Chapter I
INTRODUCTION

Planning in a mixed economy involves target fixing according to the requirements of an internally consistent programme of economic development. Investment decisions - particularly in economic units - follow target fixing. Policy measures have a major role to play: the fiscal and monetary policies are used both directionally and correctionally.

In those countries where the governments intervene directly and through the institution of public sector, public sector units may coexist along with private enterprise. In the socialist countries there is a continuous enlargement of the share of public sector in total entrepreneurial economy. Public enterprise is directed to following fields of activity in a market economy.¹

(i) Goods and services which are very essential for the entire population or for socially weak strata of population or for basic and strategic sectors of the entire economy;

(ii) Where private enterprise is not forthcoming due to long gestation period and huge capital requirements;

(iii) Where there is a long way for monopoly either because of natural or legal reasons (e.g. Power Transport, etc.);

(iv) Public enterprises should also be operated where competition prevails, but that competition threatens to be paralysed in consequence of oligopolistic practices in the form of uniform price policy, for instance, on account of price leadership. It is claimed that in such cases the public enterprise should safeguard the public interest by intensifying price competition;

(v) Public enterprise is necessary as an instrument of public policy.

Concept of Public Sector Enterprise:

Public sector enterprise has assumed great importance in recent years. It is a broad term used to describe a variety of State activities. Today there are very few countries where the Government is not engaged actively and directly in the setting up, and management, of economic and industrial enterprises. Public enterprise may be defined as the industrial, financial, commercial and agricultural undertakings owned and operated by the State or any other
public authority e.g. Board, Trust, Corporation, etc., on behalf of the public. For the purpose of this study, however, though public enterprise might be broadly interpreted to include the entire range of Government activities, it is mainly limited to economic activities, commercial in nature, whose products or services are sold in the market. Taken in this sense, the expression is analogous to 'private enterprise', and distinguishes the operation of postal services, transportations, electricity supply, and the like from activities financed out of general taxation such as education, police and national defence.¹ Thus public sector enterprise is an organisation which is engaged in production of economic goods for sale in exchange of some direct payment, and is separate from the general administration and is constituted as an independent economic unit. The decisive point is that it is constituted as a permanent establishment and as such it must be operated in such a manner that on the one hand its output capacity is maintained and adapted to demand and that on the other hand it can always preserve financial equilibrium.²


Broadly speaking we can differentiate three alternative developmental patterns from the point of view of public enterprise such as those (i) with reference to communist countries, (ii) with reference to capitalist countries and (iii) with reference to countries with mixed economy.

Briefly, in communist countries like the U.S.S.R., Poland, Yugoslavia, China - there is virtually no private sector. The entire apparatus of production and distribution is under State ownership, management and control. Private sector plays a very limited and temporary role in economic development during the 'transition to socialism', and because socialism cannot be introduced overnight, the private enterprise may offer the most practicable method of raising certain sectors of the economy to a level where they become ripe for socialisation.¹

In U.S.A., known to be a capitalist country, the private sector accounts for a large segment of the national economy. The Government enters mainly in some areas as water supply, transport, generation and distribution of electricity and gas, port and airport facilities, distribution of alcholic beverages.² Here public


sector plays a marginal role and public enterprises mostly consist of public utilities where public welfare is the prime consideration.

In countries like U.K., France, Sweeden, Turkey, India, Pakistan, - the mixed economies in a broad sense - both the private and the public sectors are growing side by side. They are complementary as well as competitive. Public sector investment in social overhead or infra-structure such as transport and communications, irrigation system, power generation and distribution, land reclamation, etc., may create private investment opportunities which were not there before. The role assigned to such public sector investment is complementary. Public sector investment should also be made where competition prevails, but because of restrictive trade practices of private sector enterprises the competition is threatened to be paralysed. Here they become competitive. It is claimed that in such cases the public enterprise should safeguard the public interest by intensifying competition. Japan has something different to say. There the Government took initiative in the early stages. And as the private enterprise became strong enough to bear the strain, it gradually withdrew from direct parti-
ception in one field after another. Thus in the beginning it played a role of initiator and later on a role of sustainer.

Public Sector in India:

The evolution of the public sector in India since Independence has been largely due to the Industrial Policy Resolution of 1948. This Resolution emphasised the responsibility of the Government in the matter of promoting, assisting, regulating and developing industry in the national

\[1\] Ibid.


\[2\] We are not concerned at this point with details of the myriad issues raised in connection with public sector and public sector enterprises in these countries. For one thing, the literature on this is abounding and much of the descriptive part is now part of the curricular studies in universities.
interest. It has therefore vested in the State a larger role in the economic development of the country. The 1948 Resolution was subsequently reviewed on adopting the 'socialist pattern of society' as the national objective and a new Industrial Policy Resolution was passed by Parliament in 1956. The 1956 Resolution sets out the need for expanding the public sector with the objective of accelerating the rate of economic growth and to speed up industrialisation. The public sector has not only to initiate developments which the private sector is either unwilling or unable to undertake; it has to play the dominant role in shaping the entire pattern of investments in the economy, whether it makes the investments directly or whether these are made by the private sector. The private sector has to play its part within the framework of the comprehensive plan accepted by the community.

Industrial Policy Resolution, 1956, has classified industries into three broad categories in view of the part which the State would play in each of them. In the first category (Schedule A) are industries the future development of which will be the exclusive responsibility of the State. The second category (Schedule B) consists of industries, which are progressively State-owned and in which the State will therefore generally take the initiative in establishing
new undertakings, but in which private enterprise is also expected to supplement the effort of the State. The third category (Schedule C) includes all the remaining industries, and their development is, in general, left to the initiative and enterprise of the private sector. However the above division of industries into separate categories is not rigid and flexibility can be introduced to it if the needs of planning so required or there are other important reasons for it. Thus the Resolution has clearly demarcated the

---

1 Second Five Year Plan, Planning Commission, Government of India, 1956, pp.45-49.

2 Following the recommendations of the Dutt Committee (Industrial Licensing Policy Enquiry Committee) the Government announced the New Industrial Policy in February, 1970. The industries are divided into four sectors: core sector, investment sector, middle sector and small scale sector. Basic, strategic and critical industries are listed in core sector. New investment above Rs.5 crores shall be placed in the heavy investment sector. Investments ranging from Re.1 crore to Rs.5 crores shall be deemed to be in the middle sector. Whereas small scale sector shall be consisting of investment less than Re. 1 crore. According to the New Industrial Policy the private sector can also enter into the core sector as well as heavy investment sector except for the industries reserved for the public sector under the Industrial Policy Resolution, 1956, Schedule A.
place of public sector enterprise in the total investment activities in the country.

Another important economic objective of public sector enterprises in India is their contribution to State revenue and thereby increasing public savings for investment for further development.

Adoption of the 'socialist pattern of society' asks for a significant place for the public sector. But at the same time the Resolution has also provided a place for private sector. Thus, what is envisaged is a mixed economy where both the public sector and the private sector have been assigned large areas to develop and expand. Since then more and more resources are directed to public sector investments in the Plans and as a result public sector has considerably grown during last twenty-five years. Table I.1 shows the remarkable growth of public sector in India. Government's present policy is towards maintaining the growth trend.
Table I.1: Growth of the Public Sector Investment in India.

<table>
<thead>
<tr>
<th>Year of Plan</th>
<th>Public Sector (Rs. in crores)</th>
<th>Private Sector (Rs. in crores)</th>
<th>Total (Rs. in crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Plan, 1951-56</td>
<td>1560 (46.43)</td>
<td>1800 (53.57)</td>
<td>3360 (100.00)</td>
</tr>
<tr>
<td>Second Plan, 1956-61</td>
<td>3650 (54.07)</td>
<td>3100 (45.93)</td>
<td>6750 (100.00)</td>
</tr>
<tr>
<td>Third Plan, 1961-66</td>
<td>6300 (60.58)</td>
<td>4100 (39.42)</td>
<td>10400 (100.00)</td>
</tr>
<tr>
<td>Fourth Plan, 1969-74</td>
<td>13655 (60.33)</td>
<td>8980 (39.67)</td>
<td>22635 (100.00)</td>
</tr>
<tr>
<td>Fifth Plan, 1974-79</td>
<td>31400 (66.02)</td>
<td>16161 (33.98)</td>
<td>47561 (100.00)</td>
</tr>
</tbody>
</table>

Note: Figures in the bracket show percentage share in the total.

Source: Five Year Plans, Planning Commission, Government of India.
Performance of Public Sector Enterprises in India:

The rate at which public sector has been expanding and attaining a dominant place in the total investment activities in the economy makes evaluation of its performance a necessity. The role assigned to public sector enterprises and the expectations were specified categorically in Third Five Year Plan by the Planning authority. They are as follows:¹

(i) Development of the large public sector was considered as one of the principal means for effecting the transition towards socialism.

(ii) The Industrial Policy Resolution (1956) required the extension of public sector to basic and strategic industries, public utilities and essential ones along with those which require large scale investment with a view to achieve socialism and rapid and planned development.

(iii) The public sector units should be managed to become efficient producers capable of yielding substantial surpluses which will provide for future expansion. Increased profits would increase capital formation (accumulation).

(iv) The public sector enterprises should be conducted efficiently with a 'proper price policy' for their goods and services so as to result in large earnings and surpluses. A sound price policy should secure an adequate rate of return on capital employed; thus they should contribute their full share to increase in the portion of national resources devoted to investment.

(v) The public enterprise must assume responsibility for continuously improving its performance and for initiating and planning its growth and expansion.

(vi) The public enterprise is expected to develop into a model employer.

As against the above objectives (expectations) the Fourth Five Year Plan (Draft) observed as follows:

(i) Though investments in public sector have been large and their composition varied, the different units within the sector do not function sufficiently in concert.

(ii) While these investments have constituted significantly to the strengthening of the industrial structure, the overall performance has not been uniformly satisfactory.

---

(iii) Expectations of a significant contribution to plan resources from the internal resources of these enterprises have not been realised; on the other hand, several of them have to rely on budgetary support to meet their cash losses.

(iv) Productivity and profitability are a matter of urgent importance.

(v) There is a considerable scope for improvement in efficiency and performance.

Considering the above observations the Fourth Plan recommended that,

(a) Each public sector enterprise must set down its objectives and targets and prepare an appropriate budget covering production, sales, cost of production, capital expenditure, cash flow and profit and loss estimates. The comparison of performance data with budget estimates should be undertaken periodically during the currency of the budget itself.

(b) Questions relating to deliveries and prices when (such) inter-enterprise transactions are involved are of crucial importance. There is a need for close co-ordination between manufacturing as well as user enterprises, as it affects the formulation of detailed and long-term production programmes of (such) public enterprises.
Project Evaluation of the Public Sector Enterprise: 1

The observations made by the Fourth Five Year Plan are based on the performance of total investment in public sector enterprises. Consideration of total investment and total returns may give an idea of aggregate performance. But this may not be useful for any detailed policy formulation. It conceals much more than what it reveals. 2 Monetary returns from infra-structure investments, basic and heavy investments having long gestation period, investments having promotional and developments functions, etc., may not be justified from the point of view of profit criterion. In a developing country their proportion might be considerable in the aggregate public sector investments. As such it is quite possible that their inadequate returns may hide the adequate returns of other enterprises. Again, public sector investments do achieve more because they add to the productive resources, output and national income of the country. For instance, the profitability in other enterprises is positively influenced by public sector infra-structure investments. Thus, on both accounts, what is essential for detailed policy formulation is project evaluation of each such enterprise which should not only


2For instance there can be cross subsidization between public sector units.
throw light on the financial working of the enterprise alone but should also study the extent of its contribution to other enterprises as well as society as a whole.

The project evaluation of public sector enterprise is, therefore, a complex task. It is much more easy to evaluate the project in private sector than in public sector for the reason that private sector has but one objective namely profit maximisation while the public sector units often are saddled with multiple objectives. The profit criterion is the central driving force for private enterprise and the accounting rate of return on total assets measures the extent of its success. It is possible to use the profit criterion and to work out the accounting rate of return for public sector enterprise. But in that case the evaluation cannot be relied upon as it would be wholly inadequate. The objectives of public enterprise are not only commercial or financial, they are social too. Public sector investments are not necessarily undertaken where profitability is highest. However, in our country, public sector enterprises are expected to generate substantial surpluses. While accounting profits and the accounting rate of return are thus poor guides in themselves, they happen to be closely related to the generation of substantial surpluses.¹

Statement of the Problem:

We therefore contend,

(i) that there is a need to study the public sector units at micro-level;

(ii) that the analysis of social benefits and social costs along with the analysis of cash (transactions) flow would show the real performance of the units;

(iii) that the benefits in total exceed the costs in total in an underdeveloped country like ours;

(iv) that a detailed examination of cost and revenue structure of such unit i.e. performance study of such unit on cost and revenue accounts is necessary so as to evolve a sound pricing policy of its products and services to generate sufficient returns.

Selection of the Unit:

Keeping the above contentions in mind we are undertaking the following study not only to speculate on the possibility of conceptual framework for public sector project analysis but to empirically verify some of the basic ideas and tools and to contribute to the extension of ideas and developing tools. For this purpose we have chosen a major public sector project – the Gujarat Electricity Board (GEB) – consisting of a number of thermal
power generating and distributing schemes spread over the entire State of Gujarat spanning a period of over five decades including those which are already spent, which is nearly over a decade. The GEB is looking after the electricity supply industry in the State and responsible for public sector investment in the electricity supply industry.

In choosing GEB as a unit we had several reasons in our mind. They are as follows:

(1) It is the biggest public sector investment project in Gujarat.

(2) Its operation starts with the formation of the new State in 1960.

(3) Being the supplier of basic infra-structure (electricity power) it is endowed with a specific role to play in stimulating as well as sustaining the economic growth.

(4) Its investment projects are still being formulated.

(5) Its potential - supply and demand - still remains largely unassessed.

(6) Its performance over the past decade is a very important clue to analysis and projection.

---

1Gujarat State has 19 districts with a population over 26.7 million and a density of population of 136 per sq.km. (1971 census).
(7) Its ramifications in the economy of the State and the country are manifold.

(8) Its investment resources are completely drawn from the public.

(9) It is a commercial undertaking.

(10) It is subject to budgetary, fiscal and plan constraints imposed by the State Government, Union Government and the institutional constraints at the international level.

(11) It runs on similar pattern of conducting the business which the Electricity Boards in different States in the country follow. This may lead to a wider application of our study.

The Present Study:

Our study purports to show that:

(a) as a public sector project the evaluation could be merely in terms of project evaluation discovering a social rate of return;

(b) as it generates innumerable benefits both directly and indirectly and as it has a special role to play in the economic development, we may have to depart from the benefit-cost framework and study the impact in specific terms (viz., employment and income);
(c) though the financial analysis may seem to suggest that an exercise in terms of the internal rate of return would have pushed the project down in the ladder of priorities, the social rate of return shows the adequacy of the benefits to society at large;

(d) though in general a project is evaluated based on the estimated flows of costs and benefits, it would be worthwhile to embark upon evaluation based on the performance in the initial period of investment which provides the basis for projections on sounder lines;

(e) there are many correctives which are required in the evaluation of the project in general, but in a project whose inputs are bought in the open market the cost correctives are limited. While the benefits are spread over a vast area and many are the indirect benefits, it would be worthwhile to consider such projects as feasible;

(f) when such an analysis is pursued, it provides a model for application in similar projects. In our country, for instance, all States have their own Electricity Boards almost running on the same pattern as the Gujarat Electricity Board. Hence a wider application of a study; and lastly

(g) it has been the opinion of the expert bodies like the Finance Commissions that such major investment areas like the State Electricity Boards must work on commercial lines and become financially viable as well as profitable, for on the performance of these units - which require
enormous financial inputs - may depend the final investment policies of the State.¹ We propose to examine this aspect with reference to the GEB.

The main contribution of our thesis may, therefore, be summed up as,

(1) to throw light on the impact of a major public sector undertaking;

(2) to show the points of departure from the traditional analysis; and

¹Electricity supply industry i.e. power generation, transmission and distribution, constitutes an important public sector industry. As observed by the Finance Commission it absorbed no less than 15 per cent of the outlays on State plans in recent years. The investment in power projects as at the end of 1973-74 is estimated at well over Rs.5000 crores (i.e. Rs.50,000 million). The loans advanced by State Governments to Electricity Boards would also have risen by the end of 1973-74 to about Rs.3225 crores. Against this, it is further observed, the working results of State Electricity Boards, far from registering any improvement, have suffered further set back during the current plan period. Taking all State Electricity Boards together, while their revenue receipts would have increased from Rs.387 crores in 1969-70 to Rs.692 crores in 1973-74 reflecting the growth in generation and sale of power and revision of tariff, their net surplus, after setting out revenue expenditure and obligatory transfers to depreciation fund, would have declined from 4.2 per cent to 3.3 per cent on the capital base. (See: The Report of the Sixth Finance Commission, 1973, p.53).

The contribution expected from these State Electricity Boards during the Fifth Five Year Plan is estimated at Rs.1412 crores which is 23.58 per cent of the amount of Rs.5998 crores estimated gross surplus (depreciation provision plus retained profits) from Central as well as State enterprises. (See: The Draft Fifth Five Year Plan, 1974-79, Vol.I, Government of India, Planning Commission, p. 59).
(3) to provide an empirical frame for testing the method of project evaluation in the background of an underdeveloped economy.

Scheme of the Work:

The present work runs in terms of following nine chapters:

Chapter I presents the statement of the problems in view of performance evaluation of public sector in the planned economy of ours. The selection of unit for the study, what we purport to study, the scheme of the work, etc., are further stated here.

Chapter II discusses the theoretical framework of project evaluation especially the technique of benefit-cost analysis. This will take us to the current state of knowledge in the field and to dilate upon the main points of departure from this in our study.

Chapter III outlines the important features of Electricity Supply Industry in India as well as in Gujarat. These three chapters (I, II and III) taken together provide the essential background to the main analysis.

Chapter IV deals with the supply of and demand for electricity in Gujarat on the basis of the growth of electricity supply industry in the State. It also discusses
the capital investment and the nature of operations of the Gujarat Electricity Board, the unit (a State Government undertaking) we have selected for our study.

Chapter V and VI are devoted to the financial analysis of GEB's operations. Chapter V discusses the cost and revenue structure analysis relating to the period 1960-61 to 1971-72 and throws light on the important factors influencing them. Chapter VI shows the long-run financial performance of GEB's total investment in Thermal Power Schemes inclusive of those sanctioned in the State Fourth Five Year Plan but which remained incomplete during the plan period. The evaluation consists of 46 years of projected working analysis running between 1960-61 to 2005-06 A.D. The performance of first twelve years are projected for remaining thirty-four years so as to examine the break-even, the financial viability and the profitability as well as accumulation of net surpluses during the economic life of the total investment.

Chapters VII and VIII provide the economic evaluation of GEB's operations. Chapter VII deals with the calculation of the social rate of return relating to first twelve years performance. This would help us to determine the social or economic viability of the investment. Chapter VIII consists of the "impact analysis". Here we study the
employment as well as income impact of GEB's operations on
two major sectors of the economy, namely, industry and
agriculture. The economic analysis in these two chapters
is useful for macro-level policy considerations.

Chapter IX summarises the main findings of different
chapters and evolves in conclusion, a pattern or a model,
which may be of wider application.