta and the generalized land use plan included therein ; and

(iii) To state explicitly the implicit policies of the Fourth Plan.

One would suspect that conflicts will arise in performing these three tasks ; but such conflicts of logic or policy are parts of the planning process and should not be abjured for the very reason of being conflicting in nature.

(c) CMD's administrative structure is both expensive and unresponsive in money, human and political terms. Probably the most serious problems facing the metropolitan administration are the low fiscal resources, lack of trained manpower and diseconomies of jurisdictional fragmentation. Serious attention will have to be paid on the aspect of reorganising the local authority framework within the CMD immediately if the current and the future development programmes are to be based on an economically viable and administratively convenient mosaic. Immediate and drastic steps should be taken in this respect.

2.6. To sustain this programme and for making an efficient use of the same, it is, however, necessary to achieve an integration on the one hand in space between the different programmes in hand, and on the other between these programmes with the concurrent programme for massive economic development in the area. Such massive economic development is necessary not only for healthy growth of the metropolis, but also for sustaining the programme of rapid modernisation of agriculture which is the key to solving all the basic problems before our State including the problem of increasing regional imbalance.

2.7. It has already been mentioned that on the basis of modernised agriculture, there will arise a possibility for the first time in our State of developing dispersed industrial and servicing centres and of reviving all the other existing urban areas. This move toward regional balance will be further reinforced by setting up industries in areas where the unused resource bases can be utilized ; and where the policy of providing subsidies and other incentives may induce their location in the present backward areas. In other words, urbanisation planning is proposed to be undertaken as a complement to agriculture and industrial planning.

2.8. The CADP approach to agricultural modernisation will decrease, after a stage, inter-district differentials in development by locating such projects in each district. The initial increase in the intra-district differential between the CADP area and other areas will have to be removed by a rapid extension of the CADP areas, so that the whole of each district is covered within the Sixth Plan period.

2.9. The guarantee of the success of all democratic development process lies in its ability to involve the people. This involvement of the people in the regional development process will be helped through the functioning of District Planning Committees, Municipalities and Panchayts on a far stronger base. A specific allocation of Rs. 10 crores may have to be made, if funds are available, to strengthen Panchayati system during the Fifth Plan period.

2.10. Urban growth centres and municipalities not included in the CMD area (example, Burdwan, Asansol, Durgapur, Siliguri, etc.) also require to be planned in an integrated manner with the rural neighbourhood so that a viable interlinked infrastructure can be built and maintained subsequently. Suitable operational plans have to be drafted for providing the basic minimum municipal needs of the Urban Centres and towns lying outside the CMD area in the State.

2.11. The basic developmental rural planning for the regions lying beyond the CADP projects will have to be carried out through the participation of the people by involving Zilla Parishads and Panchayets.

2.12. Tourism

Development and promotion of tourism is to a great extent a derived function of the availability of infrastructure at the required scale at the right places. An integrated and somewhat sophisticated urban and regional developemnt programme cannot but help the growth of tourism in the State. From the southern coastal belts to the northern Himalayas and Dooars, the State has many untapped and underutilized potentialities for tourism. The basic strategy in this respect would be to explore fully these possibilities and take sustained and imaginative actions to produce the desired results.

Tourism has been regarded as an industry by itself. Returns from it can be adequate if proper investments are made. Also the tourism policy need be oriented towards the internal tourists also, apart from being adequately attractive to the foreigners who bring in valuable foreign exchange in return. This nuance in the policy, however, has an important implication: tourist facilities should be income oriented also. The mass support which it would thereby enlist could made it really viable.

It has, therefore, been proposed to consider the promotion of tourism as an integral part of the State-wide urban and regional development policy in the Fifth and the succeeding planning efforts of the State. Growth of income will also encourage more expenditure and investment, both public and private, in the tourism industry.

2.13. A financial outlay of Rs. 300 crores for urban and regional development in the State including CMD and other urban growth centres is recommended in this sector, which includes Rs. 15 crores for slum improvement under minimum needs programme. This excludes the undergrounds Railway and the New Hooghly Bridge.

Urban and Regional Development

	Minimum Needs Porgramme	Employment	Growth
Slum Improvement in CMD and other Urban Areas	15.00	...	...
Regional and Urban Development	...	...	275
Rural Planning and Panchayats	...	...	10
Total :	15.00	...	285

CHAPTER VIII

TRANSPORT SYSTEM

1. Introduction

The need for organized transport for a developing economy need not be emphasized here. In West Bengal, compared to demands, the facilities have been limited. The huge urban agglomeration along the Hooghly river, the bias of the economy upon foreign trade, the general decay of the port of Calcutta and desperate efforts to resucitate it have jointly and severally prevented the State to obtain regional balance in this regard. The problem now is to prepare a strategy to overcome not only the deficit but also the regional imbalance in this regard. With this end in view and on consideration of technology of construction and economics of management, we shall approach the issue in two parts. The first part will concern development of transport network and the other part will deal with management of transport services.

2. Transport Network System

2.1. Here we shall concern ourselves with three types of transport routes, viz., roads, inland waterways and the railways. We shall leave out aviation from our present exercise and start this analysis with road network.

The technology of transport-route development is basically different from that of service management. Integration between them can be achieved only through fiscal measures, by allocating a part of revenue derived from the users of such facilities for maintenance and development of the routes. For example, such integration has been achieved by the railways. Similar integration is desirable in the sector of roads also.

One of the basic reasons for the backwardness of road development in West Bengal arises from rather low allocation of funds for road construction. We should note that since 1961, traffic pattern in West Bengal has changed significantly bringing in much heavier axle-loads, bigger trucks and trucktrailor combinations in addition to increasing number of vehicles on the road moving at a very high speed. Consequently, older roads were required to be made wider and stronger. Such remodelling of the existing roads in addition to low financial allocations were great deterrents for the programmes of further road elongation or network elaboration.

2.2. In 1943, some all India norms for road development was attempted in the well-known Nagpur report. These norms are old and no doubt closely related to the colonial economic system. Nevertheless, a comparison of these norms with the pattern of achievement of West Bengal is worthy of consideration. In Table 8.1 the data have been presented in a self-revealing manner.

This table clearly shows that in West Bengal the entire policy of road development at the time of Independence was heavily leaning upon the possibility of attaining high centralization. The overall predominance of National Highways merely sub-served an obsession for a head-link, export oriented port linkage and the lack of appreciation of the possibility of new economic development in the rural or hitherto backward areas. After Independence there was a considerable leeway to be made up. Throughout the various plan periods considerable road development took place. But excepting for the National Highways, in no sector was even the modest Nagpur norm attained. What is perhaps more significant is that while making up this leeway, the hang-over

TABLE 8.1

Achievement (in miles) — Plan-sector

Type of Road	Nagpur Norms 1943	At Independence	Pre-1st Plan	After 1st Plan	After 2nd Plan	After 3rd Plan
National Highway	592	410	520	699	806	810
State Highway	1067	100	418	6688	895	932
Major District Road	2953	8	8	740	1380	1656
Other District Road	2820	79	630	671	1142	2278
Village Road	5849	...	...	127	245	636
Total :	13281	597	1576	2905	4468	6312

Source : *State Planning Board Working Group.*

of the colonial style of excessive centralization in terms of administrative centres got the premium. The backward state of the rural economic base with refrence to road development is the relevant index in this regard.

2.3. In West Bengal, the Public Works (Road) Department has to shoulder the principal burden of road development programme. Unlike Tamil Nadu or Maharashtra or Bihar, the local self-government agencies or the Panchayati Raj Institutions have played very small parts in this context. To what extent the Panchayati Raj Institutions of West Bengal can be involved in this respect should be examined in depth. Such involvement can possibly help the State achieve the twin objective of attaining increasing connectivity and centrality.

2.4. In the Fifth Plan period due emphasis should be laid upon spatial phasing of the work of network development between the rural road and the trunk routes. Such a phasing will more quickly open up the backward areas and will provide accessibility to newer areas from where road building materials could be economically obtained and thus make the road-building industry more foot-loose in orientation. The current extent of present dependence upon the Pakur blackstones can be obviated by developing stone quarries in Purulia, Midnapore, Bankura, Burdwan, Birbhum and in some North Bengal Districts. Such a strategy will permit greater and more extensive use of moorum and laterites of the Western Districts of West Bengal for the preparation of road base.

Review of the Fourth Plan performance of the State Sector is not worth the effort. The departmental projects required an allocation of Rs. 42 crores. But the allotment was reduced to Rs. 14 crores ultimately. The spillover works into the Fourth Plan amounted to Rs. 12 crores. Considering obligatory expenses on Establishment, Tools and Plants, etc. not more than Rs. 7 crores would be available for continuing scheme worth Rs. 12 crores. This will cause a spill of Pre-Fourth Plan projects worth Rs. 5 crores if no new projects were adopted under the Fourth Plan. It should be mentioned that with severe financial constraints none of the projects originally designed for the Fourth Plan could be undertaken.

In table 8.2 the attained levels of road development per District of West Bengal are shown along with some relevant co-efficients or ratios. It should be mentioned that with severe financial constraints none of the projects originally conceived for the Fourth Plan could be undertaken.

TABLE 8.2

Road Mileage on 31st April, 1974 (anticipated)

District	Road length in miles	Miles/100 sq. miles	Miles/Lakh population (1971)	Miles to spill into Fifth Plan
Darjeeling	458	36.44	59.80	73
Jalpaiguri	557	23.35	31.72	37
Cooch Behar	819	62.30	58.00	65
West Dinajpur	426	20.70	20.68	3
Malda	246	17.67	15.25	50
Murshidabad	511	24.70	17.40	100
Nadia	476	31.55	21.36	60
24-Parganas	1171	20.80	13.64	160
Howrah	222	39.88	9.17	40
Hooghly	600	50.23	21.20	60
Burdwan	640	23.63	16.35	100
Birbhum	467	26.79	26.20	60
Midnapore	1010	19.20	18.33	160
Bankura	570	21.53	28.00	100
Purulia	318	13.22	19.73	100
West Bengal	8500	24.65	20.58	1200

2.5 We may note that the old Nagpur norm was revised in 1957 for a 20-Year Road Development Plan (1961-81). The norms were changed to incorporate the objectives of planned economic development of India. According to 1957-Norms, West Bengal should have 36,700 miles of road in 1981 consisting of 1,178 miles of N. H., 2,648 miles of S. H., 8,309 miles of M. D. R., 11,191 miles of O. D. R. and 13,444 miles of V. R. With 12 or 14 years of the said 20-Year Plan already spent, West Bengal will require to build 26,000 miles of roads.

2.6. For the Fifth Plan, a completely new norm has been produced from our commitment to launch direct attack on poverty. All villages having population size of more than 1,500 persons are required to be connected by all weather roads. The total demand likely to be generated, if we admit this norm, will vary according to the geometrical model of network we adopt. No dependable exercise has been undertaken so far in this regard. Whether a hexagonal linkage model or simple grid-iron model or a dendritic feeder network model will serve our economic and social objectives is still a matter of speculation in terms of the real situation of West Bengal. However, an estimate has been prepared about the likely size of Class-I Road to approximate the objective stated above by assuming that such link roads from the main roads will come up to the geoid of a cluster of villages only. The village roads will link up the geoid with the individual members of such a cluster. The total Class-I Road length, estimated in the above way, will be 3,544 miles in addition to the existing roads. In addition, some 6,000 miles of village roads will be required to connect the geoids with the neighbouring villages. The cost of construction of these village roads can be phased.

3. Inland Water Transport

The riparian orientation of the principal urban agglomeration of West Bengal make the development of inland water transport necessary and to ensure economic viability also. Before Independence, this media of transport was fairly developed.

Inland water transport can be developed economically to encourage foreign trade with Bangladesh. It is assumed that the CIWTC is currently engaged in exploring the potentials in this regard. We propose to leave this aspect of the problem beyond our purview. A few potentials have been located which can be developed by the State during the next plan period. These opportunities can be reviewed here.

In the tidal areas, with some investment, inland water transport can be developed very soon. These will involve first the Sunderban area where terrestrial transport has little chance of development. The Hooghly-Bhagirathi river and the innumerable tidal channels can be used by constructing passenger and goods jetty and also by encouraging passenger and goods service. Dry dock facilities will be required to be constructed near Calcutta.

The next potential area for development concerns the Hijli (Orissa) Tidal Canal. This cannal is now in a dilapitated state. The canal can be re-excavated and tug-boats with traction provided by tractors along the canal side can open up the entire south-eastern part of Midnapore District and establish linkages with Haldia Port and Jalleswar Railway Station at the two ends.

The third potential area will be opened up as soon as Farakka water is diverted into the Bhagirathi river. With a little investment on the Kalindi river in Malda District, the transport route from English Bazar can be connected with Calcutta by perennial waterways. This will also permit black stone chips to be carried to the principal consumption centres from Tinpahar Rajmal to Calcutta and other parts of southern Bengal. This will also create opportunities for using the heretofore unutilized DVC navigation canal for inland transport purposes.

It is estimated that for the utilization of the first two identified areas within the Fifth Plan period, for construction of jettys on the Hooghly and Sunderban rivers, development of goods passenger traffic between the Sunderbans and the Calcutta connerbation, utilization of the Kistopur canal through the Salt Lake of Calcutta, development of Hijli Tidal Canal and for sponsoring investigation and research, an investment of Rs. 10.00 crores will be required.

Railroad Network : This is clearly outside the State Plan responsibility. However, it is necessary to indicate some routes which, if developed, will open up opportunities of development of some backward areas of West Bengal.

The narrow-guage railroad from Howrah to Amta and Champadanga, should be converted into broad-guage track and extended upto Tarakeswar and Arambag. Similarly, the narrow-gauge track from Bankura to Raina, now operated by the Eastern Railway, can be converted into broad-gauge track and extended to Burdwan and Arambag. These two projects together will open the vast agricultural resources of the area for commercial exploitation. Similarly, a broad-gauge track should be extended from English Bazar through Gajol, Buniadpur, Balurghat to Hilli in Northern Bengal. Another line should connect at Kaliaganje with Buniadpur. The financial implications of these projects have not been ascertained,. This may be examined by Railway Ministry.

4. Transport Service—Management :

We shall concern ourselves exclusively with road transport services in this paper.

Road transport services are managed by both Public and Private Sector institutions. As is to be expected, the scale of operation in the public sector is bigger per unit institution. But

the bulk of road transport is handled by private agencies of various sizes. Capacity to survive without incurring financial loss is greater with private sector management. But such viability of the private sector is not free from situations arising from suspension of labour law, unauthorised use of facilities, shortage in the supply of vehicles, etc. However, nationalization of this sector of the economy is not desirable ; because the State Sector has so far been a financially loosing sector. At least, for the time being both the sectors should be permitted to function simultaneously.

The State Sector operates primarily in the large urban areas dealing with the commuters. Only the North Bengal State Transport has a fleet of trucks for goods movement. Incidentally, of all the State Transport Units, the NBSTC suffers minimum financial loss. The different State Transport Organization have in their shelves various schemes for attaining viable development and expansion. In addition, it will be desirable to organise goods transport within the State sector.

Investment will be desirable to develop regulated truck-terminals as self-financing scheme. These terminals should be statutorily supported in urban and semi-urban areas by prohibiting such activities in other unspecified areas. Without enforcement of such land use controls, the cost of continuous urban renewal arising from haphazard development of truck loading points within the urban areas cannot be reduced.

5. Financial Outlay :

In table 8.4 a summary statement is presented to indicate the probable size of the Fifth Plan funds required for the whole sector of transport system.

TABLE 8.4

Project	Minimum Needs Programme (Rs. crores)	Developmental Programme (Rs. crores)
Road Network	224	45
Inland Water Transport	10	—

So the total outlay will be 224 + 45 + 10 = Rs. 279 crores

CHAPTER IX

HEALTH, FAMILY PLANNING AND SOCIAL WELFARE

The most important objectives of the Fifth Plan so far as the health care of the people are concerned can be enunciated as follows:

1. Emphasis should be diverted from the urban to the rural centre as far as possible. In West Bengal this is specially important as the Calcutta metropolitan area takes a major part of the funds available for hospital, medical, education and public health services. Of the medical institutions in West Bengal, almost 80% of the major institutions are situated in the Calcutta area. This anomaly needs to be corrected in the Fifth Plan. For this purpose, the programme of primary and subsidiary health centres envisaged in the approach paper circulated by the Planning Commission must be fulfilled.

2. The family planning project in West Bengal needs to be considerably strengthened as the State has fallen behind many other States in India in this direction. The main emphasis, as far as family planning work is concerned, should be in extending this work, in an intensive manner, to the rural areas of the State where the impact at the present time is minimum.

3. West Bengal has traditionally been the seat of important communicable diseases which must be eradicated during the Fifth Plan. This applies particularly to Cholera and Small-pox in the Calcutta Metropolitan Area. Incidence of Tuberculosis in this State is one of the highest in India. Efforts towards controlling this disease should, therefore, be maximum.

4. As far as water-supply and sanitation in rural and semi-urban areas are concerned, West Bengal is very much behind most other States. Only 25 municipal towns are at present provided with clean water supply. Sewerage scheme exists only in 4 municipalities outside the Calcutta city. Even many parts of the Calcutta city itself have no proper sanitation facilities. These deficiencies should be met as far as possible in the 5th Five Year Plan.

5. As far as social welfare is concerned, West Bengal is in a difficult and even precarious position. The continuous inflow of refugees from the then East Pakistan (now Bangladesh) during the last 25 years, many of whom were complete destitutes, has posed tremendous problem for their rehabilitation. There are large numbers of young children and mothers in a state of sub-normal nutrition. A special nutrition programme therefore needs to be supported with considerable funds in this State.

Bearing the above facts in mind, the approach Paper to the 5th Plan is being drafted as realistically as possible with emphasis on those areas which need maximum support.

A. BASE LINE PICTURE AT THE END OF THE FOURTH PLAN, MARCH, 1974

I. Medical Education & Hospital Services (curative medicine)

	Number	Admission of Students	Out-lay
1. Training programme of doctors.			
(*a*) Under-graduate Medical Colleges	7 (4 in Cal.) (3 in Dist.)	755 Year	Rs. 275 lakhs
(*b*) Post-graduate Medical Colleges	2	200 Year	Rs. 40 lakhs
Number of Doctors at the end of the Fourth Plan	— 26,500		
Doctor/Population ratio	— 1/1850		
All India ratio	— 1/4180		
(*c*) Medical Research Institutes	2		Rs. 3 lakhs
(*d*) Dental Institutes	1	50 Year	Rs 10 lakhs
Dental Clinics	46		Rs. 328 lakhs
2. Training Programme of Para Medical Personnel			
(*a*) Nursing Institutions	30 (13 certificate 17 auxiliary)		Rs. 18 lakhs
No. of Nurses at the end of 4th Plan :	12,000		
Nurse/Population ratio 1 : 4000 (optimum 1/500)			
(*b*) Other Para Medical Personnel	No. not definitely known		Rs. 18 lakhs
		Total :	Rs. 36 lakhs
3. Hospitals.			
(*a*) Hospital beds at the end of Fourth Plan	43,000		Rs. 584 lakhs
bed/population	0.9/1000 (optimum 1/1000)		
(*b*) Health Centres			
Primary H. C.	335		
Subsidiary	670		Rs. 340 lakhs
Number of beds	7200		
4. Indigenous system of Medicine			
(*a*) Ayurbedic System			
Ayurbedic Colleges	2		
Ayurbedic dispensaries ...	15		
Subsidy to Non-Govt.			Rs. 35 lakhs
Ayurbedic dispensaries ...	10		
Production of Ayurbedic medicines			
(*b*) Homeopathy System			
Homeopathic Colleges ...	1		
Homeopathic dispensaries ...	4		Rs. 12 lakhs
Subsidy to Non-Govt.			
Homeopathic dispensary ...			
5. Blood Banks			
Central Bank ...	1		Rs. 10 lakhs
Peripheral Banks ...	20		

II. Public Health Sector at the end of Fourth Plan (Community) Mainly Central sponsored and Cetral charge.

(*a*) Control of communicable diseases			
(*i*) Tuberculosis — beds	... 5200		
T. B. Control centres (one in each district)	... 16	Rs. 40.00 lakhs	
T. B. Clinics (Supply of BCG vaccine)	... 60		
(*ii*) Malaria Eradication N. M. E. P.	Cover 80%	Rs. 441.00 lakhs	
(*iii*) National Filaria Control Control Units	9	Rs. 125.00 lakhs	
(*iv*) Leprosy — No. of beds	... 2471		
Leprosy Institutes	... 18 (State and voluntary organisations)	Rs. 13.00 lakhs	
Out patient Clinics	60 (State and Voluntary organisation)		
(*v*) Control of Cholera	.. 80 endemic blocks	Rs. 56.68 lakhs	
(*vi*) Small-pox eradication		Rs. 65.00 lakhs	
(*vii*) Immunisation-Vaccination Poliomyelities, Triple artigen		Rs. 2.50 lakhs	
(*b*) Improvement of Laboratory Services		Rs. 7.50 lakhs	
(*c*) Health Statistics Vital Statistics		Rs. 30.00 lakhs	
(*d*) School Health Services		Rs. 2.00 lakhs	
(*e*) Prevention of Food Adulteration		Rs. 18.00 lakhs	
(*f*) Improvement of Municipal Health Service		Rs. 2.50 lakhs	
(*g*) Prevention of Air Pollution		Rs. 3.00 lakhs	
(*h*) Establishment of Epidemiological Unit		Rs. 3.00 lakhs	
		Rs. 746.68 lakhs	

III. Family Planning Sector Fourth Plan (Centrally Sponsored)

Present Population Growth 2.6%
Population at the end of Fourth Plan — 48 Million.

	Number	Outlay
(*a*) Family Planning Clinics — Rural	1967	
Urban	150	
(*b*) Training Centres	4	
(*c*) Mobile Units	27	
(*d*) Sterilization Beds	400	
(*e*) Post Partum Centres	23	Rs. 19.74 lakhs
Organisation		
(*f*) State Family Bureau	1	
District	18	
Sub-division	nil	

IV. Water Supply and Santitation

Water Supply and Sanitation		Rs. 6.33 crores
Bangla Desh Refugees Flood Hazard	}	Rs. 3.50 crores
		Rs. 9.83 crores

V. Financial Outlay in 4th Plan

	Outlay
Total Outlay on Health	
State Government	15.60 crores
Central Government	
Post-Graduate Education	Rs. 4.00 crores
Public Health	Rs. 8.31 crores
Family Planning	Rs. 19.74 crores
C. M. D. A. Health Programme	Rs. 9.50 crores
Water Supply ,Sanitation Bangladesh Refugees Flood Hazards	Rs. 9.83 crores
	Rs. 51.38 crores

GRAND TOTAL : Rs. 66.98 CRORES

B. CONTINUING ON GOING PROGRAMMES IN PUBLIC HEALTH

A. 4th Plan—State Schemes to be continued during 5th Plan.

Name of Schemes	Estimated requirement (for 5th Plan period in crores of rupees)
1. Prevention of Food adulteration	3.04
2. Health Education	0.29
3. Students Health Service	0.24
4. Health Statistics & Vital Statistics	0.50
5. T. B. Control	2.35
Total	6.42

B. Centrally Sponsored Schemes :

1. Malaria Eradication Programme	1.51
2. Filaria Control Programme	1.93
3. Cholera Control	1.01
4. National Small-pox eradication programme (continuation of existing scheme)	3.00
5. T. B. Control	2.30
6. Leprosy Control	1.75
Total	11.50

C. State Fifth Plan—New Schemes :

1.	Malaria Maintenance Focal Outbreak	1.06
2.	Immunisation of Children with Polio Vaccine, Triple Antigen ..	1.55
3.	Taking over of Municipal Public Health Services	0.19
4.	Creation of a Central Public Health Store	0.52
5.	Manufacture of A. C. Vaccine, TAD Vaccine and Triple Antigen	0.60
6.	Creation of Mobile Medical Units on Block basis	2.46
7.	Establishment of a Nutrition Division	0.09
8.	Establishment of a Basic Health Workers Training Centre ..	0.14
	Total ..	6.61

Grand Total

A.	4th Plan—State Schemes to be continued during 5th Plan ..	6.42
B.	Centrally Sponsored Schemes	27.32
C.	State 5th Plan—New Schemes	6.61
		40.35 crores for 5 years.

B. APPROACH TO THE 5TH PLAN

I. Medical Education :

At the end of the 4th Plan, there would be 26,500 doctors in a population of about 48 million. The doctor population ratio therefore will work out as 1:1850. It is expected that the population will increase to 54 million at the end of the 5th Plan. If we aim at an ideal doctor population ratio at 1:1500 at this time, there should be 32,750 doctors at the end of the 4th Plan. There would be 7 medical colleges graduating about 650 doctors per year at the end of the 4th Plan. It is recommended that two more medical colleges should be added in the 5th Plan so that the total number of medical colleges at the end of the 5th Plan would be 9 in the State. We would therefore hope to produce 750 graduate doctors towards the end of the 5th Plan and it is expected that the number of doctors at the end of the 5th Plan would be about 31,000. This would give us a ratio of graduate doctor population 1:1700 which would be nearer our objective of 1:1500.

In addition, it would be desirable to involve the interms from all the medical colleges for work in the District, Sub-divisional hospitals and large health centres. This would ommediately add 650 additional manpower personnel besides giving actual rural bias to the Medical education.

The Government should also consider other suggested schemes for augmenting the man-power potential in the health sector and of correcting the imbalance in the health care personnal as between the urban and the rural population. These schemes inculde (1) the induction of registered practitioners of Indigenous system of medicine—Ayurveda, Homeopathy, unani etc. for work in rural areas. (2) the utilization of paramedical personnel including ANM nurses, Health assistants etc. as basic health workers in villages after a period of training for 1 year.

All these schemes have their merits and demerits and all may be made use of as and when necessary. There need therefore be no shortage of manpower for health care in rural areas and in the health centres in the 5th Five Year Plan.

Post-Graduate Medical Education

In recent years, West Bengal has fallen behind other States in post-graduate medical education and specialised services in medical discipline. Numerous students from this State have to go to other States for their post-graduate medical education and numerous patients have to travel long distances in India for specialised medical services. West Bengal is one of the largest exporters of medical graduates for work in the United Kingdom and in U.S.A.

At present there are 2 post-graduate institutes—Institute of Post-Graduate Education and Research and the School of Tropical Medicine in Calcutta. Both these institutes have a high tradition and both require considerable strengthening both in specialist man-power as well as in equipment. Both should become Institutes of National Importance at the All-India level.

There are no facilities at the State level for medical research. Although the India Council of Medical Research has been supporting a number of projects in West Bengal, some initiative should be shown at the State level.

There has been considerable disruption of medical education during the last 6 or 7 years. The Calcutta University is over-burdend with numerous faculties and unmanageable number of students. It finds great difficulty in giving due attention to the training of students, in revising syllabus according to needs and in maintaining proper supervision of medical education standards. It is not likely that the Burdwan and North Bengal Universities will be able provide similar attention to Medical Education. In most countries of the world, technical education is being gradually centralised. It has been felt therefore that a Medical University should be organised in the State which should take over all these functions. It should integrate all the undergraduate and post-graduate medical colleges.

Dental Institute

There is one Dental Medical College which is graduating a large number of dental graduates. However, it does not offer post-graduate degree at the present time and this should be ensured in the 5th Plan.

At present there are 46 dental clinics in the State. In the 5th Plan, 100 more clinics should be introduced in association with the primary health centres.

Training of Para Medical Personnel

Training of Nurses.

At present there are 8,000 nurses, of whom 3,000 have general nursing certificates. There are 3,000 Auxiliary Nurse Midwives and there are 2,000 unregistered nurses. On the basis of about 40,000 hospital beds expected at the end of the 4th Plan, this works out to a ratio of 1 nurse per 5 beds. The nurse population ratio will be 1:5,500. This ratio according to Mudaliar Commission, should be increased to 1:500. Nurses are also required for health centres, for teaching, for administration, laboratories etc. and nurse|patient ratio should, therefore be increased to 1 : 3. At the end of the 5th Plan, there would be about 54,000 beds in the hospitals. For this, we would require 25,000 nurses of which 11,000 should be in curative

medicine, 6,000 in public health and 8,000 in family planning. Training centres for nurses should, therefore, be considerably increased.

West Bengal at present has no nursing college for graduate training. This is considered essential.

Other Para Medical Personnel

Facilities for training of other para medical personnel such as pharmacists, physio-therapists, radiographers, laboratory technicians etc. should be strengthened in the 5th Plan.

Financial outlay on medical education in the 5th Plan

		(Rs. in lakhs)
1.	Medical Colleges	270
2.	Post-Graduate Medical Education	
	(a) Institute of post-graduate medical education & research ..	150
	(b) School of Tropical Medicine	150
	(c) State Medical Research Council	50
3.	Medical University	100
4.	Dental Institutes and Clinics	35
5.	Training of Nurses	40
6.	Nursing College	30
7.	Training of other para medical personnel	60
	Total :	885

II. Hospital Service (Curative Medicine)

At the end of the 4th Plan, there would be 43,000 hospital beds. On the basis of 1 bed to 1100 people we should have 54,000 beds at the end of the 5th Plan. They should be equitably distributed between Calcutta hospitals and other urban and rural areas according to needs.

The following special sype of hospitals should be made available in the Calcutta area to reduce the congestion and improve the hospital services in the State.

1. Special hospital for treatment of cancer patients.
2. Two Casualty hospitals to reduce the load in the teaching hospitals.
3. Three Maternity hospitals to reduce the load in the teaching maternity hospitals.

Out-patient Department

Out-patients Departments in our teaching hospitals are extremely over-congested and have very limited facilities for investigation and treatment. If they can be improved, lot can be done to reduce the load of in-patients from the teaching hospitals.

Blood Transfusion Service

Although blood transfusion service has been extended from the main centre to peripheral hospitals in Calcutta and in the district hospitals, the organisation requires improvement in many directions. At present the main centre is located in the ground floor of the Calcutta Medical

College where there is tremendous lack of space and no possibility of expansion. It is recommended that a centrally-situated and properly designed building should be constructed to house the Central Blood Bank. Blood Bank facilities in peripheral centres should be extended to at least 14 hours i.e., from 8 A.M. to 10 P.M. instead of 10 A.M. to 5 P.M. as at present.

Ambulance Service

The Ambulance Service of the hospitals in West Bengal is very poor. This is particularly so in the district and subdivisional hospitals. The ambulance fleet needs to be augmented and a central servicing organisation should be created.

Central Medical Stores

One of the acute deficiencies of all hospitals in the State, whether in the cities or in the subdivisions, is inadequate and infrequent supply of medical drugs and equipments. The main bottleneck appears to be in the organisation of the Central Medical Stores which is both over-congested and lacks facilities for expansion. The following remedies are suggested :

(a) Public health Store should be separated
(b) District medical stores should be progressively decentralised
(c) A new store building should be constructed
(d) There should be inspection and checking of both drugs and equipments in the central medical stores.

Rehabilitation Schemes

The State at present has no centre for the rehabilitation of the medically-crippled or for providing artificial limbs to amputees. It is recommended that the Bonhooghly Hospital should be utilised for this purpose.

Indigenous System of Medicine

Both Ayurvedic and Homeopathic syetems of medicines in the State require continued support and the existing hospitals and dispensaries will have to be strengthened.

State Health Transport Organisation

The maintenance workshop of this organisation is in poor state and will have to be strengthened.

The financial outlay on hospital services is shown in the following table :

Financial Outlay on Hospital Services

		Rs. in lakhs
1.	Hospital beds	Rs. 18.80
2.	Cancer hospital	Rs. 50.00
3.	Casualty hospitals (2)	Rs. 50.00
4.	Maternity hospitals (3)	Rs. 50.00
5.	Improvement of Out-patient department ..	Rs. 200.00
6.	Improvement of Ambulance service	Rs. 50.00
7.	Improvement of Blood transfusion service ..	Rs. 50.00
8.	Improvement of Central medical stores	Rs. 100.00
9.	Indigenous system of medicine	Rs. 50.00
10.	State Health Transport Organisation	Rs. 25.00
		Rs. 663.80

III. Public Health Sector in the 5th Plan (Community medicine).

Control of Tuberculosis

West Bengal is one of the States where the problem of Tuberculosis is acute. On a rough estimate, there are about 5 lakh tuberculosis patients in the State. However, it must be noted that tuberculosis at present is an easily controllable disease and lends itself to domiciliary treatment on a very large scale. Therefore, attack on the tuberculosis problem should be mainly on a domiciliary basis. The Madras chemo-therapy project showed very convincingly that it is possible to achieve 80 per cent cure rate in tuberculosis infection of all types, if these patients are given appropriate drugs at home for a proper period of time. It would therefore be undesireable to spend large amounts of funds on the construction of tuberculosis hospitals. Rather it would be more profitable to spend on well-equipped tuberculosis clinics and centres on statewise scale. The state will have 5,200 beds for tuberculosis at the end of the 4th Plan. This should be sufficient for our needs.

Control of Malaria

The national malaria eradication Programme conducted in the 3rd and 4th Plan has been generally successful and more emphasis should now be given to the maintenance programme. The cover rate should be extended from 80 per cent to 100% at the end of the 5th Plan.

Control of Filaria

During the 4th Plan, the Government of India introduced the national filaria control programme on the model of the national malaria eradication programme. The progress of this control programme has not been as successful as the malaria eradication programme. In west Bengal, endemic filaria infested areas include part of the coastal regions in Midnapore district. This eradication programme should therefore be pursued with more vigour in this area during the 5th Plan.

Control of Small-Pox

West Bengal is one of the States in India where small-pox endemicity is high. A national small-pox eradication programme has been functioning since the 4th Plan. This requires large-scale immunisation effort in urban and rural areas and, to a great extent, depends upon the willing co-operation of the people.

Leprosy

During the 4th Plan a sustained attack on leprosy was started and various rehabilitation schemes were in progress. Until now,leprosy patients have been ostracised from society and left to linger in isolation. This attitude should change as by common consent leprosy is not as infectious as it was thought previously. However, the disabilities and deformities produced by leprosy infection are marked and require intricate surgical operation for their correction.

Cholera

The lower gangetic plan has, from time immemorial, been the traditional homeground for cholera. In fact, Calcutta has been known as the capital city of the world for cholera. It is known that improvement of water supply and sanitation can do a lot towards controlling cholera. This programme should be intensively pursued in the 5th Plan. In addition, the inoculation programme for cholera in the 5th Plan needs further augmentation.

Municipal Health Service

Many of the municipalities in semi-urban areas in West Bengal have a minimum quantum of municipal health service which is functioning poorly. It has been proposed to take over the health service of all municipalities which have a population below 25,000. It may be necessary to integrate such small units into a larger comprehensive unit.

Health Centres

All emphasis on public health work in the 5th Plan will centre round the creation and proper development of primary and sub health centres in all our rural areas giving cover to nearly all our people. By the end of the 4th plan it is expected that there would be 1 primary health centre and 2 sub health centres in all the 335 blocks in our State, i.e., 335 primary and 670 sub health centres. The approach Paper of the Planning Commission proposed 3 primary health centres in each block, each serving 30,000 people and a large number of sub-centres each serving 10,000 people (8 to 10 in each block). If we are to follow this pattern of development, we must have 1005 primary health centres and 2,680 to 3,350 sub health centres necessitating creation of 670 additional primary and 2,180 to 2,680 additional sub centres. Even on the most realistic basis and with maximum effort it may be beyond our capability to create this vast number of health centres with their associated infrastructures such as, buildings, equipments and, particularly, man-power.

At the present time, most of our primary health centres have 20 beds. Some have larger number of beds going up to 50. There is provision, at the present time, for 3 doctors in each of the primary health centres and 1 doctor in the sub health centres. However, due to non-availability of doctors most primary health centres have 1 or 2 doctors and about 70 sub health centres have no doctors and are being run by pharmacists or other health workers.

The pattern of future development of the health centre system in our country needs considerable thought with regard to their maximum usage and usefulness after taking into consideration the financial resources available. In addition, the health centres should not merely be small units of curative medicine but should be the focal point of community medicine including family planning, welfare and nutrition programmes. This concept must percolate throughout the whole strata of health centre projects in our State. In order to make more doctors or trained health workers available in our health centres in rural areas, it has been proposed to induct practitioners of indigenous system of medicine, Ayurbedic practitioners, Homeopaths, Hakims etc. and also to organise a 3-Year diploma course in medicine. The use of trained paramedical personnel such as basic health workers in villages and the use of the medical students during the 1 year of intership programme in the district, subdivisional hospitals and large health has also been proposed. All these schemes have merit and all may be made use of as and when necessary. Even apart from other considerations, we must assure ourselves that in the process of trying to help the rural people, we should not subject them to quackery or unethical practices in medicine. For this reason all health personnel engaged in health centres or working in rural areas should have the proper background of training in recognised centres of medicine and a certificate indicating his proficiency in that particular speciality.

Bearing all the above facts in mind, the following scheme for the health centres in our State is being suggested. The plan has been worked out on the basis of blocks having an average of 100,000 people. When the blocks are larger, the plan has to be suitably strengthened.

1. There should be 2 primary health centres each with 50 beds. It has been felt that unless there are 50 beds in large health centres with 3 to 4 doctors, a laboratory, an X'ray unit and a technician, the scheme does not become economical in the long run.

2. There should be 4 sub centres each with 4 to 10 beds with two doctors in-charge.
3. The primary health centres, besides the 3 doctors, should have 1 trained laboratory technician, 1 radiographer, 6 nurses, 1 Social worker, 1 clerk-typist and class IV workers, as necessary.
4. The sub centres should have 2 doctors, 3 nurses, 2 technicians, 1 social worker and class IV workers.
5. It may be noted that family planning and welfare work will be performed from both the primary as the sub health centres.

On this basis, there would be additional 335 primary health centres in West Bengal making a total or 670 primary health centres. In addition, there would be 670 more sub health centres making a total of 1340 sub health centres in the State. This would involve a total financial outlay of about Rs. 50 crores for the health programme in the 5th Five Year Plan. The total outlay for public health sector (community medicine) in the 5th Plan is shown in the following table.

Many of the district and subdivisional hospitals, primary/sub health centres and family planning units have not been provided with boundary walls resulting in many difficulties. The difficulties include :—

(1) Unauthorised occupation of Government land
(2) Use of hospital buildings by unauthorised persons
(3) Insecurity for the personnel living in the campus etc.

In order to provide such boundary walls, Rs. 2 crores is being provided in the 5th Plan.

It is desirable that every primary health centre should have an ambulance. At present certain amount of aid in this direction is being provided by UNICEF. Of the 335 primary health centres proposed to be completed by 1974, 107 have vehicles of their own. The remaining 228 health centres should be provided with a jeep type of ambulance during the 5th Plan. Each of such ambluance costs about Rs. 40,000. The total cost, therefore, would be Rs. 91 lakhs.

Table Showing financial outlay on public health sector in the 5th Plan.

		(lakhs)
1.	Control of Tuberculosis	Rs. 350.00
2.	Control of Malaria	Rs. 100.00
3.	Control of Filaria	Rs. 100.00
4.	Control of Small-pox	Rs. 200.00
5.	Control of Leprosy	Rs. 60.00
6.	Control of Cholera	Rs. 100.00
7.	Municipal Health Services	Rs. 15.00
8.	Health Centres including Nutritional programme	Rs. 5200.00
9.	Immunisation and Vaccination Programme	Rs. 50.00
	Total	Rs. 6175.00

IV. Family Planning and Welfare Programme at the end of the 5th Plan

As has been said before, West Bengal is very much behind the family planning and welfare programme as compared to other States in India. In addition, major part of the emphasis

has so far been directed on urban and semi-urban areas with little impact in the rural sector. There must be complete reorientation of the family planning work in our 5th Plan with emphasis on the rural areas and over-crowded bustee areas in the cities. An average middle-class Bengali at the present time has realised the imperative necessity of having a small family because of economic forces. It is the relatively uneducated and under-privileged section of the population that must be motivated in the advantages of family planning. Unless, therefore, family planning programme could be forcefully directed specifically to this section of the society, it is not likely to produce a real impact over population explosion and, secondly, it will generate social imbalance.

For this purpose, the structure of the family planning administration in West Bengal needs strengthening in various directions both at the upper as well as at the lower levels.

The second important necessity in the orientation of family planning work is to combine welfare programme along with family planning projects. People must be made to realise that what is intended in this programme is not merely limitation of families but also their welfare. Children between ages of zero to six years and their mothers both at the pre-natal as well as at the post-natal stages must be singled out for special attention at the family planning and welfare clinics. The name 'family planning clinic' should now be changed to 'family welfare clinics' These clinics should consider programmes of routine health examination of children and mothers as part of their normal work. They should also advise as well as carry out immunisation work. Special nutritional programme introduced by the Government of India should receive special emphasis at these welfare clinics.

Family Planning and Welfare Programmes are being conducted at present through several organisation levels :

(a) Family Planning Clinics
(b) Training Centres
(c) Mobile Units
(d) Sterilization beds
(e) Post-natal Centres
(f) State and Dist. Family Planning Bureau.

It is envisaged that family planning bureaus should also be started at the sub-divisional level to keep a close watch on the family planning welfare work at the health centres. All the different items of work and organisations will need strengthening in the 5th Plan if the target of population increase has to be reduced from 2.6% to 1.5% at the end of the 5th Plan.

The family planning work is so important for our country that mere enunciation of targets or laying down of organisational frame-work or even provision of sufficient funds are not expected to bring the desired results. It is emphasised that this aspect of health-care work should be an integral part of training and teaching for all categories of health workers, viz. doctors, nurses and para medical personnel throughout their period of training or study. In other words, everybody, who will have any part to play in this programme, must be imbued with the motivation of family planning and welfare throughout his/her career. It has been estimated that if the family planning and welfare effort is to succeed in West Bengal during the 5th Plan, an outlay of about Rs. 50 crores would be necessary.

V. Man-Power requirement in the Health Sector in the 5th Plan.

If all the objectives enunciated for the successful outcome of the health-care programme in the 5th Plan are to be achieved, large injection of additional man-power will be necessary.

It is very difficult to make actual assessment of this additional man-power force. However, a rough exercise is being attempted here.

	At the end of the 4th Plan	At the end of the 5th Plan
1. Doctors	26,500	32,750
2. Nurses	12,000	25,000
3. Other para medical personnel	53,000	98,250
	(2 for each doctor)	(3 for each doctor)
Total	91,500	156,000

This does not take into account the non-medical class III and class IV workers whose numbers would roughly be double the number of medical and para medical personnel together i.e., about 300,000 at the end of the 5th Plan.

VI. Water Supply and Sanitation

West Bengal is singularly difficient in providing facilities as regards water supply both in urban and rural areas, as well as in providing good sanitation arrangements. Only 25 municipal towns have waterworks for supplying piped water catering to a very small segment of the population. Only 4 municipalities outside Calcutta have any kind of sewerage scheme.

Considering these aspects, major thrust in the 5th Plan should be directed towards meeting these deficiencies. The following programme of work is considered necessary.

(a) Urban Water Supply	Outlay (lakhs)
(i) 21 municipalities towns covered by piped water supply	300
(ii) augmentation of 25 existing municipal water works	300
(iii) 48 non-municipal towns water supply scheme	700
(iv) Special Schemes for Asansol and Siliguri	216
(v) Ranigunj coal field water supply scheme ..	419
(vi) Haldia port water supply scheme	
(a) Interim	583
(b) Comprehensive	3200
	5718

(b) Urban sanitation scheme :	Outlay (lakhs)
(a) Sewerage scheme in 4 municipalities, Burdwan, Asansol, Krishnagar & Siliguri	870
(b) Conversion of Service latrines into sanitary latrines	135
(c) Mechanical composting in big municipalities	200
	1205

(c) Rural Water supply :

Provision of pure water supply	25 crores
Sinking & re-sinking of tubewells	10 crores
	104.23 crores

5TH FIVE YEAR PLAN OUTLAY

Total financial outlay in the health care programme in the 5th Five Year Plan

	Crores
1. Medical Education	8.85
2. Hospital Service	7.63
3. Community Medicine including Health Centres and Nutrition	61.75
4. Family Planning	50.00
5. Water Supply and Sanitation	104.23
	232.46

Health Sector

I. Minimum needs programme

	Crores.	
1. Health Centre	52.00	Central Government outlay.
2. Public Health	9.75	
3. Water Supply	92.18	
4. Sanitation	12.05	
5. Family Planning	50.00	
	215.98	

II. Normal Development Programme

	Crores.	
1. Medical Education	8.85	State Government outlay.
2. Hospital Services	7.63	
	16.48	
Grand Total	232.46	

SOCIAL WELFARE SECTOR

The standards of social welfare services in West Bengal have been far from satisfactory. The number of people coming within the purview of the social welfare activities is very large and the resources of the State Government do not allow it to look after the welfare of the majority of the people who are in acute need of such services. There are also a number of artificial constraints which need urgent attention. For example, at present the West Bengal children's Act is applicable only to selected areas of Calcutta metropolitan district. It should be extended to all the districts in the State as quickly as possible. Similarly, the operation of the Bengal vagrancy act has been concentrated only in a part of the Calcutta industrial area. This act

should also be extended to as large an area of the State as possible. It should also be remembered that social welfare work cannot be the exclusive charge of the State Government. It must be shared between the Government and numerous voluntary organisations working in the State. Fortunately, the wealth of motivated workers who are interested in voluntary social work is large in West Bengal. Therefore, this kind of work should be shared between the Government and the voluntary organisations.

The Social Welfare Department of the Government has multi-level spheres of activities in the following directions :—

(a) Protection of destitute and neglected children and their rehabilitation,

(b) Protection of destitute women and girls and their rehabilitation,

(c) Rehabilitation of handicapped, blind, deaf/mute and physically crippled,

(d) Social defence activities including suppression of immoral traffic in women and rehabilitation of delinquent children,

(e) Welfare programmes for old people,

(f) Preventation and control of beggary,

(g) Special nutrition programme for children and mothers.

The present level of activity under each of the above groups is considerably limited. The scope and dimension of the work must be considerably augmented in the 5th Plan.

One other fact needs consideration. There is some amount of overlapping between the work of the social Welfare Department, Health Department and the Education Department. For example, in the nutrition programme of the children and mothers as well as in the rehabilitation of the physically crippled, the first two departments are simultaneously involved. The problem can be solved either by integration of the work in one department, preferably the Health Department, or by a close liason between the workers of the two departments performing similar type of work. The same holds good for integration of similar type of work at present being done by the social welfare and the Education Departments.

1. Child Welfare Programme

At present there is one Home for boys and another for girls at Ariadaha and Midnapore respectively. There is no day-care centre working at present. In the 5th Plan the following activities have been proposed :—

(1) Establishment of 6 Destitute homes for boys

(2) Establishment of 3 Destitute Homes for girls

(3) Establishment of 50 day-care centres including creches (Balwadis)

(4) Establishment of 50 play centres for children

(5) Grant-in-aid to voluntary organisations for maintenance of children.

Capital head expenditure will have to be provided to build suitable houses for the above activities. The total financial outlay involved would be Rs. 2.76 crores.

2. Women's Welfare

At present there are 3 Women's Homes at Uttarpara, Howrah and Midnapore. In the 5th Plan, 3 new Destitute Homes are proposed to be constructed. In addition, the State social welfare advisory Board will need considerable support and assistance will be provided to widows and children in all the districts. A sum of Rs. 2.8 crores will be necessary for these activities.

3. Welfare of old and infirm

At present there is one old and infirm political sufferers' Home at Garia and another Home of old destitutes at Midnapore. It is proposed to build 2 additional Homes for old and infirm during the 5th Plan. Another activity under this section is provision of old-age pension. At present the department is spending Rs. 22.5 lakhs per year on account of this scheme. It is envisaged that during the 5th Five Year Plan, old-age pension would be extended to 40,000 people at the rate of Rs. 20 per month and will involve an expenditure of Rs. 6 crores. The total outlay under this section will be Rs. 6.10 crores.

4. Rehabilitation of the handicapped.

At present there is one blind and one deaf/dumb school under the social welfare department. In the 5th Plan the following activities are proposed :—

(1) Establishment of a rehabilitation centre for the handicapped.
(2) Establishment of a Home for mentally retarded.
(3) Establishment of an organisation for prosthetic aids.
(4) Provision of scholarships for the handicapped.
(5) Establishment of a composite Home for children destitute, deaf and dumb, blind and physically handicapped.
(6) A scheme for granting positions to physically crippled.
(7) Establishment of a specialisation cum-production centre for orthopeadically handicapped persons. This could be located at the existing Bonhooghly Hospitals.

The total outlay under this section would be Rs. 2.07 crores.

5. Social defence

West Bengal is one of the first States in India to pass the Children's Act for protecting young and wayward children. However, this Act covers only Calcutta and its environs. It should now be extended all over the State. There are at present 8 institutions for looking after wayward children with total capacity of 830. In the 5th Plan the following activities are proposed :

(1) Establishment of 10 juvenile courts and 10 remand homes.
(2) Establishment of 6 new reformatory and Borstal schools for boys.
(3) Establishment of 6 new reformatory and Borstal schools for girls.
(4) Establishment of 9 new District Shelters under S.I.T. Act.
(5) Establishment of new rescue homes in 24-Parganas.
(6) Establishment of 7 after-care homes.
(7) Establishment of 5 special attendance centres in areas having high rates of juvenile crimes.

The total expenditure under this section would be Rs. 3.88 crores.

6. Special nutrition programme

The importance of a well-balanced nutriton programme for young children and pregnant and nursing mothers forms an important item in the 5th Plan programme. Considerable work

at the National Institute of Nutrition in Hyderabad has highlighted the benefit of providing concentrated and at the same time inexpensive nutrition items in the generally low-calorie diet of our children. It is envisaged that a special attack on mal-nutrition in children and nursing mothers must be made during the 5th Plan programme. In addition to providing this cover all over the country, certain special areas have to be selected, such as, drought-prone areas, slum areas in the cities tribal areas and backward areas. This cover should be given either separately or through the family welfare clinics. A sum of Rs. 20 crores is being provided for this purpose on the basis of 4 crores per year.

7. Training and Research

To carry on the social welfare work successfully, certain amount of special knowledge and research would be necessary for which a sum of Rs. 9 lakhs is being provided.

8. Grant-in-Aid to voluntary social organisations

There are numerous voluntary social organisations in the State who must be reimbursed for their activities as far as possible. A sum of Rs. 1.5 crores is being provided for this purpose.

9. Prevention and control of beggary

It has been established that there are 1,20,000 beggars (1961 Census) in West Bengal, of whom 50,000 are in Calcutta. It has also been estimated that the average earning of the beggars varies from Rs. 1.50 to Rs. 2.00 per day, that is, the total daily earning of all the beggars in Calcutta would vary from Rs. 75,000 to Rs. 1 lakh. Even if a part of this sum could be invested, the rehabilitation problem of the beggars could be tackled efficiently. The State at present provides for 7 Vagrants Homes with a capacity of 22.00. This number is too inadequate. Most of the Vagrants Homes are filled by persons with incurable diseases who cannot be rehabilitated and become permanent inmates of the Homes. The Vagrants' problem and beggary go together and large-scale effort is necessary to tackle them at their root. Merely increasing the number of beggars' homes would not control the problem. Considerable rehabilitation and vocational training would be necessary. However, it is envisaged that during the 5th Plan an additional number of 8 Vagrants' Homes with additional total capacity of 2,400 should be created. This will entail an expenditure of a sum of Rs. 1.13 crores. In addition, another sum of Rs. 12 lakhs is being provided for eradication of child beggary. Another item in this section would be provision of night shelters for pavement dwellers in Calcutta and Suburbs for which Rs. 9 lakhs is being provided.

Schedule Caste and Tribal Welfare

Special consideration for the backward classes such as the Scheduled caste and Tribal people have been provided in the different sectoral plans such as Education, Health, Housing and Social Welfare including Nutrition programme. Separate financial allocation is not being provided here as the specific schemes in these respects have already been integrated in the major sectoral plans. Detailed provisions under the different heads for these classes of people will be made in the final plan taking into consideration their spatial distribution.

The total financial outlay under the Social Welfare Sector would be as follows :—

	Rs. Crores.
(1) Child welfare	2.76
(2) Women welfare	2.80
(3) Welfare of old and infirm	6.10
(4) Rehabilitation of the handicapped	2.07
(5) Social Defence	3.88
(6) Special nutrition programme	20.00
(7) Training & Research	.09
(8) Grant-in-aid voluntary Organisations	1.50
(9) Prevention & control of beggary	1.34
	41.46

CHAPTER X

EDUCATION

1. Introduction

In the context of the broad objectives of the Fifth Plan oriented to removing unemployment and to providing the basic minimum needs, the approach of the State of West Bengal is based on consolidation, expansion and reorganisation of the education system at different levels. The first priority would be given to the expansion of elementary education by the enrolment of all children of the 6—10 age group in primary schools (with the minimum of one such school located within a radius of 1.5 kilometer of each village) and of 50% of the children of the 11-14 age group in middle schools (with the minimum of one such school within a radius of 5 kilometers of each village). Emphasis will also be placed on the removal of adult illiteracy, expansion of girls' education, teachers' education and provision of training with a view to the utilisation of manpower to meet the requirements of an agro-industrial economic structure of the society. Other objectives will be diversification of secondary education, provision for vocational training at suitable levels, reorganisation of university, technical, and professional education with reference to prevalent academic and social problems, correction of imbalances and proper utilisation of existing capacities. While formulating the programmes, provisions for the removal of such constraints as wastage, stagnation, falling standards, disparities, and irrelevance to needs will have to be made.

2. Elementary Education.

The coverage of children of the 6-10 age group as enrolled in the primary schools in 1971 was 68.4 per cent, the district-wise variation being from 98.9 per cent to 44.3 per cent.

On the basis of 50 per cent of the total number of children in the age-group 11-14 the coverage of children enrolled in the middle schools in 1971 was 52.9 per cent the district-wise variation being from 97.1 per cent to 35.5 per cent.

A comparison of the number of primary schools existing in 1971 (approximately 36,000) with the number of villages (approximately 38,000) and the fact that in 1974 the estimated number of schools would reach 40,000 may create the impression that the minimum need of at least one school for every village has been met. In fact, however, on account of maldistribution, all villages do not have schools—as the distribution on district level shows. Nine districts comprising approximately 29,000 villages had about 21,000 primary schools, whereas six districts comprising 9,000 villages had 15,000 schools.

In view of the low level of achievement in expanding elementary education during the current plan period it is necessary to initiate immediately some action programme for the increased enrolment of 6-10 age group children so as to create the base for the fulfilment of the target of 100% enrolment during the Fifth Plan. It is proposed to enrol by 1974 additional eleven lakhs of children by partly utilising the existing capacity and by establishing new schools and by appointing additional teachers. The existing schools with additional teachers may absorb 2.5 lakhs and 5,000 new schools would provide for 8.5 lakh students. It will be necessary to appoint some 19,125 additional teachers and to provide for other requisites. It has been estimated that the implementation of the project would cost Rs. 6.015 crore.

The task before the Fifth Plan will be to provide for the enrolment of 25,55,000 children in the age-group 6-10 years in the primary schools (Ref. Table—9.1). This would need 16,000 additional schools and 64,000 additional teachers. The total estimated cost of these schools will be Rs. 112.80 crores of which 16.8 crores will be in land, buildings and equipment and 96 crores will be in salaries. In the middle schools covering the children in the age-group 11-14 years, the Fifth Plan would have to provide for an additional enrolment of 12,12,000 children (being 50% of the total children of that age). This would require 7,600 additional schools and 38,000 additional teachers. The total cost for this programme will be Rs. 72 crores of which Rs. 8 crores will be for land, buildings and equipment and Rs. 64 crores for salaries. It is known that the existing schools are not properly run due to the absence of a proper inspection system. It is, therefore, proposed that an additional number of 950 school inspectors should be appointed involving an annual recurring expenditure of Rs. 45.4 lakhs and a total outlay of Rs. 2.27 crores for 5 years. As the quality of teaching is the essence of education, particularly at the initial and formative stages, the training of teachers (the present proportion of trained teachers being well below 50 per cent of all teachers) becomes an integral part of the system of elementary education. It is proposed that provision of Rs. 50 lakhs be made for the training of teachers. Provision of a sum of Rs. 180 lakhs is suggested for providing the school children with mid-day meal, free books, etc. Thus the total outlay for 100% coverage for free primary and 50% coverage for middle school education would be Rs. 190 crores for the 5th Plan.

The following constraints will have to be removed at all levels of school education :

(a) Wastage and stagnation :

(i) by readjustment of school terms so as not to clash with sowing and harvesting seasons in the rural areas

(ii) by improvement of the quality of teaching through increase of the number of trained teachers as well as recruitment of an adequate number of teachers of suitable academic qualification and aptitude

and (iii) by providing incentives for enrolment—by supply of free text-books, school uniform, mid-day meals etc.

(b) Lack of facilities by providing :

(i) suitable building accommodation

(ii) equipment (including sports gear), picture-books, story-books etc.

(iii) recreational facilities

(iv) approach roads

and (v) drinking water.

(c) Lack of inspection and supervision by increasing the number of inspectors and administrative reorganisation at state and district levels.

(d) Introduction of approved pay scale for teachers and bringing in all the schools under the Governments' deficit grant programme.

(e) Lack of resources :

(i) by increasing existing rate of education cess and tax

(ii) by augmenting the quantum of allocations in the state budget and of assistance by the Central Government

and (iii) by exploring possibilities of aid from UNESCO and UNICEF funds and other international agencies.

TABLE 9.1 (a)

Enrolement perspective for Primary and Middle Education

(X 1000)

Age Group	Total Number of Children			Number of children Enrolled		
	1971	1974	1979	1971	1974	1979
6 — 10 years (Primary School)	5547	5976	6766	3731	4211	6766
11 — 14 years (Middle School)	4000	4228	4783	1052	1180	2392

TABLE 9.1 (b)

Estimate of Number of Schools and Teachers required During 5th Five Year Plan

Type	Number of Schools			Number of Teachers		
	1971	1974	1979	1971	1974	1979
Primary Schools (Age 6—10 years)	36	40	56	120	160	224
Middle Schools (Age 11—14 years)	6.6	7.4	15	33	37	75

TABLE 9.1 (c)

Summary Estimates for Education under Minimum Needs Programme.

Item	Type	
	Primary Schools (6—10 Age Group)	Middle Schools (11—14 Agre group)
1. Additional Student Enrolment	2555,000	1212,000
2. Additional Schools	16,000	7,600
3. Additional Teachers	64,000	38,000
4. *Financial Outlay :*		
(*a*) Land Building Equipment	Rs. 16.80 crores	Rs. 8.00 crores
(*b*) Salary	Rs. 96.00 crores	Rs. 64.00 crores
(*c*) Inspecting staff, Teacher's training Books, Mid-day meals, etc.	Rs. 4.57 crores	
Total outlay : (Rs.)		Rs. 189.37 crores

3. High School and Higher Secondary Schools :

There are at present 3,927 high and higher secondary schools with an enrolment of 5,00,000 students in classes IX to XI. Of these, 1919 are High Schools, 1,637 Multipurpose Schools and 371 Higher Secondary Schools. In 1971, 44,267 regular and 48,619 external or private students appared at the School Final Examination and 48.14 per cent passed. As between the two categories of successful students 56.29 per cent were regular and 40.71 per cent were private students. At the Higher Secondary Examination in 1971, out of 1,08,114 regular students, 79,619 or 73.00 per cent passed. Out of 21,467 private students in this examination, 13,335 or 62.11 per cent passed. The overall percentage of pass was 71.73.

By 1974, the enrolment in classes IX-XI is expected to increase to 5,57,000. By the establishment of additional schools, it is expected that the coverage of students in the 14-17 age group would expand from 15.90 per cent (boys : 22.02% : girls 9.80%) in 1968-69 to 18.30% (boys : 24.20% : girls : 12.50%) in 1974. To take care of expansion and normal growth a provision of Rs. 24 crores is suggested.

4. College and University Education.

There are seven universities, including one Central University, and 202 colleges other than those for technical and professional education. The total enrolment is 2,80,000. The enrolment in the universities in faculties of humanities, general science, commerce is 2,54,000. The remaining quantum of enrolment is in the professional and technical faculties. There are 13637 postgraduate students and 482 research scholars. By 1974 enrolment would go to about 3.10 lakhs (based on the assumption that the actual rate of increase during 1965-71 will continue to be the same during the next 3 years).

There has been very rapid development of university education but without any planning. There is no denying that university education in the State, and for that matter in the country generally speaking, is faced with a grave crisis. In West Bengal this is particularly manifest in declining standards, disintegrating academic values, student unrest and social tensions. Revision of the organisational pattern, overhauling of the content of the courses of study, adoption of improved methods of teaching and study, reorganisation of the entire system of evaluation and examination and reorientation of higher education to the social and economic needs of the country would be necessary to get out of the present critical situation. It is imperative to put more emphasis on the development of research, particularly research in the social sciences. Provision should be made for establishing an institute of research for social sciences. An approved scheme for this purpose already exists with the Central Government. Necessary support for this purpose should be provided by the State. A total sum of Rs. 10.00 crores is suggested for taking care of expansion and normal growth activities.

5. Adult Education.

It is felt that high priority should be given and adequate provision made for the removal of illiteracy amongst this section of the population. The literacy techniques to be adopted should be oriented to generation of different kinds of skill so that manpower requirements of our developing economy can be met.

It is proposed that such units for adult education should be attached to the Primary Schools. It would be necessary for the State Government to be actively involved in this policy to ensure its successful implementation. A sum of Rs. 12.00 crores, is suggested as outlay, if funds are available.

6. Technical Education.

There is one University, two Government Engineering Colleges and one regional engineering college imparting technical education at the undergraduate degree and postgraduate levels. Besides, there are 28 Polytechnics, 27 Junier Technical Schools and 4 specialized technical colleges (2 for textile, 1 for leather, 1 for ceramics). There are also several vocational training institutes imparting technical training at the lowest level.

In technical education, two distinctive trends are noticed :

(i) continued unemployment in some classical disciplines or trades of Engineering
(ii) demand for a new type of interdisciplinary training consistent with the overall industrial back-ground of the country.

A total allocation of about Rs. 10 crores is made subject to the availability of funds. The detailed allocation should be made after ascertaining the type of technical persons demanded of in the 5th Plan. A man-power survey is required to be made a priority if wastage of skills of technically qualified persons is to be avoided.

7. Physical Education, Social & Cultural Education.

(a) The present state of Physical Education including Sports, Scouting, Folk-dancing etc. is very limited in scope and outlay. A determined effort has to be made to improve facilities and to set up a net-work of activity-centres comprising primary and secondary schools, university, village, community, club and institutional levels. A sum of Rs. 6.00 crores may be suggested for this programme if funds are made available.

(b) Programmes for improvement and development of organisations devoted to cultural, aesthetic and social educational activities and institutions for development of Music, Art, etc. and Museums both in the towns and villages require support. A provision for Rs. 4.00 crores has been suggested for the above purpose.

8. Girls' Education.

The enrolment of girls for elementary education has been unsatisfactory and special measures require to be taken for increasing enrolment. Provision of a sum of Rs. 2.50 crores for this purpose has been included.

9. Outlay for Education.

The total financial outlay for Education in the 5th Five Year Plan (1974-79) has been estimated to be Rs. 258.00 crores. The details of this outlay is indicated in Table 9.2.

TABLE 9.2

Financial Outlay for Education

ITEM	Outlay (Rs.) Crores			
	Minimum Need Programme	Employment	Growth	Total
1. Elementary Education	190.00	—	—	190.00
2. Adult Education	12.00	—	—	12.00
3. Girls' Education	2.50	—	—	2.50
4. Physical Education, Social & Cultural Education.	—	—	10.00	10.00
5. University & Collegiate Education	—	—	10.00	10.00
6. Technical Education	—	—	10.00	10.00
7. Secondary Education including its re-organisation	—	—	24.00	24.00
			TOTAL OUTLAY : Rs. Crores.	258.00

CHAPTER XI

EMPLOYMENT AND LABOUR

A. Employment

1. Two important characteristics of the employment situation in West Bengal are :

(i) a gradually declining proportion of people finding scope of any employment. In 1951, 34.8% of the people of West Bengal were employed. The corresponding proportion in 1971 was only 28.4%. In both the years, the proportions for India as a whole were substantially higher ;

(ii) during the last 6-7 years, the absolute volume of employment in the organised sector was also declining. Thus, the total of registered factories, coal mines and plantation, government offices, shops and commercial establishment and public entertainment together employed. 24.15 lakh in 1965 which was higher by 4.24 lakh compared to 1961. After the next four years in 1969, however, employment fell by 3.42 lakhs to reach the level of 21.73 lakh. In 1970, employment increased by only four thousand.

2. It may be considered that 95% of adult males and 30% of adult females are actually or potertially seeking employment ; they constitute the labour force. Its size in 1971 was 15.4 million in West Bengal. The corresponding working population being 12.6 million, the balance labour force of 2.8 million on the basis of above assumption, can be considered as fully unemployed in 1971. It is clear that not knowing the actual figure of unemployed, the estimated volume will differ with the differences in the assumptions made

3. Despite this huge backlog of unemployment and the existing trend of declining or stagnant employment situation, it is considered possible to make a major break-through in the sphere of providing new productive employment. This has been demonstrated in the different sectoral programmes presented earlier. The employment component of these programmes are summarised below.

4 In the field of agriculture, an efficient use of modern technology through the introduction of appropriate socio-economic reforms may lead to an increase in employment opportunity for 2.0 million persons of which a part will denote elimination of existing under-employment In the allied programme on animal husbandry, poultry, etc an additional employment for 0.5 million may be created.

5 For modernisation and support of agriculture as also for transforming the present back dated industrial structure of the State and for utilising the growth potential of science based industry, a massive investment will have to be made in the manufacturing sector. Total direct employment that may be generated through this investment will be of the order of 0.9 million.

6. On the basis of increased tempo of development of the directly productive sectors viz. Agriculture and Manufacture, there will be great necessity of developing the tertiary sector viz. transport, power, trade and commerce, etc. Particular mention may be made regarding the education sector where both to fulfil the minimum needs programme as well as to sustain the process of modernisation, there will be need for about 1.5 lakh teachers during the Fifth Plan The significance of the relatively huge employment potential particularly in the background of the problem, we have with educated un-

employeds can readily be appreciated. There is also considerable potential for absorbing large number of educated unemployeds in the health education etc. sectors.

7. On the basis of what has been stated above, the order of dimension of the employment position will be as follows :—

Overall Employment Position by Sectors and Target for the Fifth Plan
(in million)

	1961	1971	1973-74	1978-79
1. *Primary Sector*				
(*a*) Agriculture including animal husbandry, etc.	6.29	7.25	7.30	9.80
(*b*) Plantation, mining etc.	0.58	0.55	0.60	0.80
Total :	6.87	7.80	7.90	10.60
2. *Secondary Sector*				
(*a*) Registered Factory	0.72	0.84	0.88	1.50
(*b*) Non-registered	1.0	1.16	1.22	1.50
(*c*) Construction	0.4	0.05	0.10	0.20
Total :	1.80	2.0	2.20	3.20
3. *Tertiary Sector*				
(*a*) Public Sector	0.53	0.70	0.75	1.00
(*b*) Private Sector	2.38	2.07	2.25	3.00
Total :	2.91	2.77	3.00	4.00
GRAND TOTAL :	11.58	12.62	13.10	17.80

It may be clear from the Table above that the tentative target, depending upon the availability of resources for the Fifth Plan may be put as the generation of additional employment for 4.7 million persons. This will denote an employment growth rate of 6.4% per year during Fifth Plan. This will mean that the backlog of unemployment will be reduced to 2.5 million at the beginning of the Sixth Plan. Elimination of this backlog and providing 2.01 million jobs to new entrants to labour force during the Sixth Plan would require a growth of employment at the rate of 4.8% per (comp.).

B. Labour

1 During the last decade 1961-1971, West Bengal has been transformed from an economy mainly based on self-employed labour to one which is on the verge of being based on wage-labour. Compared to 34% in 1961, the share of wage-labour to total working force in 1971 was 45%. This rapid rise was mainly due to tremendous increase in landless agricultural labour ; in 1961 they constituted only 15.38% of the working force ; in 1971 the corresponding share has become as high as 25.75%. Thus, agricultural labour constitutes 57% of the total wage-labour in West Bengal. The size of labour in the registered factory was less than 25% of the size of agricultural labour. It may, therefore, be clear that substantially more attention will have to be given to agricultural labour in terms of guaranteeing at least a minimum standard of living, helping him to increase his productivity and gain an increasing share of it.

2. So far as factory labour is concerned the most important fact of the last few years is the vast increase in man-days lost, along with loss in production, due to labour management dispute. From 13.6 million man-day lost in 1965, it rose to as high as 94.3 million in 1970. Fortunately in 1971, it came down to 54.7 million.

3. Of the innumerable causes of this escalation in labour management dispute, it is necessary from economic planning point of view to concentrate on the following :—

(*i*) increasing insecurity in employment. Compared to continuous increase in employment up to 1965, employment decreased by nearly 90,000 during 1965-1969 ;

(*ii*) increasing food price necessitating higher wage. During 1965-66 to 1968-69, food price increased by 41% Despite some increase in money wage, real wage fell during this period ; and

(*iii*) the nature of traditional industry base in West Bengal and lack of far-sightedness amongst the entrepreneurs to modernise and to diversify during the relatively better days in the pre-1965 period made the West Bengal industries the biggest victim of post-1965 recession. This was further accelerated by a far higher price rise in industrial raw material compared to that of finished manufactured goods. During 1965-66 to 1968-69, the price of the former rose by 26%, while it was only 13% for the latter.

4. It may, therefore, be clear that a big drive for increasing employment and food production coupled with all necessary measures to maintain price stability and for achieving a structural change in the industry mix in West Bengal can be the basic foundation on which appropriate organisational, political and legal steps may be taken for inducing labour and management to pursue firmly the target of rapid national development with equity.

5 So far as wage structure is concerned there is firstly a wide disparity not only between the agricultural and manufacturing sector but also within the manufacturing sector itself. There is disparity even in the few of the industries where minimum wages have been statutorily fixed, although more often than not they are not implemented, particularly in the agricultural sector. In view of the type of development visualised, it will be necessary to consider whether a minimum need based wage can be fixed for the labour in all industry including agriculture. It may be visualised that the move from minimum wage to a better wage level will depend on the productivity and the relative collective bargaining position of labour and management

6. An essential element for maintaining the efficiency of labour is to provide him with adequate measures of social welfare through schemes like E S I , Holiday Home, Welfare Centres, etc. This better wage and welfare measures, if coupled with appropriate machinery for maintaining industrial peace can eliminate a large part of the avoidable loss of production through labour management disputes. Adequate provisions, therefore, will have to be made for improving these welfare schemes as also for strengthening the industrial relations machinery. A provision of Rs 3 crores is considered adequate for this purpose.

7. One very important characteristic particularly in the urban labour field is the dominance of the people from other States. Thus in the manufacturing sector, only about 40% of the employees are from West Bengal. Even in commercial and non-factory establishments, the corresponding share of the people from West Bengal is less than 60%. This aspect necessitates far greater attention by the Centre for creating employment in this State than what may be warranted on the basis of actual local unemployment situation.

CHAPTER XII

MARKETING AND PRICE

1. A developing economy is confronted with the phenomenon of rising prices as a consequence of growth in economic activities which often leads to marketing of outputs after an interval of generation of income. Imbalances between demand and supply of goods force spiralling of prices and affect the development of the economy itself.

2. The movement of prices in an economy with a dominant agricultural sector is influenced largely by the prices of the agricultural goods. In the formation of prices in the rural areas in India, key role is played by the village money lender, or mahajan, who combines in him the functions of a banker and a trader. He advances loan to the producer at usurious rates and obtains his repayments in kind through the system of dadan, a subtle form of hypothecation of crops. The mahajan's extortionate rate of interest and the trade margin which he keeps to himself are all added to raise the price of the produce in the markets. The grower is denied his due share and the consumer pays high prices because of the mahajan's speculative deals. It has been reported that the price spread between the producer and the consumer in some of the agricultural commodities can be at times over 100 per cent. The rate of return on mahajani capital is undoubtedly very high. The mahajani system has been accumulating capital in the villages of West Bengal over years. The huge amount of capital is locked in speculative activities and remains a hindrance to any policy for stabilization of proces by the administration.

3. It is necessary for the State to intervene in the marketing mechanism dominated by the mahajans and aratdars (big stockists) in the interest of the weaker section of the rural population. The emergence of nationalized banks with the policy of differential interest rates has created a basis for undermining the usury capital. However, the banks' inability to hold the crops for marketing leaves the cultivators at the mercy of the unscrupulous mahajans and aratdars again. The objective of relieving the small cultivator from the controls of these agencies is frustrated in the absence of a marketing agency run on principles of fair trade. A State Marketing Agency can intervene effectively at this stage.

4. State's participation in the market system serves a dual purpose. Firstly, it allows the State to regulate prices through open market type operations to move towards desired direction. Secondly, it provides an avenue of State outlay which yields fair return with short gestation lag As such it helps mobilization of surplus resources to the State.

5 Continuing inflationary pressure on prices for most of the commodities during the Plan period, all over India and particularly in West Bengal, has been eroding the basis for planning of real resources Inflation tends to accentuate inequality in distribution of income and affects the poorer strata of the population adversely. Monetary policy has only a limited role in curbing inflation in an economy like that of India It would be necessary for the State to intervene in a direct way.

6. It is suggested that the State enter the market for commodities that may be considered crucial for influencing the price mechanism. The State's role should preferably be to act as open market operator in respect of such goods, intervening in the market with bulk supply in a manner conducive to price stability. This would protect the poorer section of the population against the prospect of fall in real income and at the same time enable the State to mobilize a share of the trading surplus as revenue.

7. The State's entry in marketing activity will not only help curb speculative activity of the unscrupulous traders in the countryside, it will also be forcing the mahajani capital to seek more productive channels to the extent it is displaced from their current activity.

8. At present a number of agencies are functioning in West Bengal to provide the services to the cultivators in various ways. The Fertilizer Corporation of India supplies fertilizers. The Agro-Industries Corporation have been providing the supply of fertilizers, insecticides and high-yielding seeds to the farmers. A number of Marketing Societies organized by the Cooperation Department of the Government of West Bengal have been functioning at block levels.

9 The Jute Corporation of India and the Food Corporation of India are already in the field of procurement and trading in the respective commodities.

10. The state marketing agency should take advantage of the existing agencies in pursuance of its policy to the extent feasible. It has, however, been found that the coverage of the existing agencies is not adequate to the requirements we have in view. It is necessary to set up a separate state marketing agency which should be entrusted with the organisation of the control of wholesale trade in such commodities as the State may determine as its objective. In the present stage, the agency can start with its activities at a low-level without incurring heavy expenditure on account of the overheads The marketing agency has, however, to take full responsibility for the marketing of the produce in the comprehensive area development projects. It has already been explained that the State will invest large volume of resources in the form of fertilizer, mechanical equipment, power, etc. under this programme. It is expected that the turnover of the crops in trade for these areas will be double as compared to what it is at the moment. Unless there is a state marketing agency to take care of the marketing of the produce in these areas, the enormous amount of profit that is expected, would go to augment the resources in the private sector It will deprive, under such circumstances, the state of the leverage it can gain in the matter of stablization of prices as also mobilization of resources It is, therefore, urged that the state should initiate marketing agency at least in the comprehensive area development project areas to begin with. It is evident that concerted action will be necessary in these areas by the various state agencies operating in the agricultural sector Coordination between Nationalized Bank, the Fertilizer Corporation of India, the Food Corporation of India, the Cooperative, Agro-Industries Corporation and the proposed marketing agency is essential.

11. The State may also consider intervening through marketing operation in such areas as jute, cotton, etc. where speculative prices are already affecting the development of the economy. Amongst the facilities that the State would need to pursue its marketing policy effectively are a network of ware-houses supported by a fleet of transport vehicles.

12. The transport fleet engaged in the turnover of goods may in itself be found a profitable proposition as a State enterprise. There is no reason to confuse its economics with that of urban passenger transport system where considerations for infrastructure plays a large part in the objective.

CHAPTER XIII

THE REQUIRED SIZE OF THE FIFTH PLAN FOR WEST BENGAL

The size of the Fifth Plan for the State, as worked out here may appear to be too ambitious to be realistic. It may be said that compared to the State Fourth Plan of only Rs. 322 crores, the Fifth Plan size may not be realistic. Some explanation is necessary on this point.

2. Firstly, the proposed size of the Fifth Plan is based on requirements of the State. It has not been checked against available resources at present. Hence, the size of the plan is not comparable with that of the Fourth Plan which denotes actual resource (not need) that has been or is being made available.

3. Secondly, the proposed plan size includes, unlike that of Fourth Plan outlay of Rs. 322 crores, State outlay, Central outlay, non-plan development expenditure, etc Thus, it has been estimated that the total Central and State expenditure in West Bengal during the Fourth Plan will be about Rs 1,200 crores excluding evacuee relief operation for Bangladesh. Therefore, the comparable figure for the Fourth Plan is not Rs. 322 crores but Rs. 1,200 crores or above. Thirdly, it has been proposed that the Fifth Plan outlay will be *at least* double that of the Fourth Plan in the public sector. Even, on this basis, the Fifth Plan outlay should have been of the order of Rs. 2,400 crores or above. This figure also falls far below the requirements of the State. Fourthly, it must be remembered that the outlay of only Rs. 322 crores in the State Fourth Plan was the culmination of a decade of neglect. This may be clear from the table below : –

TABLE

	State Plan Outlay (Rs. crores)				
	West Bengal	Maharashtra	Total of all State Plan	West Bengal as % of Maharashtra	West Bengal as % of All States
First Plan	154	125	1,426	123.20	10.80
	(14.05)	(6.01)	(8.23)		
Second Plan	156	214	2,084	72.90	7.49
	(14.23)	(10.29)	(12.02)		
Third Plan	300	434	4,165	69.12	7.20
	(27.37)	(20.87)	(24.03)		
Annual Plan	164	409	3,052	40.10	5.37
	(14.96)	(19.66)	(17.61)		
Fourth Plan	322	898	6,606		
	(29.38)	(43.17)	(38.11)	35.86	4.87
Total :	1.096	2,080	17,333	52.69	6.32

4. If the size of the West Bengal Fourth Plan could grow at the rate actually achieved by Maharashtra, it would have been of the order of Rs 1,106 crores instead of Rs. 322 crores. Remembering further that average direct Central Plan expenditure is roughly 1.5 times the State outlay the total expenditure in West Bengal during the Fourth Plan should have been of the order of Rs. 2,700 crores. A doubling of this sum for the Fifth Plan would have far exceeded the sum proposed in this document.

5. Fifthly, as a result of long neglect of this State, it is now faced with a situation which is very different from that of the rest of the country. For other States the task is to accelerate the rate of growth and achievement of equity. But for West Bengal, the problem is to arrest the existing downward trend and then to put the State on the path of growth with equity. Such a situation needs higher proportion of investment than what may be warranted merely by the size of her population.

6. Lastly, a substantial part of the investment proposed here will be directly productive and will, therefore, initiate a self-generating process of growth. This will allow mobilisation of resources for further plan investment. This is, perhaps, the most important feature of the type of investments proposed in the Fifth Plan for West Bengal.

7. Considering the points mentioned above, it can certainly be said that the proposed size of the Fifth Plan for the State, though based on requirements alone, is not unrealistic.

8. West Bengal has not handled this big sized plan in the past. Hence, for obtaining optimal co-ordination and efficiency, the implementing organisations and agencies will be required to be strengthened. As coordination between the sectoral plans has been conceived as a function of maintenance of resource balance, advanced project designing and programming thereof will be the sine qua non of the successful implementation of the plan. A charge at the rate of 2% over the total public outlay to meet such expenses is considered essential. As the envisaged outlay (public sector) comes to Rs 3179 crores, the charge on this account comes to Rs. 61 crores only. The total public outlay becomes Rs. 3240 crores only.

9. In the table next page, broad sectoral break up of the proposed investment, further sub-divided by the type of the programme on the one hand, and the source of the finance on the other, has been presented. The source of finance from the public sector, (the State and the Centre) has been worked out together under the head "Public Sector" particularly because the award of the Sixth Finance Commission is still awaited. But it can certainly be stated that the State will have to make vigorous efforts during the Fifth Plan to mobilize internal resources.

10. The total public outlay will be of the order of Rs. 3240 crores. In addition, there will be investment from private sector to the tune of Rs. 1458 crores less the amount Rs. 100 crores provided to IDC etc. Thus the overall investment for the Fifth Five-Year Plan will be as follows :

(*i*) Public outlay	...	Rs 3240	crores
(*ii*) Private investment	...	Rs. 1358	„
Total :	...	Rs. 4598	„
Say,	..	Rs. 4600	„

Rs. Crores.

	Sector	Minimum needs programme	Employment	Growth	Total	Public	Private	Total
1	Agriculture	—	70	745	815	420	395	815
2.	Irrigation & Flood Control	271	—	81	352	352	—	352
3.	Industry & Minerals	4	92	1505	1601	538	1063	1601
4.	Power & Rural Electrification	200	—	440	640	640	-	640
5.	Transport	234	- -	45	279	279	—	279
6.	Urban & Regional Development (including Panchayat & Tourism)	15	- -	285	300	300	- -	300
7.	Rural Housing	115	- -		115	115	- -	115
8.	Health & Family Planning	217	—	15	232	232	- -	232
9.	Social Welfare	12	-	—	42	42	-	42
10.	Education	218	—	40	258	258	—	258
11.	Labour	3			3	23		3
	Total : ..	1319	162	3156	4637	3179	1458	4637
12.	Strengthening of implementing agencies at 2% of the total public outlay	-		61	61	61	-	61
	Total : ..	1319	162	3217	4698	3240	1458	4698 —100*
							GRAND TOTAL :	4598
							Say : Rs. 4600 crores	

* Investment in I. D. C. etc.

CHAPTER XIV

AN APPROACH TO THE PERSPECTIVE PLAN

1 In our approach to the Fifth Five Year Plan we have suggested certain complex of policies and programmes. Most of these have long term implications. Some of these policies and programmes cannot be fully implemented within a five year period : there are others whose impact even if implemented now can be manifested only after five to ten years. In addition, there are certain programmes which if we want to implement, say, 10 years hence, may have to be initiated immediately. Because of these inter-temporal linkages between the operational plans for one or five years and longer term plans, it is necessary to have a perspective plan enunciating broad targets and policies covering a period of fifteen or more years.

2. The most fundamental of our planning targets is, of course, growth of income with equity. The way this growth of total income occurs, along with the direct policy on income distribution, will determine, in conjunction with growth of population, the level of per capita earning of the different income, groups. The already achieved growth rates of income in West Bengal during the past plans may be seen from the table below :—

Growth of State Income at 1951-52 *prices, West Bengal,* 1951-52 to 1970-71

(Rs. crores)

Period	Economic Sector			
	Agriculture etc.	Mining and mfg	Others (current price)	Total Income
1951-52	288.31	154.77	288.19	731.27
1956-57	330.91	198.21	369.09	898.21
1961-62	417.39	275.18	406.78	1099.35
1964-65	473.09	376.54	472.95	1322.58
1966-67	398.25	366.50	519.48	1294.24
1969-70	443.42	347.24	589.81	1579.47
1970-71*	474.29	348.54	666.56	1489.39
Growth rates per annum (comp.)				
1951-52 to 1956-57	2.8	5.1	5.1	4.2
1956-57 to 1961-62	4.8	6.8	2.0	4.1
1961-62 to 1966-67	—2.0	5.9	5.0	3.2
1966-67 to 1969-70	3.7	—1.8	4.3	2.4
1951-52 to 1964-65	3.9	7.1	3.9	4.7

* At 1960-61 price

It may be clear from the Table that the real income of the State went up continuously during the period 1951-52 to 1964-65. In 1965-66 the recession started and the economy has not yet fully recovered from its impact. In the prerecession period, despite all the bottlenecks, real income did grow at a rate of 3.9 per cent per annum in agriculture and 7.1 per cent per annum in mining and industry This was a period when the new technology in agriculture had not yet appeared on the scene This was also a period of increasing investment in heavy industry (Durgapur complex was still in its gestation

period) and of gradually increasing idle capacity, the tolerance limit of which was, as it were, surpassed in 1965 to usher in the recession. This was also a period when the question of utilising the huge potential of human energy was not as sharply in focus as it is today.

3. It is in this background that it has been visualised that a substantial investment will have to be made during the Fifth Plan to revive the sagging economy of the State and put it on the firm path of growth and equity so that the per capita income may be doubled before 1988-89.

4 The achievement of this relatively higher growth rate and equity will evidently require a higher level of savings and what is more important, their mobilisation for investment in the socially desirable sectors and locations. During the Fourth Plan, total public sector investment, excluding those on evacuees from Bangladesh in West Bengal is expected to be of the order of Rs 1,200 crores. The Fourth Plan visualised that private sector investment would be of the order of 70 per cent of public investment. Thus, expected private sector investment during the Fourth Plan in West Bengal would be of the order of Rs. 840 crores, bringing the total investment up to Rs. 2,040 crores. It has been visualised by the Planning Commission that the Fifth Plan investment should be double the size of the Fourth Plan. On that count an investment of the order of Rs. 4,080 crores should be made in West Bengal during the Fifth Plan. However, it is suspected that private sector investment in the Fourth Plan not only did not occur as per expectation, but there has been actual net capital transfer from this State to other States during the period 1966-67 to 1971-72 This has been one of the main reasons for the stagnation-cum-decay in the State economy during the last five to seven years. To put this economy on a sound footing, therefore, this process has to be reversed and there would be need for substantial net capital transfer from other States to West Bengal in the initial period of the Fifth Plan. To minimise this need of capital transfer, however, maximum effort will have to be made to increase the internal rate of savings. A savings rate of 18 per cent would mean a total savings of Rs 2,800 crores at the income level visualised for the Fifth Plan. A capital transfer of Rs 1,200 crores can make the plan attain the size of Rs 4,000 crores. It may be stated that the proposed capital transfer will constitute only 2.2 per cent of total investment of Rs. 54,400 crores visualised for India as a whole during the Fifth Plan (composed of Rs. 32,000 in public sector and 70 per cent of it—following the Fourth Plan proportion or Rs. 22,400 crores in the private sector). It may be stressed again that the relatively high investment requirement in West Bengal necessitating some capital transfer stems from the imperative necessity to repair the thoroughly damaged economy and restore it to a sound footing so that the State may stand on its own legs during the subsequent plans. It is visualised that the average rate of saving during the next ten years (1978-79 to 1988-89) will be of the order of 23 per cent and it will be sufficient to sustain the visualised rate of growth of income at the rate of 7.4 per cent per annum (compound.)

5. In this connection, it may be mentioned that in the census sector industry which employs only about one-third of the total employed in the manufacturing sector in West Bengal, there was new investment in productive capital of the order of Rs. 140 crores per annum during the period 1959-1965 denoting a rate of growth of investment of more than 21 per cent per annum (compound). At today's price level, the money value of that investment would certainly be at least Rs. 250 crores per annum or Rs. 1,250 crores for a five year period Despite substantial idle capacity, the income from that sector did grow at that period at a rate of 11.7 per cent per annum. This was achieved with a growth of output at a rate of 14.9 per cent per annum. With the type of economy being visualised for the Fifth Plan onwards, it may not be unrealistic to plan for an investment of the order of Rs. 300 crores per annum during the Fifth Plan for the whole of the manufacturing industry and growth rate of 12 per cent per annum in value added, which will have to be maintained for the subsequent ten years. In the agricultural sector, it is expected that the new technology coupled with institutional and structural changes visualised will grow at a rate of 10 per cent. Due to much higher input context, however, the growth rate of income will be about 6 per cent for the whole period 1973-74 to 1988-89.

6. The implication of the above growth rates in terms of total income has been presented at the end of this para. It may be mentioned that the data on income presented in the previous table was in terms of 1951-52 price for the primary and the secondary sectors. Due to price rise and that too at a different rate for the different groups of commodities, income at current price is very different from what may appear from the previous table. This may be clear from the table below :—

Income from different sectors for the year 1970-71, *West Bengal.*

(Rs. crores)

Price Level	Agriculture etc.	Mining and Manufacturing	Others (current prices)*	Total
1. At 1960-61 price	474.29	348.54	666.56	1489.39
2. At current price	1,119.21	470.36	710.21	2301.78
% Increase	135.98%	34.95%	6.85%	54.55%

* Excluding some minor items.

It may be clear from the table above that during the ten years 1960-61 and 1970-71, agricultural price level has increased by more than twice and mining and manufacturing by little more than one-third. It would be desirable to estimate the levels of income at the end of the coming three plans (following the assumptions made earlier) in terms of 1970-71 prices. Assuming that the base line for the Fifth Plan, i.e. the income level at the end of 1973-74 will be approximately 10 per cent higher than that reached in 1970-71, the sum involved in round figure would be Rs. 2,500 crores. With this base line, the future incomes have been estimated as follows :—

Estimated income level of West Bengal at the base line for the Fifth Plan and those at the end of Fifth, Sixth and Seventh Plan (1970-71 *prices*)

(Rs. crores)

Sector/Year	1973-74	1978-79	1983-84	1988-89
1. Agriculture, etc.	1250	1670	2240	3000
2. Mining and manufacturing	500	880	1550	2730
3. Others	750	960	1220	1560
Total :	2500	3510	5010	7290

7. It is visualised that the income level at 1970-71 prices will be double in ten years, 1973-74 to 1983-84. We shall see below that it implies doubling the per capita income in about 12 years, 1973-74 to 1985-86. The growth in the per capita income has been calculated on the basis of annual average decrease in the population growth at the rate of 0.1 per cent from the base of 2.5 per cent furing 1971-73. This means that growth rate in 1978-79 will be 1.9 per cent that in 1983-84 will be 1.4 per cent and so on, reaching a stable population size of 61.4 million by the year 1998. This is the assumption implied in the

Five Year Plan for India. On this basis, the targets for population figure and per capita income for the respective years in West Bengal will be as follows :—

Year		1971 (actual)	1973-74	1978-79	1983-84	1988-89
Population size (in million)		44.5	46.7	51.8	56.1	59.2
Per capita Income	Rs.	524	535	678	898	1231

8 It is necessary in this context to have an idea of the level of poverty in this State and how many of the people may be considered to be below the poverty line. At 1960-61 prices, a per capita consumption of Rs. 20/- per month is deemed a minimum desirable consumption standard. At today's price level, this figure is more than Rs. 40/-. Thus, at todays price, a per capita consumption of Rs. 480 per year may be considered as the dividing line separating out the poor from amongst others.

9. The Fourth Plan estimated that in 1973-74, 79 per cent of national income would be used for private consumption and that this share would come down to 74 per cent in 1980-81. We also know from the NSS (22nd round) July 1967 to June 1968, the share of different fractile group of population in this total consumption expenditure. Assuming for the time being that this pattern of consumption would exist not only in 1973-74 but also in 1988-89 and that the share of consumption to national income would come down from 79 per cent in 1973-74, to 75 per cent in 1978-79 and from 72 per cent in 1983-84 to 70 per cent in 1988-89, the picture of per capita consumption at the beginning and end of the three plan periods at the respective income levels of the State, discussed earlier, would be as follows .—

Per Capita consumption from the lowest to the highest consumption Groups of Population on the Basis of Existing Pattern of Consumption 1973-74 *to* 1988-89, *West Bengal*

Population Groups in Percentage starting from the bottom 5%	(1970-71 Price) Per Capita Consumption in Rupees			
	1973-74	1978-79	1983-84	1988-89
0 — 5% of Population	112.50	135.18	171.04	229.29
5 — 10% ,,	157.32	189.05	239.19	320.66
10 — 20% ,,	198.34	238.35	301.56	404.79
20 — 30% ,,	243.60	292.73	370.36	496.45
30 — 40% ,,	288.00	346.09	437.87	586.95
40 — 50% ,,	334.52	401.99	508.60	681.76
50 — 60% ,,	386.11	463.99	587.04	786.91
60 — 70% ,,	448.28	538.70	681.56	913.61
70 — 80% ,,	529.48	636.27	805.01	1079.10
80 — 90% ,,	654.66	786.70	995.34	1334.21
90 — 95% ,,	823.83	989.98	1252.55	1679.16
95 — 100% ,,	1198.53	1440.25	1822.25	2442.89
Average Per Capita Consumption. Rs.	422.91	508.20	642.99	861.99

10. It may be seen from the table above that in West Bengal the average consumption level for the State in 1973-74 will be only Rs. 423 per annum and as such the State as a whole may be said to be now below the poverty line. Even those people who belong to the 60-70% level starting from the bottom, would have an income in 1973-74 of less than Rs 445/- per annum which is below the poverty line of Rs. 480 per annum. This means that the consumption level of 70% of West Bengal population would below the poverty line in 1973-74, and only about 30% might be considered as not poor'. The per capita per day consumption of poorest 5% will be only 31 paise. This staggering outlook will have to be changed decisively during the next 15 years. This is the core of the target for the perspective plan.

It may further be seen from the table above that if the present pattern of distribution continues then, even after 17 years i.e. in 1988-89, nearly 30 of the people will still be below the poverty line. Even this assumption is based on a relatively high income growth rate of 7.4 per annum and a drastic reduction in population growth rate from 2.5 in 1973-74 to only 0.9% in 1988-89. If the income does not grow at this rate and sticks to, say, 4.7% per annum, and the population growth rate remains at the level of 2.5%, and the share of private consumption to total income becomes 75% then more than 50% of the people will be below the poverty line even in 1988-89. This is the type of perspectvie that awaits us even if the performance rate of the pre-recession days can be replicated during the next 17 years. That is why we are emphasing the need for a higher growth rate of income, lower growth rate of population, and a positive redisitributive income policy which can eliminate poverty before the end of next 15 year period.

11 The higher growth rate visulised is conditional upon utilising the productive potential of all the people including those who are poor today. This will be done by providing them with all the means for increasing production as, for example, is proposed to be done through CADP, and also with an adequate return from the fruits of higher productivity. Unless all the poor and small farmers owning below 2 hectares—particularly those owning below 1 hectare are provided with all the modern inputs at a preferential rate ; unless the rural and small industrial units –particularly those with a present capital base of below Rs. 5,000 (which today account for nearly 12 lakh workers or 60% of the total in the manufacturing industry) are modernised leading to substantial increase in their productivity ; unless the agricultural labourers who constitute nearly 50% of the total number of peasants are provided with work round the year at a higher wage ; unless all other wage earners are ensured a better share of the increase in productivity making possible their willing participation in the production process ; unless all these can be achieved, there can neither be increased tempo of production nor can there be elimination of poverty in the state. The strategy, therefore, should not be basically centred round giving incentive to the rich to become richer, so that the average level of income grows, and then hopefully, take a part of the riches away through taxation etc. and distribute it to the poor for achieving equity. The real strategy should be basically centred round removing the constraints thereby enabling the poor to produce more and to claim a better share of the produce, so that the production process itself leads to the removal of poverty. Thus, the steps required to raise the poor above the poverty line are precisely those which are required to accelarate our rate of growth of income. This, therefore, is the central core of our strategy for eliminating poverty within the period 1973-74 to 1988-89. Every year we must move decisively towards this target. The changes in the structure of the present socio-economic formation, in its legal frame work, in the pattern of organisation of work etc. are the necessary tools to achieve that possibility in real life.

12 Apart from the task of mobilising the investible resources, the most important problem will be organising the implementation of the programme. This is particularly so because the organisational task involves changing the present pattern of socio-economic structure. By far the most important tool for fulfilling this organisational task, (which also includes the task of mobilising and channelising the savings in the socially desirable direction), is properly oriented organisation of the people, particularly of those who will benefit substantially from the socialist transformation. One of the most essential component of the growth strategy would centre round the task of eliminating the evil

trinity of rack-renting, usury, and speculative trading and also monopoly, and substituting them in the rural areas by a small and middle peasant economy in such a way that rather than getting transformed into capitalist economy, it may get transformed into socialist economy. In the urban industrial economy, the dominating influence of the monopolists will have to be eliminated and the productive force under their control will have to be fully utilised in the interest of the society as a whole In all the previous plans we have talked about this socialist transformation mainly for achieving equity. The task to-day is to take decisive steps towards this socialist transformation, not only to achieve equity but also to revitalise the economy and to achieve the maximum possible growth that the technology may allow. We have discussed in the relevant sections how and why only this transformation may lay the most sound basis for a steady growth a at high rate. Achieving a socialist economy on the basis of a strong movement of the organised people and aided by a government which wants to achieve socialism is, therefore, the basic perspective for the coming 15-17 years It is the combination of such organised people and a committed Government that can break the lethargy, corruption and inefficiency in the administration, and lay the foundation of a new type of society and a new type of Government structure and administration centered round Panchayati Raj.

13. It may further be clear that this is a strategy based not only on integration of growth with equity, but also on integrated simultaneous development of agriculture and industry of both rural and urban areas. Just like inter-personal equity, inter-spatial equity or relatively more balanced regional development or development of backward areas etc. will be an integral part of the process of development itself. The fundamental dichotomy in spatial disparity in development is that between rural areas and the metropolis. This is a dichotomy which is not only keeping the rural areas poor but is also making this rural poverty pull down the prosperity of the urban areas and of the metropolis. A backward agriculture with low and erratic productivity cannot sustain the prosperity of the metropolis. Growing need for food and raw material, and market for urban industries can be supported only by modernising agriculture. This agricultural modernisation will be dependent on huge supply of urban industrial inputs, and hence on rapid growth of diversified industry. In effect, therefore, rural agricultural development and urban industrial development become the complementary aspects of the same growth process. Again, the agricultural areas being generally in the backward areas, this complementary type of development will lead to elimination of regional disparity. An obvious corollary of this strategy will be identification and use of all the natural resources in the respective regions through intra-regional and inter-regional development plans.

14 An essential part of these regional development plans will be to 'renovate' the existing urban centres and to establish a large number of new centres capable of sustaining and carrying forward the task of agricultural and rural modernisation. The process of modernisation itself will need innumerable local services and industries and appropriate urban industrial servicing-cum-market centres. The extent of modernisation per unit area (say, per square km.) will determine the volume of demand for goods and services. Hence, the number of urban centres required per unit area will depend ultimately on the extent of modernisation. Thus, for example, if 100 villages each with only 20% modernisation can sustain one urban centre, then only 20 villages with 100% modernisation can also sustain one urban centre. It follows, therefore, that the distance of the service centres from the respective service zones will vary inversely as the degree of modernisation of each village. It, therefore, follows that a cluster of villages, say with 20% modernisation, will have to depend on a service centre at a relatively longer distance than what would happen with complete modernisation. This longer distance, in its turn, will mean inefficient and delayed servicing resulting in slowing down of the process of modernisation.

15. It is in this context of complete modernisation, that the need of urban service centres at the lowest level within 5 km of each village has been considered essential. This will mean establishment of one centre per 75 square km. (i.e per 30 square miles approximately) covering 30 villages with a population

of about 27,000 and leading to a total of about 1,100 such centres evenly distributed throughout the State. With this wide base, we may have a hierarchy of urban centres on whose top will lie the Calcutta Metropolis. The implication of this perspective may be clear from the fact that in 1971 there were only 226 towns in the State including the non-municipal towns, and the only two urban conglomeration areas, viz., CMD and Durgapur claimed nearly 95% of total urban population.

16. Designing the location of those towns/service centres and planning the appropriate land use for those centres are two of the biggest tasks in the sphere of urban land use planning for the coming two decades. To this will be added the task of restructuring the land use of the existing cities and towns.

17. Again, the type of development visualised is inseparable from an education policy which will on the one hand make available appropriate kind of education of a given minimum level to all, and on the other, produce sufficient number of skilled technicians and experts capable of tackling successfully all our developmental problems

18. Following the development strategy discussed above, it will be possible to reach the following planning targets:

(a) Unemployment and underemployment will be totally eliminated during the period 1984-85 to 1988-89.

(b) Total State income will be doubled by 1983-84, and average per capita income will be doubled before 1988-89.

(c) A minimum per capita income of Rs. 480 at 1970-71 prices will accrue to the lowest income bracket by 1988-89.

(d) It will be possible to create such a hierarchy of urban servicing and industrial centres that the lowest in the hierarchy will be within 5 km of any village.

(e) It will be possible to provide for universal primary education by 1978-79.

(f) Sufficient numbers of health centres will be organised so that each of them will serve a cluster of 10,000 population (i.e. one for a group of 10-15 villages) by 1978-79.

(g) An orderly and efficient physical layout for all the new centres will be provided and the existing centres will be properly planned.

(h) Power will be available in all the villages before 1983-84.

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