SOCIAL ACCOUNTABILITY OF INDIAN PUBLIC SECTOR
—A CASE STUDY OF FERTILISER CORPORATION OF INDIA (FCI)

ABSTRACT

THESIS SUBMITTED FOR THE DEGREE OF
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BY
SYED ABDUL QUADEER

Under the supervision of
Dr. A. FAROOQ KHAN
M. Com., D. B. A., M.B.A., (Aston, Birmingham), Ph. D.

DEPARTMENT OF COMMERCE
ALIGARH MUSLIM UNIVERSITY
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The concept of Social Responsibility of business moving from the stage when it was considered that the objective of the business is to protect the interest of its owners through profit maximisation has reached now to a stage where the business is considered as 'Profession of Public Service' and Managers are the 'trustees'. The fruits of business are to be distributed proportionately among various interest groups of the society.

An evaluation of various definitions and concepts of Social Responsibility have led to the conclusion that a company is a corporate citizen like natural citizen, it has certain rights and privileges and constraints and obligations also which cannot be waived. A business enterprise is a 'cooperative effort' of different groups of the society and business has to protect the interest of these groups. Very often the terms social responsibility and social accountability are used interchangeably, in the present study also they are used in the same sense. Thus, Social Responsibility is an attitude of seeing and realising the needs of other people (i.e. groups of the society other than the owners) and the efficient utilisation of economic resources is the foremost social responsibility of a business.
The present study is related to Social Responsibility of FCI which is a public sector unit. The importance of public sector in Indian economy is clearly mentioned in the Industrial Policy Resolutions.

The Fertiliser Industry in India has capacity to produce 5923.6 thousand MTs of N fertilisers and 1773.7 thousand MTs of P fertilisers. The share of Public Sector is 62.29 per cent, Private Sector's share is 29.47 per cent, and Cooperative Sector's share is 8.24 per cent of the Fertiliser Industry's N capacity. In case of Phosphatic fertilisers, the public sector accounts for 37.07 per cent, private sector accounts for 48.27 per cent and cooperative sector accounts for 14.66 per cent of the Industry's capacity. Fertiliser production was 29.83 lakh tonnes in 1979-80 and has increased to 57.34 lakh tonnes in the year 1985-86. The consumption of fertilisers was 52.6 lakh tonnes in the year 1979-80 and has increased to 95.5 lakh tonnes in the year 1985-86.

The main objectives of the present research are to study Social Responsibility of FCI with the help of Economic Parameters and Social Parameters and to study managerial attitudes towards social accountability. As FCI is incurring losses, to probe into the causes responsible for these
losses is also an objective of the present study. Thus, the present study can be divided into two main segments on the basis of sources of data used. The primary source of data on managerial attitudes towards social accountability has been obtained with the help of a questionnaire. Whereas the secondary source of data is used to study social accountability of FCI with the help of selected parameters i.e. Economic Parameters and Social Parameters. Two economic parameters i.e. Capacity Utilisation and Profitability Ratios are used to study social responsibility of FCI. The social parameters are used to study the social responsibility of FCI towards different interest-groups of the society. For this purpose the society has been divided into four major interest-groups. They are Shareholders, Employees, Consumers and the Community. Each group has been studied individually for e.g; the social responsibility of FCI towards shareholders has been studied with the help of Return on Total Shareholders' Equity (ROTSE). Whereas, the expenditure incurred by FCI on staff benefits was a parameter to study social responsibility of FCI towards employees. The expenditure incurred on Research and Development and Promotional Activities undertaken by FCI were the parameters to study Social Responsibility of FCI towards Consumers. The number of persons employed from unprivileged categories like SC, ST, etc; have been treated as parameter to study social responsibility of FCI towards the Community.
Fertiliser Corporation of India (FCI) is a pioneer public sector fertiliser company which is continuously incurring losses since its Re-organisation in April 1978. The present study is intended to cover the period from the year 1978-79 to 1985-86. In certain cases the data and information could not be collected for the entire period of the study, and the researcher was compelled to study a lesser period also.

The Public Sector Fertiliser Industry in India has the capacity to produce 3690.1 thousand MTs of Nitrogenous (N) fertilisers and 657.6 thousand MTs of Phosphatic P$_{2}$O$_{5}$ fertilisers. The FCI's capacity is to produce 805.5 thousand MTs of N fertilisers (i.e. 21.82 per cent of the Public Sector Fertiliser Industry's capacity) and 150 thousand MTs of P$_{2}$O$_{5}$ fertilisers (i.e. 22.8 per cent of the Public Sector Fertiliser Industry's capacity). FCI has four operating units with five fertiliser producing plants, the details are:

1. Sindri Modernisation Plant (SMP)  
2. Sindri Rationalisation Plant (SRP)  
3. Jorakhpur Unit  
4. Ramagundam Unit, and  
5. Talcher Unit.
It also has a Mining Organisation at Jodhpur (Rajasthan) which extracts Gypsum and a project at Korba (Madhya Pradesh) is under consideration. The SMP is based on Low Sulphur Heavy Stock, (LSHS) and Fuel Oil, SRP is based on Rock Phosphates, Pyrites and Sulphur, Gorakhpur Unit is based on Naphtha and Ramagundam and Talcher Units use coal as feedstock.

FCI's Social Responsibility studied with the help of economic Parameters reveals that during the period under study, the maximum capacity utilisation achieved by FCI was 62.9 per cent by one of its four Units. The various factors responsible for its low capacity utilisation were equipment failure, power cut, poor quality of coal, mismatch of design, defective equipments supplied under foreign contracts, delay in completion of Annual-Turn-Around (ATA) job etc.

FCI's losses were continuously increasing during the period from 1978-79 to 1985-86 under study. The losses were Rs. 21.84 crores during 1978-79, which has increased to Rs. 127.21 crores during 1985-86. During the period under study, the share of loss incurred by Sindri Unit was highest as compared to other units of FCI with a single exception of the year 1982-83 when Talcher Unit's share of loss was highest. Whereas, the share of loss incurred
by Gorakhpur Unit was lowest as compared to other units of FCI, with an exception of 1984-85, when Ramagundam Unit's share of loss was lowest.

The Fertiliser Industry Coordination Committee (FICC) has determined Input consumption norms for each fertiliser producing unit mainly based on Technology and Feedstock used. FCI could not adhere to these consumption norms during the period from 1980-81 to 1984-85 in all its producing units. However, there was an exception with regard to Ammonia consumption during the year 1981-82 and Steam Consumption during the year 1980-81 and 1981-82 at Sindri Unit, when the actual consumption was less than FICC norm. The Units at Ramagundam and Talcher are coal-based, but the input consumption of Ramagundam Unit was less than Talcher Unit though above the FICC norms.

Among different causes of losses, the "equipment failure" was responsible for highest production loss in FCI followed by the loss due to 'Power Problems'.

Four types of profitability ratios are calculated to examine the trend of FCI's losses. The Ratios are Return on Turnover (ROT), Return on Capital Employed (ROCE), Return on Gross Block (ROGB), and Return on Assets (ROA). These ratios are in negative values representing FCI's losses.
The ROT represents the relationship between the losses (in this case) and sales of FCI. The overall increase in ROT ratio was 149.7 per cent during the year 1985-86 as compared to the year 1978-79. The ROCE ratio reflects the relationship between FCI's losses and its capital employed. The overall increase in ROCE ratio was 62.41 per cent during the year 1985-86 as compared to 1978-79. The ROGB ratio represents how net fixed assets have been utilised to earn profits (losses in this case). The overall increase in ROGB ratio was 81.25 per cent during 1935-86 as compared to the year 1978-79. The ROA ratio indicate relationship between total assets and profits earned (losses in this case). The overall increase in ROA ratio was 787.5 per cent during the year 1985-86 as compared to 1978-79.

Thus, in terms of Economic Parameters, it may be concluded that FCI has failed to discharge its social accountability, as its plant wise capacity utilisation could not exceed 65 per cent and the input consumption has been exceeding the prescribed FICC norms. The four profitability ratios calculated are in negative showing the trend of FCI's losses.

To study Social Responsibility of FCI with the help of Social parameters, the Society has been divided into four major interest groups i.e. Shareholders,
Employees, Consumers and Community. FCI's Social Responsibility towards Shareholders has been studied with the help of Return on Total Shareholders' Equity. The ROTSE figures are in negative because FCI has been incurring losses. There has been an increasing trend of losses as reflected by ROTSE.

The expenditure incurred by FCI on various staff benefit activities like Township, maintenance of School and Educational facilities, Medical facilities, Canteen and Social and Cultural activities has been analysed to study Social Responsibility of FCI towards Employee-group. The expenditure incurred by FCI on staff benefits shows an increasing trend, consequently expenditure on Staff Benefits per Employee also shows a rising trend. The coefficient of correlation between FCI's net losses and FCI's expenditure on Staff Benefits was +0.14. It shows low degree positive correlation. Being positive correlation it reveals that an increase in FCI's losses has been followed by an increase in FCI's expenditure on staff benefits. The coefficient of correlation between FCI's Sales Turnover and FCI's expenditure on Staff Benefits was +0.59. It shows a high degree positive correlation, because it is inclining towards the perfect positive correlation.
value i.e. +1. Being positive correlation, it indicates that an increase in Sales Turnover is followed by an increase in expenditure on staff benefits.

To study FCI's Social Accountability towards Consumers group, the expenditure incurred by FCI on Research and Development programmes and Promotional Activities have been analysed. The expenditure on R & D activities represent a haphazard rise and fall. The coefficient of correlation between FCI's Sales Turnover and R & D expenditure was -0.84. It shows high degree negative correlation, because it is inclining towards perfect negative correlation value of -1. Being negative correlation, it indicates that an increase in amount of Sales Turnover is followed by a decline in R & D expenditure in FCI.

The overall promotional activities undertaken by FCI shows a declining trend during the year 1985-86 as compared to 1984-85. The promotional activities undertaken by FCI in its Adopted District Rae Bareli, has resulted in an overall increase in fertiliser consumption of 52.14 per cent during the year 1984-85 (Kharif and Rabi) as compared to the year 1981-82 (Kharif and Rabi). The promotional activities undertaken by FCI in its Adopted District Patna, has resulted in an overall increase in fertiliser consumption of 386.89 per cent during the year 1984-85 (Kharif) as compared to the year 1981-82 (Kharif).
To study Social Responsibility of FCI towards Community, the trend of number of persons employed from unprivileged categories has been analysed. The number of persons employed from unprivileged categories shows a declining trend. The decline was to the tune of 5.23 per cent during the year 1985-86 as compared to 1984-85. Of the 13221 persons on FCI's roll of employment during 1984-85, 19.37 per cent were from unprivileged categories. During 1985-86, 12920 persons were on FCI's roll of employment of which 18.78 per cent were from unprivileged categories. Thus, the share of persons employed from unprivileged categories in the total employment of FCI also represents a declining trend.

The increasing trend of Losses as reflected by ROTSC has confirmed that FCI has failed to discharge its social accountability towards Shareholders in terms of returns. The expenditure incurred by FCI on various staff benefit activities has been increasing and accordingly the 'Staff Benefits per Employee' also shows a rising trend during the period under study. Thus, it may be concluded that FCI has discharged the social accountability towards Employee-group.

In terms of R & D expenditure, FCI has failed to discharge its social accountability towards consumers. The overall increase in fertiliser consumption in the districts of Rae Bareli and Patna shows that FCI has
discharged its social accountability towards these small segments of the consumers. In terms of employment of persons from unprivileged categories, it may be concluded that, FCI has failed to discharge its social accountability towards the community.

The Questionnaire Analysis reveals that cent per cent respondent have accepted that a company has Social Accountability. On the question as to what priority should be given to different groups towards which a company has social accountability, 35 per cent of the respondents were of the opinion that Government should be given first priority, another 35 per cent were of the opinion that customers should be given first priority. 18 per cent of the respondents were of the opinion that employees should be given first priority and 9 per cent of the respondents were of the opinion that first priority should be given to suppliers.

When FCI's middle level managers were asked to suggest parameters to measure Social Accountability of a company, "achievement of the objectives of the company" was considered as the most important parameter supported by cent per cent respondents. The second important parameter to measure social responsibility of a company as suggested by them was "Community Development Programmes" supported by 74 per cent of the respondents. On the question as to who should
monitor social responsibility of a company, 39 per cent of the respondents viewed that "Management" should monitor, whereas another 39 per cent of the respondents viewed that "Management and Government" should jointly monitor. 76 per cent of the respondents have agreed that FCI has specific budget allocation towards social accountability measures. On the question as to how much expenditure FCI would like to incur on social accountability, 87 per cent of the respondents did not respond. On the question as to what are the actions taken by FCI to discharge its social accountability, cent per cent of the respondents have enumerated the activities like, Medical facilities, Educational facilities, Canteen and Housing facilities. On the question as to which sector is discharging its social accountability more actively, 52 per cent of the respondents agreed that public and private both the sectors are discharging social accountability actively.

10 per cent of the respondents were of the opinion that discharge of social accountability was not a constraint on the profits of the company. On the question as to what are the difficulties encountered by FCI in the discharge of social accountability, the only answer was 'Limited availability of Finance', supported by 100 per cent
respondents. 83 per cent of the respondents have mentioned that FCI has written policy statement regarding social accountability measures.

In view of the various factors affecting FCI's capacity utilisation, it is suggested that experiences of other companies and even other countries may be used as guiding path. Special Incentive Schemes may be formulated to improve capacity utilisation of FCI plants. Alternate arrangements for the supply of quality feedstock may be done. The installation of the plant should be completed within stipulated time to avail the guarantee benefit offered by foreign suppliers. Moreover, the Annual Turn Around Job should be completed within specified time to avoid delay in production schedule. Intensive R & D activities should be conducted to rectify the cause of equipment failure which causes highest production loss in FCI as compared to other causes.

When we find other fertiliser producing companies in public sector also earning profits, there seems to be some sort of managerial compromises at higher levels of hierarchy in FCI. Every company has its own problems but those earning profits means they are able to overcome the problems to a larger extent. The factors like choice of new technology,
delay in installation of plants thereby expiry of guarantee period, detecting defective equipments later, continuous repairs instead of replacements, etc; in FCI are seems to be deliberately created problems of those few hands in the Ministry of Fertilisers and Chemicals and the other persons at the top of the hierarchy of FCI. For this purpose the Government should take steps to check up the decision making process of public sector companies like FCI and the task should be entrusted to more than one group of experts so that compromise within few hands for their personal interest can be avoided. But to what extent the Government can isolate itself from the clutches of the political entities and how it ties up the hands of those few hands which play with the fortunes of the masses is a matter remains to be studies in future researches.
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ALIGARH MUSLIM UNIVERSITY
ALIGARH (INDIA)
1987
November 16, 1987

CERTIFICATE

This is to certify that Ph.D. Thesis entitled "SOCIAL ACCOUNTABILITY OF INDIAN PUBLIC SECTOR - A CASE STUDY OF FERTILISER CORPORATION OF INDIA (FCI)", submitted by Mr. Syed Abdul Quadeer, has been completed under my supervision. This is his original work and it is suitable in my opinion for the award of Ph.D. degree in Commerce.

( DR. A. FAROOQ KHAN )
Supervisor

Residence: 9 TEACHERS QUARTER (Near M.M. HALL) A.M.U. ALIGARH-202001
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<tr>
<td>AN</td>
<td>Ammonium Nitrate</td>
</tr>
<tr>
<td>AP</td>
<td>Andhra Pradesh</td>
</tr>
<tr>
<td>AS</td>
<td>Ammonium Sulphate</td>
</tr>
<tr>
<td>BHEL</td>
<td>Bharat Heavy Electricals Ltd.</td>
</tr>
<tr>
<td>BPE</td>
<td>Bureau of Public Enterprises</td>
</tr>
<tr>
<td>CAN</td>
<td>Calcium Ammonium Nitrate</td>
</tr>
<tr>
<td>CBI</td>
<td>Confederation of British Industry</td>
</tr>
<tr>
<td>CEC(MS)</td>
<td>Chief Engineer, Management Services</td>
</tr>
<tr>
<td>CMD</td>
<td>Chairman and Managing Director</td>
</tr>
<tr>
<td>CMM</td>
<td>Chief Marketing Manager</td>
</tr>
<tr>
<td>COG</td>
<td>Cooke-Oven Gas</td>
</tr>
<tr>
<td>CO2</td>
<td>Carbon di Oxide</td>
</tr>
<tr>
<td>COORD.MGR</td>
<td>Coordinating Manager</td>
</tr>
<tr>
<td>COSCY</td>
<td>Company Secretary</td>
</tr>
<tr>
<td>CTMFA</td>
<td>Chief Training and Manpower Advisor</td>
</tr>
<tr>
<td>CVU</td>
<td>Chief Vigilance Officer</td>
</tr>
<tr>
<td>ECOT</td>
<td>Electronics Corporation of Tamil Nadu</td>
</tr>
<tr>
<td>EPS</td>
<td>Earning Per Share</td>
</tr>
<tr>
<td>EJ/UKA</td>
<td>Ex-Servicemen/Dependent of those killed in Action</td>
</tr>
<tr>
<td>FACT</td>
<td>Fertilisers and Chemicals Travancore</td>
</tr>
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<td>Fertiliser Association of India</td>
<td></td>
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<tr>
<td>Fertiliser Corporation of India</td>
<td></td>
</tr>
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<td>FEDO</td>
<td>Fertiliser Engineering and Designing Organisation</td>
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FICC = Fertiliser Industry Coordination Committee
FO = Fuel Oil
FM = Financial Meet
FPDIL = Fertiliser Planning and Development India Ltd.
3KP = Gorakhpur
3M = General Manager
3PM = General Project Manager
GSFC = Gujarat State Fertiliser Corporation
HDC = Heads of Department Committee
HFC = Hindustan Fertiliser Corporation
HFO = Heavy Fuel Oil
HP = Hour
HYV = High Yielding Varieties
IAAP = Intensive Agricultural Area Programme
IADP = Intensive Agricultural Development Programme
ICAR = Indian Council of Agricultural Research
ICC = Internal Consultative Committee
IFPC = Intensive Fertiliser Promotion Campaign
K = Potassic Fertilisers
KL = Kilo Litre
KW = Kilo Watt
KWH = Kilo Watt Hour
LDO = Light Diesel Oil
LSHS = Low Sulphur Heavy Stock
MFL = Madras Fertiliser Limited
PS = Public Sector
UMMRC = Quarterly Materials Management Review Committee
QPRC = Quarterly Production Review Committee
R & D = Research & Development
RCFL = Rashtriya Chemicals and Fertilisers Ltd.
RAMJ = Ramagundam
ROA = Ramagundam
ROA = Return on Assets
ROCE = Return on Capital Employed
ROGB = Return on Gross Block
ROT = Return on Turnover
ROTES = Return on Total Shareholders' Equity
SAIL = Steel Authority of India Limited
SCOPES = Standing Committee on Public Enterprises
SCs = Scheduled Castes
SIN = Sindri
SIPCOT = State Industries Promotion Corporation of Tamilnadu
SMP = Sindri Modernisation Plant
SR = Social Responsibility
SMP = Sindri Rationalisation Plant
STs = Scheduled Tribes
TAL = Talcher
TN = Tonnage
TCH = Technical
TIIC = Tamilnadu Industrial Investment Corporation
CHAPTER - 1

INTRODUCTION

Contents:

1.1 The Problem.
1.2 Objectives of the study.
1.3 Importance of the study.
1.4 Hypothesis.
1.5 Methodology.
1.6 Scope of the study.
1.7 Limitations of the study.
1.8 Presentation of the study.
1.1 The Problem:

The acceptance of the concept of Social Responsibility of business has been the result of Industrial Revolution which has brought certain evils like exploitation of workers; and the object of business was considered as maximisation of the wealth of the owners. There was no provision for different groups of the society including workers who were most directly involved in the business operations compared to other groups of the society. And the Government was compelled to interfere in the economic operations may be for the first time by introducing Factory Laws to protect the interest of the workers. Gradually labour/trade associations were formed and collective bargaining began to take place and today workers are the most strong group with which a business deals.

After the interest of workers was safeguarded, the another group of the society which remained the target of exploitation of the business was consumers. But Government regulations to control the supply of the commodities, price control and other measures including consumer protection bills etc; have provided some relief to the 'Consumers'. In developed economics like U.S.A. and England, the formation of consumer councils/consumer
associations have enabled the consumers to stand against the strong business organisation and protect self-interest. However, in developing economics like India, the consumer movement is now getting pace.

The protection of the interest of the Society at large has not been considered seriously so far in developing economics like India except the setting up of Public Sector Unit. Recently, the government has began to regulate the business operations seriously in terms of pollution control, specifically after the Bhopal Gas Tragedy and it has been decided that preventive actions should be taken to avoid the repetition of such disaster in future. But the situation of pollution control for example, is quite different in developed countries. An analysis of the Bhopal Gas Tragedy revealed that the Union Carbide has its plants in different countries of the world, manufacturing similar pesticides as were produced in India. But the developed economies, who are more conscious about the environmental pollution have the policy of examining the various methods through which a product can be manufactured, and a process involving lesser danger to the society in terms of pollution hazards, (from the view point of affluents discharged from the process and storage of hazardous compounds, which in case of leakage, would cause irreparable damage
to the society), is accepted and the manufacturer has to accept it if he intends to carry out operations. In India the Union Carbide, it is proved that has utilised the most cheap and hazardous chemical compounds involving storage of Methyle Iso Cyanide (MIC) and made huge profits, due to improper control on such process of manufacturing by the Government.

Thus, it is observed that, business was primarily reluctant to protect the interest of different groups of the society but gradually Government's interference on the grounds of 'equity' began to change the situation. And each group began to form an association like workers consumers and even the society began to demand its share of interest from the business.

The concept of Social Responsibility has thus changed gradually and the primary concept that 'owner of business has right to utilise his resources in the manner he pleases to' has vanished and in its place came the rationale that 'ownership carries certain binding obligations'.

Now the business has to look after the interest of various segments of the society and the owners/shareholders is not the only group for whom the business has to think
but it 'has to give as much weightage to fair wages, fair prices, fair environmental practices as it gives to fair return on investment'. Thus, today a business decision has to compromise the interests of various groups of the society including shareholders/owners.

Moreover, today the success of a business is measured not in terms of mere profits, but in addition to profits, the activities it has undertaken for the benefit of the society at large are also considered.

The present Research is intended to study the social responsibility/accountability of a public sector fertiliser company i.e. Fertiliser Corporation of India (FCI). The various interest-groups of the society have been divided into shareholders, employees, consumers and community at large. Each group is studied individually with the help of selected parameters. The present study can broadly be classified into three major segments. The first segment deals with the study of social responsibility of Fertiliser Corporation of India (FCI) with the help of Economic Parameters. This segment analyses FCI's production, capacity utilisation, factors affecting thereto, losses in terms of production and financial. The second segment studies the social responsibility of FCI towards different groups of
The society. Each group is studied with the help of one or two parameters. The third segment of the study consists of questionnaire analysis which reveals FCI's middle-level management's attitudes towards social responsibility/accountability.

The present study is intended to cover the period from the year 1978-79 to 1985-86. In the year 1978-79 the Fertiliser Corporation of India was re-organised. In certain cases the data and information could not be collected for the entire period of study, and the researcher was compelled to study a lesser period also.

1.2 Objectives of the Study:

The following are the main objectives of the present research project:

1. To study the Social Accountability of FCI with the help of economic and social parameters.

2. To find out FCI's middle-level-management's attitudes towards Social Accountability of a company.

3. To find out the main factors responsible for losses in FCI.
4. To make suggestions, in the light of the findings of the study.

1.3 Importance of the study:

The present study has significance because of the following reasons:

1. This is an intensive study of public sector fertiliser unit, i.e. FCI. Most of the studies carried out in the field of Social Responsibility are questionnaire based which shows the managerial perspectives of different companies. But intensive study of a particular unit seems to be ignored by the Researchers.

2. Most of the studies are conducted in the context of the developed nations like U.S.A., England etc. but studies in the context of under developed countries like India are very rare.

3. Most of the studies on 'Social Responsibility' are conducted merely with the help of questionnaire responses but the practices of the management in terms of various activities undertaken, supported by numerical data seems to be very meagre. In this study, an attempt is made to study Social Responsibility of
a company with the help of certain selected parameters supported by numerical data.

4. The present study is a combination of qualitative and quantitative information whereas, most of the existing studies are based on qualitative data. One the one hand the social responsibility is studied with the help of management actions and at the same time the attitudes of managers of the same company are analysed with the help of a questionnaire.

5. The nature of industry to which the present study attributes has special significance. The fertiliser industry is of critical importance in agricultural countries like India. The fertiliser industry has helped increase chemical fertiliser consumption in the country, use of modern farming techniques, improved seeds etc; consequently the country has become self-sufficient in respect of food production.

6. The selected chemical fertilisers producing company belongs to the public sector upon which an ever increasing confidence has been shown by the Government and in which the 'public money' is invested. The public looks upon the public sector as the only protector of their interests, and has high expectations of it.
Moreover, the unit selected for the study i.e. Fertiliser Corporation of India (FCI) is the pioneer Public sector fertiliser company now experiencing huge losses and those once under its control are functioning with greater success, has made the study more significant than otherwise.

1.4 Hypothesis:

The present study needs examination on the basis of following hypothesis:

(i) FCI being a loss incurring unit has failed to discharge its social accountability.

(ii) Discharge of Social Accountability is the reason for FCI's losses.

(iii) The FCI's middle-level-management considers that discharge of social accountability is a constraint on the profits of the company, and Public Sector is discharging social accountability more actively than Private Sector.

1.5 Methodology:

The present study is based on two types of data. One is primary source of data and the other is secondary source. The primary source of data consist of questionnaire response of FCI's middle-level-management which was collected in
person by making visits to its Central Office at New Delhi. A 17 per cent response was obtained from FCI's middle-level-management. In addition, informal discussions with the FCI's managers both working and retired, helped not only in understanding the problems faced by FCI but also treatment of data collected from FCI.

The other source is secondary data based on FCI's Annual Reports, Production records, Pamphlets and Booklets published by FCI, Fertiliser Statistics, and other published sources of information.

1.6 Scope of the Study:

The present study is totally confined to the Fertiliser Corporation of India (FCI) which has four operating Units consisting of five manufacturing plants.

The Sindri (Bihar) Unit consists of Sindri Rationalisation Plant (SRP) which produces phosphatic fertilisers and Sindri Modernisation Plant (SMP) which produces nitrogenous (N) fertilisers. The Units at Gorakhpur (U.P.), Ramagundam (A.P.) and Talcher (Orissa) also produces chemical fertilizers in the form of 'N' fertilisers. The operations of these manufacturing plants is encompassed in this study.
However, the project at Korba is in abeyance and it remains out of the purview of this study. But the Mining organisation at Jodhpur's (Rajasthan) revenue from extracting Gypsum has been included by FCI in its Sales Turnover.

1.7 Limitations of the study:

The following limitations of the present study would naturally guide the future researches in this area.

1. The fact that the present study is based on secondary sources of information, reduces the degree of reliability as normally attributed to. However, attempt has been made to obtain the maximum possible information from the official records of FCI and information on various aspects of the study has been collected, which remain out of the purview of publication in FCI's Annual Reports and other sources.

2. A questionnaire response of FCI's middle-level-management on the aspects of managerial attitudes towards Social Accountability has given strength to the study. But the biasness likely to creep into a questionnaire may prevail
in the present study also, inspite of due care taken.

Moreover the opinion of 17 per cent managers cannot be regarded as majority opinion.

3. The Social Accountability/Responsibility of FCI is studied with the help of certain parameters which are represented in money-terms only. For eg. To study, Social Responsibility of FCI towards Employee-group, the expenditure incurred by FCI on 'Medical Facilities', 'Canteen', 'Transport', 'Township' etc, is analysed. The other aspects which are also important could not be studied due to limited resources at the disposal of the Research Scholar. These aspects may be (for eg. in the case of Medical facilities) number of hospitals maintained by FCI, number of beds maintained in each hospital, number of workers treated as In-patients, and Out-Patients. The number of cases for which FCI has allowed medical reimbursement, the number of leaves applied by workers on medical ground etc; all these factors affects FCI's Social Responsibility towards Employee-group in terms of Medical facilities.

4. In the absence of standards in respect of discharge of Social Accountability/Responsibility of business only increase/decrease trends are considered by the Researcher and conclusions are accordingly drawn. Future researches
may attempt to determine certain standards to study Social Responsibility of business.

5. The present study is not a comparative study with either other Public Sector fertiliser company or any Private Sector Unit which would give more lucid picture of the problem.

6. The limitation of the present study may also be attributed to one of the most important causes i.e. the response of the management towards Research Scholar. It is observed that management of Public Sector Units is reluctant to co-operate the researcher and more so when the company is incurring huge losses as in FCI. This may be for the reason that Research Scholars did not have any right to probe into the areas of operations of a company and it is the moral obligation on the part of the management to extend whatsoever degree of response it thinks necessary.

1.8 Presentation of the Study:

The present study has been divided into nine chapters. The chapter-1 contains introductory aspects of the study. At the end of each chapter, a brief summery is mentioned.
Chapter 2 deals with conceptual framework of the study. In this chapter, the definition and concepts of the term Social Responsibility of business are dealt in and parameters to study social responsibility of FCI are selected and explained.

Chapter 3 deals with Literature Review. In this chapter selected literature on the subject has been reviewed and the main findings of various studies are highlighted. In addition, the manner in which the present study differs from the earlier studies, is also mentioned.

Chapter 4 covers the Public Sector in general, its importance in Indian economy, Social Responsibility/Social Accountability of Public Sector, the Public Sector Fertiliser industry, historical background of fertiliser industry, importance of fertilisers and Government policies towards fertiliser industry etc.

Chapter 5 contains a profile of the Fertiliser Corporation of India. This chapter contains history of FCI, its reorganisation, operating units, capacity of the plants, organisational structure, management style, in addition to the capital structure, number of employees, installed capacity, and other related details.
Chapter 6 deals with the study of Social Accountability of FCI with the help of economic parameters. It contains analysis of capacity utilisation of FCI plants, as against the Installed capacity and Targeted capacity, inter-unit comparison of Ramagundam and Talcher Units and factors affecting capacity utilisation of FCI plants. Moreover, FCI's down-time production losses and financial losses are studied in this chapter. The down time production losses are analysed on the basis of various causes responsible for it, and financial losses are studied on plant-wise basis. Major constraints of FCI's profitability have been identified and four profitability ratios i.e. Return on Turnover (ROT), Return on Capital Employed (ROCE), Return on Gross Block (ROGB), and Return on Assets (ROA) have been calculated to see the trend of FCI's losses.

Chapter 7 deals with the study of social accountability of FCI with the help of social parameters. Various interest groups of the society viz. Shareholders, Employees, Consumers and Community are studied individually. The Social parameters selected to study social accountability of FCI in this chapter are, Return on Total Shareholders' Equity (ROTSE), expenditure on Staff Benefits, Correlation
between FCI's net losses and expenditure on Staff Benefits, and correlation between FCI's Sales Turnover and expenditure on Staff Benefits. In addition, expenditure on Research & Development, level of promotional activities, Correlation between FCI's Sales Turnover and R & D expenditure and the persons employed from unprivileged categories is also studied in this chapter.

Chapter 8 deals with the analysis of FCI's middle-level-managers attitudes towards social accountability obtained with the help of questionnaire.

Chapter 9 presents the Conclusions and Suggestions of the present study.
CHAPTER - 2

CONCEPTUAL FRAMEWORK

CONTENTS :

2.1 Social Accountability : Meaning and Definition
2.2 Parameters of Social Responsibility
2.3 Parameters Selected for the Study
2.4 Summary
CHAPTER - 2

CONCEPTUAL FRAMEWORK

The terms Social Responsibility and Social Accountability are often used interchangeably and in the context of present Research also the words Responsibility and Accountability are used in the same sense. 

Social Responsibility (SR) means responsibility towards the society or the 'admission of being answerable to society'. The concept of 'Social Responsibility of Business' evidently refers to 'responsibility of business towards the society at large'. But the term 'Social Responsibility of Business' raises many questions e.g. what type of responsibility a business organisation has towards various groups of society? What are the forms in which a business enterprise has to discharge its responsibility towards the society? What sort of activities undertaken by business enterprise are called Social Irresponsibility of Business? How can we monitor social accountability of business etc? these are some of the difficult questions that arise. In this chapter an attempt is made to answer these questions and to define the concepts used in the present research.
2.1 Social Accountability: Meaning and Definition.

To begin with Classical view, a business striving to utilities as efficiently as possible the resources at its disposal is acting in a socially responsible manner.

The classical view holds that the basic social responsibility of a business enterprise is to utilise its resources efficiently.

Khan, is of the opinion that social responsibility is an obligation on business to take account of interests of several groups that constitute society beyond the considerations of profit. Thus, business going beyond the profit consideration represents its social responsibility.

A seminar on Social Responsibility of Business held in India in 1965, spelt out the social responsibility of business as "responsibility towards customers, workers, shareholders, and the community". In this definition certain segments of the society are identified to whom the business is socially responsible.

2. Khan, A.F. 'Business and Society, New Delhi, S.Chand & Company, 1985, P. 81
Votaw\textsuperscript{4} in an article argues that, we are experiencing a social revolution comparable to Industrial Revolution. He further says that "to act responsibly in a social context is a standard expected of any normal human adult". If corporation is to be thought of as a participating member of the society as a normal adult, then it is not unreasonable to expect to meet minimum standards expected of any normal adult, that is responsible regard for the interests and rights of other members of the society. There is no reason why organisations should have extra rights and privileges over those enjoyed by the ordinary citizens, neither should they escape any of the constraints and obligations of the ordinary citizens".

This definition has given an entirely new outlook to the business entity. If a business enterprise is considered as a normal citizen, then the normal standards of behaviour as expected of a normal human citizen are expected from a corporate citizen. Therefore, business being a corporate citizen is entitled to all rights and privileges and also constraints and obligations as the normal human citizen is subject to.

Andrews asserts that social responsibility may be taken to mean "intelligent and objective concern for the welfare of the society that restraints individual and corporate behaviour from ultimately destructive activities".

Andrews's main thrust of social responsibility lies in avoiding destructive activities. Destruction may take place because of inefficient utilisation of resources by business, ignoring the interests of other groups of society, concentrating only on maximisation of profits etc.

H.R. Bowen is of the opinion that a businessman has an obligation "to pursue those policies, to make those decisions, to follow those lines of action which are desirable in terms of the objectives and values of our society".

This definition no doubt regulates the policies, decisions and the lines of action of the business to be within the framework of values of the society, but the word 'values of the society' is quite ambiguous to understand.

6. Ibid.
Naftalin\textsuperscript{7} states that "to become socially responsible, the firm must give at least as much weight for fair wages, fair prices, fair community practice and fair environmental practice as it does to fair return on investment".

This is comparatively elaborate definition of social responsibility. He has covered socially responsible activities in favour of employees, consumers, community and environment and the weightage to be given to these groups should be not less than the weightage given to the owners of the business.

Humble (1973)\textsuperscript{8} says that social responsibility is one of the key areas of business and is typically concerned with external environment problems of pollution, community and consumer relations and the internal environment problems of working conditions, minority groups, education and training.

Humble has divided the various interest groups to which the business is socially responsible into two. One is external to business and another is internal.

\begin{thebibliography}{9}

\bibitem{7} Naftalin, A. \textit{Confrontation Measuring Social Responsibility; Chimera or Reality?} \textit{Organisational Dynamics}, Autumn, 1973, P. 3-18.

\end{thebibliography}
Keim (1978)\textsuperscript{9} says that the primary sense in which we attribute social responsibility, we attribute a certain attitude, a way of seeing other people and considering their needs. Thus, social responsibility of a business is neither a goal of business nor simply a constraint but an attitude or policy.

The concept of business confining to the interests of its shareholders/owners disappears with the definition of Keim, who lucidly explains that social responsibility is merely an attitude to consider the needs of others (i.e. other than the owners of business).

In the Confederation of British Industry (CBI)\textsuperscript{10} report on the responsibility of British Public Company, profit is defined as "a surplus fund that remains after all proper commitments have been met".

This definition emphasises that whatever surplus or profit is earned by a business enterprise, it has to be proportionately apportioned and utilised to satisfy the various interest-groups of the society. Thus, profit is


not the sole-right of the owners of business. There are several interest groups who are being affected by the operations of the business and they may not be directly connected with the business but still have a right in the business-earnings.

Rockefeller\textsuperscript{11} argues that the old concept that the owner of a business has a right to use his property as he pleased to maximise profits has envolved into the belief that ownership carries certain binding social obligations. Today's manager serves as trustee not only for the owners but for the workers and indeed for the entire society... Corporations have developed a sensitive awareness of their responsibility for maintaining an equitable balance among the claims of stockholders, employees, customers and the public at large.

The author has compared the initial stages of business with the present one. Earlier, business was considered to be the exclusive property of the owner who can use it for self-interest having no regard to the interests of others. But now it is realised that ownership of business create certain obligations towards the fellow-groups, and it cannot be isolated from them.

Goyder\textsuperscript{12} points out that industry in twentieth century can no longer be regarded as private arrangement for enriching shareholders. It has become a joint enterprise, in which workers, management, consumers, the Community, the government and trade union officials, all play their part.

This definition highlights that a business is run with the co-operation of different groups such as workers, management, consumers, locality and government etc. consequently these groups will have their respective share in the fruits of the business operations.

Mayo\textsuperscript{13} argued long back that countries whose businessmen turned away from just economic profits to more responsible goals, would develop in a stable and secure manner while others would experience social disorganisation.

Mayo's forecast which he made more than five decades ago has come true now. A business enterprise cannot survive if it disregards the various interests of societal groups and concentrates merely on "Economic profits".

\textsuperscript{13} Mayo, E. "The Human Problems of an Industrial Civilisation", New York, John Wiley and Sons, 1933.
Singhania is of the opinion that business is not merely a profit making occupation but a social function having certain duties and responsibilities and have to follow appropriate ethics. Its responsibilities are:

(i) produce goods to its maximum capacity;
(ii) ensure smooth supply;
(iii) at competitive prices;
(iv) obey all laws;
(v) pay all dues;
(vi) shun malpractices;
(vii) pay fair wages to employees;
(viii) pay reasonable dividend to shareholders;
(ix) search for new investment;
(x) ancillarisation;
(xi) dispersal of industries in backward areas.

Blum had spelt out the social responsibilities of management as follows:

---

(i) provision of an adequate level of income for a working family, i.e. minimum wages.

(ii) provision of equal opportunities for all employees to develop their abilities and potentialities.

(iii) preservation of the liberty of the individual and protection against dangers of paternalism.

(iv) ensuring quality of goods and services eliminating adulteration.

(v) allround development of locality in which an enterprise is located.

Naftalin had identified five sets of corporate relationships, each of which involves a major aspect of socially responsible behaviour:

(i) The firm's internal constituency-workers and managers.

(ii) The firm's external constituency-consumers and suppliers.

(iii) The community within which the firm operates.

(iv) The society from which the firm draws its resources and upon which the firm leaves its

imprint for good or ill.

(v) The firm's shareholders.

Maheshwari, and Gupta17 mention that 'today business has become a profession of public service and businessmen are expected to be public trustees'.

There are two important groups with whom the business has to deal with:

(i) the insiders i.e. shareholders & employees.
(ii) the outsiders i.e. customers, suppliers, creditors, government and community as a whole.

Dale18 sees today's manager is an arbiter among many interests of public affected by the business, the stockholders, the employees, the suppliers, the consumers and the local community. It is his duty to divide the returns from the business equitably by providing:

(i) fair return to shareholders;
(ii) fair working conditions and pay for the employees;
(iii) fair deal to suppliers and customers;

18. Ibid.
(iv) and become asset to the local community and nation.

The owners of business should get:

(i) fair stable rate of return;
(ii) steady capital appreciation;
(iii) regular, adequate and accurate information about the working of the company;
(iv) planned growth, business solvency, optimum utilisation of resources.

The employees should be assured of:

(i) security of job, higher wages;
(ii) full employment;
(iii) better working conditions;
(iv) opportunity for self development;
(v) share in excess profits,
in (vi) participation/decision making process.

Ford, H.¹⁹ says management must provide "those goods and services which the society needs and at a price which the society can afford to pay" and

¹⁹. Ibid, P. 316.
(i) maintain regular supply;
(ii) liberal and fair attitude towards customers;
(iii) cater the needs of different classes of customers; and
(iv) protect customers against adulteration, underweighing, misleading advertisements etc.

From the analysis of the above definitions and statements it is concluded that:

1. A business enterprise is a corporate citizen participating in the process of development of the society. Like a normal human being it has certain rights and privileges as well as constraints and obligations towards different segments of the society which cannot be waived. The owners should/think that they can utilise the resources of business as they like because every ownership carries certain obligations which should not and cannot be ignored.

2. The efficient running of a business enterprise requires joint efforts of several groups like employees, consumers, suppliers, shareholders, government, community and the society at large, hence whatever profit it earns
cannot be diverted exclusively to enrich shareholders. But due share of all other groups is also to be met with.

3. The attitude of seeing other people (i.e. groups other than the shareholders) and considering their needs beyond the consideration of profit is the first pre-requisite of social responsibility.

4. To utilise efficiently the precious economic resources endowed on business, is the foremost social responsibility of a concern.

5. The groups to whom a business enterprise is socially responsible, can broadly be divided into two categories. One is internal group and the other is external group. The Internal group consists of shareholders and employees whereas the External group comprises of customers, suppliers, government, community etc.

6. The social responsibility of a business towards various groups may be summed up as follows:

   (A) Towards employees:

   (i) provide fair wages;
   (ii) good working conditions;
   (iii) provide security of employment;
(iv) provide opportunities for promotion and training;
(v) medical assistance to be given;
(vi) contributions to education
(vii) labour participation in management to be allowed.

(B) **Towards consumers**: 

(i) goods to be sold at fair price;
(ii) smooth supply be assured;
(iii) quality goods to be sold;
(iv) protection against adulteration and under weighted goods sale;

(C) **Towards government**: 

(i) pay taxes
(ii) obey all laws;
(iii) shun malpractices;
(iv) assist government

(D) **Towards suppliers**

Arrange payment of bills promptly
(E) **Towards shareholders**:

(i) fair return on investment;

(ii) sufficient information about the working of organisation;

(iii) maximise shareholders wealth;

(F) **Towards community**:

(i) help in pollution control;

(ii) prefer ancillarisation;

(iii) do general welfare activities;

(G) **Towards society**:

(i) locate industries in backward regions;

(ii) contribute to art and culture;

In the absence of any specific definition regarding social irresponsibility of a business, any action or behaviour on the part of a business enterprise impairing the interest of any of the segments of the society or which expressly contradicts the so-called social accountability of a business, can fairly be termed as "Social Irresponsibility of a business".

2.2 **Parameters of Social Responsibility**:

With the help of a critical evaluation made of the various definitions and concepts of social responsibility/
Accountability of a business given by different authors, it is clear that there are certain actions, activities or behaviour which can be termed as social responsibility (SR) of a business and vice versa.

These actions or behaviour may not in themself be capable of measuring or in other words these are subjective terms. For instance to provide 'fair return on investment' is the social responsibility of a business directed towards its owners. But what is 'fair' or what is 'unfair' it quite a discretionary term differing place to place, time to time and situation to situation. What should be the 'rate of return' on a particular Investment to be termed as 'reasonable'/'fair' or vice-versa is deliberately ignored.

Similarly, if the supply of 'quality goods' is a social responsibility of a business to consumers then what do we mean by 'quality'? Is there any accepted norm of measuring quality? Whether the approval of Indian Standard Institutions (ISI) should be treated as token of quality? If it is so whether ISI offers its approval to different brands of products strictly on the basis of Then how to devise some quality measuring standards? A standard for measuring the quality of products so that one can easily pass on a
judgement that a particular business organisation has failed to discharge its social responsibility towards consumers.

It can, therefore, be argued that the absence of commonly accepted, reasonably devised 'standards' for measuring different activities of social responsibility, it is quite unscientific and irrational to comment at that a particular business enterprise has failed to discharge its social responsibility towards a definite interest group.

However, in the present research, an attempt has been made to study social responsibility of a selected public sector fertiliser company with the help of certain parameters which can be measured in financial terms. The detailed analysis of these parameters is also done in this chapter.

In the context of present research, certain parameters of social responsibility are classified in chart-1.

The various interest groups to whom the business is socially responsible, as shown in Chart-1 are shareholders, workers, employees, consumers, suppliers, government, community and the society. It is observed from the chart that most of the experts have attempted to identify the social responsibility parameters in respect
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of workers/employees and consumers only. The other interest groups i.e. suppliers, shareholders, government, community and the society have received less attention with regard to the identification of social responsibility parameters. Another important feature that can be noted in this regard is that most of the authors have repeated the parameters for measuring social responsibility in respect of workers and consumers. For instance we find the parameters of social responsibility relating to workers like 'fair wages', 'equal opportunity for self development', 'good working conditions' are suggested by almost all the authors, and in respect of consumers, we find 'fair prices', 'quality goods' is recommended by majority of the authors. This suggests that these social responsibility measures have common and undisputed acceptance.

With regard to parameters to study social responsibility in respect of community, we find 'pollution control' is the only parameter suggested by a number of authors. A few authors have also recommended parameters like 'community development'/ancillarisation'. 
In respect of parameters to measure social responsibility/society 'minority groups', 'contribution to art and culture' and 'dispersal of industries in backward regions' are the suggested standards.

'Payment of bills promptly' is the only parameter suggested to measure social responsibility towards 'suppliers'. Regarding the social responsibility towards Government, the authors have suggested the parameters of 'obeying laws', 'paying taxes', 'shun malpractices', 'assist government in various welfare measures' etc.

For 'Shareholders', the suggested parameters are 'fair return on investment', 'efficient utilisation of resources' and 'information about the working of the organisation'.

The concept of Social Responsibility of business and relationship of business with society is depicted in Diagrams 1 to 4.

Diagram 1 shows Odell's classification of Business and society constituents. A business has two groups one is 'Internal' and other is 'External'. Internal group consist of Employees/Workers. Whereas External group
Diagram 2: Business is Influenced by Variables.
CORPORATE RESPONSIBILITY

BUSINESS

SOCiETY

Diagram: The Corporate Social Responsibility Interface between Business and Society.
has customers, suppliers, consumerists and Environmentalists. The arrows are shown in both the directions i.e. from society to business and from business to society. These arrows show that various groups external/internal to business are on the one hand constituents of the society at large whereas on the other they show that society is composed of these groups which form Internal and External groups of the business.

Diagram 2 shows that business is influenced by various groups of the society. These groups are government and society at large, Shareholders, Consumers, Suppliers and Employees.

Diagram 3 illustrates that profit is essential to protect the interest of various Societal Groups. A business enterprise incurring losses is failing to discharge its primary social responsibility.

Diagram 4 emphasises that Business and Society are interlocked with Corporate Social Responsibility. Business cannot isolate itself from the forces of the society.
2.3 Parameters Selected for the Study:

Of the various parameters suggested by different authors, certain parameters are selected to study the social responsibility of FCI. These are depicted in chart 2.

The parameters which are selected to study social responsibility of FCI, are broadly classified into two main categories:

(1) Economic parameters: To earn profit is the primary social responsibility of a company hence, to measure social responsibility of FCI two important economic parameters are chosen. One is 'Capacity Utilisation' the other is 'Profitability Ratios'.

(i) Capacity Utilisation of FCI Plants:

Plant-wise capacity utilisation of FCI is measured in terms of percentage for the period 1979-80 to 1985-86. The plants at Ramagundam (in A.P.) and Talcher (in Orissa) are commissioned during the year 1980-81 hence their capacity utilisation is measured since the year of their commencement.

'Target of production' for each plant is determined by FCI is studied as against the 'Actual Production'.
'Target' and 'Actual Production' are given in thousand metric tonnes. 'Actual Production' as percentage of the 'Target' is also calculated by the researcher. With the help of 'Installed Capacity' (in thousand metric tonnes) the 'Capacity Utilised' in percentage is calculated. Moreover, increase/decrease in production as against previous year is calculated both in terms of absolute figures and percentage.

With the help of the production figures, plantwise share (except Sindri Rationalisation Plant, which produces phosphatic fertilisers) is calculated for the year 1984-85. In addition, plant-wise share of production in terms of Total 'N' production during the year 1984-85 is also calculated.

Inter-unit comparison of capacity utilised of each plant is made from 1979-80 to 1984-85 and for Ramagundam and Palcher plants it is from 1980-81 to 1984-85. Factors affecting capacity utilisation are also discussed on plant wise basis.

(ii) Application of Profitability Ratios:

FCI is incurring losses running into crores of rupees. The 'Net Loss' figure of each plant is separately mentioned in the thesis. Each plant's percentage share of loss in the total net losses of FCI is calculated, year-wise since 1978-79 to 1985-86.
The Fertiliser Industry Coordination Committee (FICC) has determined certain 'consumption norms' to be fulfilled by each fertiliser producing unit as a standard for input consumption. A unit which adheres to this consumption norms of input is likely to earn profit. Because the 'tentation Prices' of fertilisers are calculated on the basis of consumption norms and 20 per cent on net worth. In this context, Deviation from specific consumption norms of FICC are calculated plant wise and the extent of deviation is measured in absolute terms for each product constituent.

As the Ramagundam and Talcher plants are designed on coal-based technology, the Input Consumption norms are same for both the units in respect of certain product constituents and it differs for certain others. A comparison of deviation from specific consumption norms for different product constituents is made.

The various causes of production losses for each plant is analysed in the present thesis. These production losses are due to factors like equipment problems, power, process and raw material problems etc.

With help of factors affecting capacity utilisation, production losses, etc; a diagram depicting 'constraints on TCI's profitability' is made. Various
profitability ratios have been calculated. These ratios are:

(a) **Return on Turnover (ROT)**
(b) **Return on Capital Employed (ROCE)**
(c) **Return on Gross Block (ROGB)**
(d) **Return on Assets (ROA).**

(a) **Return on Turnover (ROT)**: This ratio reflects management's efficiency in manufacturing, administering and selling the products. This ratio shows firm's ability to convert each rupee of sale into net profit.

(b) **Return on Capital Employed (ROCE)**: This ratio shows how the management has utilised the funds supplied by owners and creditors.

(c) **Return on Gross Block (ROGB)**: This ratio determines the relationship between the Net Fixed Assets and Net Profit/Loss. It shows how the net fixed assets have been utilised in creating profits.

(d) **Return on Assets (ROA)**: This ratio helps in finding out the relationship between the total assets and the profit/loss. It reflects how the management has utilised 'total assets' to earn profits.
2. **Social Parameters** : In addition to earn profit a business has to discharge certain other social obligations directed towards different segments of the society. Measurement of social obligations of a business is difficult, because of two reasons:

One is, the costs incurred and benefits accrued from the discharge of certain social responsibility activities is difficult to be quantified because a series of subjective judgements are involved and determination of a criteria to compare them is another difficulty.

The following social parameters are selected to measure social responsibility of FCI.

(i) Towards Shareholders - Return on Shareholder's Equity (ROTSE).

(ii) Towards Employees - (a) Township.

   (b) Maintenance of School & Educational facilities.

   (c) Medical Facilities.

   (d) Canteen.

   (e) Transport.

   (f) Social & Cultural Activities.

   (g) Death benefit scheme.
(iii) Towards Consumers - Research & Development (R & D)

(Specifically towards Farming Community)

- Fertiliser Promotional Activities
  (includes programmes to educate Fertiliser use knowledge, use of non-conventional sources of energy i.e. bio-gas, free soil testing facility, distribution of mini-kits, adoption of villages)

(iv) Towards Community - Employment of persons from Scheduled Castes (SCs) Scheduled Tribes (STs), Ex-Servicemen, Physically handicapped categories.

To study social responsibility of FCI towards 'Shareholders', Return on Total Shareholders' Equity (ROTSE) is calculated to know the return on shares over the period of study. On the other hand, the amount incurred towards Township, Maintenance of School and Educational facilities, Medical facilities, Canteen, Transport, Social and Cultural activities is taken into account to study social responsibility of FCI towards employee-group. A brief mention of death-benefit scheme launched by the employees of FCI-NFL group of companies is made.
Towards consumers, the expenditure incurred on Research and Development and various promotional activities undertaken by FCI to promote fertilizer use knowledge, overall socio-economic development of farming community, family planning idea, incentives for the use of non-conventional source of energy etc; and the impact of fertilizer promotion campaign on fertilizer consumption in two selected IFPC-Districts viz. Patna and Raibareli is also examined in the present work.

Towards community, the number of persons employed unit-wise from SC, ST, Ex-servicemen, and Physically handicapped categories and their trend over the period of study is studied.

Finally a questionnaire-response on Managerial Attitudes towards social responsibility is analysed. The questionnaire was filled in by the FCI's middle level managers who were involved in the implementation of policies and programmes of FCI.

2.4 Summary: An evaluation of the various definitions and statements regarding the concept of Social Responsibility (SR) have enabled us to conclude that a business enterprise is a corporate citizen and like natural citizen, it has certain rights, and privileges as well as constraints and obligations which cannot be waived. A business enterprise is a 'cooperative effort' of various segments of the society thereby necessitating the distribution of its efforts i.e. profits among various interest groups proportionately.
Social responsibility is an attitude of seeing and realising the needs of other people (i.e. other than owners) and the efficient utilisation of economic resources is the foremost social responsibility of a business. In respect of 'Social Irresponsibilities of business there is no specific definition, hence any activity or behaviour of the business affecting adversely the interest of any of the societal groups or an express contradiction of any of the so-called social responsibility measures can fairly be treated as social irresponsibility of business.

To measure Social Responsibility of FCI, certain Economic and Social Parameters are selected. The Economic Parameters include 'Capacity Utilisation' and 'Profitability Ratios' whereas Social Parameters include, study of 'Return on Total Shareholders' Equity (ROTSE), expenditure incurred on Township, maintenance of Schools & Educational facilities, Medical Facilities, Canteen, Transport, Social and Cultural activities. Death benefit scheme and Research and Development. In addition Fertiliser Promotional Activities and their impact on fertiliser consumption is also analysed. Lastly questionnaire response of FCI's managerial attitudes towards social responsibility is also analysed.
CHAPTER - 3

LITERATURE REVIEW
In India, the issue of Social Responsibility of business has generated growing interest during the last two decades. The concept of Social Responsibility has been a relatively much talked about matter in industrially advanced countries in the past, mainly because the industrial revolution was one of the decisive forces that led to the emergence of this concept. The less developed countries faced a comparatively delayed and slow pace of industrial revolution and as a result, the concept of Corporate Social Responsibility also occupied a dormant position in these countries.

The incidence like Bhopal Gas Tragedy has invited the attention of scientists, legal experts, government, pressure groups, etc., towards several new issues of public policy, for instance, Is a corporation/company responsible for its actions/operations to the members of the society? If so to what extent? and if not why not? Who is to monitor social responsibility and how to measure it? etc. This was the world's biggest environmental disaster and it is unanimously agreed that every corporation
has responsibility towards the society which cannot be allowed to be neglected in future.

In the present study an attempt has been made to review the existing literature on the subject of Corporate Social Responsibility keeping in view, the Constraints of time, energy and other factors at the disposal of the researcher. A brief review of the selected studies is presented here to create necessary background of the problem of Research.

Francis Cherunilam in his book "Business and Government" has explained the importance of the State in the development of the economy. The concept of 'Laissez Faire' has taken the shape of 'Welfare State' where the state is expected to take care of citizens from the 'cradle' to the 'Grave'.

Government's intervention in different segments of the economy is normally advocated in non-capitalist economies but President Roosevelt's New Deal Programme for stimulating economic recovery from Great Depression in

which large scale Government's intervention in the economy was its main feature, the author observed that it was in fact, a manifestation of the role the Government has to play even in a capitalist economy like U.S.A. 2.

Likewise, John Maynard Keynes in his book "the General Theory of Employment, Interest and Money" (1936) advocated the role of the Government in stabilising the economy. He has listed certain techniques like cost variations, credit, income-tax etc., through which the government can influence the economy and founded 'New Economics' rejecting the classical doctrine of 'Laissez-faire' 3.

The importance of State in regulating and controlling the society of which business is a part, is also highlighted by Musgraves, when he said the market mechanism alone cannot perform all economic functions therefore, public policy is needed to guide, correct and supplement in certain respects 4.

About the 'Social Responsibility of Business' the author observed that the resources an organisation makes use of are not confined to proprietors and the impact of

2. Ibid.
their operations is felt by different parties or groups who are not connected with the enterprise directly. Thereby the author has widened the scope of the interactions a business organisation normally has with different sections of the society, in its day-to-day operations. This has also led to nullify the traditional concept where the object of business was considered exclusively to protect the interest of its owners. It is further explained that the groups like shareholders, suppliers, consumers, employees and local community are affected by the activities of a business organisation. Hence, a business enterprise has to be socially accountable so that a social balance is struck between different diversifying interests.⁵

To emphasise the presence of several parties whose efforts are involved in the achievement of the corporate objectives and who are affected by the conduct of operations of such a business, George Goyder⁶ says that "industry in the twentieth century can no longer be regarded as private arrangement for enriching shareholders".

The importance of Social Responsibility in the present stage of economic and industrial development was highlighted

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⁵. Ibid, P. 403.
⁶. Ibid, P. 404.
by the Highpowered Expert Committee (Sachar Committee) on Companies and MRTP Act, in its report submitted to Government in August, 1978 in these words: "in the development of corporate ethics, we have reached a stage where the question of social responsibility of business to the community can no longer be scoffed at or taken lightly".

On the controversial question of how to test the discharge of Social Responsibility of a business enterprise the Sachar Committee says that "...by the test of social responsiveness shown to the needs of the community. The company must behave and function as a responsible member of the society, just like any other individual".

The conflict of "profits" and "discharge of social responsibility" is always a matter of concern to the management of a business organisation. A business enterprise earning huge profits not necessarily mean that it has failed to discharge social responsibilities. It is, therefore, argued that, "In the responsible company, profits continue to be the criterion of financial health. As blood is the life of man so are profits life of industry and just as man must maintain life before he can be free to

8. Ibid, P. 110.
pursue the life objects he has set before him, be they horse racing or the mission field, so profits are necessary to business and are in the proper sense of the word 'primary'. But profits are not the ultimate objects of the responsible company".

George Goyder\textsuperscript{10} has enumerated the ultimate objectives of a responsible company as follows:

i. The extension, development and improvement of the company's business and building up of its financial independence.

ii. the payment of fair and regular dividends to shareholders.

iii. the payment of fair wages under the best possible working conditions to the workers.

These objectives did not represent the wide sphere of activities in which a business enterprise is normally engaged. However, a very comprehensive coverage is done by H.S. Singhania\textsuperscript{11}. He has identified the responsibilities of a business organisation such as:

i. produce goods to maximum capacity;

ii. ensure smooth supply;

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\textsuperscript{9} Cherunilam, Francis: Business & Government; Op.Cit; P.404.
\textsuperscript{10} Ibid; P. 405.
\textsuperscript{11} Ibid, P. 405.
\end{flushleft}
iii. at competitive prices;
iv. obey all laws;
v. pay taxes;
vi. shun malpractices;
vii. fair wages to employees;
viii. reasonable dividend to shareholders;
ix. search for new investment;
x. ancillarisation;
xi. dispersal of industries in backward areas.

J.R.D. Tata 12 who is regarded as one of the first persons to introduce "Social Audit" in India has highlighted very important aspect of Social Responsibility. He rightly says that it is not the 'business alone who is to be socially responsible. As society comprises of various groups of people, including business, each group has to discharge its social responsibility towards other groups.

The social responsibility should be expected not only from business and industry but also from various economic groups. He has quoted the example of trade unions in India and abroad who have misused the powers endowed in them and in India alone millions of man-days of production are lost.

due to industrial unrest. It means the trade unions have failed to discharge the social responsibility towards business and the society, of which they are a part.

The author has emphasised the importance of state intervention in the economy and how its intervention is important and influential even in capitalist economy like U.S.A. About social responsibility of business, it is argued that business resources cannot be confined to the proprietors only because they are several groups indirectly affected by the business operations.

On the question of how to test social responsibility of a business enterprise the Sachar Committe says that with the help of the social responsiveness shown to the needs of the society, social responsibility of business can be judged. However, profits are very much essential for a business to earn without which social accountability cannot be discharged. Various social responsibility activities towards different groups of society are mentioned.

An important aspect of social responsibility as highlighted by the author is the fact that social responsibility should be expected from every group of the society, and not merely by the business, for eg, the workers, due to
their continuous strikes and other actions leading to industrial unrest cause loss of millions-man-days in production. It means the workers have failed to discharge their social responsibilities towards the business and society of which they are a part.

This study however, did not say anything about the practical problems that come in the way of setting standard and to measure social responsibility of business.

Khan\textsuperscript{13}: in his book "Business and Society" which is based on a research survey conducted by him has examined the attitudes of senior managers in issues concerning 'Social Responsibility of Business' in India and Britain.

The survey was conducted in the context of Delhi and Ghaziabad District (U.P.) in India and West Midlands in U.K. The author confesses that in view of the scope of the survey, the sample may not represent the attitudes of the entire population, but still it has provided an insight into the managerial attitudes on social responsibility of Business found in India and Britain. The findings of this study focus on similarities and differences in the perceptions of Indian and British managers on different issues concerning social responsibility in the two countries.

\textsuperscript{13} Khan, A.F., Business and Society, New Delhi, S. Chand & Co. Ltd., 1985, P. 112.
In the above survey a questionnaire was developed and sent through Mail to selected companies and personal interviews were conducted with Managers in both the countries, i.e. India and Britain.

The type of social responsibilities activities developed by the author were grouped into three main categories i.e. (1). Urban Affairs, (2) Consumer Affairs and (3) Environmental Affairs. The details of Social Responsibility Activities under each of these heads are:

1. **URBAN AFFAIRS**:
   
   (a) Employment & Training  (b) Medical Assistance  
   (c) Contribution to Education  (d) Urban Renewals  
   (e) Contribution to culture and Arts.

2. **CONSUMER AFFAIRS**:
   
   (a) Design Improvement  (b) Quality Control  
   (c) Marketing Improvements  (d) Customer Services  
   (e) Customer Information and Education.

3. **ENVIRONMENTAL AFFAIRS**:
   
   (a) Air & Water Pollution  (b) Assistance to Government for Controlling Pollution  
   
   (c) Other Category
The important conclusions derived from the survey conducted in India & Britain, are briefed as under.  

(i) There were strong similarities between the attitudes as perceived by Indian and British managers, on the issues concerning social responsibility.  

(ii) Regarding the ambit of social responsibility of business the study concludes that a large percentage of Indian and British Managers agree that the business has responsibilities not only to its shareholders and employees but also to consumers, suppliers, the society in which it operates and to the state.  

(iii) Concerning the possible outcome of discharge of social responsibility, majority of the managers were of the opinion that, it helps in better relationship between industry and people, a good working environment, better customer relations and enhanced corporate image.  

(iv) The survey revealed that there was also similarity in the level of activity perceived by Indian and British managers. The activities comprised of  

employment and training, medical assistance, contribution to education, quality control design improvement, marketing improvements, customer information and education and customer service.

(v) It was observed that, most of the firms in India and Britain covered by the survey did not have a written policy statement relating to social responsibility, did not made any structural changes in the organisation to implement social responsibility, did not provide specific budget allocation to meet social responsibility except for those in big size.

(vi) In response to the problems faced in implementing social responsibility the Indian and British managers have disclosed that the 'adjustment to the legal requirements' and 'changing prices' are the major ones.

(vii) About the opinion as to who should monitor social responsibility, majority of the respondents agreed that management is suitable.

(viii) The Research further concludes that even in countries with distinct culture, the managerial attitudes towards Social Responsibility did not vary significantly. At the same time the contingent
factor like size of the company certainly has some bearing upon social responsibility even in culturally different countries.

These has been a change in the concept and role of Business. In the past the term business was conceived as "the business of business is business". The profit maximisation was the only objective of business and the profit, the sole indicator of success of an enterprise. In fact profit is not the cause or rationale of business decisions but it is the test of their validity. The first test of any business is not the maximisation of profits but to earn sufficient profit to cover the risk of loss arising out of economic activity.

Therefore, the concept of business gradually changed, and now-a-days business is not an end in itself but a means to achieve an end. Profits are still essential for a business to earn but it is not the sole objective of business to maximise profits, rather it is to distribute the profit properly among different sections of society through different measures.

The belief that there is conflict between the profit and the company's ability to make social contribution has created a misunderstanding about the concept of profit.
A company can discharge its social obligations only if it is highly profitable whereas a loss incurring unit cannot make any social contribution, and is a burden on the society.

There are several pressures which have led to a change in the concept of business from "a private arrangement to enrich its owners" to a 'Social and economic institution'. The forces responsible for such change are:

(i) changing social values;
(ii) increasing labour disputes;
(iii) demand for increased participation of labour in management;
(iv) consumerism;
(v) increased public awareness about quality of life and pollution control;
(vi) increased regulation of business;
(vii) growth of large industrial houses;

As a result of these pressures, the business began to realise its relationship with different sociatal groups and took certain steps to discharge its obligations. The interests of various groups i.e. employees, consumers, shareholders, suppliers, and community at large are diversified and sometimes conflicting in nature. The business has to balance the interests of these diversified groups
because 'goodwill and willing co-operation' of these groups is essential for its success.

The more surprising findings of the research survey conducted by Khan are the fact that in spite of culturally different atmosphere of India and Britain there are more of resemblances than differences concerning the managerial views on the subject.

Although this survey discloses the attitudes of managers of selected companies on social responsibility, which may not have the desired influence over the action plans these companies have. Though the favourable attitudes present that companies have given considerable weightage to the issue of social responsibility, they cannot simply be relied upon, unless a comparison of the attitudes is made with company practices towards social responsibility.


The editor has given a brief account of the changes that emerged in the concept of business. He says, in earlier days the responsibility of business was limited to make money.
for himself and his immediate associates. Now the responsibility has extended beyond himself (i.e. businessman) to encompass other groups on which actions and decisions of business have some sort of impact.  

In this book different authors delivered speeches covering different sections of the society to whom business is responsible.

Richard R. Deupree, President of the Proctor and Gamble Company, CINCINNATI, OHIO in a talk given on Management’s Responsibility to Employees has listed five important responsibilities of management towards Employees. These are:

(i) Earn regular profits;
(ii) provide steady employment;
(iii) opportunity to individual employee to develop his skill and abilities to full extent;
(iv) employee’s chance to become a capitalist;
(v) good working conditions;

Stressing upon the first responsibility of management towards employees, the author says that profits are life-blood of the business and essential for

15. The Responsibilities of Business Leadership: Edited by Harwood F. Merrill, Massachusetts, Cambridge, Harvard University Press, 1949, P. VI
expansion, growth and progress of individuals. Hence the business has to earn profit and distribute wages among individuals. If a company is not earning profits, 'the going business', becomes 'the gone business' with no jobs.  

About providing steady employment to workers, the author advocates that certain guaranteed weeks-work per year should be provided. He says that in his organisation, at least forty eight weeks work per year was in operation since 1923.

To determine fair wage to be paid to workers the author has cited his experiences. According to the system in practice a list of better companies in area in which the firm operates is prepared with the help of workers. Then wage rate paid to each class of work is calculated accordingly what would be a 'fair wage' for a particular job is determined.

Another responsibility of management to give the employee, a chance to develop his skill and capabilities. For this purpose selected employee should be given proper training and supervision to improve his abilities.

17. Ibid, P. 19.
The fourth responsibility of the management towards employees is to give opportunity to become capital with the help of profit sharing, stock ownership, savings and other schemes.

The fifth social responsibility of company towards workers is providing good working conditions. Important factors that constitute good working conditions are; concern about health of employees, safety at work, recreation provision, work day atmosphere, attitude of other workers, etc.

Straus while discussing the responsibilities of business to the 'consumers' used the words 'responsibilities of business to her' to represent that 85% of all purchases are done by 'women' and asserts that 'she' exerts more than a casual influence on 15 per cent of the other sales.

Stressing the importance of customers, the author says that on different issues of a business there may be argument, disagreement, debate etc; except about the fact that to treat the consumers all important.

If the 'interest' of the consumers is so important her and 'satisfaction' is so inevitable that the businessmen unanimously agree on it then all the business would be conducted on a basis that protect consumers interest and ensure
their satisfaction. But does it happen practically? The answer is 'no', 'too often it is no'.

Straus, further comments upon the importance of 'her' (consumer) satisfaction and 'her' complaints should be given due care otherwise the entity of business itself will be in danger. Talking of his own experiences the author says that 'Macy! the organisation of which he is President, had a reputation of "efficiently-run-store". For every 10,000 transaction, only 75 are recorded complaints, it means that 9,925 out of every 10,000 customers are satisfied and only 75 are not satisfied.

But the organisation is more sensitive about these 75 dissidents because they are not mere 75 but they are 75 multiplied by all those people to whom they talk. Unless we are vigilant, 75 can became hundred and the hundred a thousand. That is where the good will disappears and alongwith it business may also disappear.

The steps taken by Macy stores regarding maintenance of quality include that before any seller is allowed to advertise the product and the advertising writer, writes final copy of Ad, they have to submit it to the 'Macy Bureau of Standards' to test its accuracy in performance and function.

The claims a manufacturer makes about his product, will be tested by the Bureau and then approved or rejected.

While quoting the 'long range responsibilities' towards, consumers it is mentioned that the existing product should be developed regularly.

An instance cited by the author about the consumer-safety measures is that once the head of Bureau of Standard (of Macy stores) read that, a boy fatally burned because the cowboy suit he was wearing caught fire. He went to the department where the suits were displayed and took the sample of each suit and on testing found that many were highly inflammable. He immediately withdrawn the suits and contacted the firms involved in its manufacture and put them into contact with a firm that developed fire proof substance. Now Macy sells only such suits which are safe from fire-hazards.

These are some of the experiences 'Straus' mentioned in the process of explaining different types of business responsibilities towards consumers the most important segment of the society.

Bullis in a talk on 'Management Responsibilities to Stockholders' has enumerated four groups i.e. 'Management, stockholder, labour and consumer' on whom the competitive system works.
Now the list of owners of a company has grown substantially large through the means of shares purchases. Naturally, the duty of the management is to know "what does progressive and innovative stockholders want and expect of management." 21

The approach of stockholders has also changed as revealed by Lewis Gilbert of New York that "above all he wants to be treated as an owner and a partner in the enterprise and not merely a name on a stock ledger". He further observes that the response of stockholders is not adequate, they did not attend Annual meetings, few write letters and visit companies. It is the duty of the management to arouse the interest of stockholders in the company through various measures. Annual Reports, dividend inserts, stockholder magazines etc; may be a few tools to nurture interest in the stockholders about their companies.

The author while narrating his experiences, explained how the founder and former member of the Board of General Mills Co; James F. Bell, conducted informal meetings of stockholders in 1938 and used to meet 25 per cent of their stockholders personally. In such meetings the Chairman created a tradition to greet each stockholder personally.

at the door and use of stage or platform was avoided to ensure free movement with the owners and at the end of meeting a question-answer session was conducted. The rationale was to get the stockholders involved with the company morally, spiritually and financially.

Another important observation of the author regarding measurement of awareness of stockholders is revealed by the fact that very few of them recognise the products sold by the company and fewer used them or recommended to their friends. In such an instance, to familiarise the stockholders about the products dealt in by their company to make their active users and boosters of the products a Christmas Gift Package scheme was introduced and sold at Cost to the stockholders.22

The uninformedness of people regarding ownership of a corporation as revealed by the scientific study conducted in 1947 by Henry C. Link and the Psychological Corporation23 says that one-third of the people agreed that "a handful of men like Duponts, Rockfellers, and Fords own most of the corporations in America". Eight, out of ten admit that "they have no idea as the to the number of persons who own a big corporation".

22. Ibid, P. 64.
One person in five guesses that big corporations are usually owned by fewer than one hundred people. Most of the people did not know, that the "owners of the big corporations are the general public—ordinary people who have spare money widely scattered and not concentrated in a particular locality". 24

Francis while explaining the need for discussing the responsibilities of business towards different sections of the society, says, "Yet I wonder how often civil servants or trade unionists or lawyers, or physicians or even clergymen—hold meetings solely for the purpose of discussing their responsibilities. Why, then, do we? Is it because we are specially conscientious? Actually I believe it is because our calling is so new, because our task is so vital and because we are frankly a bit bewildered. 25 This shows that business certainly has an effective influence over the society.

About the future role of business leadership, the author rightly forecasted that the next age of business leadership will belong to those who count their success in terms of the greatest possible service to greatest number of people. 26

24. Ibid.
The author in order to encompass the divergent responsibilities of business management and their proper discharge has devised an Oath so that the business leadership if stick up to such an Oath will fulfil the test of its leadership.

Maheshwari and Gupta: in their book Business, Government and Society, deal with the social responsibilities of business. Highlighting the inter-relationship of profit and social responsibility, the authors mention that business was afraid of discharge of social obligations with the view that, it will increase cost of production of goods and services and reduce their competitiveness. It is erroneous to think that there lies any controversy between profit objectives and social obligations. It is a sufficient social obligation of business to run the business efficiently and earn profit. Because a loss incurring unit is a burden on the society and its closure affects adversely various segments of the society.27

Peter Drucker says that "the problem of any business is not maximisation of profit but the achievement of sufficient profit to cover the risks of economic activity and thus to avoid loss."28 Thus, profits are essential to run the business with possible growth and at the same time to satisfy the interests of various interest groups of the society.

28. Ibid.
Urwick is of the opinion that "nothing can be a bigger offence than to increase one's profits by evasion of taxes, by selling sub standard or underweighed goods to the consumers, by forcing workers to work under inhuman conditions etc". Thus, no one can be allowed to earn profit in a manner inconsistent with the socio-economic policies of the government and while earning profits, one cannot ignore the indirect adverse effects of his activities on society.29

Oliver Sheldon a British business leader has derived the concept of Social Responsibility, by four basic observations of social environment he made.

First: he saw an awakening of public interest in the inner working of business, due to close co-operation between industry and community.

Second: he observed demand of workers for more leisure time and opportunity for self-improvement.

Third: association of workers into trade unions and political club etc; was the beginning of an atmosphere conducive to social change.

Finally he noted, a new spirit of inquiry stemming from application of scientific principles to problem solving.30

30. Ibid, P. 308.
The main contribution of Oliver Sheldon in this regard is that he has given more importance to the human and social aspects of management as against mechanical side of management.

The present day business has become a 'profession of public service' and businessmen, 'public trustees'.

Earnest Dale 31 is of the opinion that today Manager is an arbiter among many interests of public affected by business, the stockholders, the employees, the suppliers, the consumers, and the local community. It is the duty of the businessman to divide the returns from the business equitably by providing:

(i) fair return to shareholders;
(ii) fair working conditions and pay for the workers;
(iii) fair deal to suppliers and customers;
(iv) become asset to the local community and nation.

The authors have made clear the misconceptions about profit and discharge of social obligations. As profits are essential to discharge social accountability and to avoid loss in the course of economic activity.

Rehman in his article 'Social Accountability of Management' discusses the importance of Management in discharge of social accountability as follows:

a) Business organisations acquire considerable power by virtue of their command over a set of physical and intellectual resources in the course of their business. This power delegated by the society and carries certain social obligations.

b) Management is custodian of corporate resources and have to pursue long term self interest which includes concern for social obligations.

Hence, management has to include its social obligations as inputs into the decision and action process.

Ramaswamy, in his paper presented at the National Seminar on State level public enterprises, studied the social roles played by selected Tamilnadu State level Public Enterprises. The social problems emphasised by the author are poverty, unemployment, consumer problems, education, artistic, charitable and youth activities.

32. Rehman H; 'Social Accountability of Management'. Indian Management, Nov. 1982, Vol. 21 No. 11, P. 7
33. Ibid, P. 8.
The different groups towards which the business has social responsibility are employees, consumers and community and government. The notable feature of this paper is that it has listed certain considerations expected from the government. They are:

(i) clean, prompt administration;
(ii) rational tax structure;
(iii) reasonable stability in legislature, administration etc.

The units of Public Enterprises selected by the author for the study of Social Responsibility Measures were four viz.,

1) Tamilnadu Industrial Investment Corporation (T.I.I.C.);
2) Electronic Corporation of Tamilnadu (E.L.C.O.T.);
3) State Industries promotion Corporation of Tamilnadu (S.I.P.C.O.T.); and
4) Civil Supplies Corporation.

The important conclusions of this study are briefed as under:

(i) The company should base its decisions not on the criterion of what is best to the shareholders
but on, what is best for the community at large;

(ii) A company has responsibility to pressure the environment and maintain ecological balance;

(iii) There are statutory requirements of social responsibility alongwith voluntary requirements;

(iv) The author exerts that there should be a Study Group consisting economists, statisticians, sociologists, businessmen, directors, partners, members of the Chambers of Commerce etc;
- to prepare a set of business norms for adoption by the business community;
- to examine the hurdles in the way of the implementation of these business norms; and
- to recommend remedial measures to eliminate those hurdles.

Ramaswamy's study of state owned four public enterprises has enlisted welfare measures undertaken by the respective PSUs. No comparison is made either inter-units or intra-units basis but it is still an information giving study. Moreover the various schemes and concessions offered in the name of Social Measures which in fact meant to represent Social Responsibility of these selected PSUs, did not quantify the benefits in rupees/value terms to the concerned beneficiaries.
The state-owned four public sector units selected for the study are different in respect of the nature size and their functions. Their activities have different spheres, therefore, these comparisons may not be very valid. However, the suggestion made by the author with regard to setting up of a Study Group constituting experts from different fields of activity to study the norms to be followed by the business community and to remove the hurdles in their implementation is worth giving a serious consideration.

Singh\textsuperscript{35}, in the article 'Social Responsibility of Business' expresses his views as 'a business cannot run efficiently when society is hostile towards it'. Business is no longer the sole concern of the industrialist and the investors, and it has to be efficient not only to satisfy the interest of consumers but should be conscious of its wider obligations towards society.

The expectation of the general public from the business has risen compelling the business to make social contribution even if it damages short term profits.\textsuperscript{36}

The author has highlighted the importance of the business in society and its inevitability to contribute for the benefit of the society at large. Its recommendations

\textsuperscript{35} Singh, P.N; 'Social Responsibility of Business', Lok Udyog, Delhi May, 1978, P. 27.
\textsuperscript{36} Ibid, P. 28.
for the introduction of compulsory Social Responsibility Audit for both public and private sectors is need-based. Moreover to define the social indicators for each industry or group of industries as suggested by the author will help in resolving the ambiguity of social responsibility concept.

Venu\(^{37}\), in the article profitability and Social Responsibility argues that, it is essential to distinguish between economic and financial viability of projects of public sector. This is because the economic viability includes social calculus like the provision of township, subsidised transport etc; whereas the financial viability excludes the social calculus. Naturally, in such case, the difference between the economic and financial viability should be compensated if a management is expected to run its organisation efficiency.

The author has pointed out the most controversial aspect of measuring profitability in public sector. As Public Sector is expected to discharge certain social obligations which affects their economically viable decisions. In such case the likely profit-foregone due to the consideration of social responsibility of business should be compensated by the Exchequer, so that their profit balance shows the real state of efficiency of the organisation.

37. Venu, S; 'Profitability and Social Responsibility; A Reconciliation' Lok Udyog, Nov. 1971.
About the social accountability of Business, Kempner\(^{38}\) says that a number of text books written by businessmen and academicians reveal that business should try to reconcile the interest of the shareholders, workers, consumers and the government (representing the community as a whole) on the other hand many writers are of the opinion that the firm's traditional objectives of pursuing profit and growth is the best means to discharge its social responsibilities.

The organic view does not see any incompatibility between the firm's obligations to employees, customers and the wider community and orthodox policies of growth and profit.

Moreover "it is not thought to be the responsibility of businessmen to initiate widespread social changes, that would be brought about by a radical re-orientation from ourthodox objectives."\(^{39}\)

Alternative policies to profitability and the growth of either firms or whole economies are not yet clearly framed nor accepted by firms or governments, nor the implications been thought through the institutional level.\(^{40}\)


\(^{39}\) Ibid, P. 12.

\(^{40}\) Ibid, P. 13.
Summary: The concept of social responsibility of business moving from the stage, when it was considered that the objective of business 'is to protect the interest of its owners through profit maximisation' has reached now to a stage where the business is considered as 'Profession of public service, and managers are trustees. The fruits of business are to be distributed proportionately among the various interest groups of the society.

The statements like "no one can be allowed to earn profit in a manner inconsistent with the socio-economic policies of the government and while earning profits one cannot be permitted to ignore the indirect adverse effects of his activities on society" emerged. The controversy arising from the quantum of profit and willingness to discharge social responsibility is irrational. Earning profits is the primary social responsibility of business. The test of discharge of social responsibility of a business is its actions and social responsiveness shown to the needs of the community. There are several interest groups like shareholders, employees, consumers, suppliers, community, society and government towards which a business has to discharge its social responsibility.
The different pieces of literature encompass right from the traditional concept of business, how it gradually succumb to the pressures of the society and acceptance of the fact that business is a part of society, the various responsibilities a business enterprise owe towards societal groups including the conflict between profit and discharge of social obligations etc; are dealt in detail.

But the most important facet of the problem remains to see how to measure social responsibility of a business? What actions and parameters are needed to examine whether a company has successfully discharged its social responsibility? or vice versa are significantly dormant.

Cherunilam has argued that social responsibility should be expected from every section of the society and its application not to be confined merely to business. His study has not covered the areas like how the social responsibility of business is to be measured? In the present research an attempt is made to study social responsibility of a public sector fertilizer company with the help of certain commonly accepted parameters.

The findings of the research survey conducted by Khan helps to understand the managerial attitudes in two different countries i.e. India and Britain. Though India and Britain have resemblance in respect of the prevailing political
system but the stage of economic development of these two countries is different. Despite the different stages of their economic development, the attitudes of Indian and British managers in respect of social responsibility were similar to a large extent. This study lays more emphasis on the attitudes and less on managerial practices, which are undoubtedly more reliable for measuring social responsibility. The present research encompasses on the one hand the attitudes of managers towards social responsibility based on the questionnaire and on the other it also examines the actions accompanying with the help of different social and economic parameters of social responsibility.

Kempner discusses the two views of social responsibility. One is that the reconciliation of interests of various groups is considered as social responsibility of business whereas the other viewpoint is pursuance of objectives of growth and profit is the social responsibility of business.

The present research is based on the concept that a business has social responsibility towards various groups of the society. Profit earning is the primary social responsibility of business. In addition to earn profit, there are certain other social obligations, which a business has to discharge. Thus, on one hand, business has to utilise its resources efficiently thereby earn profit, and on the other,
has to utilise profit in such a way as to result in protection of interest of various groups of society. Thereby the social responsibility of business is discharged.

Maheshwari and Gupta have discussed the essentiality of profit to discharge social responsibility. But on what type of activities such profit could be utilised is not mentioned.

Rehman is of the opinion that society has endowed business enterprise considerable power by virtue of its command over a set of physical and intellectual resources in the course of business and in turn, it expects certain responsibilities to be discharged. His study does not offer any practical standards towards measuring social responsibility of business.

Ramaswamy expects certain considerations from the government to help discharge of social responsibility. The state public enterprises selected for the study by Ramaswamy are heterogenous in nature, size and functions. His study did not make any inter unit comparison or comparisons over a period of time. The present research undertakes an intensive study of a public sector fertiliser company i.e. FCI and aims to compare the performance of FCI relating to social responsibility with the help of different parameters over the period of study.
CHAPTER - 4

PUBLIC SECTOR FERTILISER INDUSTRY

CONTENTS:

4.1 Importance of Public Sector in the Economy
4.2 Social Responsibility of Public Sector
4.3 Fertiliser Industry
  4.3.1 Historical Background of Fertiliser Industry
  4.3.2 Need and Importance of Fertilisers
  4.3.3 Government Policies towards Fertiliser Industry
    4.3.3.1 Fertiliser Pricing Policies
    4.3.3.2 Distribution Policies
    4.3.3.3 Feedstock/Technology Policy
    4.3.3.4 High Yield Varieties (HYV) Programme
4.4 Recent Trends in Fertiliser Industry
4.5 Summary
4.1 Importance of Public Sector in the Economy:

Public Sector has emerged as a major tool of development in the economy of developing countries like India. Even countries which were the champions of the Laissez faire policy have realised the importance of state intervention in the economic affairs of nations.

The Laissez faire policy dominated the world in the seventeenth and eighteenth centuries but it began to give way to state regulation and control in nineteenth century. With the passage of time it was realised that mere control on the part of government is not enough but state intervention in the economic activity is essential to ensure economic growth with social justice.

The idea of state intervention in the economy was strengthened with the Industrial Revolution, which brought about an unjust and inequitable social order. It led to separation of man from his craft and his family. Man became just an attendant upon a machine erected with the sole objective of earning money for its owners.¹

Apart from the evils of industrial revolution, private capitalism also led to certain irregularities, and undesirable

developments. The old system of independent self-supporting families in an around villages was disturbed and the barren realities of industrial revolution took its place. The resultant operation of 'Laissez-faire' policy led to side by side existence of distress and luxury, starvation and plenty, riches and nakedness.² It was in this historical background that the need of State regulation of the economy was felt.

The First World War gave further impetus to State intervention to mobilise resources for the war and to exercise control over the production process. The Russian Revolution, led to the total management of economic life by the State. The Second World War gave a further thrust to State participation in the economic activities of nations.

Unchecked growth of private enterprises is not desirable both from economic and social considerations. It artificially creates poverty amidst plenty, scarcity exist side by side unemployed workers and unused plant capacity. Producers complaint of gluts and surpluses and consumers are underfed, underclothed and under sheltered.³

General de Gaulle stated in 1964 that tomorrow it will be the role of the state itself to ensure the development of great sources of energy, coal, electricity and petrol and also

². Ibid. P. 2.
³. Ibid. P. 4.
of the principal means of transport, by rail, sea or air and of the financial media on which all the rest depends. 4

The need for state intervention in the economic activities has also arisen due to complexity of the modern industrial infrastructure. As big projects cannot be financed without the participation of the state, the Government is drawn into economic activity. As a matter of fact, the rationale of many public enterprises is that they perform a commercial activity that is either unprofitable or unsuitable for private enterprise. 5

The state intervention in the economy by means of public enterprise was considered essential, because most of the developing countries were under foreign rule. On becoming independent and sovereign states, these countries found themselves surrounded by economic poverty and stagnation. In an attempt to foster economic development, overcome poverty, malnutrition, illiteracy etc; the state intervention became indispensable. 6

In India, the beginning of public enterprises dates back to middle of the nineteenth country when Lord Clive had

started a postal system in 1765. This was extended by Lord Dalhousie in 1774. 7

Since independence, the growth of public enterprises is guided by the Industrial Policy Resolutions. The Industrial Policy Resolution of 1943 was aimed at greater production and proper distribution of wealth. Moreover, the justice and equality of opportunity was to be promoted and the state has to perform a greater role in the economic development of the country. It was stated that the government should concentrate on the expansion of units of production already under its control and setting up of new industries rather than nationalising existing units in the private sector. 8

The Industrial Policy Resolution of 1956 stated that "the adoption of socialistic pattern of society as the national objective as well as the need for planned and rapid development require that all industries of basic and strategic importance, or in the nature of public utility services should be in the public sector. Other industries which are essential and require investment on a scale which only the state, in present circumstances could provide, have also to be in the public sector." 9

8. Ibid; P. 10.
9. Ibid; P. 11.
Modern economies are planned economies and the responsibility of planning can best be shouldered by the government itself. Secondly, a country like India where the industrial base is not built up properly needs a great deal of building it up thereby state intervention becomes inevitable. The private enterprise naturally tends to calculate risk and returns on a short-term basis, but to take into account the total needs of the country required a different approach to the problem which only the government can provide. Thirdly, a country which is committed to socialistic society is increasingly compelled to enter into commercial activity. Fourthly, government has to regulate prices, offer subsidies, incentives, disincentives etc; to achieve the social objectives set by it, for which it has to intervene into the economic field. Fifthly, the Directive Principles of the state policy has endowed the government with the responsibility of socio-economic welfare of the people. The revenues from taxation proved to be inadequate for this purpose and government, was compelled to participate in business.

These were some of the forces that led to state participation in economic and commercial activities in India. Public Sector has grown rapidly in our country. This can well be studied with the help of Table-1, which gives a brief profile of Central Government Public Enterprises.

10. Ibid; P.13-16.
The analysis of Table-1 reveals that the number of Public Enterprises owned by Central Government was 155 in the year 1977-78 which gradually increased to 295 in the year 1984-85, thereby an increase of 50 units was registered during the period 1977-78 to 1984-85.

The amount of capital employed in Public Enterprises owned by Central Government was Rs. 12,065 crores in 1977-78 which consistently increased to Rs. 36,390 crores in the year 1984-85. Thus an increase of Rs. 24,325 crores was in the capital employed/achieved during the period 1977-78 to 1984-85.

The turnover of centrally owned public enterprises which was Rs. 18,020 crores during 1977-78, increased to Rs. 54,668 crores, recording an increase of Rs. 36,648 crores in the year 1984-85.

Gross profit before interest and tax which was Rs. 915 crores, in the year 1977-78 rose to Rs. 4,637 crores during the year 1984-85, recording an over all increase of Rs. 3,722 crores during the years 1977-78 to 1984-85.

Percentage of Gross Profit to Capital Employed which was 7.6 in the year 1977-78 increased to 12.7 in the year 1984-85 resulting in an overall increase of 5.1 percent during this period.


<table>
<thead>
<tr>
<th>Year</th>
<th>Capital Employed</th>
<th>Turnover</th>
<th>Number of PEs</th>
<th>Profit Profit to Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977-78</td>
<td>920</td>
<td>21</td>
<td>193</td>
<td>1.93</td>
</tr>
<tr>
<td>1978-79</td>
<td>159</td>
<td>201</td>
<td>199</td>
<td>1.99</td>
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<tr>
<td>1979-80</td>
<td>155</td>
<td>202</td>
<td>199</td>
<td>1.99</td>
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<tr>
<td>1980-81</td>
<td>187</td>
<td>203</td>
<td>199</td>
<td>1.99</td>
</tr>
<tr>
<td>1981-82</td>
<td>168</td>
<td>204</td>
<td>199</td>
<td>1.99</td>
</tr>
<tr>
<td>1982-83</td>
<td>198</td>
<td>205</td>
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<td>1.99</td>
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<td>1983-84</td>
<td>206</td>
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</tr>
<tr>
<td>1984-85</td>
<td>214</td>
<td>207</td>
<td>199</td>
<td>1.99</td>
</tr>
</tbody>
</table>

Notes:
1. Figures in brackets indicate increase in absolute terms as compared to 1977-78.
2. Figures in columns 7 to 10 taken from Table-1 of P. D. These are calculated by research scholar.
3. Capital Employed
4. Gross Profit
5. Percentage Cross before Interest
6. Turnover
7. Profit Profit to Capital

Source: Figures in columns 1 to 6 taken from Table-1 of P. D. These are calculated by research scholar.

Oman University, Surat, 1984. By Mrs. Surya Kalpadar.
TABLE - 2
INVESTMENT IN CENTRALLY OWNED PUBLIC ENTERPRISES

<table>
<thead>
<tr>
<th>Period</th>
<th>Total Investment (Rs. in Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Five Year Plan</td>
<td>29</td>
</tr>
<tr>
<td>Second Five Year</td>
<td>31</td>
</tr>
<tr>
<td>Third Five Year</td>
<td>953</td>
</tr>
<tr>
<td>Fourth Five Year</td>
<td>3,902</td>
</tr>
<tr>
<td>Fifth Five Year</td>
<td>6,237</td>
</tr>
<tr>
<td>Sixth Five Year</td>
<td>18,223</td>
</tr>
<tr>
<td>As on 31st March, 1981</td>
<td>21,102</td>
</tr>
<tr>
<td>As on 31st March, 1982</td>
<td>24,916</td>
</tr>
<tr>
<td>As on 31st March, 1983</td>
<td>30,939</td>
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<tr>
<td>As on 31st March, 1984</td>
<td>33,567</td>
</tr>
<tr>
<td>As on 31st March, 1985</td>
<td>30,324</td>
</tr>
<tr>
<td></td>
<td>(39,295)</td>
</tr>
</tbody>
</table>

Note: Figure in brackets indicates Increase in Absolute terms as against First Plan.

The Government's policy regarding the important role the Public Sector has to play in the economic development of the country is evident from the Table-2, which gives an account of total investment (in Rs. crores) in centrally owned Public Enterprises.

The Table-2 reveals that the total investment in the Central Government owned Public Enterprises was Rs. 29 crores at the time of First Five Year Plan. The Investment rose to Rs. 91 crores in Second Plan, Rs. 953 crores in Third Plan, Rs. 3,902 crores in Fourth Plan, Rs. 6,237 crores in Fifth Plan, and Rs. 16,225 crores in the Sixth Plan respectively. At the end of March, 1985 the Investment in centrally owned public enterprises was Rs. 39,324 crores. Thus, if we compare the growth of investment we find that the investment which was Rs. 29 crores in the First plan, rose to Rs. 39,324 crores at the end of March, 1985, recording an overall increase of Rs. 39,295 crores.

4.2 Social Responsibility of Public Sector:

Public Sector enterprises are normally established with the view of setting up of capital intensive units, create employment, help import substitution, export promotion etc. 11

As Public Enterprises have to perform various functions, keeping in view the national interest, hence, they cannot give the same weightage to profit as the private sector enterprises give. Consequently the performance of the public sector enterprises cannot be judged on the same grounds as is done for private enterprises.  

The main responsibility of public sector management which distinguishes it from the Private Sector management is the fact that the former has to reconcile its plans and operations with the national goals. Because of multiplicity of objectives of the management, the public enterprises have to make a trade off among them.

Laxminarain says that each public enterprise is a part and parcel of the overall structure of the government and the values declared by the State as essential for the betterment of the society will have to be pursued by public enterprises. The 'best interest' of a Public Enterprise depends upon the 'best interest' of the country and accordingly changes from time to time.

14. Assessing the Public Sector; op. cit.
We find that the private sector management keeps its eyes strictly on the profit maximisation objective while public sector management considers the profit as secondary objective. In private enterprises, social considerations are not taken seriously whereas in public enterprises, it is built in the system. But inter-mingling of social and economic considerations create problems for measuring efficiency of PEs.¹⁶

Undoubtedly, profit is more reliable criteria for measuring efficiency of a business enterprise but at the same time while measuring efficiency of public enterprises profit cannot be regarded as the only indicator of efficiency. Because the profit that appears in financial statements of PEs does not necessarily reflect its efficiency, nor losses its inefficiency. The factors that affect working of PEs should be kept in view while determining their efficiency. These factors are, Government policies, surplus staff, being model employer, employment of persons from certain backward categories, the manner in which the government wants to use Public Enterprises as instrument of public policy, political pressures affecting the autonomy of PEs management etc.

Some important activities that are undertaken by public

¹⁶. Ibid, P. 204.
sector in the name of social responsibility are:

1). **Industries with long gestation period**:

Government sets up public enterprises in heavy and core industries, which have longer gestation period in view of the national interest. Huge amount of capital is held up in such projects, which no private enterprise can dare to.

ii) **Townships**:

Public Enterprises provide township facilities to their employees/workers mostly in cases where their units are set up in comparatively backward regions. It is estimated that about 5 to 10 percent of the investment in public enterprises are in their capital cost of Townships. In addition, the recurring expenditure on maintenance of township is substantial.

iii) **Respiratory process to Sick Units**:

Government takes up near-sick or sick units under its control for financial respiration process to make them live again. Normally, the first five years of take-over of sick units is considered as gestation period for them.

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iv). Removal of Regional Disparities:

To reduce regional disparities, the government has established public enterprises in backward areas and it is considered as the social responsibility of public sector. It involves building up of costly infrastructure, which otherwise would be available at much less expenditure had the unit being located in developed areas.

v) Ancillaryisation by PEs:

The Bureau of Public Enterprises through its guidelines instructed PEs to develop ancillary industries. Long term contracts with them are also suggested wherever possible in fixing prices, keeping in view the cost of production and a reasonable rate of return of 10 to 20 per cent (before tax) on capital employed.

vi) Import Substitution:

For items to be substituted for imports, it is suggested that ordinary prices be fixed mutually with the parties allowing a reasonable rate of return of 12 to 15 per cent on capital employed. There are no clearly defined norms in respect of economic and social goals of PEs in India, making the task of measuring their social responsibility more difficult.

The nature and extent of social obligations of a PE differs from industry to industry and over a period of time. The most critical area of evaluation of efficiency of public enterprises is determination of costs and benefits of social obligations. In this connection the suggestions made by the British Select Committee on Nationalised Industries,\(^\text{20}\) are worth mentioning.

1. The Committee is of the opinion that the nature and extent of Social obligations of PEs should be determined by the government, which is a custodian of social and public interest.

2. The quantification of social obligations is the duty of the government because it involves matters that go beyond the PE and affect wider social interests.

3. The direct costs of social obligations should be published so that a citizen know what he is paying for social benefits that he or his neighbour is receiving. And he may decide whether or not he is getting good value for his money.

4. The PEs should be compensated for social obligations undertaken by them. The examples of un-economic obligations undertaken by British PEs, which were compensated include:

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\(^{20}\text{Ibid; P. 208.}\)
i) The National Coal Board was reimbursed the losses incurred in deferring the closure of unremunerative collieries, at the instance of government.

ii) London Transport, which postponed the fare hike proposal was paid loss of revenue, consequent to this decision.

iii) British European Airways was allowed for adjustments in capital reconstruction or suspension of interest charges to compensate government's refusal to allow it to buy an American air-craft.

iv) For British European Airways' Highlands and Inlands services, the financial targets fixed were half a per cent low.

Thus, as long as social obligations of PE, remain undefined and attempts to quantify them are not made, it would be difficult to assess the PE efficiency. At the same time, whether a PE has discharged its social responsibility or not can not be concluded logically in the absence of clearly defined social obligations. Moreover, to what extent the losses incurred by a PE are due to its discharge of social obligations can be known only when a clear demarcation between social and economic objectives is made and targets are set for them accordingly.
4.3 **Fertiliser Industry** :

The fertiliser Industry occupies an important place in the Indian economy. India has now emerged as one of the largest manufacturers of Nitrogenous fertilisers in the world. The plants at Ramagundam and Talcher are the World's largest coal-based plants, adding feather to India's technology. The importance of fertilisers cannot be under-emphasised in view of the food requirements of the country. The Government's special attention has enabled the country to achieve self sufficiency in respect of food production.

Such an increase in food production is the result of adoption of modern farming techniques, improved seeds, balanced application of chemical fertilisers, dispersal of fertiliser use knowledge, distribution of fertilisers to remote areas, fertiliser price control, High yield varities programme etc. The purpose of this chapter is to discuss the historical perspective and importance of fertiliser industry, government policies in respect of pricing, distribution, technology etc. In addition, the fertiliser industry's capacity, production, imports, etc, are also discussed in this chapter.

4.3.1 **Historical Background of Fertiliser Industry** :

India is basically an agricultural country. But the progress achieved in the agricultural sector is still not upto the desired level of satisfaction, when we compare India
with other countries in respect of yield per Hectare. For example in the year 1984-85, Japan ranked first in the world with an average yield of 6414 Kg. per hectare in respect of paddy, while India was ranked to eleventh position as its yield was 2126 Kg. per hectare. Similarly in case of wheat yield during the year 1984-85 Italy was ranked first in the world as its yield per hectare reached 10005 Kg. and India declined to Twelveth position, yielding 1851 Kg. per hectare.21

These figures however, should not be interpreted to mean that they reflect India's inability to enhance the 'yield per hectare' and the overall agricultural production or the 'area under cultivation'. The Country's status as denoted by the above statistics was on account of the fact that India remained a British colony for a long period and British Rulers made deliberate attempts to squeeze out the resources of the country to leave it at the mercy of the future circumstances.

The use of fertilisers started for the first time in India in the year 1920, when the Tea Plantations were using imported Ammonium Sulphate (AS) along with the by-produce from Tata Iron and Steel Company. In 1930's the use of fertilisers was also extended to non-tea plantations like sugarcane and rice.

In respect of the Indian Soil, the need of fertilisers was felt in the year 1993 when 'John Augustus Volecker' made some observations and said that "it is the soil" that will produce the crops and "it is the manure" that will enhance agricultural produce. He further observed that "water and manure constitute the cultivator's chief wants and that supply of manure must go hand in hand with the water and must like the latter be taken up by the Government otherwise the soil will not provide for the increasing millions of people. 22

**TABLE - 3**

**PRODUCTION OF NITROGENOUS FERTILISERS DURING THE BRITISH PERIOD**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Year</th>
<th>Nitrogenous Fertilisers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1932-33</td>
<td>1699</td>
</tr>
<tr>
<td>2.</td>
<td>1936-37</td>
<td>3358</td>
</tr>
<tr>
<td>3.</td>
<td>1941-42</td>
<td>6698</td>
</tr>
<tr>
<td>4.</td>
<td>1946-47</td>
<td>4640</td>
</tr>
</tbody>
</table>

**SOURCE**: Desai Gunwant M: Historical Perspective-"Growth of fertilisers use in Indian Agriculture, past Trends and Future demand"; New York, 14 850, P. No. 8 Table-1.

The production figures of nitrogenous fertilisers of the British Regime are given in Table-3. In the year 1932-33. Production of N was 1699 Metric Tonnes and it continued increasing till the year 1941-42. Its production declined from 6698 MT in the year 1941-42 to 4640 MT in the year 1946-47.

However, the year 1942 marked the beginning of a new era in the history of Indian fertiliser industry. India realised in the wake of Japan's attack on Burma in the year 1942, that dependence on imports of foodgrains from Burma could no more be relied upon. The government launched "Grow More Food Campaign" in an effort to give an impetus to the food production the country. This movement was further intensified at the time of Bengal Famine in the year 1943, which resulted in the loss of lives of about one and a half million of people. 23

The 'Grow More Food Campaign" was launched to attain the following objectives:

a) expanding the area under foodgrains crops;
b) augmenting irrigation;
c) increasing the supply of improved seeds;
d) extending the use of manures and fertilisers on foodgrain crops.

23. Ibid; P. 9-11.
Thus, the conditions created on account of the Japan's attack on Burma in 1942 and Bengal Famine in 1943 gave rise to a decision to setup first Ammonium Sulphate (AS) plant at Sindri in the year 1946. The plant was to receive hard-coke from Tata Iron and Steel Company, Jamshedpur and Gypsum from Bikanair. Earlier it was to receive Gypsum from Daudkhel in Sind, which went to Pakistan as a result of the partition of the country in the year 1947.24

However, the first superphosphate factory was established in Ranipet (Tamilnadu) in 1906 and the enterprises like Parry's (1906), J.K. Chemicals (1953) and Dharmasi Morarji (1924) were established in the private sector.

The capacity at Sindri was thought to be sufficient to meet the demands of nitrogenous fertilisers, but soon it was realised that more such units are required to be established to keep pace with the growing requirements of fertilisers. Two Committees were setup, one headed by Shri B.C. Mukherji, ICS and the other by Dr. G.P. Kane (the then technical advisor to the Government of India). These Committees looked into the details of setting up of new capacities at different locations. Their recommendations included, setting up of units at Nangal, Trombay, Namrup, Rourkela Gorakhpur and Neyveli.

The unit at Nangal was planned to be based on surplus power available from Bhakra system, whereas the Trombay unit was to use surplus refinery gases and naphtha from neighbouring Burmah-shell and Caltex refineries. The prospective unit at Namrup was based on associated gases from Maharkatiya oil fields. The Rourkela unit was to receive hydrogen from cokeoven gas fractionation. Similarly Gorakhpur unit was to use naphtha received from Barauni refinery and Neyveli was based on locally mined lignite.  

Fertiliser Industry has undergone several changes in regard to its Feedstock base, which is the prime regulator of its performance and efficiency. Due to the fear of exhaustion of limited reserves of natural resources, every country is trying to use a feedstock which assures its availability for a longer period of time. The price aspect of the feedstock is also considered because if it has to be imported, the foreign exchange out flow may adversely affect the economy. But, at the same time, the feasibility of the operations and processes of the plant continue to dominate the scene.

The costs of plant and equipments that are used in the fertiliser industry are rising rapidly. In view of such a price rise situation, long term planning about the plant has become inevitable. Because any change in the plant after its installation would become a costly affair and under-utilisation of existing capacity would incur a heavy loss.

With the introduction of new type catalysts in the petroleum-based feedstock like Naphtha, Natural gas, fuel oil etc, and usage of high pressure turbo compressors, economies of large scale operations are achieved. As a result the coal-based units which were planned to be setup at Korba, Singareni etc; were postponed. A decision was taken to setup capacities at Durgapur, Cochin, Kanpur, Madras, Barauni, Goa and Mangalore, based on Naphtha as feedstock.

But soon it was realised that increase in the use of Naphtha by fertiliser plants would lead to a situation, where the domestic supply of Naphtha would not be able to meet the requirements and may necessitate imports. The increase in demand for crude resulted in price-spurt situation in the world market and countries like India could not afford to forego huge foreign exchange.
In this context, steps were taken to revive the feedstock policy. A committee was setup in 1968-69 which included representatives from Ministry of Fertilisers, Finance, Planning Commission and prospective owner company, i.e. Fertiliser Corporation of India. The committee after careful consideration on various issues, sanctioned plants at Ramagundam, Talcher and Korba in 1970. The Korba project is kept in abeyance, pending observation of the actual results of Ramagundam and Talcher plants.26

With the discovery of crude and free gas field off the West Coast and north-western shore of the country the feedstock policy was again revised during 1975-77. And four plants were sanctioned, two at Thal Vaishet (Maharashtra) and the other two at Hazira (Gujarat).

The feedstock-wise capacity of Niterogenous fertilisers is shown in Table-4.

### Table - 4

CAPACITY OF N FERTILISERS ON THE BASIS OF SOURCES OF FEEDSTOCK (AS ON OCT. 1, 1985).

| Naphtha | Fuel | Natural | Coal | Ammonia (Exter- | Elect- | Coke | Total |
|---------|------|---------|------| internal power | ric | Coke | Oven | gas |
| Oil     | gas  | gas     |       | supply)         |      |      |      |     |
| 2520.0  | 1174.0 | 1424.1 | 456.0 | 204.0           | 80.0 | 65.5 | 5923.6 |

* @ @ * @
(42.6) (19.8) (24.0) (7.7) (3.4) (1.4) (1.1) (100.0)

26. Ibid P. 68-71
Figures in brackets represent percentage contribution to the total.


Notes:

1. *in the case of 1) FCI, Sindri (21,9000 tpy N) it is assumed 209000 tpy capacity on fuel oil 10,000 tpy capacity on naphtha.

   ii) SAIL, Rourkela (120,000 tpy N) it is assumed, 99,000 tpy capacity on naphtha, 21,000 tpy capacity on coke-oven gas (COG).

   iii) RCFL, Trombay (16,5000 tpe N) it is assumed, 90,000 tpy capacity associated gas from Bombay High and 75,000 tpy capacity on external supply of ammonia.

   iv) GSFC, Baroda (236,000 tpy N) it is assumed; 1,44,000 tpy capacity on naphtha 92,000 tpy capacity on natural gas.

2. *Only a part of the capacity is based on electrolysis and the rest is on fuel oil.

3. Capacity of ammonia planned to be marketed /not included in the total.

4. Projects under Implementation, Approved in Principle and under consideration are not taken into account.

Table-4 shows that in the production of 'N' fertilisers the contribution of Naphtha as the Feedstock is highest i.e. 42.6 per cent of the total capacity. The second widely used feedstock is Natural Gas which accounts for 24 per cent and the lowest share is of coke oven Gas which accounts for 1.1 per cent of the total 'N' producing capacity.
4.3.2 **Need and Importance of Fertilisers**:

In India the land under cultivation is yielding low output. Moreover, most of the arable land has already been brought under cultivation. In order to enhance overall agricultural production and the yield per hectare of land, application of 'chemical fertilisers' is of crucial importance.

In a report submitted by the Royal Commission on Agriculture in India, to the British King in the year 1928, the commission observed that 'one of the most essential plant nutrients in which the soils of India is deficient is the nitrogen'. The commission further mentioned that there was no proper method for replenishment of the soil except the natural process. As a result the quantum of nitrogen removed from the soil in the form of crop is not feded back to the soil. Hence, the soil fertility is bound to be low in such a situation. Another important feature pointed out by the commission is that farmyard manure was burnt as fuel and oilseeds, food and animal products such as hides and bones which contain high quantity of combined nitrogen, were exported.27

The Report of National Commission on Agriculture stated that soil has nutrient stores endowed by the nature,

27. Sivaraman B. - 'Fertilisers in Indian Agriculture'- "Development of fertilisers in India, Commemorative volume, New Delhi Fertiliser Association of India; 1980, P. 32."
and the crop raised from the soil removes plant nutrients, which are determined by chemical analysis. These nutrients so removed by the crop vary from soil to soil and crop to crop. If the quantity of nutrients lost, as a result of raising crop is replenished, then the soil fertility is likely to be reformed. As each plant nutrient has a specific function to perform, they should be available in a balanced quantity, otherwise full benefits cannot be reaped. Thus the use of Chemical Fertilisers is necessary to serve as supplement and to maintain the soil fertility.

In addition to the nutrient stores, discussed above, soil also contains micro-nutrients. The small quantity of micro-nutrients is normally available in the soil, but due to intensive cultivation and high yielding varieties, the quantity of micro-nutrients may be felt deficient. These small quantity nutrients are so essential that their deficiency is reflected in the visual symptoms in the Crops.

4.3.3 Government Policies towards Fertiliser Industry:

The progress and development of any industry depends greatly upon the government policies, and the efficiency with which these policies are implemented. The fertiliser industry in India is no exception.

29. Ibid, P. 40.
Indian Fertiliser Industry has undergone many changes, and now is one of the largest manufacturers of Nitrogenous fertilisers in the world. The world's largest coal-based Ammonia plants at Ramagundam and Talcher are to its credit. The progress achieved in this direction, was the result of a number of programmes, policies and efforts made by both the Central and State governments. The programmes like National Extension Service, Intensive Agricultural Development Programme (IADP); Intensive Agricultural Area Programme (IAAP); etc.; have played an important role in the transformation of Agricultural technology.

Government policies towards fertilisers have played a key role in the development and expansion of this industry. Some of the policies of the Government in regard to pricing, Distribution, Feedstock and Technology of Fertilisers are discussed below. The High Yield Varieties (HYV) programme is also discussed here, in brief.

4.3.3.1 Fertiliser Pricing Policies:

The control of fertiliser prices in India, dates back to world war II when the Govt. established a 'Central Fertiliser Pool'. The Pool was responsible for the distribution of fertilisers in the country. It/prescribed uniform prices for fertilisers throughout the country.
In case of nitrogenous fertilisers the prices are controlled by the Govt. from the very inception. In case of single super phosphatic fertilisers the prices were controlled by Fertiliser Association of India since 1966. These prices were controlled on the basis of Tariff Commission formula covering cost of raw materials and processing cost.

The Government of India, under the revised fertiliser policy of 1965, allowed the manufacturers to set their own prices, for a period of seven years from the date of commissioning of their production. But in practice, it was not applied to Urea, Calcium Ammonium Nitrate (CAN) and Ammonium Sulphate (AS) which account for major portion of the total fertiliser production in the country.

The 'Price Control' introduced by the Govt. has two aspects. One is the 'Retention Price', which the manufacturer is allowed to retain. The other is 'Maximum Retail Price' at which the fertilisers are made available to the consumers.

The retention prices were adjusted from time to time, to input cost changes. But the Organisation of Petroleum Exporting Countries (OPEC), decision of Price escalation, in 1974 and onwards has disturbed the economies of production and marketing. Moreover, the inflationary pressures, all over
the world has resulted in, difficulties for mobilisation of resources for huge investments. The setting up of new fertiliser units has become difficult. The investment per annual tonne of nitrogen output, in some of the latest plants worked out at Rs. 8400, but it ranged from Rs. 6400 to Rs. 11,000 for phosphatic plants, depending upon the process and product opted. Added to it, was the continuous demand for reduction in fertiliser prices, and pressure on the industry to reduce the cost of production. In these circumstances, the only way out was to avail the economies of large scale production.  

The pricing problem, thus has become more complex, because on the one hand, it has to ensure reasonable return on heavy investments made in the industry. On the other hand, the industry has plants of different vintages, processes and feedstock, with one selling price. In view of all such factors, 'Marathe Committee' recommended for working out a formula, whereby every individual producer, would be given a price which assures viable operation of the unit and a single price at selling point which will be remunerative to the farmer. Thus the present pricing policy takes into account both these ends.

On this basis, the formula for retention prices, which is in force now is calculated. This retention price is calculated on the basis of "80 per cent capacity utilisation", of each plant, in confirmation of the prescribed "consumption norms" plus "12 per cent post Tax return" on "Net Worth". If a unit fulfils the requirements, based on which the Retention price is calculated, it is bound to yield 12 per cent profit. If a particular plant's capacity utilisation, is below the fixed norm of 80 per cent, and if its consumption increases the prescribed norms, it is likely to incur losses. The Retention price may vary from plant to plant and over a period of time.

The other end of pricing control, is the 'Retail price' which is lower than the 'Retention price'. The Govt. pays the manufacturer, the difference between the 'Retention Price' and 'Retail Price' in the form of 'Subsidy'.

4.3.3.2 Distribution Policies:

Fertilisers being seasonal commodity, its distribution in time, is very important. The Distribution of fertilisers to places not connected with rail and roadways is a big issue. In our country, the consumption of fertilisers vary from state to state, and even from village to village within the same state. The concentration of fertiliser use is confined to
disperse the benefits of fertilisers use, the Govt. has implemented different policies from time to time.

On the basis of recommendations of expert committee, the Govt. announced a liberalised fertiliser policy in 1965. The policy had given freedom to manufacturers, who were licensed before Dec. 31, 1967 to market their products, through the agencies of their choice. The price fixation, was also left at the discretion of the manufacturers. This relaxation was available, for a period of seven year from the date of commencement of their commercial production. As per the fertiliser policy of 1965. Government retained a right to take 30 per cent of the production of such manufacturers, for distribution of its choice, and the price in this case is to be negotiated with the manufacturers. 32

Since April, 1969, Govt. allowed the fertiliser manufacturers, to market their entire production, through their desired channels.

In the year 1980, the Government/'Block Delivery Scheme' of fertilisers. Different Blocks were made in the country, with the object of i) Diffusing the concentration of fertiliser retail outlets at or near to railheads and ii) to encourage the supply of fertilisers to the remote areas, not connected with railheads or inaccessible areas.

32. Ibid; P. 267.
The Block delivery scheme has come under strong criticism, in recent times. As a result of this scheme, the Government is required to pay additional cost incurred for transportation of fertilisers from railheads to the interior points of consumption. Because initially, the fertilisers were transported to the points of rail connections and dealers have no such provision to claim expenditure for further movement of fertilisers to remote areas.

The main drawback of Block Delivery Scheme, is that it was implemented uniformly throughout the country, without considering the fact, that whether the areas so connected, deserve it or not. As a result, those areas, which have locational advantage of rail head connection got good fertiliser supply, irrespective of the presence of other essential factors, like credit facility and fertiliser use knowledge. Whereas, certain remote areas, which have good potential of credit and knowledge of fertiliser use, suffered merely due to the fact that they were not directly connected with realheads.33

In view of these loopholes, it is expected that, the Government will make necessary changes in the existing distribution policy, to make it more effective.

In the past, non-availability of wagons, for transportation of fertilisers has caused huge losses. Now transportation of fertilisers, through roadways is given due attention, so that the fertiliser consumption does not suffer due to transport bottlenecks.

4.3.3.3 Feedstock/Technology Policy:

The fertiliser Industry has undergone several changes, in regard to Feedstock Policies, the world over. India too has its share. Due to the capital intensive nature of the industry, the decision regarding Feedstock, has effects stretching into the far-future. Any change in it, will be a heavy burden on the financial reserves of the industry. Another issue which this industry faces, is the continuous availability of Feedstock chosen, may be due to price-rise situation or due to the fear of exhaustion of non-renewable resources.

Initially, the coal was used as feedstock, which later proved to be uneconomic. In India, the indigenous pioneer unit producing nitrogenous fertilisers, setup at Sindri in 1959, was based on coal. Later, due to uneconomies related with coal based operations, other petroleum products like Naphtha, Natural Gas, Fuel Oil etc. were preferred.
Till 1973, Naphtha was preferred as feedstock, but due to the Energy crisis in 1973, Naphtha's shortage was feared which could bring some uncertainties. The Govt. began to give importance to fuel oil, but due to high capital cost involved, it did not prove viable. The Govt. at the same time decided to go in, for commissioning of three coal-based projects with 900 tpd; Ammonia capacity, so that the huge resources of the coal in the country could be utilised. Two units at Ramagundam (A.P.) and Talcher (Orissa) are commissioned and one at Korba (M.P.) is kept in abeyance, pending observation of the actual production of the first two plants. These two coal based Ammonia plants are largest of their kind in the world. Due to several problems faced in the operation of these new units, full scale commissioning could not be achieved but the experiences gained over a period of time are strengthening the Indian technology. 34

In view of the discovery of large gas field, by the Gas Oil and Natural/Commission, the feedstock policy was again revised in 1975-77. An estimation revealed that, with the help of these gas fields located, the Govt. will be able to feed 10-12 new plant with 1350 tpd ammonia capacity each.

The Govt. seems to be serious, to bring about reduction in the imports of sulphur. As the sulphur requirements, in the manufacture of phosphates are fulfilled by Imports, the Govt. is trying to promote technology which avoids sulphur imports. In this regard, the use of nitro phosphate is an alternative. In order to encourage the use of nitrophosphate, the Govt. is adjusting its consumer prices in such a way, that the price of $P_2O_5$ through nitrophosphate is lower than the NP and NPK combinations. 35

In respect of fertiliser technology, India is no more dependent on turn-key foreign contracts. Its capabilities have been improved, right from the early 70's, when the engineering work to a larger extent was done locally. Though this indigenous technology proved expensive, because still there are plants not functioning satisfactorily, but it has provided confidence to technological maturity.

4.3.3.4 High Yield Varieties (HYV) Programme:

The quality of seeds, has a bearing on agricultural output. The improved seeds give good yield. The Govt. has

taken several steps, to ensure that the quality of seeds is improved and improved seeds are widely distributed, even in the interior locations of consumption.

The HYV programme was introduced in the year 1966-67. This programme has revolutionised the Indian agriculture, and brought a phenomenal growth in agricultural production. The consumption of fertilisers also increased with the introduction of HYV seeds because, these seeds need more fertilisers than the traditional ones.

The area covered under the HYV programme, at the time of its introduction, in the year 1966-67, was 18.9 lakh hectares, which now has increased to 84.75 crore hectares in the year 1982-83. The target for the year 1983-84 is fixed at 5.25 crore hectares.  

4.4 Recent Trends in Fertiliser Industry:

Fertiliser Industry has an important role to play in agricultural countries like India because application of chemical fertilisers is essential to increase the soil fertility thereby enhancing the yield per hectare. The Government is keen to increase the production of fertilisers though all the requirements of Potassic (K) fertilisers are so far met totally from imports.

Public Sector fertiliser producing companies can be divided into two categories, the first category consists of those producing 'N' & 'NPK' combinations the other category is of those producing 'phosphatic' fertilisers.

The following nine Public sector companies produce 'N' and 'NPK' fertiliser combination:

1. Fertilisers and Chemicals Travancore (FACT).
2. Fertiliser Corporation of India (FCI).
3. Hindustan Fertiliser Corporation Limited (HFCCL).
9. Steel Authority of India Limited (SAIL).

The following seven Public Sector companies produce Phosphatic Fertilisers:

2. Chemical Unit of Associated Industries, Assam.
3. Fertilisers and Chemicals, Travancore (FACT).
4. Hindustan Copper, Khetri.
5. Hindustan Zinc Debari.
7. Maharashtra Agro Industrial Development Corporation Panvel.

SOURCE: Fertiliser Statistics, 1984-85, New Delhi, Fertiliser Association of India, Table-1.01, P. 1-2 to 1-6 and Table-1.02, P. 1-12 to 1-15.

Some of the Public Sector companies produce fertilisers along with other chemicals whereas, majority of the listed above, produces exclusively chemical fertilisers.

**TABLE - 5**

FERTILISER INDUSTRY'S CAPACITY AND SECTOR-WISE SHARE

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Capacity (000 Tonnes)</th>
<th>% Share in Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>Public Sector</td>
<td>3,690.1</td>
<td>657.6</td>
</tr>
<tr>
<td>Private Sector</td>
<td>1,745.5</td>
<td>856.1</td>
</tr>
<tr>
<td>Cooperative Sector</td>
<td>488.0</td>
<td>260.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5,923.6</strong></td>
<td><strong>1773.7</strong></td>
</tr>
</tbody>
</table>

Table-5 gives the total capacity of Indian Fertiliser Industry with respective share of different sectors. The total capacity of Indian Fertiliser Industry during the year 1984-85 is 5,293.6 thousand tonnes in terms of Nitrogenous (N) fertilisers and 1,773.7 thousand tonnes of Phosphatic (P) fertilisers.

Of the 5,923.6 thousand tonnes 'N' fertilisers capacity, Public Sector accounts for 3,690.1 thousands tonnes of 'N' fertilisers, whereas the private sector is responsible for 1,745.5 thousand tonnes of 'N' fertilisers capacity. Moreover, cooperative sector's capacity is 488 thousand tonnes of 'N' fertilisers.

In terms of percentage share, the public sector accounts for 62.29 per cent, private sector for 29.47 per cent and cooperative sector shares 8.24 per cent of the Industry's 'N' capacity, respectively.

The capacity of the Fertiliser Industry in terms of Phosphatic (P) fertilisers is 1,773.7 thousand tonnes. Out of 1,773.7 thousand tonnes, public sector shares 657.6 thousand tonnes, private sector shares 856.1 thousand tonnes and cooperative sector's share is 260 thousand tonnes of 'P' capacity.
In terms of percentage share, the public sector is responsible for 'P' capacity of 37.07 per cent, private sector for 48.27 per cent and cooperative sector 14.66 per cent, respectively.

From the above analysis it can be learned that as far as production capacity of 'N' fertilisers is concerned, Public Sector occupies top position, having 62.29 per cent capacity and private sector ranks second, having 29.47 per cent capacity and the last rank is of Cooperative Sector having 8.24 per cent of Industry's capacity.

Whereas in respect of Phosphatic (P) fertilisers production capacity, the private sector ranks top, having 48.27 per cent of Industry's capacity, second position is of Public Sector having 37.07 per cent and the cooperative sector occupies last position having 14.66 per cent capacity.

Table-6 reveals some details about fertilisers Production, Imports and Consumption; for the period 1979-80 to 1985-86. However, the figures for the year 1985-86 are estimated.
<table>
<thead>
<tr>
<th>Years</th>
<th>Production (Lakh Tonnes)</th>
<th>Imports (Lakh Tonnes)</th>
<th>CONSUMPTION NPK Total NPK (Lakh Tonnes)</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-80</td>
<td>29.83</td>
<td>20.05</td>
<td>52.6</td>
<td>-</td>
</tr>
<tr>
<td>1980-81</td>
<td>30.05</td>
<td>27.59</td>
<td>55.2</td>
<td>4.9</td>
</tr>
<tr>
<td>1981-82</td>
<td>40.93</td>
<td>20.41</td>
<td>60.6</td>
<td>9.8</td>
</tr>
<tr>
<td>1982-83</td>
<td>44.04</td>
<td>11.32</td>
<td>63.9</td>
<td>5.4</td>
</tr>
<tr>
<td>1983-84</td>
<td>45.33</td>
<td>13.55</td>
<td>77.1</td>
<td>20.7</td>
</tr>
<tr>
<td>1984-85</td>
<td>51.81</td>
<td>36.24</td>
<td>82.1</td>
<td>6.5</td>
</tr>
<tr>
<td>1985-86*</td>
<td>57.34</td>
<td>NA</td>
<td>95.5</td>
<td>16.3</td>
</tr>
</tbody>
</table>

Notes: 1. *Estimated.
2. NPK = Nitrogenous, Phosphatic and Potassic Fertilisers Combination.

SOURCE: Economic Survey, 1985-86, Government of India, New Delhi, Table 2.7 and Table 2.8.
The figures of production show a consistent increase over the period 1979-80 to 1985-86. The production of fertilisers was 29.83 lakh tonnes in the year 1979-80 which consistently increased to 57.34 lakh tonnes in the year 1985-86. Thus, there was a total increase of 27.51 lakh tonnes in fertiliser production during the period 1979-80 to 1985-86. In terms of percentage the increase in production of fertilisers amounted to 92.2 per cent during the year 1985-86 as compared to the base year of 1979-80.

As the quantum of fertilisers produced in the country is not able to meet the total requirements of fertiliser consumption. Import of fertilisers has become inevitable.

Import of fertilisers, as shown by Table-6, was 20.05 lakh tonnes during the year 1979-80 which increased to 36.24 lakh tonnes during the year 1984-85. There was a total increase of 16.19 lakh tonnes in import of fertilisers during the period 1979-80 to 1984-85. The total increase in import of fertilisers in the year 1984-85 was 80.75 per cent as against the year 1979-80.

The figures relating to consumption of fertilisers as evident from Table-6, are gradually increasing over the period from 1979-80 to 1985-86. The consumption of ferti-
The fertiliser consumption increased by 4.9 per cent in the year 1980-81 as against the previous year 1979-80. In increased by 9.8 per cent in the year 1981-82 as compared to the previous year of 1980-81. The consumption of fertilisers was increased by 5.4 per cent in year 1982-83 as compared to the previous year i.e. 1981-82. There was a substantial increase in consumption of fertilisers during the year 1983-84 i.e. by 20.7 per cent, as compared to previous year of 1982-83. However, the increase in fertilisers consumption was 6.5 per cent in the year 1984-85 as against the year 1983-84. Again in the year 1985-86 it has increased by 16.3 per cent as against the figures of previous year of 1984-85.

An analysis of the Table-6 shows that the fertiliser production in the country though in substantial quantity is not meeting the demand for fertiliser consumption thereby
necessitating imports. The requirements of potassic fertilisers are totally met from imports.

The consumption is also affected by drought conditions. During the Sixth Five Year Plan, the rate of increase in fertiliser consumption has fluctuated between 5 to 10 per cent, though over the five years, there was an increase in consumption by 56.1 per cent.

4.5 - Summary:

Public Enterprises occupy a unique place in the economy of developing countries like India. Even countries which were firm believers in the policy of 'Laissiz Faire' began to realise the importance of state intervention in the economy.

The evils of industrialisation brought separation of man from his craft and his family, and the self supporting family system living in and around rural areas was disturbed. The barren realities of industrial revolution began to appear with all its exploiting factors and the first state intervention in the form of factory laws was the historical need. However, the First World War necessitated the government of many countries to control the sources of production to meet was requirements. The Russian Revolution advocating total management of economic life by the State, and the
Second World War, provided further impetus to the need for State intervention in the economic activities of those nations.

Most of the developing countries including India, which were under foreign role, on attaining independence chose the path of State intervention for eliminating economic poverty and stagnation in the economy. As a result, State intervention became indispensable.

The Industrial Policy Resolutions of 1948 and 1956 have clearly laid down the role of the state in economic development. The Industrial Policy Resolution of 1956, has stressed upon the acceptance of socialistic pattern of society and all the important, strategic industries and public utility concerns to be exclusively properties of the state.

Table-1 gives a profile of public enterprises owned by Central Government. The 'number of PES' were increased from 155 in the year 1977-78 to 205 in the year 1984-85. The 'Capital Employed' in the centrally owned public enterprises increased from Rs. 12,065 crores to Rs.36,390 crores in the year 1984-85. The 'turnover' figures show
that it was Rs. 18,020 crores in the year 1977-78 and increased to Rs. 54,668 crores in the year 1984-85. The 'Gross Profit' (before interest and tax) was Rs. 915 crores in the year 1977-78 and risen to Rs. 4,637 crores in the year 1984-85. The 'percentage gross profit to capital employed' was 7.6 in the year 1977-78 and rose to 12.7 in the year 1984-85.

Table-2 shows that the 'total investment' in centrally owned public enterprises was Rs. 29 crores in the First Five Year Plan and has substantially increased to Rs. 18,225 crores in the Sixth Five Year Plan. The 'Investment' figures has further increased to Rs. 39,324 crores as on March 31st, 1985.

This all confirms an ever increasing confidence shown in public sector, which has to play a very dominating role in the economy. The economic development lies on the shoulders of PEs but are they really fairing well with this responsibility or just ignoring the responsibility by means of inefficiency in their operations is the most talked-about question.

Public Sector Enterprises are established with the view of setting up of capital intensive units, create employment, help import substitution, export promotion
etc. As PEs have to perform various functions, keeping in view the national interest, they cannot give the same weightage to profit as the private sector enterprises give.

Laxminarain says that public enterprises are part and parcel of the overall structure of the Government. The 'best interest' of public enterprises, depends upon the 'best interest' of the country and accordingly changes from time to time.

Undoubtedly, profit is a reliable criteria to measure efficiency of a business enterprise but while measuring efficiency of PEs, profit cannot be regarded as sole indicator of efficiency. The various factors that affect the working of PEs should be kept in view. There are several activities that are performed by PEs in the name of social responsibility, like setting up of industries with long gestation period, building townships for its workers and employees, take-over of sick units and steps to make them economically Viable, establishing units in backward regions, thereby incurring huge expenditure on infrastructure, promoting ancillary units, etc.

There are no clearly defined norms setup for public enterprises in respect of the economic goals and social goals, hence, it became difficult to measure efficiency of PEs. The
determination of costs and benefits of social obligations is another hindrance in the way of assessing social responsibility of PEs.

The British Select Committee on Nationalised Industries made certain recommendations useful in Indian context. It made government responsible for determining the nature and extent of social obligations and quantification of their costs. The committee also stressed upon publication of social costs for the knowledge of the general public. Another important recommendation of the select Committee was that the Government should compensate the losses incurred by PEs on account of uneconomic obligations.

Although India is basically an agricultural country, but its progress in the field of agricultural output per hectare and fertiliser consumption per hectare is considerably low. Since Independence, the Government is making constant efforts to promote fertiliser consumption and production as well. Several measures are taken up by the government like Intensive Agricultural Development Programme (IADP), Intensive Agricultural Area Programme (IAAP), High Yield Varieties (HYV) Programme etc; have revolutionised the Indian agricultural scene.
The fertiliser industry has undergone several changes because of the cost of Feedstock and its availability, which is the prime regulator of efficiency. Choice of Feedstock involves consideration of factors like continuity of supply, costs, necessity of imports i.e. foreign exchange involvement etc. Initially Naphtha was considered as suitable Feedstock for fertiliser companies to avail the advantages of large scale production. Accordingly, a decision was taken to use Naphtha in the place of the proposed coal-based plants. But soon it was realised that resources of the country may not be able to meet the Naphtha requirements necessitating imports which is a costly affair involving foreign exchange outflow.

Again a decision was taken to setup plants based on coal as feedstock at Ramagundam and Talcher. The discovery of gas off the west coast of the country and consequently four gas based plants were sanctioned, two at Thal Vaishet (Maharashtra) and two at Hazira (Gujrat).

Table-4 shows the feedstock wise capacity of 'N' fertilisers. A glance at this table reveals that Naphtha is widely used feedstock in the production of 'N' fertilisers in the country i.e. it accounts for 42.6 per cent whereas the Natural gas is second widely used and coke even gas is the least used feedstock in the production of 'N' fertilisers.
The control of fertiliser prices in India dates back to World War II when the government established Central Fertiliser Pool for distribution of fertilisers throughout the country. The Government has controlled the prices of Nitrogenous fertilisers, since inception whereas in case of Single Superphosphatic fertilisers, Fertiliser Association of India controlled it since 1966. The Marathe Committee's recommendation for working out of formula, which, on one hand assures viable operation of the unit and on the other determines a single price remunerative to farmer, came into existence. Based on which the 'Retention price' in fixed and post 'Subsidies' are given which assures 12 per cent/tax return to producer. The 'Retention Prices' are higher than the 'Retail price at which fertilisers are made available to consumers. The difference between these two is paid by the government in the form of subsidy.

Fertilisers being seasonal commodity, its distribution in time is very important. In our country consumption of fertilisers vary from State to State and even from village to village within the same State. Since, April, 1969, Government allowed the fertiliser manufacturers to market their entire product through their desired-channels. In the year 1980, Government launched 'Block Delivery Scheme' of
fertilisers to diffuse the concentration of fertiliser retail outlets at or near railheads and to encourage supply of fertilisers to the remote areas not connected with railheads.

The introduction of High Yield Varieties (HYV) seeds has revolutionised Indian agricultural scene and brought phenomenal agricultural growth. It also resulted in increase in fertiliser consumption because HYV seeds require more fertilisers.

In respect of fertiliser technology, India is no more dependent on turn key foreign contracts. Since 1970, its capabilities have been improved.

The Public Sector fertiliser producing companies can be divided into two categories one is those producing Nitrogenous fertilisers and the other is those producing phosphatic fertilisers. There are nine public sector companies producing 'N' fertiliser and seven are engaged in production of phosphatic (P) fertilisers.

The fertiliser Industry's capacity is to produce 5,923.6 thousand tonnes of 'N' fertilisers and 1,773.7 thousand tonnes of phosphatic 'P' fertilisers. Public Sector's
share is 62.29 per cent, Private Sector's share is 29.47 per cent and Cooperative Sector's share is 8.24 per cent of the Industry's 'N' capacity. In case of phosphatic fertiliser capacity of Industry, the public sector accounts for 37.07 per cent, private sector accounts for 48.27 per cent and cooperative sector's share is 14.66 per cent.

The fertiliser production was 29.83 lakh tonnes in the year 1979-80 and it increased to 57.34 lakh tonnes in the year 1985-86. The consumption of fertilisers is also showing a rising trend, it was 52.6 lakh tonnes in the year 1979-80 and reached to 95.5 lakhs tonnes in the year 1985-86. As the domestic production of fertilisers is not able to meet the consumption rate, hence imports are essential. Moreover, there is no potassic 'K' fertiliser production capacity in the country and all its requirements are met from imports. The figures of imports also show a consistent increase.
CHAPTER - 5

FERTILISER CORPORATION OF INDIA-A PROFILE

CONTENTS:

5.1 FCI - A Historical Perspective
5.2 FCI's Operating Units
5.3 Organisation and Management of FCI
5.4 Summary
5.1 FCI - A Historical Perspective:

The importance of chemical fertilisers was realised long back, right during the British period. A series of events were responsible for the initiative taken by the Government towards establishing companies to produce chemical fertilisers and the establishment of Fertiliser Corporation of India (FCI) was the outcome of such events. The havoc created by Bengal Famine of 1943, forced the British Government to think of measures, which can augment food production. Consequently a food policy committee headed by G.S. Gowing was set up. The Committee pointed out that, the reasons for low food production, were the low contents of nitrogen and phosphorus in the soil. Consequently the Government set up a committee to look into the possibilities, of setting up of fertiliser plants, and to suggest their suitable locations.

The Committee recommended, for the setting up of a fertiliser plant, using coal and gypsum as feedstock, either at Harduaganj (UP) or at Sindri (Jihar). The capacity of the plants, as recommended by the committee was 3.5 lakh metric tonnes of Ammonium Sulphate (AS). The Government decided to setup the first public sector fertiliser plant at Sindri (Jihar), in view of the vicinity and the avail-
ability of abundance of coal and water. The construction of the Sindri plant which commenced, in 1946, was completed in 1950, and the commercial production started on October 31, 1951, which happened to be a "Diwali Day".

In the year 1952, the management of the Sindri plant was handed over to a Government owned company called "Sindri Fertilisers and Chemicals Limited."

In the year 1954, it was realised that the output of the Sindri plant, was insufficient to meet the growing food requirements of the masses. The Government set up a committee, to look into the feasibility of locations, for setting up, few more fertiliser producing plants. The committee came up with the recommendations for setting up new plants at Nangal, Neyveli, Rourkela and Trombay. Ultimately a plant at Nangal was commissioned, which was owned by another government company namely; Hindustan Chemicals and Fertilisers Limited.

To overcome the difficulties in management, and to avail the economies of centralised control, it was decided in the year 1961, that the "Sindri Fertilisers and Chemicals Limited" would be nationalised.

and Chemicals Ltd."
and "Hindustan Chemicals and Fertilisers Ltd." be merged to give birth to the Fertiliser Corporation of India Limited (FCI). Before the reorganisation of FCI, the units and divisions under its control were located at:


The Government's persistent efforts to increase the number of fertiliser plants, resulted in establishment of a new company called "National Fertilisers Limited' (NFL), incorporated on August 23, 1974. The NFL was planned to implement the oil-based plants at Ghatinda and Panipat.

In order to ensure effective control, coordination and efficiency of the plants, the Government in the year 1978, decided to re-organize FCI-NFL group of companies.

As a result of the scheme of re-organization, the following public sector fertiliser companies came into existence.

1. The Fertiliser Corporation of India Ltd. (FCI)
   - i) Sindri
   - ii) Gorakhpur
   - iii) Ramagundam
   - iv) Talcher
   - v) Korba

2. Hindustan Fertilise Corporation Ltd. (HFC)
   - i) Barauni
   - ii) Durgapur
   - iii) Namrup
   - iv) Haldia

3. Rashtria Chemicals and Fertilisers Ltd. (RCF)
   - Trombay

4. National Fertilisers Ltd. (NFL)
   - i) Nangal
   - ii) Panipat
   - iii) Bhatinda

5. Fertiliser (Planning and Development) India Limited (FPDIL)
   - P & D Division at Sindri

The FCI's history has been depicted in Chart No.3

At the time of re-organisation of FCI, it has two operating units, one at Sindri and the other at Gorakhpur. The original Sindri Plant (which is referred to as old plant) was producing Ammonium Sulphate (AS), with a
Chart 3: FCI's History at a Glance

- **Sindri**
  - Project: 1946
  - Commercial Production: Oct 1951
  - Handover
  - Sindri Fertilisers & Chemicals Ltd. (1952)

- Hindustan Fertilisers & Fertilizers Ltd. (July 1959)
  - Merged
  - Fertiliser Corporation of India Ltd. (1961)

**Before**  --- Reorganization of FCI & NFL (April) 1979  --- **After**

**Units under FCI**
- Sindri
- Nagpur
- Trombay
- Gorakhpur
- Barauni
- Durgapur
- Ramagundam*
- Talcher*
- Kozha*
- Haldia pun
- Phul Sinda

**Units at FCI & NFL**
- FCI
  - Sindri
  - Gorakhpur
  - Ramagundam
  - Talcher
  - Kozha*
- HFC
  - Barauni
  - Gorakhpur
  - Ramagupur
  - Haldia pun

- RCF
  - Trombay

- NFL
  - Nagpur
  - Panipat
  - Ghaziabad

- FIPDI
  - Sinda
capacity of 350 thousand tonnes per year i.e. 73.5 thousand tonnes in terms of Nitrogen (N). Two more products i.e. Urea and Double Salt were added to its capacity, and its capacity in terms of N was enhanced, to 117 thousand tonnes."

Owing to technological obsolescence and considerable wear and tear of the plant, the old plant at Sindri was closed and in its place, two new plants known as 'Sindri Modernisation' and 'Sindri Rationalisation' were established.

Thus, as a result of the re-organisation of FCI, the Rationalisation and Modernisation plants at Sindri, were established, and these plants commenced production from Oct. 1979. The plant at Gorakhpur underwent expansion in 1975. Moreover the FCI got the credit of having three of the world's largest coal-based fertiliser projects. The projects at Ramagandum and Talcher were commissioned from November 1980, and the third at Korba was kept in abeyance, pending observation of the results of the first two coal-based plants.

5.2 FCI's Operating Units:

The Sindri Modernisation plant has the capacity to produce, 151.8 thousand tonnes of fertilisers, in terms

of nitrogen, and its main product being urea. A part of the Ammonia produced in the process by Modernisation plant, is being used by the old plant, for the manufacture of Ammonium Sulphate, Nitric Acid and Ammonium Nitrate. Whereas, the Sindri Rationalisation Plant produces phosphatic fertiliser in the form of Triple Super Phosphate (TSP). Its capacity is 150 thousand tonnes per year. The plant at Gorakhpur is capable to produce 131.10 thousand tonnes of Nitrogenous fertilisers and its main product is urea.

The coal-based plants at Ramagundam and Talcher, each has capacity to produce 227.7 thousand tonnes of nitrogenous fertilisers, the end-product being urea. Also project at Korba has the same capacity. The capacity of FCI plant is shown in Table-7.

1. 'FCI - New Milestone' - Information at a glance, pamphlet published by FCI, New Delhi.
The capacity of all the plants is in (000) M. Tonnes per year except Arnon.

<table>
<thead>
<tr>
<th>Plant/Products</th>
<th>(1SP)</th>
<th>(AS)</th>
<th>Phosphate</th>
<th>Superphosphate</th>
<th>Ammonium</th>
<th>Urea</th>
<th>Tri-P</th>
<th>P₂O₅</th>
<th>Nitrogen</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranchor</td>
<td>9,500</td>
<td>0</td>
<td>0</td>
<td>495</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>395</td>
<td>0</td>
<td>222.7</td>
</tr>
<tr>
<td>Ramangudam</td>
<td>9,504</td>
<td>0</td>
<td>0</td>
<td>495</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>395</td>
<td>0</td>
<td>222.7</td>
</tr>
<tr>
<td>Coromandel</td>
<td>28,800</td>
<td>0</td>
<td>0</td>
<td>285</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>285</td>
<td>0</td>
<td>131.1</td>
</tr>
<tr>
<td>1st. Rattonalisation</td>
<td>0</td>
<td>326.0</td>
<td>0</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>150</td>
<td>0</td>
<td>67.2</td>
</tr>
<tr>
<td>2nd. Modernisation</td>
<td>0</td>
<td>330.0</td>
<td>0</td>
<td>151</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>151</td>
<td>0</td>
<td>67.2</td>
</tr>
<tr>
<td>3rd. Old Plant</td>
<td>0</td>
<td>320.0</td>
<td>0</td>
<td>150</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>150</td>
<td>0</td>
<td>67.2</td>
</tr>
</tbody>
</table>

*Capacity of PCI Plants

Table - 7
With regard to Feedstock, the Sindri Modernisation plant is based on, Low Sulphur Heavy Stock (LSHS) and Fuel-oil. On the other hand, the Sindri Rationalisation plant's intake is Pyrites, Rock phosphates and Sulphur. Naphtha is being used by the plant at Gorakhpur, whereas the Ramagundam and Talcher plants consume coal as feedstock. The Feedstock-base of FCI plants is shown in Table 8.

**TABLE - 8**

**FEEDSTOCK-BASE OF FCI PLANTS**

<table>
<thead>
<tr>
<th>Plant</th>
<th>Feedstock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sindri</td>
<td></td>
</tr>
<tr>
<td>i) Old Plant</td>
<td>Gypsum (by product), ammonia and Carbon dioxide</td>
</tr>
<tr>
<td>ii) Modernisation</td>
<td>Low Sulphur Heavy Stock (LSHS)/Fuel oil.</td>
</tr>
<tr>
<td>iii) Rationalisation</td>
<td>Pyrites, Rock Phosphates and Sulphur.</td>
</tr>
<tr>
<td>Gorakhpur</td>
<td>Naphtha.</td>
</tr>
<tr>
<td>Ramagundam</td>
<td>Coal</td>
</tr>
<tr>
<td>Talcher</td>
<td>Coal</td>
</tr>
</tbody>
</table>

*SOURCE: Fertiliser corporation of India-New Milestones' Pamphlet published by FCI, New Delhi*

5. Ibid -
The capacity of FCI, in terms of Nitrogen is 805.5 thousand tonnes per year and in terms of phosphatic fertilisers, it is 150 thousand tonnes. The urea produced by FCI is 1605 thousand tonnes per year.

Diagram 5 shows the plant-wise capacity of N fertilisers of FCI plants. The highest percentage share of N capacity is that of the Ramagundam and Talcher plants, each sharing 30.84% of FCI's total capacity. The Gorakhpur unit accounts for 17.76 percent share, which is the lowest. The Sindri Modernisations share is 20.56 per cent of FCI's N capacity, and it ranks second.

In case of phosphate fertilisers, there is only one plant in the FCI, producing in the form of TSP i.e. Sindri Rationalisation.

5.3 Organisation and Management of FCI:

The Fertiliser Corporation of India is a company, registered under the Indian Companies Act, 1956 and is wholly owned by the Government of India. It functions under the control of the Ministry of Petroleum, Chemicals and Fertilisers.

The Corporate structure of the FCI is shown in Chart 4.
Diagram 5. FCI's Plant-Wise Share of 'N' Capacity.

- Gosakhpur Unit.
- Sindhri Modernisation Plant.
- Ramagundam Unit.
- Talcher Unit.

Note. The Share of the Old Plant at Sindhri is not taken into account in this Diagram.

- = 20.56 %
- = 30.84 %
- = 30.84 %
- = 17.76 %
FCI's Authorised capital is Rs. 800 crores. It has four operating units, at Sindri (Bihar), Gorakhpur (U.P.), Ramagundam (A.P.) and Talcher (Orissa). It also runs a Mining organisation at Jodhpur (Rajasthan) and has a Project at Korba (M.P.). The unique feature of the Ramagundam and Talcher plants is that, they are the world's largest coal based plants.

The Organisational hierarchy of FCI's central office can be seen from Chart 5.

**CHART - 4**

**CORPORATE STRUCTURE OF FCI.**

1. **Name of the Company** : The Fertiliser Corporation of India Ltd.
2. **Registered Office** : 55 'Madhuban' Nehru Place, New Delhi-110 019.
3. **No. of Operating Plants** : Four
   - 1. Sindri (Bihar)
   - 2. Gorakhpur (U.P.)
   - 3. Ramagundam (A.P.)
   - 4. Talcher (Orissa)
4. **Project** : Korba (M.P.)
5. **Mining Organisation** : Jodhpur (Rajasthan)
7. **Capital (as per Annual Report 1983-84)** : 
   - **Authorised Capital**:
     - 80,00,000 Equity Shares of Rs. 1000/- each
   - **Rs. 800.0 (crores)**
8. Products manufactured:

Sindri: Old Plant, Ammonium Sulphate, Ammonium Nitrate, etc.
Modernisation: Urea
Rationalisation: TSP

Gorakhpur: Urea & Argon Gas
Ramagundam: Urea & Argon Gas
Talcher: Urea & Argon Gas

9. Annual Installed Capacity

: In terms of Nitrogen: 8.05 Lakh Tonnes
  In terms of $P_2O_5$: 1.50 Lakh Tonnes

10. Total Number of Officers & Staff (As on 31.3.1986): 12,920

11. Investment (1985-86): Rs. 0.15 (lakhs)

12. Capital Employed (1985-86): Rs. 29,960.53 (Lakhs)

13. Turnover (1985-86): Rs. 27,409.45 (Lakhs)

14. Profit/Loss After Tax (1985-86): Rs. (-) 12,937.86 (Lakhs)

SOURCE: 1. FCI's Status Report, Year 1983-84, P. No.4
Chart 5. Organisational Hierarchy of FCI & Central Office

Chairman & Managing Director (CMD)

Director Finance

Chief Vigilance Officer (CVO)

Company Secretary (CSecy)

Chief Engineer, Management Services (CE(EMS))

General Manager (GM)

Deputy General Manager (DGM)

Marketing (Mktg)

Commercial (Comml)

Technical (Tech)

Personnel & Administration (P& A)

Coordinating Manager (Coord. Mgr)

CTMPA = Chief Training & Manpower

TPM = Project Manager

SAP = Senior Administrative Post

GKP = Gourkhatpur

RMG = Ramagundam

TAL = Talsira

Source: FCI & Status Report, 1983-84, p.3.
It is evident from chart 5 that the Chairman and Managing Director (CMD) is at the top of the hierarchy. The Director of Finance functions under the direct control and supervision of the Chairman and Managing Director of FCI. The various operating units of FCI are headed by the General Managers (GMs). In addition to that, Personnel and Administration, Marketing and Technical Services are also headed by the General Managers.

The Managing Director (MD) is a whole time employee of the company, appointed by the Government. The MD exercises such powers, as are delegated to him, by the Board of Directors. In view of the importance of his position in the organisation, the MD is given wide powers regarding financial matters and other critical policy matters including staffing. The MD is assisted by a number of Advisers, who are experts in their respective areas like, Production, Sales, Finance, Personnel, Marketing etc; in the process of decision making.

Another important official, after the MD is the General Manager (GM). The GM is the head of a particular Unit/Division, and is responsible for the results of the concerned Unit/Division. The performance of particular Unit/Division reflects, how successfully the General Manager was able
to tackle various situations and coordinate the work of his subordinates, and his foresight in decision-making process.

The GM is responsible for matters pertaining to

(a) Production
(b) Maintenance of plant
(c) Finance
(d) Personnel
(e) Materials management
(f) Training
(g) General Administration & Welfare.

Before re-organisation of FCI in 1978, a 15 members Board of Directors was responsible for controlling the affairs of the organisation. However, after re-organisation the no. of Board of Directors has been reduced. As per the Annual Report of the company for the year 1983-84, the Board of Directors of FCI constitutes 10 members; including the Chairman and Managing Director of the company.

The affairs of the corporation are managed by different committees, setup for the purpose. The Diagram 6 shows that FCI's management is influenced and controlled
Diagram 6. FCI-Management Model

BPE = Bureau of Public Enterprises
SCOPE = Standing Committee of Public Enterprises
ICE = Internal Consultative Committee
QPCR = Quarterly Production Review Committee
OMRE = Organization Management Review Committee
PKC = Public Relations Committee
FM = Financial Meet
HDC = Heads of Departments Committee
by six Internally Constituted Committees and two external bodies. The two external bodies known as Bureau of Public Enterprises (BPE) and the Standing Committee of Public Enterprises (SCOPE), also influence the working of the Corporation, as they do in the case of other public sector undertakings.

A brief note about the committees referred above is given below:

**Internally Constituted Committees**:

1. **Internal Consultative Committee (ICC)**: Some of the important functions of ICC are:

   a) To formulate the policies, procedures and systems of management for the corporation;

   b) to formulate short term and long term plans for the Corporation;

   c) to review monthly performance in various functional areas;

   d) to supply necessary information, which is helpful to the Board in taking policy decisions;

   The ICC meets once a month, usually the day earlier to Board's meeting unless otherwise notified.

---

The Internal Consultative Committee, consists of the following persons.

i) The Chairman and Managing Director - Chairman

ii) OSD (T) - Member

iii) Financial Advisor - Member

iv) General Managers of Units/Divisions Marketing - Member

v) Manager (P & A) - Member

vi) Company Secretary - Member

vii) Special Invitee - CTMPA - Convener

2. Quarterly Production Review Committee (QPRC):

The QPRC is responsible for production, planning, fixing targets, review of actual results, corrective actions in the field of production. As the name suggests, this committee meets every quarterly.

The constitution of QPRC is as given below:

i) Chairman & Managing Director - Chairman

ii) General Manager of Units/Divisions/Marketing - Member

iii) OSD (T) - Member

3. Quarterly Materials Management Review Committee (QMMRC):

The functions of QMMRC relate to:

a) Inventory control
b) Despatch of finished goods

c) Procurement of Jags and bulk raw material

d) expenditure of foreign exchange on spares/equipments/raw material etc.

The QMMRC consists of:

1) Chairman & Managing Director  -  Chairman

ii) General Managers of Units/Divisions/Marketing  -  Member

iii) OSD (T)  -  Member

iv) Material Managers of Units/Divisions  -  Member

4. Public Relation Committee (PRC):

It is responsible to coordinate Public Relations work of Units/Division, to avoid duplication of efforts and to ensure economy in expenditure. This committee meets twice a year. The constitution of this committee is as follows:

i) Chairman & Managing Director  -  Chairman

ii) OSD (T)  -  Member

iii) General Managers of Units/Divisions/Marketing  -  Member

iv) Financial Advisor  -  Member

v) PIRM  -  Member

vi) Chief Public Relations Officer  -  Convener
5. **Financial Meet (FM)**:

This meet has the function of formulating Financial plans, monitoring the results and taking remedial measures. The meet takes place twice a year. FM consists of:

i) Financial Advisor - Chairman

ii) Financial Managers of Units/ Divisions - Member

6. **Heads of Department Committee (HDC)**:

Under this committee, all the Heads of Department of the Central Office (at New Delhi), meet on every 1st and 3rd Wednesday of each month, under the Chairmanship of CMD. The purpose being, to coordinate the working of the organisation and to improve its efficiency.

The External Bodies:

1. **Bureau of Public Enterprises** (BPE):

BPE is a department of the Ministry of Finance, which coordinates and controls the functioning of different public sector undertakings, working under the respective ministries. The BPE is responsible to Parliament and reports to it about the working of Public Sector Enterprises. It issues guidelines pertaining to different policy matters of public sector enterprises.
2. Standing Committee of Public Enterprises (SCOPE):

SCOPE is a federation of public sector undertakings, and has been compared with the Employers Organisation in private sector. Its main objective is to discuss the problems faced by the PS undertakings and report those difficulties to the Government.
5.4 Summary: The importance of chemical fertiliser was realised long back, right during the British period. There were several events that compelled the British Government to think of measures to augment food production. A Committee headed by G.S. Gowing pointed out that the low contents of Nitrogen (N) and Phosphorus (P) in the soil was the main reason for low food production. The Government set up a committee to suggest the possibilities of establishing fertiliser producing companies and their locations. As a result of the recommendation of the committee the construction of the first public sector fertiliser producing plant was started in 1946 at Sindri, which began its commercial production on October 31, 1951. It was handed over to "Sindri Fertilisers and Chemical Ltd." a Government owned company, in the year 1952.

In view of the insufficiency of fertilisers produced by "Sindri Fertilisers and Chemicals Limited" in the year 1954, another committee was set up to recommend setting up of few more plants. The committee recommended for establishing plants at Nangal, Neyveli, Rourkela and Trombay. Ultimately a plant was commissioned at Nangal which was owned by another government company called Hindustan Chemicals and Fertilisers Limited.
In the year 1961 it was decided that "Sindri Fertilisers and Chemicals Limited" and 'Hindustan Chemicals and Fertilisers Ltd.' be merged which gave birth to "Fertiliser Corporation of India (FCI) Ltd. This decision of merger was taken in view of the difficulties encountered in the management and control of the above mentioned two independent units.

A new company to produce fertilisers was established in the public sector in the year 1974 which was named, 'National Fertilisers Limited (NFL), to implement oil-based plants at Bhatinda and Panipat.

In the year 1978, the Government, in order to ensure effective control, coordination and efficiency of the plants decided to reorganise the FCI-NFL group. As a result of re-organisation scheme, five public sector fertiliser companies came into being which are The Fertiliser Corporation of India (FCI) Ltd., Hindustan Fertiliser Corporation (HFC) Ltd. Rashtriya Chemicals and Fertilisers (RCF) Ltd; National Fertilisers Ltd. (NFL) and Fertiliser (Planning and Development ) India Ltd. (FPDIL).

At the time of re-organisation, FCI had only two units, one at Sindri (Bihar) and the other at Gorakhpur (U.P.). This Sindri Plant later called as Sindri Old plant and has a capacity to produce 350 thousand tonnes
Of Ammonium Sulphate (AS) per year. Afterwards Sindri Rationalisation and Sindri Modernisation plants were setup and the old Sindri plant was closed, due to technological obsolescence.

The Sindri Modernisation Plant (SMP) has the capacity to produce 151.8 thousand tonnes of 'N' fertilisers and its main product is Urea. It uses Low Sulphur Heavy Stock (LSHS)/Fuel oil as its feedstock. The Sindri Rationalisation Plant (SRP) is the only plant in FCI producing Phosphatic (P) fertilisers with a capacity to produce 150.0 thousand tonnes of $P_2O_5$ fertilisers. Its feedstock is Pyrites, Rock phosphates and Sulphur. The main product of SRP is Triple Super Phosphate (TSP).

The Gorakhpur (U.P) Unit has capacity to produce 131.1 thousand tonnes of 'N' fertilisers with its main product being Urea. It uses Naphtha as its feedstock. The plants at Ramagundam (A.P.) and Talcher (Orissa) use coal as feedstock, each having capacity to produce 227.7 thousand tonnes of 'N' fertilisers. Their main product is Urea. A plant at Korba based on the same technology, feedstock and with same capacity as that of plants at Ramagundam and Talcher is kept in abeyance.
Thus FCI's total capacity is to produce 805.5 thousand tonnes of 'N' fertilisers and 150.0 thousand tonnes of 'P' fertilisers per annum.

The FCI is a government owned corporation working under the control of the Ministry of Petroleum, Chemicals and Fertilisers. It has an authorised Equity share capital of Rs. 800 crores divided into share of Rs. 1000 value each. Its Issued, Subscribed and Paid up Capital is Rs. 541.69 crores i.e. 54,16,937 Equity shares of Rs. 1000 each. The total number of officers and staff as on 31.3.1986 are 12,920. Its Investment was Rs. 0.15 lakhs, Turnover Rs. 27,409.45 lakhs, capital employed Rs. 29,960.53 lakhs during the year 1985-86. It is incurring losses since its Re-organisation i.e. April 1978. The profit/loss after tax is Rs. (-) 12,937.86 lakhs during the year 1985-86.

The organisational Hierarchy of FCI represents that the chief authority of the organisation is Chairman and Managing Director (C & MD) whose immediate subordinate is Director Finance. The various operating Units are controlled by the respective Units General Managers (GMs). However, Chief Training and Man Power Adviser (CTMPA) and Chief Engineer, Management Services (MS), Company Secretary, Chief Vigilance Officer(CVO) and Coordinating Manager continues to function under the direct supervision of C & MD.
The General Manager for Marketing, Personnel and Administration (P & A), Technical are also under direct supervision of C & MD. The GM, Technical is the incharge of Korba project.

The management of FCI is undertaken by six-internally constituted committees and two external bodies. The external bodies are Bureau of Public Enterprises (BPE) and Standing Committee of Public Enterprises (SCOPE) who control and regulate the working of all PES. The Internal Committee are Internal Consultative Committee (ICC), Quarterly Production Review Committee (QPRC), Quarterly Material Management Review Committee (QMMRC), Public Relations Committee (PRC), Financial Meet (FM) and Heads of Department Committee (HDC).
CHAPTER - 6

FCI's SOCIAL ACCOUNTABILITY-ECONOMIC PARAMETERS

CONTENTS:

6.1 Production Capacity of FCI Plants
   6.1.1 Sindri Modernisation Plant (SMP)
   6.1.2 Sindri Rationalisation Plant (SRP)
   6.1.3 Gorakhpur Unit
   6.1.4 Ramagundam & Talcher Units

6.2 Capacity Utilisation of FCI Plants
   6.2.1 Sindri Modernisation Plant (SMP)
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   6.2.3 Gorakhpur Unit
   6.2.4 Ramagundam Unit
   6.2.5 Talcher Unit
   6.2.6 Plant-wise Share of FCI's Production
   6.2.7 Recent Trends

6.3 Factors Affecting FCI's Capacity Utilisation
   6.3.1 Sindri Modernisation Plant (SMP)
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   6.3.3 Gorakhpur Unit
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   6.3.6 Inter-Unit Comparison of Capacity Utilised
6.4. FCI's Profitability

6.4.1 FCI's Losses

6.5 FICC Consumption Norms

6.5.1 FICC Consumption Norms for Sindri Modernisation Plant (SMP)

6.5.2 FICC Consumption Norms for Gorakhpur Unit

6.5.3 FICC Consumption Norms for Ramagundam Unit

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6.5.5 Comparative study of Ramagundam and Talcher Units

6.6. FCI's Production Losses

6.6.1 For the year 1981-82 and 1982-83

6.6.2 For the year 1983-84

6.6.3 For the year 1984-85

6.6.4 For the Quarter ended June, 1985

6.6.5 For the year 1985-86

6.7 Major Constraints on FCI's Profitability

6.8 Profitability Ratios

6.9 Summary
The concept of social accountability has been defined in this study as actions taken by the corporation beyond the "Welfare Measures" because profit making is the primary social accountability of a company. The business enterprises incurring losses are a burden on the society at large.

The Social Accountability of FCI is studied with the help of two types of parameters. One type of parameter (i.e. Economic Parameters) are used to study the FCI's performance in terms of factors like Capacity Utilisation and Profitability Ratios. The other type of parameters (i.e. social parameters) are used to study FCI's performance in terms of various activities towards different segments of the society including shareholders and employees.

Thus, FCI has Social Accountability on one hand to utilise its productive resources efficiently and earn profits and on the other hand protect the interest of various groups with the help of certain activities like Staff Benefits, R & D activities, Promotional activities, Employment of persons from unprivileged categories.

An attempt is made in this chapter to study the Social Accountability of FCI with the help of above mentioned 'Economic Parameters'.
6.1 Production Capacity of FCI Plants:

The importance of Chemical Fertilisers to enhance the agricultural production has long been recognised worldwide. The Government of India has also taken a number of steps to enhance the fertiliser production in the country, so that large areas of land can avail the benefits of chemical fertilisers. The Government has established Public Sector Undertakings for producing Nitrogenous and Phosphatic Fertilisers. As a result, now the country has become self-sufficient in respect of food requirements.

<table>
<thead>
<tr>
<th>TABLE - 9</th>
<th>FCI'S SHARE IN PUBLIC SECTOR FERTILISER INDUSTRY'S CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector Capacity N</td>
<td>FCI's Share in PS Capacity N</td>
</tr>
<tr>
<td>P₂O₅</td>
<td>N</td>
</tr>
<tr>
<td>Absolute Figures</td>
<td>%</td>
</tr>
<tr>
<td>3690.1</td>
<td>657.6</td>
</tr>
</tbody>
</table>

Notes: 1. PS = Public Sector  
2. Public Sector Capacity is during 1984-85.  
3. The percentage share is calculated by the Research Scholar.

SOURCE: 1. For PS capacity, the source is Fertiliser Statistics/1984-85.  
2. FCI's capacity in absolute figures, based on FCI's pamphlet titled "The Fertiliser Corporation of India - New Milestones", Published by FCI, New Delhi.
Table-9 reveals that the Public Sector's capacity of N fertilisers is 3690.1 thousand tonnes, of which FCI's capacity is 805.5 thousand tonnes. It means, FCI's share is 21.82 percent of public sector's N capacity. Similarly the phosphatic fertiliser production capacity of Public Sector is 657.6 thousand tonnes. The FCI's $P_2O_5$ capacity is 150.0 thousand tonnes, thereby FCI's share amounts to 22.8 per cent of Public Sector's phosphatic capacity.

The production capacity of FCI plants is given in the corporation's status Report. The important information is given here, in brief.

6.1.1. **Sindri Modernisation Plant (SMP):**

a) **Production Capacity:**

2. Urea Plant : 100 Te/Day.
3. Steam generation Plant : 3 Boilers, 127 Te/hours, each steam generation capacity.

b) **Raw Material Consumption :**

1. Low Sulphur Heavy Stock (LSHS)/Fuel Oil (FO) for process : 735 Te/Day.
2. Coal for Steam generation : 1150 Te/Day.
6.1.2. **Sindri Rationalisation Plant (SRP)**:

a) **Production Capacity**:

2. Phosphoric Acid : 360 Te/Day.

b) **Raw Material Consumption**:


6.1.3. **Gorakhpur Plant**:

a) **Production Capacity**:

1. Ammonia Plant : 570 Te/Day
2. Urea Plant : 950 Te/Day
3. Steam generation Plant : 3 boilers each with 55 Te/Hr. steam generation capacity.

b) **Raw Material Consumption**:

1. Naphtha : 485 Te/Day
2. Coal : 475 Te/Day
6.1.4 Ramagundam and Talcher Units:

Each plant has the following production capacity and Raw Material requirements:

a) Production Capacity:

1. Ammonia Plant : 900 Te/Day
2. Urea Plant : 1500 Te/Day
3. Steam generation plant : 3 boilers each with 182 Te/hr. Steam generation capacity
4. Emergency Power Unit : 1200 K.W.
5. Water Treatment Plant : 16 million Gallon per day (MGD)
6. De-mineralised water Treatment plant : 250 M³/Hr.

b) Raw Material Consumption:

1. Coal for Process : 1700 Te/Day
2. Coal for steam generation : 1300 Te/Day
3. Power : 55 M.W.
4. Raw Water : 15 MGD.

SOURCE: FCI's Status Report published by FCI, 83-84 New Delhi, P.No. 9A for SMP, P.No.20 SRP, P.No.28 for Gorakhpur Unit and P.No. 42 for Ramagundam and Talcher Units.
6.2 **Capacity Utilisation of FCI Plants**:

FCI's production records show that, it has low-capacity utilisation during the past 7 years in the three out of five plants under its control. The Sindri Modernisation plant and the Gorakhpur Unit have capacity utilisation, exceeding 55 percent during 4 out of 7 years (i.e. 1981-82 to 1984-85) period under study. Sindri Rationalisation plant's capacity utilisation could not exceed 13.5 percent during the period 1979-80 to 1984-85. The Ramagundam Unit could utilise 41 per cent of its capacity, which is the highest during its 5 years of operation. Whereas the Talcher Unit stands at a maximum capacity utilisation of 24.2 per cent, since its inception.

The low capacity utilisation is affecting FCI's overall profitability and efficiency. Because "low capacity utilisation" results in "higher Input consumption", as the efficiency is greater at higher levels of production rather than at lower levels. Moreover the fact that, certain fixed costs are required to be incurred, whether the plant operates at 'optimum level' or 'lower level'. It aggravates the cost of production seriously, in the latter's case.
The plant-wise capacity utilised during last 6 years, is analysed below:

6.2.1 Sindri Modernisation Plant (SMP):

Sindri Modernisation Plant (SMP), produces Nitrogenous (N) fertilisers, in the form of Urea. The feed stock of the plant is Low Sulphur Heavy Stock (LSHS)/Fuel Oil (FO). The plant went into commercial production since 1.10.1979.

The SMP has capacity to produce, 222.15 thousand tonnes of N fertilisers, with which 330 thousand tonnes of Urea could be produced. Of its capacity, 3.0 thousand tonnes of N is meant for Industrial uses. A portion of the Ammonia produced in the process of manufacturing Urea in SMP, is being diverted for the manufacture of Ammonium Sulphate (AS) in the old Sindri Plant. The capacity of the Old Sindri Plant, which was renovated for this purpose, is 320 thousand tonnes of AS.

The production performance of SMP is given in Table-10.

An analysis of the Table-10 reveals that the production figures of SMP are constantly rising, during the period from 1979-80 to 1984-85, with the exception of the year 1983-84. The production has declined from 133 thousand tonnes in the year 1982-83 to 121.4 thousand tonnes in the year 1983-84.
### Table 1: Commercial Production Startled From 1.1.1799

<table>
<thead>
<tr>
<th>Year</th>
<th>%</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
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<td>1.1.1799-80</td>
<td>81.5</td>
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<td>9.9</td>
<td>30.9</td>
<td>25.2</td>
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<td>2.</td>
<td>1980-81</td>
<td>14.7</td>
<td>25.3</td>
<td>77.9</td>
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<tr>
<td>3.</td>
<td>1981-82</td>
<td>156.7</td>
<td>74.2</td>
<td>55.9</td>
<td>39.0</td>
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<td>4.</td>
<td>1982-83</td>
<td>157.8</td>
<td>84.3</td>
<td>39.0</td>
<td>6.2</td>
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<td>5.</td>
<td>1983-84</td>
<td>171.4</td>
<td>72.7</td>
<td>54.6</td>
<td>11.6</td>
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<td>6.</td>
<td>1984-85</td>
<td>161.4</td>
<td>79.3</td>
<td>67.2</td>
<td>11.0</td>
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<td>7.</td>
<td>1985-86</td>
<td>76.7</td>
<td>71.7</td>
<td>53.8</td>
<td>7.2</td>
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<td>8.</td>
<td>1986-87</td>
<td>72.7</td>
<td>74.6</td>
<td>53.8</td>
<td>7.2</td>
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<tr>
<td>9.</td>
<td>1987-88</td>
<td>71.7</td>
<td>74.6</td>
<td>53.8</td>
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<tr>
<td>10.</td>
<td>1988-89</td>
<td>167.7</td>
<td>171.4</td>
<td>172.7</td>
<td>167.5</td>
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</tbody>
</table>

**Note:** I. = Output of N. Personnel

**Source:** The data furnished in columns 2, 4, 6 of the Table is based on RCI. Status Report.
The SMP's production was highest at 133 thousand tonnes, in the year 1982-83 and the lowest at 25.2 thousand tonnes in its first year of operation, i.e. in 1979-80.

The increase in production as against previous year, was highest in the year 1981-82, when it increased by 98.9 thousand tonnes, equivalent to 390.5 per cent. The production declined by 11.6 thousand tonnes in the year 1983-84, as compared to its previous year. This decline amounted to 8.72 per cent.

The capacity utilisation of SMP, remained in between 11.4 to 59.9 per cent, during the last 6 years i.e. 1979-80 to 1984-85. The plant had the capacity utilisation of more than 50 per cent during the period from 1981-82 to 1984-85. In the year 1979-80 and 1980-81, it could utilise, 22.7 and 11.4 per cent of its capacity, respectively.

However, SMP could not attain the production target fixed, during the last six years period. Its production as percentage of Target, remained in between 17.9 to 84.3. In 4 out of six years of period under study (i.e. 1979-80 to 1984-85), the production as percentage of target was above 70 per cent. And during the first two years of operation i.e. in 1979-80 and 1980-81, its production was 30.9 and 17.9 per cent respectively of the target.
6.2.2 Sindri Rationalisation Plant (SRP):

The main product of Sindri Rationalisation Plant (SRP) is phosphatic fertilisers in the form of Triple Super Phosphate (TSP). The feedstock of the plant is based on Pyrites, Rock phosphate and Sulphur. It has the capacity to produce 150 thousand tonnes of phosphatic fertilisers, equivalent to 326 thousand tonnes of TSP. The commercial production of the plant commenced from 1.10.1979.

The production performance of SRP is shown in Table-11.

An analysis of the Table-11 suggests that, the trend of production of SRP can be divided into two segments. One segment represents continuous increase in production, while the other shows a continuous decline. The production of SRP was continuously rising during first three years of its operation i.e. from 1979-80 to 1981-82. It increased from 4.7 thousand tonnes in its initial year of operation to 20.2 thousand tonnes in the year 1981-82. And the production began to decline from 10.4 thousand tonnes in the year 1982-83 to 4.6 thousand tonnes in the year 1984-85.

The production of SRP was highest during the year 1981-82 at 20.2 thousand tonnes and it was lowest at 4.6 thousand tonnes in 1984-85.

Details provided in columns 3, 4, and 5 of this table in terms of percentage of the Research Scholar.


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<td></td>
<td>1.2</td>
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<td>4.7</td>
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In terms of 2.5% Perturbations

Production performance of "SINDIRI REFINERIES PLANT"
The increase in production over previous year was highest, in the year 1980-81 at 13.6 thousand tonnes, equivalent to 289.4 per cent. The decline in production was sharp in the year 1982-83, which recorded a fall of 9.8 thousand tonnes as against previous year. Whereas in terms of percentage, a steep decline in production as against previous year, was noted in the year 1984-85 at 51.6.

The capacity utilisation of the SRP during the period from 1979-80 to 1984-85, remained in between 3.1 to 13.5 per cent. During last 6 years period, there were only two instances, (i.e. in 1980-81 and 1981-82) where its capacity utilisation exceeded 10 per cent. Most of the times it remained below 7 per cent.

During the period under study, the SRP could not achieve the Target fixed, except in the year 1984-85, where the Target fixed was as low as 4.6 thousand tonnes. Its production as percentage of Target, was in between 19.8 to 50 per cent. In 5 out of 6 years of study, the production as percentage of Target was below 50 per cent.
6.2.3 Gorakhpur Unit:

The Gorakhpur Unit is now the oldest plant operating under FCI. It produces Nitrogenous fertiliser in the form of Urea. The Feedstock of the plant is Naphtha. The commercial production of this unit was started in the month of January 1969 and it undergone expansion on in the month of April, 1976.

The capacity of Gorakhpur unit is to produce 131.1 thousand tonnes of N Fertilisers, equivalent, to 285 thousand tonnes of Urea.

The production performance of this unit is given in Table-12.

The figures furnished in Table-12 suggest that, there is a rising trend of production over the period. The production was 51.1 thousand tonnes in the year 1979-80 and it gradually reached to a level of 82.5 thousand tonnes in the year 1984-85.

During the period under study, the Gorakhpur Unit has, its highest production at 82.5 thousand tonnes in the year 1984-85 and the lowest being 51.1 thousand tonnes in the year 1979-80.
The data furnished in column 3, 4 of the table is based on P.C.I. status.

The data furnished in column 5 is calculated by the research scholar.

3. The installed capacity of the plant is 13.1 thousand tonnes of n-paraffines.

2. All = n-paraffines

took place in April, 1976.

Notes: 1. * = the commercial production started from January 1969 and expansion

<table>
<thead>
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<th>Year</th>
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<td>39.0</td>
<td>51.1</td>
<td>51.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(000 MT) (000 MT) (000 MT)
\[
\begin{array}{cccccc}
\text{Increase in Product} & \text{Increase in Production} & \text{Increase in Product} & \text{Increase in Production} \\
\text{(000 MT)} & \text{(000 MT)} & \text{(000 MT)} & \text{(000 MT)} \\
\text{Percentage} & \text{Percentage} & \text{Percentage} & \text{Percentage} \\
\text{on over previous year} & \text{on over previous year} & \text{on over previous year} & \text{on over previous year} \\
\end{array}
\]

In terms of n-paraffines

\[\text{Production} = \text{Production} \times (\text{PARAFFINES OF NORMALIZED UNIT})\]

\[1.0 - 2.12\]
The increase in production over previous year, was highest during the year 1981-82, at 13.4 thousand tonnes i.e. 22.4 in percent. The increase in production against previous year, was lowest at 1.0 thousand tonne, in the year 1982-83 and in 1984-85 also. And in terms of percentage, the increase in production against previous year, was lowest at 1.2, during 1984-85.

The capacity utilisation of this plant is in the range of 39 to 62.9 per cent, during last 6 years period. In 4 out of 6 years of period under study, (i.e. in 1981-82 to 1984-85) the capacity utilisation of the plant has been more than 50 per cent. In the 1979-80 and 1980-81 it could utilise 39 per cent and 45.6 per cent, of its capacity, respectively.

Regarding the achievement of Target, it is evident from the Table-12 that during 1983-84, the Target was 80.8 thousand tonnes and production was 81.5 thousand tonnes. Thus the Target was surpassed by a margin of 0.7 thousand tonnes, in this year. In 5 out of 6 years of period under study, the production has exceeded 70 per cent of the Target fixed. The year 1979-80 was the only exception, when its production was below 70 per cent of the Target i.e. 51.1 per cent.
6.2.4 Ramagundam Unit:

Like SMP & Gorakhpur Unit, Ramagundam Unit also produces Nitrogenous fertilisers in the form of Urea. The coal is used as feedstock of this Unit. The commercial production of the Unit was started on 1.11.1980.

It has the capacity to produce 227.7 thousand tonnes of Nitrogenous fertilisers, equivalent to 495 thousand tonnes of Urea.

The production performance of the Ramagundam Unit can be seen from Table-13.

The figures detailed in the Table-13 conclude that there is perpetual rise in the production of Ramagundam unit, over the period. The production was 19.7 thousand tonnes in the year 1980-81 and it increased to an impressive figure of 93.4 thousand tonnes in the year 1984-85.

Since its inception, the highest production of Ramagundam Unit, is 93.4 thousand tonnes, attained during 1984-85. The lowest production figure is 19.7 thousand tonnes, achieved in the year 1980-81, which was the first year of its production.
**TABLE 1.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Production (000 M3)</th>
<th>Production Performance of Farming Unit (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1980-81</td>
<td>75.9</td>
</tr>
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<td>2.</td>
<td>1981-82</td>
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<td>3.</td>
<td>1982-83</td>
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<td>1983-84</td>
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<td>5.</td>
<td>1984-85</td>
<td>93.0</td>
</tr>
<tr>
<td>6.</td>
<td>1985-86</td>
<td>90.7</td>
</tr>
<tr>
<td>7.</td>
<td>1986-87</td>
<td>62.0</td>
</tr>
<tr>
<td>8.</td>
<td>1987-88</td>
<td>25.9</td>
</tr>
</tbody>
</table>

**Notes:**
1. + The commercial production started from 1.1.1980.

Sources: Data furnished in columns 5, 6, 7 & 8 is calculated by the Research Scholar.

5. In data furnished in columns 5, 6, 7 & 8, the data is based on R.C. 3654.

6. The installed capacity of the plant is 22.77 thousand tons of I. Pertillers.

7. AC = Actual Capacity

8. AC = Installed Capacity

9. AM = Actual Production

10. AP = Annual Production

11. AP = Annual Production
The increase in production over previous year was highest at 39.2 thousand tonnes, equivalent to 199 per cent in the year 1981-82. Similarly, the increase in production against previous year, was lowest, in the year 1983-84, at 5.7 thousand tonnes, being equal to 7.6 per cent.

The capacity utilisation of the plant, is in between 20.8 and 41.0 per cent during last 5 years period. In 4 out of 5 years of period under study, the plant could utilise more than 25 per cent of its capacity. The year 1980-81 being the first year of production, it could attain a capacity utilisation of 20.8 per cent.

About the Target achievement, it can be seen that the plant could not achieve the target fixed in any of the last 5 years operation. Though, in 4 out of 5 years period, the production as percentage of Target remained above 60 per cent. The year 1980-81 is the only exception, when the production was 29.9 per cent i.e. below 60 per cent of the Target.

6.2.5 **Talcher Unit**:

The Talcher unit produces N fertilisers in the form of Urea and it uses coal as feedstock. The Ramagundam and Talcher Units are similar in respect of the feedstock,
Technology used and also in regard to installed capacity. These two units are the result of the Government's decision to setup three coal-based units, to use the huge coal reserves of the country. The commercial production of Talcher unit was commenced from 1.11.1980. The capacity of Talcher Unit is 227.7 thousand tonnes of 'N' fertilisers equivalent to 495 thousand tonnes of Urea, as that of the Ramagundam Unit.

In view of the similarities of the two units referred above, many problems of these two coal-based units are similar in nature. There are also instances, where the remedial measures taken up in one unit, were extended to the other unit to achieve the results in the desired direction.

The production performance of the Talcher Unit is given in Table-14.

An analysis of the Table-14 reveals that the production of Talcher Unit shows a rising trend over the period under study, except in the year 1982-83. The production was 4.3 thousand tonnes in the year 1980-81, which enhanced to 55.1 thousand tonnes in the year 1984-85. During the year 1982-83, the production declined to 20.5 thousand tonnes, from the previous year's figure of 45.8 thousand tonnes.
<table>
<thead>
<tr>
<th>Year</th>
<th>Production (000cb)</th>
<th>Percentage Increase in Production from Previous Year</th>
<th>Production (000cb)</th>
<th>Percentage Increase of Target Capacity</th>
<th>Production (000cb)</th>
<th>Percentage As Percentage of Target Production</th>
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<tr>
<td>1980-81</td>
<td>-</td>
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<td>20.3</td>
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<td>4.0</td>
<td>20.0</td>
<td>1.8</td>
<td>47.1</td>
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<td>1987-88</td>
<td>88.3</td>
<td>58.8</td>
<td>3.9</td>
<td>19.7</td>
<td>1.7</td>
<td>47.0</td>
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<td>19.0</td>
<td>1.5</td>
<td>46.7</td>
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<td>3.1</td>
<td>18.7</td>
<td>1.4</td>
<td>46.6</td>
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<tr>
<td>1991-92</td>
<td>88.3</td>
<td>58.9</td>
<td>2.8</td>
<td>18.4</td>
<td>1.3</td>
<td>46.5</td>
</tr>
<tr>
<td>1992-93</td>
<td>37.7</td>
<td>41.2</td>
<td>2.7</td>
<td>18.1</td>
<td>1.2</td>
<td>46.4</td>
</tr>
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<td>1993-94</td>
<td>65.0</td>
<td>24.5</td>
<td>2.6</td>
<td>17.8</td>
<td>1.1</td>
<td>46.3</td>
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<td>55.1</td>
<td>17.1</td>
<td>2.5</td>
<td>17.5</td>
<td>1.0</td>
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<td>88.3</td>
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<td>2.4</td>
<td>17.2</td>
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<td>46.1</td>
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<td>2.3</td>
<td>16.9</td>
<td>0.8</td>
<td>46.0</td>
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<td>2.2</td>
<td>16.6</td>
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<td>45.9</td>
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<td>17.1</td>
<td>2.1</td>
<td>16.3</td>
<td>0.6</td>
<td>45.8</td>
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<tr>
<td>1999-00</td>
<td>88.3</td>
<td>58.9</td>
<td>2.0</td>
<td>16.0</td>
<td>0.5</td>
<td>45.7</td>
</tr>
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<td>37.7</td>
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<td>1.9</td>
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<td>45.3</td>
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<td>41.2</td>
<td>1.5</td>
<td>14.5</td>
<td>0.0</td>
<td>45.2</td>
</tr>
</tbody>
</table>

Notes: 1. * = the commercial production started from 11.1980.
2. + = the capacity utilized is calculated on par-rates basis.
4. The Installed capacity of the plant is 227.7 thousand tonnes of Paraffins.
5. The data furnished in columns 5, 6, 7, 8 is calculated by the research scholar.

Source: Data furnished in columns 3, 4 of this table is based on Ref's status.
The highest production achieved by the Talcher Unit was 55.1 thousand tonnes, during 1984-85. And its lowest production was 4.3 thousand tonnes, attained in its initial year of operation, i.e. in 1980-81.

The increase in production over previous year, was highest at 41.5 thousand tonnes, equivalent to 965.1 per cent, in the year 1981-82. The production in the year 1982-83 compared to previous year, has declined sharply, the decline was 25.3 thousand tonnes, which is equal to 55.2 per cent, as against its previous year's production.

The capacity utilisation of the Talcher unit is in between 4.5 and 24.2 per cent, during last 5 years. The overall capacity utilisation is very low, as it could not utilise its capacity more than 25 per cent, through out the period under study. In two out of five years of study (i.e. in 1980-81 and 1982-83), the capacity utilisation of the unit is below 10 per cent. And in remaining three years, the unit has a capacity utilisation of more than 10 per cent but less than 25 per cent. The year 1980-81, being its first year of operation, the capacity utilisation is as meagre as 4.5 per cent.
During the period 1980-81 to 1984-85, the unit could not achieve the annual production target fixed. The production as percentage of Target was in the range of 9.1 to 84.8 per cent during the period under study. In two out of five years of study, (i.e. 1980-81 and 1982-83) the production as percentage of target remained below 25 per cent. And in remaining three years period, (i.e. in 1981-82, 1983-84 and 1984-85) the production was in between 25 to 85 per cent of the target.

6.2.6 Plant-wise Share of FCI's Production:

The Nitrogenous fertilisers produced by FCI during the year 1984-85 is analysed in the Table-15.

Except the Sindri Rationalisation plant (SRP), all other plants under FCI, produce 'N' fertiliser. The data furnished in Table-15 shows that, during the year 1984-85, Sindri Modernisation plant (SMP) has produced 128.1 thousand tonnes of N fertilisers, being highest among FCI's plants. The Ramagundam unit has ranked second, which has produced 93.4 thousand tonnes of 'N' fertilisers. The Gorakhpur Unit's production is 82.5 thousand tonnes, thereby occupying third position. The Talcher unit having produced 55.1 thousand tonnes is ranked fourth occupying the last position.
### TABLE - 15

PLANT-WISE SHARE OF N FERTILISERS PRODUCED BY FCI DURING 1984-85

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Plant</th>
<th>Production (000 Mt)</th>
<th>Production as Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sindri Modernisation</td>
<td>128.1</td>
<td>35.7</td>
</tr>
<tr>
<td>2.</td>
<td>Ramagundam</td>
<td>93.4</td>
<td>26.0</td>
</tr>
<tr>
<td>3.</td>
<td>Gorakhpur</td>
<td>82.5</td>
<td>23.0</td>
</tr>
<tr>
<td>4.</td>
<td>Talcher</td>
<td>55.1</td>
<td>15.3</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>359.1</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*NOTE: Total % of Production calculated by the Research Scholar.*

*SOURCE: As that of Table-10, 12, 13 and 14.*
When compared in terms of percentage, the SMP has contributed 35.7 per cent to the FCI's N fertilisers produced during 1984-85. The Ramagundam unit has a share of 26 per cent in the overall N production of FCI during this year. Whereas the Gorakhpur and Talcher Units have 23 and 15.3 per cent share respectively, to their credit.

The plant-wise share of N fertilisers, produced by FCI during 1984-85 is also depicted in the Diagram No.7

6.2.7 Recent Trends:

The latest figures relating to FCI's capacity utilisation are available in the Table-15 (a) which gives an account of unit-wise capacity utilisation during the year 1985-86.

Analysis of table 15(a) reveals that the capacity utilisation and the actual production is declining during 1985-86. The Actual production of Sindri Unit was 82.4 thousand MT of N during 1985-86 as compared to 128.1 thousand MT of N during 1984-85. Similarly the Gorakhpur unit has produced 82.5 thousand MT of N during 1984-85 which has declined to 78.9 thousand MT during 1985-86. The Ramagundam unit has produced 93.4 thousand tonnes of N during 1984-85, which has came down to 55.3 thousand

- Sindri Modernisation Plant: 35.7%
- Ramagundam Unit: 15.3%
- Talcher Unit: 23.0%
- Gosikhur Unit: 26.0%
tonnes of N during 1985-86. A similar trend is adopted by Talcher Unit, its production was 55.1 thousand tonnes of N during 1984-85 which has come down to 53 thousand tonnes during 1985-86. Thus, overall there is a decline of 89.5 thousand MTs of N during 1985-86 as compared to 1984-85.

The capacity utilisation of FCI plants has also declined during the year 1985-86. The Sindri plant's capacity utilisation was 57.7 per cent during the year 1984-85 which has declined to 37.1 per cent during 1985-86. The capacity utilisation of Gorakhpur Unit was 62.9 per cent during 1984-85 and it has decreased to 60.2 per cent during 1985-86. The Ramagundam unit had a capacity utilisation of 41 per cent during 1984-85 and it has come down to 24.3 per cent during 1985-86. The Talcher unit also represents similar picture, its capacity utilisation was 24.2 per cent during 1984-85 and has declined to 23.3 per cent during 1985-86.

Thus overall capacity utilisation was 44.58 per cent during 1984-85 which declined to 33.47 per cent during 1985-86. It means 11.11 per cent decline was recorded in capacity utilisation of FCI plants during 1985-86 as compared to 1984-85.
### TABLE - 15 (a)

CAPACITY UTILISATION OF FCI PLANTS DURING 1985-86

(000 MT/N)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Actual Production 1984-85</th>
<th>1985-86</th>
<th>% Capacity Utilisation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1984-85</td>
</tr>
<tr>
<td>Sindri</td>
<td>128.1</td>
<td>82.4</td>
<td>57.7</td>
</tr>
<tr>
<td>Gorakhpur</td>
<td>82.5</td>
<td>78.9</td>
<td>62.9</td>
</tr>
<tr>
<td>Ramagundam</td>
<td>93.4</td>
<td>55.3</td>
<td>41.0</td>
</tr>
<tr>
<td>Talcher</td>
<td>55.1</td>
<td>53.0</td>
<td>24.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>359.1</td>
<td>269.6</td>
<td>44.58</td>
</tr>
</tbody>
</table>

6.3 Factors Affecting FCI's Capacity Utilisation:

There are a number of factors that regulate and influence directly or indirectly the working of business organisation. They may however vary from organisation to organisation and over a period of time.

Similarly there are several factors affecting the capacity utilisation of FCI plants, thereby regulating its overall efficiency.

However, a plant-wise study is made in this chapter to have an insight, as to what were the major factors which have dominated the FCI's working, during the period from 1979-80 to 1983-84.

6.3.1 Sindri Modernisation Plant (SMP):

The year 1979-80 being the first year of its operation, the problems associated with new equipment and process, adversely affected the production of SMP. In addition, there was problem of non-availability of adequate quantity of feedstock (i.e. L.S.H.S./Fuel Oil). As a result, the plant had to be shut down w.e.f. 16.1.1980.¹

¹ FCI's Annual Report for 1979-80 P. No. 11.
In view of these problems the SMP could produce 25.2 thousand tonnes of N fertilisers during 1979-80. As the commercial production of this plant was commenced from 1.10.1979, it has six months operation period, in the year 1979-80. Hence the capacity utilisation calculated on pro-rata basis, came to 22.7 per cent.

The problem of non-availability of feedstock, continued due to Assam agitation, and SMP, was closed till September 1980\(^2\). Thus in the year 1980-81, the plant shut down was for six month period. The impact is evident from the production figure of 1980-81, which is 25.3 thousand tonnes and the capacity utilisation is 11.4 per cent in this year. The capacity utilised in this year is the lowest during the period under study.

The plant shut-down not only disrupts the production instantly, but also caused the so-called "re-start problems." These re-start problems, normally continue for 3-4 months before achieving smooth production-flow. Moreover, frequent re-start result in high input consumption. Because every re-start needs certain quantum of input to be processed, which cannot be used as finished product and is a waste.

\(^2\) FCI's Annual Report for 1980-81 P. No. 7.
Similarly, due to unscheduled production stoppage, certain amount of input in the process, becomes a waste. Such problems increase the cost of production and result in losses.

During the year 1981-82, the plant faced the problems of inadequate and poor quality of raw material and frequent equipment failure. In second-half of the year 1981-82 the production was stabilised\(^3\), and it reached to 124.1 thousand tonnes, an increase of 98.8 thousand tonnes over the previous year. The capacity utilised in this year is 55.9 per cent.

The production of SMP has increased to 133 thousand tonnes in the year 1982-83, which is highest during 6 years period under study. Consequently, the capacity utilisation in this year is also highest of the period at 59.9 per cent. The trouble-giving equipments were given special attention while under taking Annual Turn-around-job, which helped in improving the production performance.\(^4\)

The power plant at Sindri, which has became more than 30 years old, is creating problems for SMP. The break-down in power plant is causing plant shut-down. To remedy the

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3. FCI's Annual Report for 1981-82 P. 6
situation, M/S. Bharat Heavy Electricals Limited (BHEL) has been entrusted with diagnostic study of the power plant.\(^5\)

In the year 1982-83, in view of the stabilised production, the FCI has requested the Fertiliser Industry Coordination Committee (FICC), to revise the retention prices of SMP products on the basis of Actual consumption. The adhoc prices so far applicable to SMP product were based on Nangal fertiliser Plant's norms of consumption.\(^6\)

Another problem which has a financial bearing on SMP, is the non-inclusion of the Ammonium Sulphate (AS) in the retention price scheme.

The SMP produces 900 tonnes of Ammonia per day, of which 600 tonnes is used to produce Urea and the remaining one third of Ammonia i.e. 300 tonnes is used in the manufacture of Ammonium Sulphate (AS). But while determining the cost of production and transfer price of Ammonia from SMP, only two third of capital and other investment is considered, and the remaining one third is ignored. The fixed costs and other investment made for the production of 300 tonnes of Ammonia per day in the manufacture of AS, does not enjoy the 'Retention Price' benefit. Thus, the production and sale of AS is a financial loss to SMP.\(^7\)

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5. Ibid.
6. Ibid.
7. Ibid.
In view of such financial losses, a study has been commissioned by the corporation to install additional capacity to produce 500 tonnes of Urea per day. So that the surplus of Ammonia hitherto used in the manufacture of AS can be diverted for the manufacture of Urea. The Government is also approached in this regard for profitable use of surplus Ammonia produced by SMP.

The figures of production have declined from 133 thousand tonnes in the year 1982-83 to 121.4 thousand tonnes in the year 1983-84. Consequently the capacity utilisation has also declined from 59.9 per cent in the year 1982-83 to 54.6 per cent in the year 1983-84.

The main cause responsible for decline in production during 1983-84 was the equipment failure.  

The major reason for lower production during 1985-86 was due to long shut down from 11.11.1985 to 12.3.1986 of the SMP Plant due to failure of Turbine Casting of the Synthetic gas compressor.

6.3.2 Sindri Rationalisation Plant (SRP) :

The production trend of SRP has been discouraging since its inception. Its capacity utilisation could not exceed 13 per cent during last 6 years period under study.

The production of phosphatic fertilisers was 4.7 thousand tonnes in the year 1979-80. As the commercial production of this plant was started from October, 1979, it has an operation period of six months in the year 1979-80. The capacity utilisation calculated on Pro-rata basis is 6.3 per cent in the year 1979-80.

In its first year of production, the equipment problems were faced and certain modifications in the equipment were required.

As its major problems include the poor quality of rock phosphate, the operational difficulties were continued in the year 1980-81 also. To remedy the situation, a rock drying unit was installed to reduce the moisture contents of rock phosphate to 5 per cent.\(^9\)

In the year 1980-81, the production figured 18.3 thousand tonnes, utilising 12.2 per cent plant capacity.

Inspite of non availability of raw materials and frequent equipment failure,\(^10\) the production in 1981-82 increased to 20.2 thousand tonnes, which is highest during the period under study.

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To relieve of the recurring equipment breakdown, and end-to-end survey was proposed. A study to diagnose the SRP, was entrusted to a foreign agency called M/S Kemira OY of Finland. In January 1983, the report of the foreign experts was received.\textsuperscript{11}

The Finland agency, in its reports mentioned that the use of Pyrites should be discontinued mainly due to its low sulphur contents. Regarding the Sulphuric Acid plant, the report stated that, it requires rehabilitation or total replacement as the effects of dust and corrosion have deteriorated the plant.\textsuperscript{12} The production figures during the year 1982-83 have declined to 10.4 thousand tonnes as against previous year figure of 20.2 thousand tonnes. The capacity utilisation during this year was 6.9 per cent.

The FCI, in consultation with the Ministry of Chemicals and Fertilisers has taken certain decisions, to implement the recommendations made by foreign experts.\textsuperscript{13}

These measures include discontinuation of production of sulphuric acid from pyrites, and to operate the sulphuric acid plant with the use of sulphur to the extent possible, and to fulfil additional requirement from market.\textsuperscript{14}

\textsuperscript{11} FCI's Annual Report 1982-83, P. 7.  
\textsuperscript{12} Ibid.  
\textsuperscript{13} Ibid.  
\textsuperscript{14} Ibid.
The production of phosphatic fertilisers continued to decline. In the year 1983-84 it has declined to 9.5 thousand tonnes. The capacity utilised was 6.9 per cent.

Based on the recommendations of M/S Kemira OY of Finland, the production of TSP through pyrites is discontinued. The Government appointed a High Power Committee to study the health and viability of the plant and suggest remedial measures. On receipt of the committee's report, M/S. Fertiliser Engineering and Designing Organisation (FEDO), was entrusted with the task of preparing techno-economic feasibility report. The plant was shut-down during 1985-86 on account of the study that has been undertaken by M/S FEDO.

6.3.3 Gorakhpur Unit:

From the viewpoint of capacity utilisation Gorakhpur is the only unit under FCI's control, which has the highest capacity utilisation of 62.9 per cent in one out of six years (i.e. in 1984-85) period under study.

In the year 1979-80, the quantum of N fertilisers produced by Gorakhpur unit, is 51.1 thousand tonnes, equal to 39 per cent capacity utilisation. The year 1979-80

15. FCI's Annual Report for 1983-84 P.(X)
experienced a sharp decline in the capacity utilisation as compared to its previous year's figure of 67 per cent. The reason for this decline is the power cut imposed. A 95 per cent power cut was imposed from 24.11.1979 to 10.12.79 on Gorakhpur plant's consumption.\(^{16}\)

Though the year 1980-81 witnessed an increase in the production at 59.8 thousand tonnes, the power restrictions continued in the first half of 1980-81. The power cut was reduced to 66 per cent from 10.12.1979 to 22.7.1980, and to 33 per cent from 22.7.1980 to 16.9.1980.\(^ {17}\) And from 16.9.1980 onwards the power cut was lifted totally. Thus about 6 months operations of Gorakhpur unit were affected due to partial or total power cut.

In addition to the power shortage this plant also began to suffer from equipment troubles, due to its old age.

Certain short term measures were taken by the corporation, which included installation of a cooler in Urea plant to cool CO\(_2\) gas, and installation of package boiler to make up steam shortage.\(^ {18}\)

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18. Ibid.
In the year 1981-82, the production increased to 73.2 thousand tonnes as against 59.8 thousand tonnes in the previous year. The capacity utilisation increased to 55.8 per cent in this year, against the previous year figure of 45.6 per cent. Though the production has increased in this year, the power cut and voltage dips continued to disturb the production schedule. The equipment failure also restricted the plant from attaining higher capacity utilisation.\footnote{19} Steps were taken to replace certain equipments.

A slight rise in the production and capacity utilisation of the Gorakhpur unit was noted in the year 1982-83. In this year the production quantum was increased to 74.2 thousand tonnes; from 73.2 thousand tonnes in 1981-82. The capacity utilisation also show a small increase, at 56.6 per cent compared to previous year's figure of 55.8 per cent.

Inspite of the due care taken of the plant, it has become difficult to run three streams of Urea and Ammonia regularly.\footnote{20}

\footnote{19. FCI's Annual Report for 1981-82 P. 6.}
\footnote{20. FCI's Annual Report for 1982-83 P. 8.}
As the plant has now become more than 17 years old, and due to the high energy consumption of Naphtha-based technology, it is estimated that within few years it its economic life will expire.²¹

To replace the present plant an indepth techno-economic study is entrusted to M/S Projects & Development India limited, to appraise the health of the plant and suggest for its rehabilitation. The Government should set up a new plant, so that the existing infrastructure and other resources could beneficially be utilised.²²

6.3.4 Ramagundam Unit:

The commercial production of this plant was started from 1.11.1980. In its initial year of operation the Ramagundam Unit could produce 19.7 thousand tonnes of N fertilisers, utilising 20.8 per cent of its capacity. It has a period of 5 months operation during the year ending in March 1981. Thus the capacity utilisation is calculated on pro-rata basis, during 1980-81. The factors, that affected the capacity utilisation in this year were the power cuts and equipment failure.²³

²¹. Ibid.
²². Ibid.
Leakage in waste-heat Boiler Tubes, was one of the important equipment problems faced by the plant during 1980-81. Added to it were the power restrictions imposed by Andhra Pradesh State Electricity Board.

The plants at Ramagundam and Talcher are based on Kopper-Totzeck technology, which involve direct gasification of coal. This process is first of its kind in India and even the world experience of such a large scale is very limited. This new technology obviously had many problems in its implementation, which resulted in low production.

The production during the year 1981-82, increased to 58.9 thousand and capacity utilisation reached to 25.9 per cent. However, the teething troubles continued to afflict the production during the year 1981-82 also. Certain imbalances in the equipment and plant were observed. Another reason for equipment failure is the emphasis given to indigenisation of designing and procurement of machinery for Ramagundam and Talcher plants. The non-availability of power and voltage dips have became a common feature, hampering the production.

24. Ibid.
In spite of equipment failures that persisted in the year 1982-83, the production improved to 74.8 thousand tonnes and the capacity utilisation to 32.8 per cent. The year 1983-84 also noted an increase in the production and capacity utilisation. The production reached from 74.3 thousand tonnes in the year 1982-83 to 80.5 thousand tonnes in 1983-84 and capacity utilisation to 35.4 per cent, as against the previous year figure of 32.8 per cent.

In addition to the regular problems of equipment failure, power restrictions, and voltage dips, the year 1983-84 saw other problems due to which the plant was shut down for 4 weeks period. In August, 1983 the plant was shut down for two weeks, due to heavy floods in Godavari river, and again for two weeks in October 1983 due to strike in Sinjareni Collieries, which supplies coal.

Failure of weld joint on the high pressure superheated steam line to the synthesis gas compressor drive turbine, has resulted in plant shut down from 16.7.1985 to 27.10.1985.

6.3.5  **Talcher Unit** :

The year 1980-81 being the first year of its commercial production, the problems faced by Talcher unit were common to those of Ramagundam Unit. The Talcher unit production in the first year was 4.3 thousand Tonnes, and capacity utilised was 4.5 per cent, calculated on pro-rata, basis.

The technique of direct justification of coal based on which the Ramagundam and Talcher Units operate, involve handling of huge quantity of coal. The poor quality of coal is also one of the factors resulting in equipment failure. The coal having Ash contents of 30-32 per cent is causing accumulation of huge quantum of ash in the process, thereby resulting in equipment failure. The equipments were designed to function with coal having 17-18 per cent ash contents.

The production of Talcher Unit was increased from 4.3 thousand tonnes in the year 1980-81 to 45.8 thousand tonnes in the year 1981-82. Consequently, the capacity utilisation was enhanced from 4.5 per cent in the year 1980-81 to 20.1 per cent in the year 1981-82. This was the Talcher Unit's highest increase in production compared to previous year's production.
The problems of imbalance in plant and equipments, power shortage, voltage dips and equipment failure were of no exception to Talcher unit.

The year 1982-83 experienced a steep fall in the production and capacity utilisation. The production came down from 45.8 thousand tonnes in the year 1981-82 to 20.5 thousand tonnes in the year 1982-83. The utilisation of capacity decreased from 20.1 per cent in the year 1981-82 to 9 per cent during 1982-83. This sharp decline was the result of power cut imposed by Orissa State Electricity Board. As a result the plant could function, only for about 5 months in the year 1982-83. 27

To overcome the problems faced by Ramagundam and Talcher units and to improve their performance, certain short-term and long term measures were taken.

The short-term measures included 28:-

i) modification and replacement in gasifiers.

ii) installation of 30 MW gas turbine generating set at Talcher to avoid power shortage.

iii) installation of stainless steel Heat Exchangers in the Ammonia Plant etc.

iv) replacement of blades of air compressors etc.

28. Ibid.
The long-term measures for which investment proposals were submitted to the Government included:—

1) modification of air separation plant at Ramagundam and Talcher.

2) installation of 4th Gasifier at both the units.

3) setting up of captive power plant with two units of 30 MW each, both at Ramagundam & Talcher etc.

During the year 1983-84, the power cut, forced the Unit to close its operations for 5 months. Subsequent restart problems also disturbed the production schedule. However, as compared to previous year i.e. 1982-83, the production in 1983-84 showed an increase of 16.8 thousand tonnes, as it figured 37.3 thousand tonnes. The utilisation of capacity also increased to 16.4 per cent compared to 9 per cent in 1982-83. With the installation of 30 MW gas turbine generator, it is expected that the total power requirements of the Talcher plant would be met from the year 1985 onwards. During the year 1985-86, the problems of break down equipment failure, process problems, limitation due to power supply from Orissa State Electricity Board have affected the capacity utilisation.

The world bank has agreed to finance an indepth techno-economic study of the two coal-based plants at Ramagundam and Talcher. It is hoped that the findings of the study will go a long way in maximising the capacity

29. Ibid. P. 7.
utilisation of the two plants.

6.3.6 Inter-Unit Comparison of Capacity Utilised:

In order to have a comparative study of capacity utilisation of different plants of FCI, the related information is tabulated in Table-16.

**TABLE - 16**

INTER-UNIT COMPARISON OF CAPACITY UTILISED

<table>
<thead>
<tr>
<th>Year</th>
<th>Sindri Complex</th>
<th>戈拉库普</th>
<th>拉马古丹</th>
<th>塔切尔</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sindri Modernisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sindri Rationalisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1979-80</td>
<td>22.7*</td>
<td>6.3*</td>
<td>39.0+</td>
<td>-</td>
</tr>
<tr>
<td>1980-81</td>
<td>11.4+</td>
<td>12.2</td>
<td>45.6</td>
<td>20.8+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.5+</td>
</tr>
<tr>
<td>1981-82</td>
<td>55.9</td>
<td>13.50@</td>
<td>55.8</td>
<td>25.9</td>
</tr>
<tr>
<td>1982-83</td>
<td>59.9@</td>
<td>6.9</td>
<td>56.6</td>
<td>32.8</td>
</tr>
<tr>
<td>1983-84</td>
<td>54.6</td>
<td>6.3</td>
<td>62.2</td>
<td>35.4</td>
</tr>
<tr>
<td>1984-85</td>
<td>57.7</td>
<td>3.1+</td>
<td>62.9@</td>
<td>41.0@</td>
</tr>
</tbody>
</table>

Notes: 1. *Capacity utilised, calculated on pro-rata basis.
        2. +Minimum capacity utilisation of the plant, during the period under study.
        3. @Maximum capacity utilisation of the plant during the period under study.
        4. All the figures in table-16 have been computed by the Research Scholar.

SOURCE: As that of Table-10, 11, 12, 13 and 14.
The data furnished in Table-16 reveals that, the capacity utilisation of Sindri Modernisation Plant (SMP), was in between 11.4 to 59.9 per cent, during last 6 year period under study. The capacity utilisation of SMP has declined to 11.4 per cent, (as against 22.7 per cent in 1979-80), and in 1983-84, it declined to 54.6 per cent (as against 59.9 per cent during 1982-83).

The figures relating to Gorakhpur unit's capacity utilisation shows a consistent over this period it operated at capacity, ranging in between 39 to 62.9 per cent during the period under study.

The capacity utilisation of Ramagundam unit, is also increasing consistently, as that of Gorakhpur unit. The Ramagundam unit could utilise its capacity, in between 20.8 to 41.0 per cent during the 6 years period under study.

The Talcher Unit has a minimum of 4.5 per cent and a maximum of 24.2 per cent capacity utilisation, during last 5 years period. Its capacity utilisation is continuously increasing, except in the year 1982-83, when it declined to 9.0 per cent (as against 20.1 per cent in 1981-82).

The comparison of capacity utilisation figures of the above mentioned, 'N' fertilisers producing plants show that, the minimum capacity utilisation was 4.5 per cent and the maximum was 62.9 per cent. The minimum capacity utilisation of 4.5 per cent was experienced by Talcher Unit, in its first year of operation, i.e. 1980-81. Whereas, the maximum capacity utilisation of 62.9 per cent was achieved by Gorakhpur Unit in the year 1984-85.
It is observed that out of four 'N' fertilisers producing plants of FCI, two plants, namely SMP and Gorakhpur Unit could attain 50 per cent capacity utilisation, in four out of six years of period under study. The capacity utilisation of these two plants figured more than 50 per cent during the period from 1981-82 to 1984-85. The other two plants at Ramagundam & Talcher, could not achieve 50 per cent capacity utilisation even in their fifth year of operation.

The capacity utilisation of Ramagundam unit has reached to 41 per cent, in the year 1984-85, and it was never below 20 per cent, during last 5 years period. On the other hand, the Talcher unit has very discouraging performance. It could not utilise its capacity, above 25 per cent, in its 5 years operation.

Thus, the capacity utilisation of Gorakhpur unit was most impressive in the year 1984-85 when it reached to 62.9 per cent. The credit of highest capacity utilisation, among FCI units during the period from 1979-80 to 1984-85, also goes to Gorakhpur unit. The SMP is at second position, which could achieve 59.9 per cent capacity utilisation, during the year 1982-83. The Ramagundam unit ranks third, as its maximum capacity utilisation is 41 per cent, in the year 1984-85. The Talcher unit has lowest capacity
utilisation at 4.5 per cent during 1980-81 among the FCI's nitrogenous fertilisers producing plants. During the year 1984-85 Talcher unit has capacity utilisation of 24.2 per cent which is its highest achievement in the last 5 years.

However, the comparison of Gorakhpur plant's performance with the new generation plants of SMP, Ramagundam and Talcher units is not desirable. Because, the Gorakhpur unit was commissioned in the year 1969 and its production has been stabilised. The Gorakhpur plant has now become more than 17 years old. Whereas, the SMP was commissioned in the year 1979 and Ramagundam & Talcher Units started commercial production in the year 1980. These new plants have certain problems which are commonly experienced in the initial years of operations. Moreover, the Ramagundam and Talcher units pertaining have additional problems/to the new technology of coal gasification.

Among the new plants, SMP's performance is better compared to the two coal-based plants. Though Ramagundam & Talcher units are similar in respect of Feedstock & Technology, the performance of Ramagundam Unit is much better compared to its sister plant at Talcher.

Regarding the phosphatic fertilisers, Sindri Rationalisation plant (SRP), is the only plant constituting FCI's
phosphatic capacity. SRP was commissioned in the year 1979-80. Its capacity utilisation is declining gradually since 1982-83, when it was 6.9 per cent and came down to a meagre 3.1 per cent in the year 1984-85.

The overall capacity utilisation of SRP ranged between 3.1 to 13.5 per cent during last 6 years period under study. Thus its operations were below 14 per cent of its capacity. In 4 out of 6 years of its operation, its capacity utilisation was below 10 per cent. There are only two instances, when it could utilise its capacity above 10 per cent i.e. in the year 1980-81 and 1981-82.

To sum up, the SRP has the lowest capacity utilisation, among all the plants under FCI's control.

6.4 **FCI's Profitability** :

Profits are essential for the business firms for their long term growth and survival. The term 'profit' is sometimes mis-interpreted in the sense that every action of management is backed by the objective of profit-maximisation, irrespective of its social consequences. Profit is important not only from the viewpoint of survival of the business but also from the point of view of return on investment to the shareholders. A loss incurring unit is liability not only to shareholders and creditors but also a drag on the society.  

A Public Enterprise should be judged with reference to its contribution to development, a part of which is financial. Public policy often demands emphasis on various broader aspects which are very likely to conflict with commercial returns.\(^3^2\) The factors affecting the working of P.\&Es. are subject to Government policies and directives. For instance location of the plant in backward regions, the price policy adopted irrespective of cost of production, role of P.\&Es. as a model employer retaining surplus staff, Compulsory employment of persons belonging to certain categories and the way in which the Government wants to use the P.\&Es. as instrument of public\(\_\text{policy}\), the political pressures indirectly affecting autonomy of P.\&Es. management and many other factors affect the efficiency of P.\&Es.\(^3^3\)

In view of the factors affecting the working of P.\&Es. neither accrual of profit can be treated as an indicator of efficiency nor the losses as the result of inefficient operations. The performance of P.\&Es. have to be judged in view of their contribution to the development of the society at large, a segment of which is represented by so-called 'Profit'. Thus 'profit' for P.\&Es. is undoubtedly one of the main indicators and not the only indicator of measuring efficiency.

The FCI being a public sector organisation is also expected to earn profit, in addition to discharge of its social obligations. The FCI has incurred losses during the period (i.e. 1978-79 to 1985-86) under study, which are analysed in this chapter to examine its performance.

6.4.1 FCI's Losses:

The FCI's losses are disclosed by its Annual Reports for the period from 1980-81 to 1985-86.

The data relating to losses is tabulated in Table-17 along with the share of different operating units. The period covered is 1978-79 to 1985-86.

It can be seen, from Table-17 that, from 1978-79 to 1981-82 the FCI's net losses are continuously increasing i.e. from Rs. 21.84 crore to Rs. 126.8 crore respectively. In the year 1982-83 the net loss has steeply declined to Rs. 80.3 crores as compared to the previous year (i.e. 1981-82) figure of Rs. 126.8 crores. In 1983-84, there was a slight increase in FCI's total losses to Rs. 80.59 crores, as compared to Rs. 80.3 crores in the year 1982-83, (i.e. its previous year). In 1984-85 the FCI's net losses considerably declined to Rs. 45.13 crores as compared to the previous year figure of Rs. 80.59 crores.
### TABLE - 17

**FCI's NET LOSSES**

<table>
<thead>
<tr>
<th>Year</th>
<th>FCI's Net Loss (Rs. in crores)</th>
<th>Share of Net Loss (in %)</th>
<th>Sindri</th>
<th>Gorakhpur</th>
<th>Ramagundam</th>
<th>Talcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-79</td>
<td>21.84</td>
<td></td>
<td>18.36</td>
<td>3.48</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(84.07)</td>
<td>(15.93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1979-80</td>
<td>48.67</td>
<td></td>
<td>38.63</td>
<td>10.04</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(79.37)</td>
<td>(20.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980-81</td>
<td>100.9</td>
<td></td>
<td>60.62</td>
<td>6.10</td>
<td>14.92</td>
<td>19.35</td>
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<tr>
<td></td>
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<td>(60.08)</td>
<td>(6.05)</td>
<td>(14.79)</td>
<td>(19.18)</td>
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<td>1981-82</td>
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<td>(44.01)</td>
<td>(5.99)</td>
<td>(20.5)</td>
<td>(29.5)</td>
</tr>
<tr>
<td>1982-83</td>
<td>80.3</td>
<td></td>
<td>24.0</td>
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<td>9.3</td>
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<td>(29.87)</td>
<td>(8.97)</td>
<td>(11.58)</td>
<td>(49.56)</td>
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<tr>
<td>1983-84</td>
<td>80.59</td>
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<td>NA</td>
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<tr>
<td>1984-85</td>
<td>45.13</td>
<td></td>
<td>21.63</td>
<td>9.20</td>
<td>0.28</td>
<td>20.01</td>
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<td></td>
<td>(42.31)</td>
<td>(18.00)</td>
<td>(0.55)</td>
<td>(39.14)</td>
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<tr>
<td>1985-86</td>
<td>127.21</td>
<td></td>
<td>43.77</td>
<td>11.30</td>
<td>23.89</td>
<td>42.94</td>
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<td></td>
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<td></td>
<td>(34.41)</td>
<td>(8.88)</td>
<td>(18.78)</td>
<td>(33.76)</td>
</tr>
</tbody>
</table>

**Notes:**
1. NA = Not available
2. Represents projects under implementation
3. Figures in parenthesis represent individual plant's share in per cent, calculated by the Research Scholar.
4. FCI's Net Loss for the year 1984-85 comes to Rs. 51.12 crores, if the losses incurred by individual units are summed up. Because Rs. 5.99 crores was profit from 'other' operations, which has reduced FCI's Net Loss for the year to Rs. 45.13 crores. The percentage share of individual units is calculated on the basis of Rs. 51.12 crores.
5. FCI's Net Loss for the year 1985-86 comes to Rs. 121.9 crores if the losses of individual units are summed up. But in addition there was a loss of Rs. 5.31 crores from 'other' operation, thereby the Net Loss of FCI has reached to Rs. 127.21 crores on which percentage share of individual units is calculated.

**Source:** FCI's Net Losses and plant-wise share (in Rs. crore) are taken from FCI's Annual Reports for the year 1980-81 P. No.7, for 1981-82 P. No. 5, for 1982-83, P. No. 9, 1983-84, P. No.(X), for the year 1984-85 and for the year 1985-86, Annual Report for the year 1985-86, P. 8.
During the year 1985-86, FCI's net losses have sharply increased to Rs. 127.21 crores as compared to previous year.

During the period study (i.e. 1978-79 to 1985-86) the FCI's total losses were highest at Rs. 127.21 crores in the year 1985-86 and they were lowest at Rs. 21.84 crores in the year 1978-79.

During the year 1978-79 and 1979-80, the FCI had only two units (at Sindri and Gorakhpur) under its control. The Ramagundam and Talcher projects were on their way to implementation.

During the year 1978-79, out of the total net loss of Rs. 21.84 crores, the Sindri Unit incurred a loss of Rs. 18.36 crores and Gorakhpur unit incurred Rs. 3.48 crores of loss. The Sindri Unit has shared 84.07 per cent and Gorakhpur unit shared 15.93 per cent of the FCI's total losses. In the year 1978-79, Sindri Unit incurred a heavy loss, compared to Gorakhpur Unit.

In the year 1979-80, out of the FCI's total net loss of Rs. 48.67 crores, the share of Sindri Unit was Rs. 38.63 crores and Gorakhpur Unit's share was Rs. 10.04 crores. In this year the Sindri Unit was responsible for 79.37 per cent and Gorakhpur unit was responsible for 20.63 per cent of FCI's total net losses. In the year 1979-80 also the Sindri Unit continued to share major portion of FCI's total net losses.
During the year 1980-81, the total net losses of FCI were amounted to Rs. 100.9 crores. Out of which the Sindri Units share was Rs. 60.62 crores and Gorakhpur unit's share was Rs. 6.10 crores. Whereas Ramagundam unit's share was Rs. 14.92 crores and Talcher Unit's share was Rs. 19.35 crores. Accordingly the share of Sindri Unit was 60.08 per cent and of Gorakhpur unit it was 6.05 per cent. The Ramagundam unit's share was 14.79 per cent and Talcher Unit's share was 19.18 per cent. During the year 1980-81 again the Sindri Unit's share of losses was highest at 60.08 per cent, whereas the lowest share of losses was that of Gorakhpur unit i.e. at 6.05 per cent of the FCI's total net losses.

In the year 1981-82, the FCI's total net losses were Rs. 126.8 crores. Out of which the share of Sindri, Gorakhpur, Ramagundam and Talcher Units were Rs. 55.8, Rs. 7.6, Rs. 26.0 and Rs. 37.4 crores respectively. In percentage terms share of losses were 44.01 of Sindri, 5.99 of Gorakhpur, 20.5 of Ramagundam and 29.5 of Talcher. The highest share of losses was again that of Sindri unit at 44.01 per cent and the lowest share was of Gorakhpur unit at 5.99 per cent of FCI's total net losses. Thus, in this respect, the situation of 1980-81 was repeated.
In the year 1982-83 FCI's total net loss was Rs. 80.3 crores. Out of which the share of Sindri Unit was Rs. 24.0 crores and of Gorakhpur Unit, it was Rs. 7.2 crores. The Ramagundam and Talcher Units have their share of losses at Rs. 9.3 and Rs. 39.8 crores, respectively. In terms of percentage, the share of Sindri and Gorakhpur Units were 29.87 and 8.97, respectively and that of Ramagundam and Talcher Units, 11.58 and 49.56 respectively. In the year 1982-83, the highest loss was incurred by Talcher Unit, amounting to 49.56 per cent of FCI's total net loss. And the Gorakhpur Unit accounts for the lowest share of loss at 8.97 per cent of FCI's total net loss for the year.

During the year 1984-85, the total net loss of FCI was Rs. 43.13 crores, of which Rs. 21.53 crores were incurred by Sindri Unit, Rs. 7.20 crores by Gorakhpur Unit, Rs. 0.28 crores by Ramagundam Unit and 20.01 crores by Talcher Unit. In terms of percentage, the share of loss of Sindri Unit was 42.31, of Gorakhpur 16.7, of Ramagundam Unit 0.55 and of Talcher Unit 39.14. In the year 1984-85, the highest share of loss was incurred by Sindri Unit amounting to 42.31 per cent, and the lowest share of loss was incurred by Ramagundam Unit at 0.55 per cent, of the FCI's total net losses for the year.
During the year 1985-86, FCI's net losses have substantially increased to Rs. 127.21 crores as compared to previous year figure of Rs. 45.13 crores. Of Rs. 127.21 crores, Sindri Unit was responsible for a loss of Rs. 43.77 crores, Gorakhpur Unit was responsible for a loss of Rs. 11.3 crores and the Ramagundam and Talcher Units have incurred loss of Rs. 23.89 crores and Rs. 42.94 crores respectively. In terms of percentage, the Sindri Unit's share was 34.41 per cent, Gorakhpur Unit's share was 8.88 per cent, Ramagundam Unit's 18.78 per cent and Talcher Unit's share was 33.76 per cent. In the year 1985-86 the highest share of loss was incurred by Sindri Unit amounting to 34.41 per cent and the lowest was incurred by Gorakhpur unit at 8.88 per cent of the FCI's total net losses for the year.

From Table-17 it is revealed that throughout the period under study i.e. 1978-79 to 1985-86 (break up of data for the year 1983-84 was not available) the share of loss incurred by Sindri Unit was highest as compared to other FCI Units, there was only one exception of the year 1982-83, when the Talcher Unit's share was highest at 49.56 per cent of the FCI's total net losses for the year. On the other hand, the Gorakhpur Unit's share of loss continue to be the lowest as compared to other FCI units with an exception of 1984-85, during the period under study. During the year 1984-85, the share of loss of Ramagundam unit was lowest at 0.55 per cent as compared
to other FCI Units.

6.5 FICC Consumption Norms:

The Fertiliser Industry Coordination Committee (FICC) has determined Consumption norms for different Units based on the Technology and feedstock used and other relevant factors.

The prices of Fertilisers are controlled statutorily. The 'Retention Prices' are calculated on the basis of FICC consumption norms and a margin of 20 per cent on Net worth is allowed. Incase, the unit is unable to adhere to the FICC consumption norms in respect of its product constituents, its cost of production is bound to increase. As a result the 20 per cent margin of profit allowed by way of 'Retention Prices' is offset and the unit incurs losses. The FCI's main problem was that it could not stick to the FICC consumption norms, ultimately experiencing losses.

The Fertiliser Corporation of India, (FCI), was unable to adhere to the FICC consumption norms during the period from 1980-81 to 1984-85, in all its four N producing units. However, there was an exception in Ammonia consumption in 1981-82, and steam consumption in 1980-81 and
1981-82 at Sindri Unit, when the actual consumption was less than the FICC norm. An analysis is made here with the help of tabulated data, in which the FICC norms for different product-constituents are given. Simultaneously the actual consumption figures are compared with the norms to find out the quantum of deviation, whether it is in excess of norm or less than the norm. For convenience, unit-wise analysis is made to account individual unit's input consumption trend.

6.5.1 FICC consumption Norms for Sindri Modernisation Plant (SMP):

Table-18 deals with FICC norms applicable to Sindri modernisation plant. Table-18 reveals that FICC consumption norms was 0.614 MT of Ammonia, per tonne of Urea. During the period 1980-81 to 1984-85 there was only one instance when the Ammonia's consumption was less than FICC norm, i.e. in the year 1981-82. In this year the Ammonia's consumption was 0.609 MT, as compared to FICC norm, of 0.614 MT, thereby the consumption was less than the norm, by 0.005 MT per tonne of Urea.

During the other four years period (i.e. 1980-81 and 1982-83 to 1984-85) the consumption of Ammonia was in excess of FICC norm. The consumption in excess of norm was highest in the year 1980-81 at 0.033 MT, and was lowest in the year 1984-85 at 0.007 MT. However, the consumption
<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption</th>
<th>Deviation</th>
<th>Actual</th>
<th>Deviation</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-84</td>
<td>1.07</td>
<td>-0.063</td>
<td>0.507</td>
<td>-0.06</td>
<td>0.445</td>
</tr>
<tr>
<td>1983-84</td>
<td>1.07</td>
<td>-0.063</td>
<td>0.507</td>
<td>-0.06</td>
<td>0.445</td>
</tr>
<tr>
<td>1983-84</td>
<td>1.07</td>
<td>-0.063</td>
<td>0.507</td>
<td>-0.06</td>
<td>0.445</td>
</tr>
<tr>
<td>1983-84</td>
<td>1.07</td>
<td>-0.063</td>
<td>0.507</td>
<td>-0.06</td>
<td>0.445</td>
</tr>
</tbody>
</table>

Per tonne of ore
in excess of FICC norm has declined from 0.017 MT in 1982-83 to 0.007 MT in 1984-85.

The other product constituent is Low Sulphur Heavy Stock (LSHS). The FICC consumption norm was 0.515 MT of LSHS, per tonne of Urea. During the period under study (i.e. from 1980-81 to 1984-85) the LSHS consumption was above the FICC norm.

The LSHS consumption in excess of norm, was highest in the year 1980-81 at 0.330 MT, and was lowest in the year 1984-85 at 0.017 MT. The LSHS consumption in excess of FICC norm was declining over the period from 0.330 MT in 1980-81 to 0.017 MT in 1984-85.

Table-18 further reveals that the power requirements of Sindri Modernisation Plant are determined by FICC at 261.39 Kilo Watt Hour (KWH), per tonne of Urea. During the period from 1980-81 to 1984-85 the power consumption has exceeded the norm.

The power consumption in excess of norm was highest in the year 1980-81 at 691.82 KWH, and was lowest in the year 1983-84 at 133.79 KWH. The power consumption in excess of norm was declining gradually from 691.82 KWH

Note: 'N' represents Nitrogenous Fertilisers.

Wherever 'Norm' is written, it is meant to represent FICC consumption Norm.
in 1980-81 to 133.79 KWH in the year 1983-84. The year 1984-85 is the only exception where the consumption in excess of norm has increased (to 137.84 KWH) as compared to previous year i.e. 1983-84 figure of 133.79 KWH.

The Steam requirement of Sindri Modernisation plant has been determined by FICC at 1.09 MT, tonne of Urea. The consumption of steam was in excess of FICC norm during three (i.e. 1982-83 to 1984-85) out of five years of period (i.e. 1980-81 to 1984-85) under study. In other two years (i.e. 1980-81 and 1981-82), the steam consumption was below the FICC norm.

The steam consumption in excess of norm is increasing from 0.11 MT in 1982-83 to 0.39 MT in 1984-85.

The consumption of steam was 0.93 MT in 1980-81 and 0.89 MT in 1981-82, whereas the FICC norm was 1.09 MT. As a result, the consumption of steam was less than the FICC norm by 0.16 MT & 0.20 MT in 1980-81 & 1981-82 respectively.

Thus, Table-18 suggest that the consumption of all the four product-constituents of Urea, produced by Sindri Modernisation plant have exceeded the FICC norms prescribed. However, there are three instances (i.e. the Ammonia
consumption in 1981-82 and steam consumption in 1980-81 and 1981-82) where the actual consumption was below the FICC norms.

6.5.2 FICC Consumption Norms for Gorakhpur Unit:

Table-19 gives an account of the FICC specific consumption norms prescribed for Gorakhpur Unit and its actual consumption.

It can be observed from Table-19 that during the period from 1980-81 to 1984-85, the actual consumption of the product constituent of Urea by Gorakhpur unit has exceeded the FICC norms. For Ammonia, the FICC has determined a consumption norm of 0.623 MT, per tonne of urea.

The Ammonia's consumption in excess of norm, was highest in two years i.e. 1982-83 and 1983-84 at 0.025 MT and it was lowest at 0.010 MT in the year 1980-81. The consumption in excess of norm, was increasing during first three years (i.e. 1980-81 to 1982-83) from 0.010 MT to 0.025 MT respectively. And it was 0.025 MT in 1983-84 also. In 1984-85, the consumption of ammonia, in excess of norm has came down to 0.023 MT.

The Gorakhpur Unit's requirement of Naphtha is determined by FICC at 0.512 MT, per tonne of Urea. During the
The following table shows the deviation of PICC's consumption norms from the actual consumption figures. The actual consumption figures are extracted from PICC's production records.

### Notes:
1. Does not include power required in the process of steam generation.
2. Deviation in excess of PICC norms calculated by the research scholar.
3. KWh = Kilo Watt Hour.

<table>
<thead>
<tr>
<th>Year</th>
<th>PICC Norm</th>
<th>Actual</th>
<th>Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2010</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2011</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2012</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2013</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2014</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2015</td>
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<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2016</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2017</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2018</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2019</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
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<tr>
<td>2020</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2021</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2022</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2023</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2024</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2025</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2026</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2027</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2028</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2029</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
<tr>
<td>2030</td>
<td>0.341</td>
<td>0.341</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Table:** 227
period under study (i.e. 1980-81 to 1984-85) the Naphtha consumption was above the FICC standard norm.

The Naphtha consumption in excess of norm was highest in the year 1983-84 at 0.048 MT and it was lowest at 0.016 MT in 1980-81. During the year 1983-84 the naphtha consumption in excess of norm, was 0.048 MT, which declined to 0.020 MT in 1984-85.

In respect of Power consumption, the FICC has determined its norm at 1391.3 KWH, per tonne of Urea. The consumption trend of other product-constituents is repeated here also i.e. the consumption has exceeded the norms.

The power consumption in excess of norm, was 139.5 KWH in 1981-82, which increased to 246.9 KWH in 1983-84. However, in 1981-82 the power consumption in excess of norm has declined to 139.5 KWH, from the figure of 148.9 KWH in 1980-81. Similarly the consumption in excess of norm has also declined to 201.8 KWH in 1984-85 as compared to the previous year's (i.e. 1983-84) figure of 246.9 KWH. Thus, in two years i.e. 1981-82 and 1984-85, the consumption in excess of norm has shown a declining trend.

The steam requirement of Gorakhpur Unit was measured by FICC at 2.811 MT. The consumption figures indicate that the FICC norms could not be adhered to.
The steam consumption in excess of FICC norm, has increased in two years i.e. from 0.070 MT in 1981-82 to 0.361 MT in 1982-83 and from 0.284 MT in 1983-84 to 0.342 MT in 1984-85. On the other hand the steam consumption in excess of norm, has declined in two years. In 1981-82 it has declined to 0.070 MT as compared to 0.162 MT in 1980-81 and in the year 1983-84, it came down to 0.284 MT, as compared to the previous year's (i.e. 1982-83) figure of 0.361 MT.

6.5.3 **FICC Consumption Norms for Ramagundam Unit** :

Table-20 gives the details of FICC consumption norms prescribed for Ramagundam Unit.

It is evident from table-20 that like Gorakhpur unit, the Ramagundam Unit also could not conform its actual consumption of product - constituents to the FICC norms, during the period (i.e. 1981-82 to 1984-85 under study. The consumption norm for Ammonia was 0.600 MT, per tonne of Urea, which could not be achieved in any of the four years period (i.e. 1981-82 to 1984-85) under study. The Ammonia consumption in excess of FICC norm was highest at 0.043 MT in 1981-82 and was lowest at 0.009 MT in 1982-83. In two years i.e. 1983-84 and 1984-85, the consumption in excess of FICC norm was constant at 0.014 MT. In the year
Production Records

Source: Rice's consumption forms and actual consumption figures are extracted from P&I's

Date: 7. Deviations are calculated by the research scholar.

1. Deviation (+) = consumption in excess of Rice's forms.
2. Deviation (-) = consumption less than Rice's forms.

Notes: I. Cro = Heavy Fuel Oil
2. "DO = Light Distillate

<table>
<thead>
<tr>
<th>Year</th>
<th>Cro (t)</th>
<th>Actual Deviation</th>
<th>Actual Distillate</th>
<th>Actual Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-82</td>
<td>0.643</td>
<td>0.010</td>
<td>0.033</td>
<td>0.043</td>
</tr>
<tr>
<td>1982-83</td>
<td>0.509</td>
<td>0.076</td>
<td>0.192</td>
<td>0.209</td>
</tr>
<tr>
<td>1983-84</td>
<td>0.514</td>
<td>0.084</td>
<td>0.213</td>
<td>0.209</td>
</tr>
<tr>
<td>1984-85</td>
<td>0.614</td>
<td>0.096</td>
<td>0.216</td>
<td>0.226</td>
</tr>
<tr>
<td>1985-86</td>
<td>0.606</td>
<td>0.109</td>
<td>0.219</td>
<td>0.228</td>
</tr>
<tr>
<td>1986-87</td>
<td>0.615</td>
<td>0.115</td>
<td>0.222</td>
<td>0.228</td>
</tr>
<tr>
<td>1987-88</td>
<td>0.615</td>
<td>0.115</td>
<td>0.222</td>
<td>0.228</td>
</tr>
<tr>
<td>1988-89</td>
<td>0.606</td>
<td>0.109</td>
<td>0.219</td>
<td>0.228</td>
</tr>
</tbody>
</table>

Rice by Ammonium Unit:

Deviation from Specific Consumption Forms of Rice
1982-83, the consumption in excess of norms had declined to 0.009 MT as compared to the previous year's (i.e. 1981-82) figure of 0.043 MT. Whereas, in 1983-84, the consumption in excess of norm has increased to 0.014 MT as compared to the previous year's (1982-83) figure of 0.009 MT.

The coal requirement for process, has been determined by FICC at 1.450 MT, per tonne of Urea. But actual coal consumption for process was above the FICC norm during the years 1981-82 to 1984-85.

The coal consumption (for process) in excess of norm, was highest in the year 1981-82 being 0.303 MT and it was lowest at 0.123 MT in the year 1982-83. The consumption in excess of norm, has declined to 0.123 MT in 1982-83 as compared to 0.303 MT figure of 1981-82 and it also decreased in 1984-85 to 0.156 MT as compared to 0.208 MT in 1983-84. However, the coal consumption in excess of norm has increased to 0.208 MT in the year 1983-84 in comparison to 0.123 MT figure of 1982-83.

The coal requirement for steam generation in Ramagundam Unit has been calculated by FICC at 1.550 MT, per tonne of Urea. During the period under study there was not even a single instance where the coal consumption (for steam generation) was within the FICC norm.
The coal consumption (for steam generation) in excess of norm was highest in the year 1981-82 being 0.751 MT and gradually declined to 0.315 MT in the year 1983-84.

The power requirements of Ramagundam Unit were measured by FICC at 1.20 MWH, per tonne of Urea. The element of non-compliance of FICC norm continued in this respect also.

The power consumption in excess of norm was declining over the period. It was 0.549 MWH in 1981-82 and came down to 0.115 MWH in 1984-85.

The FICC has determined its norm, for Heavy Fuel Oil (HFO) consumption of Ramagundam Unit at 0.072 KL (kilo litre), per tonne of Urea. Like other product constituents, the HFO consumption has also exceeded the FICC norm.

The HFO consumption in excess of norm, was highest being 0.064 KL in 1982-83 and lowest at 0.016 KL in 1984-85. The consumption in excess of norm, has been declining during the past two years. In 1983-84, it has declined to 0.047 KL as compared to the figure of 0.064 KL in the year 1982-83. And in 1984-85 it has declined to 0.016 KL, as compared to the figure 0.047 KL in the year. But the consumption in excess of norm has increased to 0.064 KL in 1982-83 as compared to the previous year's (i.e. 1981-82) figure of 0.033 KL.
In respect of Light Diesel Oil (LDO) consumption requirement of Ramagundam Unit, the FICC norm is 0.006 KL per tonne of urea. However, the consumption of LDO could not be contained within FICC norm, during the period 1981-82 to 1984-85.

The LDO consumption in excess of norm was highest at 0.012 KL in 1981-82 and lowest at 0.003 KL in 1984-85. The LDO consumption in excess of norm has increased to 0.011 KL in the year 1983-84 as compared to 0.007 KL figure of 1982-83. But it has declined in the years, 1982-83 and 1984-85. In the year 1982-83, the LDO consumption in excess of norm has declined to 0.007 KL as compared to the figure of 0.012 KL in the year 1981-82. In the year 1984-85 the LDO consumption in excess of norm has declined to 0.003 KL as compared to 0.011 KL, figure of 1983-84.

6.5.4 FICC Consumption Norms for Talcher Unit:

Table-21 gives the details of FICC consumption norms applicable to Talcher unit and the deviation thereon. Like Gorakhpur and Ramagundam Units, the Talcher unit also had its actual consumption of product-constituents above the FICC norm, during the period under study.
### Deviation from Specific Consumption Norms of PICC by Talcher Unit

<table>
<thead>
<tr>
<th>Year</th>
<th>Unit</th>
<th>Ammonia</th>
<th>Coal for Process</th>
<th>Coal for Steam</th>
<th>Power</th>
<th>MFO</th>
<th>LDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981-82</td>
<td>MT</td>
<td>0.600</td>
<td>1.64</td>
<td>1.60</td>
<td>1.260</td>
<td>0.072</td>
<td>0.006</td>
</tr>
<tr>
<td>1982-83</td>
<td>MT</td>
<td>0.637</td>
<td>2.274</td>
<td>1.567</td>
<td>1.284</td>
<td>-0.924</td>
<td>0.288</td>
</tr>
<tr>
<td>1983-84</td>
<td>MT</td>
<td>0.636</td>
<td>2.551</td>
<td>4.122</td>
<td>2.413</td>
<td>-1.153</td>
<td>0.234</td>
</tr>
<tr>
<td>1984-85</td>
<td>MT</td>
<td>0.629</td>
<td>2.161</td>
<td>3.311</td>
<td>1.800</td>
<td>0.540</td>
<td>0.111</td>
</tr>
</tbody>
</table>

Note: Deviation (-) = Consumption in excess of PICC norms, calculated by the Research Scholar.

**Source:** PICC's Norms and Actual Consumption figures are extracted from FCI's production records.
Table-21 reveals that the consumption norm for Ammonia as determined by FICC was 0.600 MT, per tonne of Urea. But the Unit's consumption was above the norm. In the year 1982-83 the Ammonia consumption in excess of norm was highest being 0.037 MT, whereas in the year 1984-85, it was lowest at 0.020 MT. The Ammonia consumption in excess of norm has increased in the year 1982-83 to 0.037 MT, as compared to its previous year's (i.e. 1981-82) figure of 0.030 MT. In the years 1983-84 and 1984-85, the Ammonia consumption in excess of norm has been declining. In 1983-84, it has declined to 0.036 MT from its previous year's (i.e. 1982-83) figure of 0.037 MT and in 1984-85, it has further declined to 0.020 MT as compared to the figure of 0.036 MT in the year, 1983-84.

The coal requirement for process is determined by FICC at 1.64 MT, per tonne of Urea.

The coal consumption (for process) in excess of FICC norm has highest in the year 1982-83 at 0.911 MT and was lowest in the year 1984-85 at 0.197 MT. The coal consumption (for process) in excess of FICC norm has declined in the years 1983-84 and 1984-85. In 1983-84 the coal consumption (for process) in excess of norm has came down to 0.521 MT from 0.911 MT in the previous year i.e. 1982-83, and in 1984-85 it declined to 0.197 MT from 0.521 MT in
1983-84. However, in the year 1982-83 the coal consumption in excess of norm has increased to 0.911 MT as compared to the previous year (i.e. 1981-82) figure of 0.634 MT.

The coal requirement for steam generation is determined by FICC at 1.60 MT, per tonne of Urea. But the consumption figures have crossed the norm of 1.60 MT in all the four years (i.e. 1981-82 to 1984-85) period under study.

The coal consumption (for steam generation) in excess of FICC norm was highest in the year 1982-83 at 2.522 MT and was lowest in the year 1984-85 at 0.882 MT. The coal consumption (for steam generation) in excess of norm has increased to 2.522 MT in the year 1982-83 as compared to its previous year (i.e. 1981-82) figure of 1.567 MT. But in the year 1984-85 it declined to 0.882 MT, compared to the figure of 2.522 MT in 1982-83.

The power consumption requirement of Talcher Unit is prescribed by FICC at 1.260 MWh, per tonne of Urea. The power consumption has exceeded the norms in all four year i.e. from 1981-82 to 1984-85.

The power consumption in excess of FICC norm was highest at 1.53 MWh in 1982-83 and lowest at 0.062 MWh in the year 1984-85. The power consumption in excess of
FICC norm has steeply declined from 1.153 MWH in 1982-83 to 0.062 MWH in 1984-85. And in the year 1982-83 the power consumption in excess of norm has increased to 1.153 MWH in comparison to the figure of 0.924 MWH in 1981-82.

The Heavy Fuel Oil (HFO) requirement of Talcher Unit are determined by FICC at 0.072 Kilo Litre (K.L.), per tonne of Urea.

The HFO consumption in excess of norm was highest at 0.216 K.L. in 1981-82 and lowest at 0.039 K.L. in 1983-84. The HFO consumption in excess of FICC norm has declined from 0.216 K.L. in 1981-82 to 0.039 K.L. in 1983-84. However, in the year 1984-85 the HFO consumption in excess of norm has increased to 0.047 K.L. as compared to the previous year (i.e. 1983-84) figure of 0.039 K.L.

The consumption requirement of Light Diesel Oil (LDO) of Talcher Unit is prescribed by FICC, at 0.006 K.L., per tonne of Urea.

The LDO consumption in excess of norm was highest in the year 1981-82 at 0.038 KL and lowest in the year 1984-85 at 0.032 KL. There are two instances where the LDO consumption in excess of norm has declined, in the years 1982-83 and 1984-85. In 1982-83 the LDO consumption in excess of norm declined to 0.033 KL as compared to its previous year.
(i.e. 1981-82) figure of 0.038 KL. And in 1984-85 the
LDO consumption in excess of norm declined to 0.032 KL
as compared to 0.035 KL in 1983-84. In 1983-84, the LDO
consumption in excess of norm has increased to 0.035
KL compared to its previous year figure of 0.033 KL.

6.5.5 Comparative Study of Ramagundam and Talcher Units:

The two coal-based units at Ramagundam and Talcher
are identical to each other in respect of reedstock, Tech-
nology and installed capacity. But the FICC consumption
norms prescribed in each of these two units are different
in respect of certain product-constituents.

The product-constituents for which the consumption
norms are determined by FICC are Ammonia, Coal for process,
Coal for Steam, Power, Heavy Fuel Oil (HFO) and Light
Diesel Oil (LDO).

The product-constituents for which FICC consumption
norms are the same for both the coal-based units, are Ammonia,
Heavy Fuel Oil (HFO) and Light Diesel Oil (LDO). And the
product-constituents for which the FICC consumption norms
differ in each of these two coal-based units are coal for
process, Coal for steam and power. This difference in FICC
consumption norms may be due to the nature of the coal available for each of these units. Accordingly, the power consumption required for the entire process also varies. The nature of the coal varies principally on the basis of its ash-contents.

A comparison of the consumption norms and deviation thereon, is made here in respect of Ramagundam and Talcher units. It is easy to compare the product constituents for which the consumption norms are same, for the coal-based units.

From the Table-22, it is evident that the product constituents in respect of which the FICC consumption norms are the same, the consumption of Ramagundam Unit is much less as compared to its counterpart at Talcher, except in the case of Ammonia Consumption.

The FICC norm for ammonia consumption was 0.600 MT per tonne of Urea. During the period under study (i.e. 1981-82 to 1984-85) the ammonia consumption in excess of norm was ranging between 0.009 MT to 0.043 MT in Ramagundam Unit, whereas the Talcher Unit's ammonia consumption in excess of FICC norm was ranging between 0.020 MT to 0.037 MT. In this case, the ammonia consumption in excess of FICC norm was higher in Ramagundam Unit at 0.043 MT as compared to 0.037
**SOURCES:** PICC consumption norms are taken from PICC production records.

**Notes:**
- The research indicates that PICC consumption norms, being lower than the Ramengundam consumption, are calculated.
- Deviations are calculated.

**10.** = Ramengundam
**7.** = Medium Runge
**6.** = Heavy Fuel Oil
**3.** = Maximum
**2.** = Minimum

---

**Talcher:** 0.097 0.037 0.031 0.033 0.03 0.123 0.23 0.106 0.064 0.06 0.03 0.015 0.009 0.006

**Ramangunam:** 0.20 0.039 0.216 0.216 0.009 0.015 0.006

**Production:**
- PICC norms: 0.60 0.072
- PICC in excess of PICC norms

**Units:**
- Tonne
- Tonnage

**Process:**
- Steam
- Power

**Units:**
- Tonne
- Tonnage

**Comparison of Deviation from PICC Consumption Norms**

**Table 22**
MT in Talcher Unit. This is the only exception where the consumption of product-constituent in excess of FICC norm is higher in Ramagundam Unit as compared to Talcher Unit during the period under study.

In respect of Heavy Fuel Oil (HFO) the FICC norm was 0.072 KL per tonne of Urea. We find that HFO consumption in excess of FICC norm was 0.016 KL as minimum and 0.064 KL as maximum in Ramagundam Unit. The Talcher Unit's HFO consumption in excess of FICC norm was ranging between 0.039 KL to 0.216 KL, which is higher than Ramagundam Unit's consumption.

The same is the case with Light Diesel Oil (LDO) consumption. The Ramagundam Unit's LDO consumption in excess of norm was minimum at 0.003 KL and maximum at 0.012 KL. Whereas the Talcher Unit's LDO consumption in excess of norm was minimum at 0.032 KL and maximum at 0.038 KL.

Thus, in two (i.e. HFO & LDO), of the three product-constituents (i.e. HFO, LDO & Ammonia), the Talcher Unit's consumption in excess of FICC norm has been higher as compared to Ramagundam Unit's consumption. This shows that the Ramagundam Unit is performing its operations with a quantum of input consumption which is slightly higher than
the FICC norms. But the Talcher Unit's input consumption widely differs from FICC consumption norms. Therefore, it is obvious that due to Talcher Unit's higher consumption in excess of FICC norm, its proportionate share of loss will also be higher as compared to Ramagundam Unit's share in FCI's total losses.

On the other hand if we compare the consumption of product constituents for which the FICC consumption norms differ in each of the two coal-based units, the Ramagundam Unit's consumption is less compared to Talcher Unit, during the period under study.

For instance, the FICC norm for Coal for process is 1.45 MT per tonne of Urea, applicable to Ramagundam Unit and 1.64 MT per tonne of Urea applicable to Talcher Unit. The consumption of 'Coal for process' in excess of FICC (respective) norm ranged between 0.123 MT to 0.303 MT in Ramagundam Unit and between 0.197 MT to 0.911 MT in Talcher Unit.

Similarly for 'Coal for steam' the FICC norm is 1.55 MT per tonne of Urea, in respect of Ramagundam Unit and 1.60 MT per tonne of Urea, relating to Talcher unit. The consumption of coal for Steam in excess of FICC norm has been between
0.315 MT and 0.751 MT in Ramagundam unit and between 0.882 MT and 2.552 MT in Talcher Unit.

The FICC norm for power consumption was 1.20 MWH per tonne of Urea, determined for Ramagundam Unit and for Talcher unit it was 1.26 MWH, per tonne of Urea. In case of Ramagundam Unit the power consumption in excess of FICC (respective) norm was minimum at 0.115 MWH which is higher than the Talcher Unit's minimum figure of 0.062 MWH and it was maximum at 0.549 MWH. The Talcher Unit's power consumption in excess of FICC norm was minimum at 0.062 MWH which is lower than the Ramagundam Unit's minimum figure of 1.115 MWH and it was maximum at 1.153 MWH.

This is an exception where the consumption of a product-constituent in excess of FICC norm is higher in Ramagundam Unit as compared to the consumption in excess of FICC norm for Talcher Unit.

From the analysis of the consumption of three (i.e. coal for process, Coal for steam and power) product-constituents for which FICC norms are different for each of the coal-based units; it is concluded that, in two inputs (i.e. coal for process and 'coal for steam') the Ramagundam Unit's consumption in excess of FICC (respective norm) was lower than the Talcher Unit's consumption.
6.6 FCI's Production Losses

The FCI's production losses have been analysed separately from 1981-82 to 1985-86 as under :-

6.6.1 For the Year 1981-82 & 1982-83:

Table-23 gives an account of the downtime production losses for the years 1981-82 and 1982-83.

During the years 1981-82 and 1982-83, the production of N fertilisers suffered mainly due to the Equipment Failure as revealed by Table-23. The total quantity of N production loss due to equipment failure increased to 59.27 thousand MT as compared to the 56.72 thousand MT, figure of 1981-82.

During the year 1981-82 the FCI's N production loss due to equipment failure, was 56.72 thousand MT. Of which the loss incurred in Sindri unit was of 14.56 thousand MT and in Ramagundam unit the loss was of 16.53 thousand MT. Whereas in Talcher unit the equipment failure resulted in a production loss of 25.63 thousand MT of N fertilisers.

In terms of percentage, the N production loss due to equipment failure was 25.67 in Sindri, 29.14 in Ramagundam and 45.19 in Talcher Unit. Thus the share of N production loss was highest at 45.19 per cent in Talcher Unit and was lowest at 25.67 per cent in Sindri Unit during the year 1981-82.
**Source:** SCRA's Annual Reports for the year 1981-82 and for the year 1982-83. 7

3. * = The lowest quantum of production lost as compared to other units.
2. + = The highest quantum of production lost as compared to other units.

**Notes:** 1. Figures in parentheses represent percentage share in total, calculated.

<table>
<thead>
<tr>
<th>Year</th>
<th>Losses (in %)</th>
<th>Total Quantity</th>
<th>Total Quantity</th>
<th>Total Quantity</th>
<th>Total Quantity</th>
<th>Total Quantity</th>
<th>Total Quantity</th>
<th>Total Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start</td>
<td>Catcher</td>
<td>Hamyang-dang</td>
<td>Porochap</td>
<td>Jangheung</td>
<td>South</td>
<td>Cause of Losses</td>
<td></td>
</tr>
<tr>
<td>1982-83</td>
<td>(21.34)</td>
<td>12.05</td>
<td>18.95</td>
<td>15.95</td>
<td>12.61</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(45.19)</td>
<td>+23.63</td>
<td>16.53</td>
<td>(-)</td>
<td>(-)</td>
<td>*14.56</td>
<td>Failure</td>
<td></td>
</tr>
</tbody>
</table>

**Down Time Production Losses for the Year 1981-82 & 1982-83**

**Table 23**
In the year 1982-83, FCI's total quantity of N production loss due to equipment failure was 59.27 thousand MT of which the Sindri Unit's share of N production loss was 12.61 thousand MT and of Gorakhpur unit it was 15.05 thousand MT. The Ramagundam and Talcher Unit's respective share of N production loss due to equipment failure was 18.96 and 12.65 thousand MT.

In terms of percentage, the Sindri Unit's share of N production loss due to equipment failure was 21.28 and of Gorakhpur Unit, it was 25.39. The Ramagundam Unit's share of loss stands at 31.99 and of Talcher unit at 21.34 per cent respectively. The share of N production loss due to equipment failure was highest at 31.99 per cent in Ramagundam unit and was lowest at 21.28 per cent in Sindri unit. Thus, the quantity of N production loss due to equipment failure was highest in Talcher unit at 45.19 per cent of the total quantity lost during the year 1981-82 and it was highest in Ramagundam unit being 31.99 per cent of the total N quantity lost during 1982-83.

6.6.2 For the year 1983-84:

Table-24 gives the details of FCI's unit-wise production losses during the year 1983-84. The important causes
of losses mentioned are equipment failure, power problems, process problems, raw material problems and 'other' problems.

The Table-24 further suggests that among different causes of losses, 'the equipment failure' was the main cause of huge loss of N production i.e. 322.5 thousand M.T. out of a total loss of 477.9 thousand MT, thereby sharing 67.48 per cent of total N production loss during the Year 1983-84. This is followed by 'power problems', which account for the loss of 78.8 thousand MT, of N, equivalent to 16.49 per cent of the total N production lost during the year 1983-84. The other problems account for the loss of 50.9 thousand MT, of N, which is equal to 10.65 per cent of the total N production lost during 1983-84.

However, other causes such as 'process problems' and "Raw Material Problems" were responsible for the loss of 22.4 thousand MT (4.69 per cent) and 3.3 thousand MT (0.69 per cent) respectively, of the total N production lost during the year 1983-84.

If we analyse the unit-wise share in the total loss of N production due to different causes, it can be seen that the "equipment problems" have caused highest loss in Ramagundam unit. The total N quantity lost due to equipment
TABLE - 24

DOWN TIME PRODUCTION LOSSES FOR THE YEAR 1983-84

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Cause of Loss</th>
<th>Sindri</th>
<th>Gorakhpur</th>
<th>Ramagundam</th>
<th>Talcher</th>
<th>Total Qty. Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(in 000 MT of N)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Equipment Problems</td>
<td>43.3</td>
<td>*29.8</td>
<td>+128.8</td>
<td>120.6</td>
<td>322.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(13.43)</td>
<td>(9.24)</td>
<td>(39.94)</td>
<td>(37.40)</td>
<td>(67.48)</td>
</tr>
<tr>
<td>2.</td>
<td>Power Problems</td>
<td>*4.5</td>
<td>4.8</td>
<td>7.4</td>
<td>+62.1</td>
<td>78.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5.71)</td>
<td>(6.09)</td>
<td>(9.39)</td>
<td>(78.81)</td>
<td>(16.49)</td>
</tr>
<tr>
<td>3.</td>
<td>Process Problems</td>
<td>*2.6</td>
<td>+7.6</td>
<td>6.5</td>
<td>5.7</td>
<td>22.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(11.61)</td>
<td>(33.93)</td>
<td>(29.02)</td>
<td>(25.45)</td>
<td>(4.69)</td>
</tr>
<tr>
<td>4.</td>
<td>Raw Material Problems</td>
<td>-</td>
<td>*1.4</td>
<td>+1.9</td>
<td>-</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>(42.42)</td>
<td>(57.58)</td>
<td>-</td>
<td>(0.69)</td>
</tr>
<tr>
<td>5.</td>
<td>Other Problems</td>
<td>+40.2</td>
<td>6.1</td>
<td>2.6</td>
<td>*2.0</td>
<td>50.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(78.98)</td>
<td>(11.98)</td>
<td>(5.11)</td>
<td>(3.93)</td>
<td>(10.65)</td>
</tr>
</tbody>
</table>

TOTAL: 90.6 49.7 147.2 190.4 477.9

Notes: 1. Figures in parenthesis represent % share in Total calculated by the Research Scholar.

2. + = The highest quantum of loss of N Production as compared to other units.

3. * = The lowest quantum of loss of N production as compared to other units.

SOURCE: FCI's Annual Report for 1983-84 P.No.(xi)
problem was 322.5 thousand MT in 1983-84. Of which 128.8 thousand MT of N (39.94 per cent) was in Ramagundam unit. The Gorakhpur unit recorded a loss of 29.8 thousand MT of N (i.e. equivalent, to 9.24 per cent of the total N quantity lost due to 'equipment problems') which is the lowest. The Talcher and Sindri Units have foregone 120.6 and 43.3 thousand MT of N respectively, due to 'equipment problems'. The share works out to 37.4 per cent for Talcher and 13.43 per cent for Sindri, of the total N quantity lost due to equipment problems. The total N quantity lost due to power problems was 78.8 thousand MT in 1983-84. The highest loss of N production was experienced by Talcher unit at 62.1 thousand MT (i.e. 78.81 per cent of the total N quantity lost due to power problems) and the lowest by Sindri unit at 4.5 thousand MT (i.e. 5.71 per cent). The loss of N production recorded by Gorakhpur and Ramagundam Units was 4.8 and 7.4 thousand MT of N, respectively. In terms of percentage, the Gorakhpur Unit's share was 6.09 and Ramagundam Unit's share was 7.4 of the total N quantity lost due to power problems.

Table-24 further reveals that due to 'process problems' the total loss of N production was 22.4 thousand MT in the year 1983-84. The highest loss of N production was suffered by Gorakhpur unit at 7.6 thousand MT and the lowest by Sindri unit at 2.6 thousand MT. The shares of Gorakhpur and Sindri units were 33.93 and 11.61 per cent,
respectively, of the total N quantity lost due to 'process problems'. The Ramagundam and Talcher units have lost 6.5 and 5.7 thousand MT which was equivalent to 29.02 and 25.45 per cent respectively of the total N quantity lost due to process problems.

The 'Raw material problems' have resulted in a total loss of 3.3 thousand MT of N in 1983-84, of which a loss of 1.9 thousand MT was incurred by Ramagundam unit which is equivalent to 57.58 per cent of total N quantity lost (due to this cause). Whereas the Gorakhpur unit suffered a loss of 1.4 thousand MT which was equivalent to 42.42 per cent of the total N quantity lost due to Raw Material problems.

A loss of

The 'others problems' have caused/of 50.9 thousand MT of N during 1983-84. A production loss of 40.2 thousand MT was incurred in Sindri Unit (being the highest compared to other units), and 2.0 thousand MT in Talcher unit (being the lowest compared to to other units). The production loss of Gorakhpur unit was 6.1 thousand MT and of Ramagundam unit 2.6 thousand MT respectively. In terms of percentage, the share of Sindri unit was 78.98, of Talcher unit 3.93, of Gorakhpur unit 11.98 and of Ramagundam unit, it was 5.11 respectively, of the total N quantity lost due to 'other' problems.
Thus the 'Equipment problems' have caused a loss as high as 128.8 thousand MT of N in Ramagundam Unit, and the 'Raw material problems' also have caused comparatively higher loss of N production at 1.9 thousand MT in this Unit. The Talcher Unit's N production loss was comparatively higher at 62.1 thousand MT due to the 'Power problems'. The process problems have made Gorakhpur unit to suffer by losing 7.6 thousand MT of N, a figure comparatively higher than other units. The 'other problems' have caused a loss of 40.2 thousand MT of N (being the highest figure compared to other units) in Sindri Unit.

6.6.3 For the year 1984-85:

The Table-25 details the causes of N production losses during 1984-85 and also for the quarter-ended June 1985. The causes mentioned are 'Equipment problems', 'Power problems', 'Process Problems, Raw material problems and delay in completion of "Annual-Turn-Around Job".

The Total N quantity lost during the year 1984-85 due to the above-mentioned causes, was 199.99 thousand MT. Out of which the highest share of 106.08 thousand MT of N was lost due to equipment problems. It was equivalent to 53.04 per cent of the total N quantity lost during 1984-85. The problems related to power are responsible for a loss of
<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Turnaround Job</th>
<th>Problems</th>
<th>Problems</th>
<th>Problems</th>
<th>Problems</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>32.07</td>
<td>7.20</td>
<td>4.74.3</td>
<td>3.2.00</td>
<td>3.32.5</td>
<td>3.32.5</td>
<td>3.95.5</td>
</tr>
<tr>
<td>1986</td>
<td>6.4.9</td>
<td>3.0.21</td>
<td>3.2.53</td>
<td>3.32.2</td>
<td>3.95.5</td>
<td>3.32.5</td>
<td>3.95.5</td>
</tr>
<tr>
<td>1987</td>
<td>6.4.9</td>
<td>3.0.21</td>
<td>3.2.53</td>
<td>3.32.2</td>
<td>3.95.5</td>
<td>3.32.5</td>
<td>3.95.5</td>
</tr>
<tr>
<td>1988</td>
<td>6.4.9</td>
<td>3.0.21</td>
<td>3.2.53</td>
<td>3.32.2</td>
<td>3.95.5</td>
<td>3.32.5</td>
<td>3.95.5</td>
</tr>
</tbody>
</table>

Notes: 1. Figures in parentheses indicate percentage share in total, calculated by the equation:

\[ \text{Percentage Share} = \left( \frac{\text{Value}}{\text{Total}} \right) \times 100 \]
64.00 thousand MT, which was equivalent to 32 per cent of the total N quantity lost during 1984-85. Similarly the share of 'process problems' and 'Raw material problems' was 27.2 and 2.71 thousand MT, which was equivalent to 13.6 per cent respectively, of the total N quantity lost during 1984-85.

In respect of Unit-wise share of the N quantity lost during 1984-85, it is evident from Table-25, that the highest N production loss due to equipment problems was incurred by Talcher Unit. The total N quantity lost due to Equipment problems was 106.08 thousand MT, of which the Talcher Unit incurred a loss of 34.29 thousand MT, equivalent to 32.32 per cent of the total N quantity lost due to equipment problems during 1984-85. The Gorakhpur unit suffered loss to the extent of 8.43 thousand MT, which was equivalent to 7.95 per cent of the total N quantity lost due to equipment problems during 1984-85. The loss of Gorakhpur unit was lowest compared to other units. However, the Sindri Unit incurred a loss of 32.07 thousand MT (equivalent to 30.23 per cent of the total N quantity lost due to equipment problems) and the Ramagundam unit incurred a loss of 31.29 thousand MT (equivalent to 29.50 per cent of the total N quantity lost due to equipment problems) during 1984-85.
The problems associated with "power supply" have resulted in a total loss of 64 thousand MT of N, during 1984-85. Of which the highest share of loss of 34.64 thousand MT was incurred by Talcher unit, which was equal to 54.12 per cent of the total N quantity lost due to power problems in 1984-85. The Gorakhpur unit experienced a production loss of 12.15 thousand MT, which was equivalent to 18.98 per cent of the total N quantity lost due to power problems in 1984-85. The loss of Gorakhpur unit was comparatively low. Due to "power problems", the Ramagundam Unit's share of N production loss was 17.21 thousand MT, equal to 26.89 per cent of the total N quantity lost due to this cause, in the year 1984-85.

The 'process problems' have resulted in a total loss of 27.2 thousand MT of N, during 1984-85. Of which the highest share of loss was pocketed by Sindri Unit at 13.8 thousand MT, equivalent to 50.74 per cent of the total N quantity lost due to process problems in 1984-85. The loss of Ramagundam Unit was comparatively lowest at 2.38 thousand MT, equal to 8.75 per cent of the total N quantity lost due to process problems. The Gorakhpur unit has suffered a loss of 7.08 thousand MT, equal to 26.03 per cent, of total N quantity lost because of process problems. The Talcher unit has incurred a production loss of 3.94 thousand MT, which is equal to 14.49 per cent of the total N quantity lost, due to process problems in 1984-85.
The 'Raw material problems' have caused a loss of 2.71 thousand Mt of N in Ramagundam Unit during 1984-85.

Thus, during 1984-85 the Talcher Unit suffered a loss of 34.29 thousand MT of N due to equipment problems and of 34.64 thousand MT of N due to power problems. The process problems have caused a loss of 13.8 thousand MT of N in Sindri Unit. The Ramagundam unit suffered a loss of 2.71 thousand MT of N due to Raw material problems.

6.6.4 For Quarter-ended June, 1985:

Table-25 discloses the fact that by the end of June, 1985, the total loss of N production was 41.37 thousand MT. Of which the 'Equipment problems' account for 15.08 thousand MT, 'power problems' share 15.47 thousand MT and the "delay in completion of Annual Turn around Job" has a share of 10.58 thousand MT respectively.

If we analyse unit-wise share it can be noted that out of a total loss of 15.08 thousand MT of N, due to equipment problems, the highest share of loss was that of Sindri Unit at 7.2 thousand MT, which was equal to 47.75 percent of the total N quantity lost due to equipment problems in the quarter ending June, 1985. The lowest share of loss was at 0.72 thousand MT, incurred by Gorakhpur unit, which
was equal to 4.77 per cent of the total N quantity lost owing to equipment problems in the quarter ending June, 1985. The Ramagundam and Talcher units have incurred a loss of 3.85 and 3.31 thousand MT, which was equivalent to 25.53 and 21.95 per cent respectively of the total N quantity lost due to equipment problems during the same period.

The total N quantity lost due to power problems during the quarter-ending June, 1985 was 15.47 thousand MT. The loss of Gorakhpur and Talcher units was 10.47 and 5.0 thousand MT of N respectively. The share of Gorakhpur unit was 67.68 per cent and the Talcher Unit's share was 32.32 per cent of the total N quantity lost due to power problems in the quarter ending June, 1985.

The 'process problems' have caused a loss of 0.24 thousand MT of N, in the Gorakhpur unit, which is the only loss due to the process problems during the said period.

The 'delay in completion of Annual-Turn-Around Job' has resulted in a loss of 10.58 thousand MT of N production during the quarter-ended June, 1985. The share of Ramagundam unit was 6.9 thousand MT and of Talcher Unit it was 3.68 thousand MT, which were the highest and lowest loss respectively. In terms of percentage the Ramagundam Unit's share
was 65.22 and of Talcher Unit it was 34.78 respectively, of the total N quantity lost due to delay in completion of Annual Turn Around Job, in the quarter ending June 1985.

Thus, during the quarter-ended June, 1985, the Sindri Unit incurred a production loss of 7.2 thousand MT of N due to equipment problems. The Gorakhpur unit experienced a loss of 10.47 thousand MT of N due to power problems and a loss of 0.24 thousand MT of N due to process problems. The Ramagundam unit incurred a loss of 6.9 thousand MT of N owing to delay in completion of 'Annual-Turn-Around-Job.'

6.6.5 For the Year 1985-86:

Table-25(a) gives the details of Downtime production losses during the year, 1985-86. The various problems have caused a loss of 387.2 thousand MT of 'N' in FCI during the year 1985-86. Of 387.2 thousand MT of N production loss, 305.8 (000 MT) was due to power problems, 29.1 (000 MT) was due to process problems and 11.3 (000 MT) due to 'Other problems'. It means, the share of Equipment problems was 78.98 per cent, of Power problem 10.59 per cent, of Process problem 7.52 per cent, and of 'other problems' 2.91 per cent in the total production loss of 'N' during the year 1985-86. Thus, the highest share of loss of production was due to 'Equipment problems' (i.e. 78.98 per cent) and the lowest share of loss of production was 'Other problems' (responsible for a loss of 2.91 per cent).
Of 305.8 thousand MT of N production lost due to Equipment problem, the Sindri Unit has lost to the tune of 134.3 thousand MT, Gorakhpur Unit has suffered a loss of 16.3 thousand MT, Ramagundam 89.8 thousand MT and Talcher Unit has suffered a loss of 65.4 thousand MT. In terms of percentage, the Equipment problems have caused a loss of 43.92 in Sindri, 5.33 in Gorakhpur, 29.37 in Ramagundam and 21.39 in Talcher Unit. Thus, the Equipment problems have caused more loss in Sindri Unit i.e. 43.92 per cent and comparatively low loss in Gorakhpur Unit i.e. 5.33 per cent of the total quantity lost due to Equipment problem. Of 41 thousand MT of N production lost during 1985-86 due to power problem, the loss in Gorakhpur Unit was to the extent of 29.5 thousand MT, in Ramagundam Unit to the extent of 1.5 thousand MT, and in Talcher Unit to the extent of 10 thousand MT. In terms of percentage the loss in Gorakhpur Unit was 71.95, in Ramagundam Unit was 3.66 and in Talcher Unit was 24.39. Thus the highest loss of N production due to power problem during 1985-86 was in Gorakhpur Unit amounting to 71.95 per cent and the lowest was in Ramagundam Unit at 3.66 per cent.

The process problem have caused a loss of 29.1 thousand MT of N production during the year 1985-86. Of which 3.6 thousand MT loss of N production was in Sindri Unit, 4.1 thousand MT in Gorakhpur Unit, 3.3 thousand MT in Ramagundam Unit, and 18.1 thousand MT in Talcher Unit.
Table - 25(a)

UNIT-WISE DOWN TIME PRODUCTION LOSSES
FOR THE YEAR 1985-86

<table>
<thead>
<tr>
<th>Cause of loss</th>
<th>Sindri</th>
<th>Gorakhpur</th>
<th>Ramagundam</th>
<th>Talcher</th>
<th>Total Quantity Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Problems</td>
<td>134.3+ (43.92)</td>
<td>16.3* (5.33)</td>
<td>89.8 (29.37)</td>
<td>65.4 (21.39)</td>
<td>305.8+ (78.98)</td>
</tr>
<tr>
<td>Power Problems</td>
<td>(-)</td>
<td>29.5+ (71.95)</td>
<td>1.5* (3.66)</td>
<td>10.0 (24.39)</td>
<td>41.0 (10.59)</td>
</tr>
<tr>
<td>Process Problems</td>
<td>3.6 (12.37)</td>
<td>4.1 (14.09)</td>
<td>3.3* (11.34)</td>
<td>18.1+ (62.20)</td>
<td>29.1 (7.52)</td>
</tr>
<tr>
<td>Other Problems</td>
<td>1.8* (15.93)</td>
<td>2.3 (20.35)</td>
<td>1.9 (16.81)</td>
<td>5.3+ (46.90)</td>
<td>11.3* (2.91)</td>
</tr>
</tbody>
</table>

TOTAL : 139.7 52.2 96.5 98.8 387.2

NOTES : 1. Figures in parenthesis represent % share in Total calculated by the Research Scholar.

2. + = The highest quantum of loss of N production as compared to other units.

3. * = The lowest quantum of loss of N production as compared to other units.

In terms of percentage, the loss of production in Sindri Unit was 12.37, in Gorakhpur Unit of 14.09, in Ramagundam Unit of 11.34 and in Talcher Unit 62.2 respectively. Thus, the highest share of production loss was in Talcher Unit (at 62.2 per cent) and the lowest was in Ramagundam Unit (at 11.34 per cent) due to process problem during the year 1985-86.

The 'other problems' have caused a loss of 11.3 thousand MT of N in FCI during 1985-86. Of which there was a loss of 1.8 thousand MT in Sindri, 2.3 thousand MT in Gorakhpur, 1.9 thousand MT in Ramagundam and 5.3 thousand MT in Talcher Unit. In terms of percentage, the loss of production in Sindri was 15.93, in Gorakhpur 20.35 in Ramagundam 16.81, and in Talcher 45.9, due to 'other problems' during 1985-86. The highest share of loss due to 'other problems' was in Talcher Unit at 46.9 per cent and lowest in Sindri at 15.97 per cent.

6.7 **Major Constraints on FCI's Profitability**

The major Constraints on FCI's profitability have been identified on the basis of the factors affecting the capacity utilisation of FCI plants/are discussed in this chapter at 6.3. Diagram 8 shows the "constraints on FCI's profitability complex", which have affected the overall profitability of FCI from 1978-79 to 1985-86.
Diagram 8. Consequences of FCI's Projectility Complex
The constraints shown in diagram 8 are inter-dependent and there is a cumulative effect of each constraint, resulting into 'Financial Losses.'

These factors have resulted in two main consequences, one is equipment failure/break down and the other is process problems/operational problems. Sometimes the process/operation problems themselves may lead to equipment failure/break down.

The process problems/operational problems may result in plant-shut-down or sometimes it may cause low-level of production. The end-result of the plant shut down or low level of production would be lower-capacity utilisation. The Re-start problems are associated with plant shut-down. The cause of lower capacity utilisation and Re-start problems would have the effect of High Input consumption and continued fixed costs. Because at low level of production, certain fixed costs are required to be incurred, disproportionate to the scale of operations, as the economies are availed at higher level of Operations rather than at lower. Similarly the Re-start process require certain amount of input to be burnt in the initial process, which cannot be used as finished product. The more the number of re starts, the more will be consumption of inputs.
Moreover, the unscheduled-stoppage also result in losing certain quantum of input under-process, which leads to high input consumption.

Thus, the High Input consumption and continued fixed costs, (which may be the result of either frequent plant-shut downs and re-starts or due to lower level of production), have the end-product in the form of "Financial Losses."

5.8 Profitability Ratios:

Profitability is one of the several factors that are used for assessing the efficiency of a business organisation. When earning profit is a social accountability of a company the profitability ratios can be used to study social accountability of FCI. Public Enterprises are also expected to earn profits in addition to discharging the social obligations. The most acceptable norms for assessing the profitability performance include, Return on Turnover (ROT), Return of Capital Employed (ROCE), Return on Gross Block (ROGB) and Return on Assets (ROA).

1. Return on Turnover (ROT): This ratio establishes a relationship between the net profit and sales. It reflects management's efficiency in manufacturing,
administering and selling the products. This ratio shows the firm's ability to turn each rupee of sales into net profit.

2. **Return on Capital Employed (ROCE)**: This ratio shows how well the management has utilised the funds supplied by creditors and owners. The higher the ratio, the more efficient will be the firm in using its funds.

3. **Return on Gross Block (ROGB)**: This ratio represents the relationship between the Net Fixed Assets and Net profit. It shows how the management has utilised the Net Fixed Assets in creating profits.

4. **Return on Assets (ROA)**: This ratio depicts the relationship between the Total Assets and the profit earned. How the total assets have been utilised by the management in earning Profits can be known from this ratio.

Table-26 gives an account of four profitability ratios calculated, i.e. Return on Turnover (ROT), Return on Capital Employed (ROCE), Return on Gross Block (ROGB) and Return on Assets (ROA).
### Table 26

**FCI'S PROFITABILITY RATIOS - AT A GLANCE**

<table>
<thead>
<tr>
<th>SI No.</th>
<th>Year</th>
<th>Return on Turnover (ROT)</th>
<th>Return on Capital Employed (ROCE)</th>
<th>Return on Gross Block (ROGB)</th>
<th>Return on Assets (ROA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1978-79</td>
<td>-0.189</td>
<td>-0.266</td>
<td>-0.096</td>
<td>-0.024</td>
</tr>
<tr>
<td>2.</td>
<td>1979-80</td>
<td>-0.816</td>
<td>-0.203</td>
<td>-0.143</td>
<td>-0.077</td>
</tr>
<tr>
<td>3.</td>
<td>1980-81</td>
<td>-1.179</td>
<td>-0.163</td>
<td>-0.138</td>
<td>-0.136</td>
</tr>
<tr>
<td>4.</td>
<td>1981-82</td>
<td>-0.736</td>
<td>-0.246</td>
<td>-0.179</td>
<td>-0.183</td>
</tr>
<tr>
<td>5.</td>
<td>1982-83</td>
<td>-0.263</td>
<td>-0.114</td>
<td>-0.090</td>
<td>-0.094</td>
</tr>
<tr>
<td>6.</td>
<td>1983-84</td>
<td>-0.256</td>
<td>-0.175</td>
<td>-0.112</td>
<td>-0.131</td>
</tr>
<tr>
<td>7.</td>
<td>1984-85</td>
<td>-0.136</td>
<td>-0.110</td>
<td>-0.060</td>
<td>-0.071</td>
</tr>
<tr>
<td>8.</td>
<td>1985-86</td>
<td>-0.472</td>
<td>-0.432</td>
<td>-0.174</td>
<td>-0.213</td>
</tr>
</tbody>
</table>

**Note:** Based on the data furnished in Appendix 1

**Formulae used for calculating Ratios:**

1. Return on Turnover (ROT) = \( \frac{\text{Net Profit after Tax}}{\text{Sales}} \)
2. Return on Capital Employed (ROCE) = \( \frac{\text{Net Profit after Tax}}{\text{Capital Employed}} \)
3. Return on Gross Block (ROGB) = \( \frac{\text{Net Profit after Tax}}{\text{Gross Block}} \)
4. Return on Assets (ROA) = \( \frac{\text{Net Profit after Tax}}{\text{Total Assets}} \)
The Pour Ratios calculated represent the trend of losses incurred by FCI (during the period from 1978-79 to 1985-86 under study) as the ratios are in negative values.

The ROT ratio shows the losses incurred by FCI in relation to sales. Increase in this ratio as compared to previous year will represent that more losses are being incurred in relation to sales and it is an unhealthy affair.

The ROT ratio is increasing every year from 1978-79 to 1980-81. It was -0.189 during the year 1978-79 and increased to -0.816 in the year 1979-80 and further increased to -1.179 during the year 1980-81. From the year 1981-82, it is declining till the year 1984-85. In the year 1981-82, the ROT ratio was -0.736 which declined to -0.263 in 1982-83, -0.256 in 1983-84, and ultimately -0.136 in 1984-85. During the year 1985-86, the ROT ratio has again increased to -0.472. The ROT ratio was highest during the year 1980-81 at -1.179 and was the lowest at -0.136 during the year 1984-85. The overall increase in ROT ratio was 149.7 per cent during the year 1985-86 as compared to 1978-79.
The ROCE ratio represents the utilisation of owners funds and returns thereon. As the FCI is incurring losses, it represents the quantum of losses incurred on utilisation of owners funds. In such case higher the ratio, more will be the losses and vice versa.

The ROCE ratio declined in the first three years i.e. -0.266 in 1978-79, -0.203 in 1979-80 and -0.163 in 1980-81. Thereafter, ROCE ratio has increased every alternate year, i.e. -0.246 in 1981-82, -0.175 in 1983-84 and -0.432 in 1985-86, as compared to respective previous years. On the other hand ROCE was -0.114 in 1982-83 and -0.110 in 1984-85, which shows a declining trend as compared to their respective previous years. The highest increase in ROCE was noted in the year 1985-86 when it was -0.432, and the lowest was in the year 1984-85 at 0.110. The overall increase in the ROCE ratio was 62.41 per cent during the year 1985-86 as compared to 1978-79.

ROGB ratio indicate relationship between net fixed Assets and the Profits. As FCI is incurring losses, ROGB gives negative values. The ROGB ratio has increased every alternate year as compared to its previous year during the period from 1978-79 to 1985-86. It was -0.096 in 1978-79, increased to 0.148 during 1979-80, to -0.179 during 1981-82,
-0.112 during 1983-84, and -0.174 during 1985-86. Similarly, ROG3 has declined every alternate year as compared to previous year, i.e. it was -0.138 in 1980-81, -0.090 in 1982-83 and -0.060 in 1984-85. The ROG3 ratio was highest at -0.179 during the year 1981-82 and lowest at -0.060 during the year 1984-85. The overall increase in ROG3 was 81.25 per cent during 1985-86 as compared to the year 1978-79.

ROA represents the relationship between the total assets and profits earned. In this case ROA gives negative values, as FCI is incurring losses. It is continuously increasing during the period from 1978-79 to 1981-82. In 1978-79 the ROA was -0.024, which gradually increased to -0.077 in 1979-80, -0.136 in 1980-81, and -0.183 in 1981-82. During 1982-83, the ROA has declined to -0.094 and in 1983-84 it has increased to -0.131. In the year 1984-85 it has declined to -0.071 and during the year 1985-86 it has increased to -0.213. The ROA was highest during the year 1985-86 at -0.213 and the lowest was during the year 1978-79 at -0.024. The overall increase in ROA was 787.5 per cent during the year 1985-86 as compared to 1978-79.
6.9 Summary:

To study Social Accountability of FCI, two types of parameters are chosen: one is "Economic parameters" and the other is "Social Parameters".

In this chapter, 'Economic parameters' are used to study FCI's social accountability. These parameters are Capacity Utilisation and Profitability Ratios.

Public Sector fertiliser companies in India have the capacity to produce 3690.1 thousand tonnes of N fertilisers. FCI's capacity is 805.5 thousand tonnes, it means FCI's share is 21.82 per cent of Public Sector fertiliser industry's capacity. FCI's phosphate fertilisers production capacity is 150 thousand tonnes, whereas, phosphatic fertilisers production capacity of fertiliser industry is 657.6 thousand tonnes, it means FCI has 22.8 per cent share in Public Sector industry's capacity.

The SMP is based on Low Sulphur Heavy Stock (LSHS) and Fuel Oil (FO), SRP is based on Rock Phosphates, Pyrites and Sulphur, Gorakhpur unit is based on Naphtha, Ramagundam and Talcher units are coal-based plants.

FCI's production records show that during last 7 years its capacity utilisation is declining. SMP and GKP
Units have capacity utilisation exceeding 55 per cent during 4 out of 7 years (i.e. 1981-82 to 1985-86) under study.

SRP's capacity utilisation could not exceed 13.5 per cent during the period 1979-80 to 1984-85. Ramagundam unit could utilise 41 per cent of its capacity which is highest during its 6 years of operation. Talcher Unit stands at maximum capacity utilisation of 24.2 per cent since its inception. The capacity utilisation of SMP remained in between 11.4 to 59.9 per cent during the last 7 years (i.e. 1979-80 to 1985-86).

SMP could not attain the production target fixed, during the last six years period. Its production as percentage of target remained in between 17.9 to 84.3.

The capacity utilisation of SRP remained in between 3.1 to 13.5 per cent during the period 1979-80 to 1984-85. The SRP could not achieve the target fixed during the period under study except in 1984-85 where the target fixed was as low as 4.6 thousand tonnes. Its production as percentage of target was below 50 per cent in 5 out of 6 years of study with a minimum of 19.8 per cent.

The capacity utilisation of Gorakhpur Unit was in the range of 39 to 62.9 per cent during last 7 years period. During 1983-84, it has surpassed the production target fixed.
The year 1979-80 was only exception when the production was below 70 per cent of the Target (i.e. 51.1 per cent).

The capacity utilisation of Ramagundam unit was in between 20.8 and 41 per cent during last 6 years period. The plant could not achieve the target fixed in any of the last five years operation. Its production as percentage of Target remained above 60 per cent during 4, out of 6 years period under study.

The capacity utilisation of the Talcher Units was in between 4.5 and 24.2 per cent, during last 6 years. The Talcher Unit could not achieve the annual production target fixed during the last 5 years period under study. The production as percentage of target was in the range of 9.1 to 84.8 per cent during the period under study.

During the year 1984-85 SMP has produced 128.1 thousand tonnes of N fertilisers, being highest among all FCI's plants. The Ramagundam unit has ranked second, having produced 93.4 thousand tonnes of N, the Gorakhpur Unit has produced 82.5 thousand tonnes occupying third position. Talcher unit has produced 55.1 thousand tonnes and occupied fourth and last position.

The latest figures relating to capacity utilisation show that there is a declining trend during 1985-86 in all FCI Units. There was an overall decline of 89.5 thousand MT of N during 1985-86 as compared to 1984-85. The capacity utilisation of FCI has declined by 11.11 per cent during 1985-86 as compared to 1984-85.
1979-80 being first year of operation for SMP, the problems associated with new equipment and process were found. In addition there was problem of non-availability of feedstock (LSHS/Fuel Oil) as a result plant had to be shut down w.e.f. 16.1.1980. Thus in the year 1981-82, the plant shut down was for six months.

During the year 1981-82 plant faced the problem of poor quality of raw material and frequent equipment failure. The power plant at Sindri which has become more than 30 years old, is creating problems of SMP. Another problem which has a financial bearing on SMP is the non-inclusion of the Ammonium Sulphate (AS) in the retention price scheme. During 1985-86 the major cause for lower production was, long shut down from 11.11.1985 to 12.3.1986 for failure of Turbine casting of the synthetic Gas Compressor. In the first year of operation of SRP, equipment problems were faced and modifications in the equipment were required. During the year 1980-81 the operational difficulties continued due to poor quality of rock phosphate. During the year 1979-80 Gorakhpur Unit faced power cut problem. A 95 per cent power cut was imposed from 24.11.1979 to 10.12.1979 on SKP Plant's consumption. The power cut was reduced to 66 per cent from 10.12.1979 to 22.7.1980 and to 33 per cent from 22.7.1980 to 16.9.1980. And from 16.9.1980 onwards,
the power cut was lifted totally. Due to its old age, the plant also began to suffer from equipment troubles. Leakage in waste-heat boiler tubes was one of the important equipment problems faced by the Ramagundam unit during 1980-81. In addition power restrictions imposed by Andhra Pradesh State Electricity Board has reduced the level of production.

The plants at Ramagundam and Talcher are based on direct gasification of coal technology, being new in India, many problems of implementation were found. In August, 1983 the plant had to be closed for 2 weeks due to heavy floods in Godavari river, and in October 1983 for two weeks due to strike in Singareni Collieries, which supplies coal. Failure of weld joint on the high pressure super heated steam line to the synthesis gas compressor turbine, resulted in plant shut down from 16.7.1985 to 27.10.1985. In Talcher unit the poor quality of coal is also one of the factors resulting in equipment failure. The coal having ash-contents of 30-32 per cent is causing accumulation of huge quantum of ash in the process, as the equipments were designed to function with coal having 17-18 per cent ash contents. The power cut imposed by Orissa State Electricity Board has affected the capacity utilisation and the plant has remained closed for 5 months each in the year 1982-83 and 1983-84. During the year 1985-86 also the
Equipment problem and process problems continued along with limitation of power supply from State Electricity Board.

The comparison of capacity utilisation figures of the N fertilisers producing plants show that, the minimum capacity utilised was 4.5 per cent and the maximum was 62.9 per cent. The minimum capacity utilisation of 4.5 per cent was experienced by Talcher Unit, in its first year of operation i.e. 1980-81, whereas the maximum capacity utilisation of 62.9 per cent was achieved by Gorakhpur Unit in the year 1984-85.

The capacity utilisation of Gorakhpur Unit was most impressive in the year 1984-85 when it reached to 62.9 per cent which is the highest capacity utilisation among FCI plants during the period from 1979-80 to 1985-86. The SMP is at second position, which could achieve, 59.9 per cent capacity utilisation, Ramagundam Unit ranks third as its maximum capacity utilisation was 41 per cent, and the Talcher Unit has lowest capacity utilisation at 4.5 per cent.

However, the comparison of Gorakhpur Unit's performance with the new generation plants of SMP, Ramagundam and Talcher is not desirable. Because, Gorakhpur plant has now became more than 17 years old, whereas the SMP was
commissioned in the year 1979 and Ramagundam and Talcher Units started their commercial production in the year 1980. These new plants have certain problems which are commonly experienced in initial years of operations.

Among the new plants, SMP's performance is better compared to the two coal-based plants. Though Ramagundam and Talcher units are similar in respect of feedstock and Technology, the performance of Ramagundam is much better compared to its sister plant at Talcher. The SRP is the only plant producing phosphatic fertilisers under FCI. The SRP has lowest capacity utilisation among all the plants under FCI's control.

Profits are essential for the business firms for their long term growth and survival. It is important not only for the enterprise itself but also for the shareholders who make investments. In view of the factors affecting the working of a public sector organisation, profit cannot be treated as only indicator of efficiency, nor the losses as the result of inefficient operations.

FCI's losses are continuously increasing from the year 1978-79 (i.e. Rs. 21.84 crores) to 1981-82 (i.e. Rs. 126.8 crores), during the year 1983-84 (i.e. Rs 80.59
crores) and during 1985-86 (at Rs. 127.21 crores) as compared to the respective previous years.

Thus, throughout the period under study i.e. 1978-79 to 1985-86 the share of loss incurred by Sindri Unit was highest as compared to other FCI units, with a single exception of the year 1982-83 when Falcher unit's share was highest at 49.56 per cent of the FCI's total net losses for the year. The Gorakhpur Unit's share continues to be the lowest as compared to other FCI units with an exception of 1984-85, when the Ramagundam Unit's share of loss was lowest at 0.55 per cent as compared to other FCI units.

The Fertiliser Industry Coordination Committee (FICC) has determined consumption norms for different units based on the Technology and Feedstock used and other factors. The prices of fertilisers are controlled statutorily throughout the country. The Retention Price is calculated on the basis of FICC consumption norms and 20 per cent on Net Worth.

FCI's main problem is that it could not adhere to the consumption norms thereby the 20 per cent margin of profit allowed on Retention Price is concealed by the losses. FCI could not adhere to the prescribed consumption
norms during the period from 1980-81 to 1984-85 in all its four N producing units. There was an exception with regard to Ammonia consumption in 1981-82 and Steam consumption in 1980-81 and 1981-82 at Sindri Unit when the actual consumption was less than FICC norm. There are certain product constituents for which the FICC norms prescribed for Ramagundam and Talcher units vary from each other while in respect of certain other product constituents, same norms are determined for both these units.

The product constituents for which the norms are the same for both units, it is observed that the consumption of Ramagundam unit is much less as compared to the Talcher Unit. In respect of the product constituents for which the FICC norms are different for each of these units, the consumption in excess of FICC norms was higher in Talcher Unit as against the respective norms, compared to Ramagundam Unit's consumption.

During 1981-82, N production lost due to Equipment problems was 56.72 thousand MT, which increased to 59.27 thousand MT during 1982-83. Among different causes of losses, the equipment failure was the main cause of huge loss of N production i.e. 322.5 thousand MT, thereby sharing 67.48 per cent of total N production loss during
the year 1983-84. The next comes, 'Power problems' which accounts for a loss of 78.8 thousand MT of N, equivalent to 16.49 per cent of the total N production lost during the year 1983-84. The 'other problems' account for the loss of 50.9 thousand MT of N, which is equal to 10.65 per cent of the total N production lost during 1983-84. During the year 1984-85, due to various causes, the production loss was to the tune of 199.99 thousand MT. Out of which the highest share of loss was at 106.08 thousand MT of N equal to 53.4 per cent was due to equipment problems. The power problems were responsible for a loss of 64 thousand MT of N equal to 32 per cent, the process problems for 27.2 thousand MT of N, equal to 13.6 per cent and Raw material problems were responsible for 2.71 thousand MT of N, equal to 1.36 per cent of total N quantity lost during 1984-85.

The various problems have caused a loss of 387.2 thousand MT of N in FCI during 1985-86. Of which 305.8 thousand MT loss was due to equipment problems, (equal to 78.98 per cent), 41 thousand MT loss was due to power problems (equal to 10.59 per cent), 29.1 thousand MT was due to process problems (equal to 7.52 per cent) and 11.3 thousand MT was due to other problems, (equal to 2.91 per cent). The highest share was of 'Equipment problems' and the lowest share of loss was of 'other problems' among the loss due to different causes.
The process/operational problems may result in plant shut down or sometimes it may cause low-level of production. The end-result of the plant shut down or low level of production would be lower capacity utilisation. The re-start problems are associated with plant shut-down. The cause of lower capacity utilisation and re-start problems would have the effect of high input consumption and continued fixed costs. The re-start process requires certain amount of input to be burnt in initial stages which cannot be converted into finished product and is waste. The more the number of re-starts, the more would be input consumption. Unscheduled production stoppage also results in losing certain quantum of input under process, leading to high input consumption. The cumulative effect of all these factors is the financial losses suffered by FCI.

Profit earning is accepted as social accountability of a company because loss incurring units would become burden on the resources of the community and wastage of precious resources.

Four types of ratios are calculated for the period from 1978-79 to 1985-86. These ratios are return on turnover (ROT), return on capital employed (ROCE), return on gross block (ROGB) and return on assets (ROA). These ratios represent FCI's losses hence they are in negative values.
ROT represents relationship between the losses (in this case) and the Sales of FCI. The overall increase in ROT ratio was 149.7 per cent during the year 1985-86 as compared to 1978-79. ROCE ratio represents the relationship between the losses of FCI and its capital employed. The overall increase in the ROCE ratio was 62.141 per cent during the year 1985-86, as compared to 1978-79. The ROGB ratio indicates relationship between net Fixed Assets and the profits. As FCI is incurring losses, the values of ROGB also like other ratios are negative values. The overall increase in ROGB ratio was 81.25 per cent during 1985-86 as compared to the year 1978-79. The ROA ratio indicates relationship between the total assets and profits earned. The overall increase in ROA was 787.5 per cent during the year 1985-86 as compared to 1978-79.
CHAPTER - 7

FCI's SOCIAL ACCOUNTABILITY - SOCIAL PARAMETERS

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   7.1.1 FCI's Return on Total Shareholder's Equity (ROTSE)

7.2 FCI's Social Accountability towards Employees
   7.2.1 Trend of Expenditure Incurred by FCI on Staff Benefits
   7.2.2 FCI's Staff Benefits per Employee
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7.5 Summary
To study Social Accountability of FCI two types of parameters are chosen. One is "Economic Parameters" and the other is "Social Parameters".

In earlier chapter (i.e. Chapter-6) an attempt has been made to study Social Accountability of FCI with the help of selected "Economic Parameters". In this chapter, efforts are being made by the researcher to study Social Accountability of FCI with the help of selected "Social Parameters".

For this purpose, various interest-groups with whom the business interacts, have been divided into four major segments. These segments are:

1. Shareholders
2. Employees
3. Consumers and
4. Community.

Each group will be studied separately to see how the FCI has been discharging social accountability towards them.

7.1 FCI's Social Accountability Towards Shareholders:

As FCI is a Central Government owned company, its shareholder is the Government of India. Normally, an
investor makes investment in shares with prime objective of earning returns. The Issue of shares by various organisations promises a return comparatively higher than the existing in the market.

The notifications offering issue of shares are backed by financial strength of the companies in terms of its Assets, Sales Turnover, Profit volume, Dividends declared on earlier Issues, Diversification projects under consideration, Growth potential of the company etc; mere with a deliberate intention to lure the prospective investor. On the basis of such financial strength we see shares of many organisations are sold at premium and at discount as the case may be. Some of the organisations both existing and prospective fulfil these promises, and some of them fail to do so.

Thus, now, it is clear that in almost all of the investment proposals, the motivating factor is the "Return on Investment" which is commonly accepted by the capital inviting organisations as well as prospective investors.

In this study an effort is made to find out the "Return on Total Shareholders' Equity (ROSTE)" of FCI. Naturally, the primary Social Accountability of an organisation is to earn reasonable Returns on the capital invested by its shareholders, which happens to be Government of India in this case.
7.1.1 FCI's Return on Total Shareholders' Equity (ROTSE): 

There are several financial tools in the form of ratios to determine how the firm's resources have been utilised, for example: the Return on Turnover (ROT), Return on Capital Employed (ROCE), Return on Gross Block (ROGB), Return on Assets (ROA) etc. There four ratios have been calculated to measure social accountability of FCI in the earlier chapter (i.e. chapter-6).

As we are concerned here primarily with the owners of equity shareholders hence the "Return on Total Shareholders' Equity" (ROTSE), provides the returns on owners' funds. In view of the preference shareholders, who have a preferential right in respect of getting dividends and return of capital, the equity shareholders are the real "owners". Formula used to calculate ROTSE is:

\[ \text{ROTSE} = \frac{\text{Net Profit After Taxes}}{\text{Total Shareholders' Equity}} \]

As FCI is incurring losses, the return will be measured in terms of losses incurred, the ROTSE value will be in negative.

Table-27 gives the details of other two ingredients i.e. Equity Share Capital and the Net Profit (Loss in this case) to arrive at ROTSE.

The Return on Total Shareholders' Equity reveals how the company has utilised Shareholders' Equity and what are the returns on them.

---

<table>
<thead>
<tr>
<th>Year</th>
<th>Shareholders' Return on Total (Rs. in lakhs)</th>
<th>Net Loss (Rs. in lakhs)</th>
<th>Share Capital (Rs. in lakhs)</th>
<th>Quantity (RoI% of)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985-86</td>
<td>0.228</td>
<td>12.720.63</td>
<td>55.796.37</td>
<td>12.720.63</td>
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<tr>
<td>1984-85</td>
<td>0.082</td>
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<td>54.969.37</td>
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<td>1983-84</td>
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<td>8.058.85</td>
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<td>8.058.85</td>
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<td>1980-81</td>
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<td>38.283.47</td>
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<tr>
<td>1978-79</td>
<td>0.059</td>
<td>2.183.05</td>
<td>36.753.47</td>
<td>2.183.05</td>
</tr>
</tbody>
</table>

Note: ROIs is calculated by the Research Scholar.
Table-28 gives the Trend of Return on Total Shareholder' Equity (ROTSE) of FCI. As FCI is incurring losses, the ROTSE in this case will represent the amount of losses incurred by FCI, on Shareholders' Equity. Thus increase in ROTSE will indicate that the losses of FCI are increasing and a decline of ROTSE will correspondingly indicate a decline in losses because, ROTSE is directly related to the quantum of losses incurred by FCI.

A glance at Table-28 reveals that, ROTSE is increasing during the period from 1978-79 to 1981-82 and declining during the years 1982-83, 1983-84 and 1984-85. Whereas, the ROTSE has again increased during 1985-86.

The ROTSE was -0.059 during the year 1978-79 and increased to -0.127 in the year 1979-80. This increase amounted to 0.068 in absolute terms and 115.25 in percent as against previous year.

The ROTSE has further increased to -0.255 during the year 1980-81 which amounts to an increase of -0.128 equivalent to 100.79 per cent as compared to previous year i.e. 1979-80.

In the year 1981-82, the ROTSE has again increased to -0.305 which is an increase of 0.50 or 19.61 per cent over previous year i.e. 1980-81.
During the year 1982-83, the ROTS had for the first time declined to -0.193 equivalent to 0.112 or 36.72 per cent as against previous year of 1981-82.

In the year 1983-84 also the ROTS continues to decline and it came down to -0.149. This decline has amounted to 0.044 equal to 22.8 per cent when compared to previous year of 1982-83.

The ROTS continues to decline during the third consecutive year (i.e. 1984-85) during the period under study. It has came down to -0.082 (in 1984-85) and this decline amounted to 0.67 or 44.97 per cent as compared to its previous year 1983-84.

But the year 1985-86 has seen a substantial increase in ROTS and it was enhanced to -0.228 as against -0.082 figure of 1984-85. Thus, this increase has amounted to 0.146 and 178.05 per cent as compared to previous year 1984-85.

The maximum increase in ROTS as against previous year was 0.146 in 1985-86 amounting to 178.05 per cent. The maximum decline in ROTS in absolute terms was in the year 1982-83 when it came down by 0.112 as compared to previous year 1981-82. But in terms of percentage,
SOURCE: Based on the data mentioned in Table-27.

Calculations by the Research Council.

1. Increase/Decrease in absolute terms and in percentage are

<table>
<thead>
<tr>
<th>Year</th>
<th>Absolute Terms</th>
<th>Quantity (ROS)</th>
<th>Return on Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-79</td>
<td>0.146</td>
<td>0.228</td>
<td>0.059</td>
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<td>1979-80</td>
<td>0.069</td>
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<td>1980-81</td>
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<tr>
<td>1985-86</td>
<td>0.076</td>
<td>0.127</td>
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</tbody>
</table>

Notes:
1. = maximum decrease in ROS as against previous year.
2. = maximum increase in ROS as against previous year.

TREND OF PCI'S RETURN ON TOTAL SHAREHOLDERS' EQUITY (ROS)

TABLE - 28
the maximum decline of ROTSE was in the year 1984-85 when it declined by 44.97 per cent as against previous year of 1983-84.

Thus, the ROTSE is in negative, representing losses, incurred by FCI during the period from 1978-79 to 1985-86. It can be said that FCI has failed to discharge its Social Accountability towards Shareholders in terms of Returns as the normal expectations of any investor would be 'reasonable returns' on the amount invested.

7.2 FCI's Social Accountability towards Employees:

The second group or segment to whom FCI is socially accountable is its own Employees. The most important group after consumers is the employees of a business enterprise and discharge of Social Accountability towards them is very essential. There are several activities which an organisation undertakes to discharge Social Accountability towards employee-group.

In this study the expenditure incurred by FCI on various staff benefit activities is taken into account to study its Social Accountability towards employees.
To study FCI's Social Accountability towards its employees, six staff benefit activities are chosen. The expenditure incurred by FCI on these activities will help in studying its Social Accountability towards employee-group.

Table-29 shows the details of expenditure incurred by FCI towards various staff benefit activities. These staff benefit activities include providing Township, Maintenance of School and Educational Facilities, Medical, Canteen and Transport facilities.

Analysis of the Table-29 reveals that during the year 1979-80, the total expenditure incurred on various staff benefit activities was Rs. 451.30 lakhs, which was continuously increasing and reached to Rs. 925.31 lakhs during the year 1985-86 under study.

Out of Rs. 451.30 lakhs incurred on various staff Benefit Activities during the year 1979-80, Rs. 222.36 lakhs were spent on Township, Rs. 44.06 lakhs on Maintenance of School and Educational facilities and Rs. 143.54 lakhs on Medical facilities. On Canteen, an amount of Rs. 20.54 lakhs was incurred. On Transport Rs. 9.08 lakhs and on Social and Cultural activities Rs. 11.72 lakhs were spent during the year 1979-80.
In terms of percentage, Township accounts for 41.27, maintenance of School and Educational facilities accounts for 9.76 and Medical facilities accounts for 31.81 per cent of the total expenditure incurred on staff benefit during the year 1979-80. Whereas, Canteen's share is 4.55, Transport's share is 2.01 and Social and Cultural Activities share is 2.60 per cent of the total expenditure incurred on staff benefits during the year 1979-80.

During the year 1979-80, top priority was given to Township (49.27%), second priority to Medical facilities (31.81%) and least priority was given to transport (2.01%), in terms of the expenditure incurred on different staff benefit activities.

During the year 1980-81, the total expenditure incurred on various staff benefit activities was Rs. 497.57 lakhs. Out of which an amount of Rs. 218.76 lakhs was spent on Township, Rs. 61.09 lakhs on Maintenance of School and Educational facilities and Rs. 158.80 lakhs on Medical facilities. Expenditure incurred on Canteen was Rs. 31.91 lakhs, on Transport Rs. 12.76 lakhs and on Social and Cultural activities Rs. 14.25 lakhs during the year 1980-81.

The expenditure incurred on Township accounts for 43.97, on maintenance of School and Educational facilities
12.28, on Medical facilities 31.92, on Canteen 6.41, on Transport 2.56 and on Social and Cultural activities 2.86 per cent of the total expenditure incurred on staff benefits during the year 1980-81.

During the year 1980-81, the top priority was given to Township (43.97%), second priority to Medical facilities (31.92%) and least priority was given to Transport (2.56%) in terms of expenditure incurred on various staff benefit activities.

An amount of Rs. 578.58 lakhs was spent on various staff benefit activities during the year 1981-82. Of which Rs. 237.29 lakhs were spent on Township, Rs. 70.32 lakhs on Maintenance of School and Educational Facilities, Rs. 175.34 lakhs on Medical and Rs. 33.11 lakhs on Canteen. Whereas, the expenditure incurred on Transport was Rs. 15.33 lakhs and on Social and Cultural activities was Rs. 47.19 lakhs during 1981-82.

The expenditure incurred on township amounted to 41.01 per cent, maintenance of School and Educational facilities 12.15 per cent, Medical facilities 30.31 per cent and Canteen 5.72 per cent respectively. The amount spent on Transport amounts to 2.65 per cent and on Social and Cultural activities, it amounts to 8.16 per cent of the


<table>
<thead>
<tr>
<th>YEAR</th>
<th>EXPENDITURE INCREASED ON</th>
<th>NOT EXPENDITURE INCREASED ON</th>
</tr>
</thead>
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<td>1980-81</td>
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<td>1984-85</td>
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</tr>
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<td></td>
</tr>
<tr>
<td>2009-10</td>
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<td></td>
</tr>
</tbody>
</table>

Note: EXPENDITURE INCREASED ON PCIT is not shown in the table as per instructions.

**Table - 29**
total amount spent during the year 1981-82 towards various staff benefit activities.

Top priority was given to township (41.01%), second priority to Medical (30.31%) and least priority was given to Transport (2.65%) of the total expenditure incurred during the year 1981-82, on various staff benefit activities.

FCI has incurred an amount of Rs. 588.22 lakhs on different staff benefit activities, during the year 1982-83. Out of which Rs. 261.03 lakhs were spent on Township, Rs. 80.20 lakhs on maintenance of School & Educational facilities and Rs. 190.06 lakhs on Medical facilities. Amount spent on Canteen was Rs. 35.50 lakhs, on Transport Rs. 15.10 lakhs and on Social and Cultural activities Rs. 6.33 lakhs respectively during the year 1982-83.

The expenditure incurred on township accounted to 44.33 per cent, on maintenance of school & educational facilities to 13.63 per cent, and on medical, it amounted to 32.31 per cent, of the total amount spent on staff benefit activities during the year 1982-83. Whereas, the expenditure incurred on canteen amounts to 6.04 per cent, on transport 2.56 per cent and on social and cultural activities 1.08 per cent of the total amount spent on staff benefit activities during 1982-83.
The township continues to attract top priority having 44.38 per cent, medical having second top priority at 32.31 per cent and social and cultural activities got the least priority at 1.08 per cent of the total expenditure incurred on staff benefit activities during the year 1982-83.

The amount spent by FCI during the year 1983-84 on various staff benefit activities was Rs. 741.79 lakhs. Out of this expenditure, Rs. 324.19 lakhs were allocated for township, Rs. 96.61 lakhs for maintenance of school and educational facilities, Rs. 238.58 lakhs for medical and Rs. 46.05 lakhs were for canteen. On the other hand the allocation for transport was Rs. 26.36 lakhs and for social and cultural activities it was Rs. 10.0 lakhs.

The amount spent on township accounts to 43.7 per cent, on maintenance of school and educational facilities 13.02 per cent, on medical 32.16 per cent and on canteen 6.21 per cent of the expenditure incurred on staff benefits during the year 1983-84. The respective share of transport was 3.55 per cent and that of social and cultural activities, it was 1.36 per cent.

Township continuous to get top priority, having (43.7%), the medical facilities at second top priority (31.16%) and the least priority was given to social and cultural activities (1.36%) of the total amount spent during 1983-84 in respect of staff benefits.
FCI has incurred an amount of Rs. 814.05 lakhs on various staff benefit activities during 1984-85. Out of Rs. 814.05 lakhs, an amount of Rs. 363.29 lakhs was spent on township, Rs. 104.64 lakhs on school and educational facilities, Rs. 249.94 lakhs on medical, and Rs. Rs. 54.87 lakhs on canteen. An amount of Rs. 31.56 lakhs was spent on transport and Rs. 9.75 lakhs on Social & cultural activities.

In terms of percentage, the amount spent on township comes to 44.63, on school and educational facilities 12.85, on medical 30.70 and on canteen 6.74 per cent of the expenditure incurred by FCI during 1984-85 on staff benefit activities. The percentage share of transport was 3.88 and of social and cultural activities 1.20 respectively.

The percentage share of township being 44.63 shows that it was given top priority in respect of allocation of amount as compared to other staff benefits. Similarly 'Medical' got second priority in allocation of budget having 30.7 per cent share and 'Social and Cultural activities' got least priority having 1.2 per cent share.

In the year 1985-86, the amount spent by FCI on staff benefit activities was Rs. 925.31 lakhs. The
amount spent on various heads was, Rs. 411.72 lakhs on township, Rs. 119.25 lakhs on School and Educational facilities, Rs. 283.15 lakhs on Medical, Rs. 64.30 lakhs on Canteen, Rs. 33.94 lakhs on Transport and Rs. 12.45 lakhs on Social and Cultural activities.

On Township 44.5 per cent, on School & Educational facilities 12.88 per cent, on Medical 30.6 per cent, on Canteen 7.0 per cent, on Transport 3.67 per cent and on Social and Cultural activities 1.35 per cent was spent of the total expenditure incurred on staff benefits during the year 1985-86.

The share of Township at 44.5 per cent was highest compared to other staff benefits, the share of medical facilities at 30.6 per cent was the second highest and the share of social and cultural activities at 1.35 per cent was lowest compared to other staff benefits during the year 1985-86.

7.2.1 Trend of Expenditure Incurred by FCI on Staff Benefits

Table-30 gives the trend of expenditure incurred by FCI on various staff benefit activities during the period from 1979-80 and to 1985-86 under study,
The total expenditure incurred by FCI on various staff benefit activities show a continuous increasing trend from Rs. 451.3 lakhs in 1979-80 to Rs. 925.31 lakhs in 1985-86. The total expenditure incurred on FCI's staff benefits increased by Rs. 46.27 lakhs in the year 1980-81 which amounts to 10.25 per cent increase as against previous year 1979-80.

During the year 1981-82, the total expenditure incurred on FCI's staff benefits was Rs. 578.58 lakhs, which is an increase of Rs. 81.01 lakhs equivalent to 16.28 per cent as compared to previous year 1980-81.

The total expenditure on FCI's staff benefits has further increased to Rs. 588.22 lakhs during the year 1982-83, which is an increase of Rs. 9.64 lakhs or 1.67 per cent as compared to previous year of 1981-82.

During the year 1983-84 also, the total expenditure incurred by FCI on staff benefits i.e. Rs. 741.79 lakhs has increased as against its previous year. This increase amounted to Rs. 153.57 lakhs or 26.11 in per cent as against the previous year of 1982-83.

The year 1984-85 has recorded an increase of Rs. 72.26 lakhs equal to 9.74 per cent as compared to previous year
of 1983-84. The actual expenditure incurred on FCI's staff benefits during the year 1984-85 was Rs. 814.05 lakhs.

During the year 1985-86 the total expenditure incurred by FCI on staff benefits was to the tune of Rs. 925.31 lakhs, which is an increase of Rs. 111.26 lakhs, equal to 13.67 per cent as against previous year i.e. 1984-85.

The total expenditure incurred by FCI on staff benefits has recorded a maximum increase of 26.11 per cent during the year 1983-84 as against previous year i.e. 1982-83.

The expenditure incurred by FCI on 'Township' was Rs. 222.36 lakhs during the year 1979-80, and it has declined to Rs. 218.76 lakhs in the year 1980-81. This decline has accounted for Rs. 3.6 lakhs or 1.62 per cent as against previous year of 1979-80.

During the year 1981-82, the expenditure on 'Township' has increased to Rs. 237.29 lakhs which is an increase of Rs. 18.53 lakhs or 8.47 per cent when compared to previous year of 1980-81.
The year 1982-83 has recorded an increase in the expenditure on Township of Rs. 23.74 lakhs, equal to 10.01 per cent as against previous year of 1981-82. The expenditure incurred on Township during the year 1982-83 was Rs. 261.03 lakhs.

In the year 1983-84, expenditure incurred on Township was Rs. 324.19 lakhs, which is an increase of Rs. 83.16 lakhs equal to 24.20 per cent as compared to previous year of 1982-83.

The expenditure incurred on township was Rs. 363.29 lakhs during the year 1984-85 which is an addition of Rs. 39.10 lakhs or 12.06 per cent over previous year of 1983-84.

The expenditure incurred by FCI on Township during the year 1985-86 was Rs. 411.72 lakhs. This is an increase of Rs. 48.43 lakhs or 13.33 per cent, compared to previous year i.e. 1984-85.

The expenditure incurred on Township recorded a maximum increase of 24.2 per cent in the year 1983-84, as compared to previous year of 1982-83, and decline of 1.62 per cent during the year 1980-81 as compared to previous year 1979-80.
The expenditure incurred by FCI on maintenance of school and educational facilities was Rs. 44.06 lakhs during the year 1979-80, and it has increased to Rs. 61.09 lakhs during the year 1980-81, which is an increase of Rs. 17.03 lakhs equal to 38.65 per cent as compared to previous year of 1979-80.

During the year 1981-82, the expenditure incurred on maintenance of school and educational facilities has increased to Rs. 70.32 lakhs, which is an increase of Rs. 9.23 lakhs or 15.11 per cent over previous year of 1980-81.

The year 1982-83 has recorded a further increase in the expenditure on maintenance of school and educational facilities of Rs. 9.88 lakhs or 14.05 per cent over previous year of 1981-82. The expenditure incurred under this head, was Rs. 80.20 lakhs during the year 1982-83.

The expenditure incurred by FCI on maintenance of school and educational facilities was of the tune of Rs. 96.61 lakhs during the year 1983-84, being an increase of Rs. 16.41 lakhs or 20.46 per cent over previous year of 1982-83.
The expenditure incurred on maintenance of school and educational facilities was Rs. 104.64 lakhs during the year 1984-85 resulting in an increase of Rs. 9.03 lakhs or 8.31 per cent as against previous year of 1983-84.

The year 1985-86 has recorded an increase in the expenditure on maintenance of School and educational facilities of Rs. 14.61 lakhs equal to 13.96 per cent as against previous year i.e. 1984-85. The expenditure incurred during the year 1985-86 was Rs. 119.25 lakhs.

The maximum increase in the expenditure incurred on maintenance of school and educational facilities was 38.65 per cent during the year 1980-81 as compared to previous year of 1979-80.

The expenditure incurred by FCI on Medical facilities was Rs. 143.54 lakhs during the year 1979-80 and it has increased to Rs. 158.50 lakhs, during the year 1980-81, being an increase of Rs. 15.26 lakhs or 10.63 per cent over the previous year.

During the year 1981-82, the amount spent by FCI on Medical facilities has increased to Rs. 175.34 lakhs being an increase of Rs. 16.54 lakhs, equal to 10.42 per cent as compared to previous year of 1980-81.
The expenditure on Medical facilities has further increased to Rs. 190.06 lakhs during the year 1982-83. This increase amounts to Rs. 14.72 lakhs equal to 8.40 per cent, as against previous year of 1981-82.

The year 1983-84 has recorded further increase in the expenditure incurred by FCI on Medical facilities, amounting to Rs. 238.58 lakhs. This increase amounts to Rs. 48.52 lakhs in absolute terms and 25.53 in percentage, when compared to previous year of 1982-83.

The expenditure incurred by FCI on medical facilities was Rs. 249.94 lakhs during the year 1984-85, which is an increase of Rs. 11.36 lakhs or 4.76 per cent over previous year of 1983-84.

During the year 1985-86 the amount spent on Medical facilities was of Rs. 283.15 lakhs, which amounted to an increase of Rs. 33.21 lakhs or 13.29 per cent over previous year of 1984-85.

The maximum increase in the expenditure incurred on Medical facilities was 25.53 per cent during the year 1983-84, as compared to previous year of 1982-83.
The expenditure incurred by FCI on Canteen facility was Rs. 20.54 lakhs during the year 1979-80. This has enhanced to Rs. 31.91 lakhs during the year 1980-81, amounting to an increase of Rs. 11.37 lakhs or 55.36 per cent over the previous year of 1979-80.

During the year 1981-82, the expenditure incurred by FCI on canteen has further increased to Rs. 33.11 lakhs, which is an increase of Rs. 1.2 lakhs or 3.76 per cent over the previous year of 1980-81.

The expenditure incurred by FCI on 'Canteen' has increased to Rs. 35.5 lakhs during the year 1982-83, being an increase of Rs. 2.39 lakhs, equal to 7.22 per cent as against previous year i.e. 1981-82.

The year 1983-84 has recorded a further increase in the amount spent on Canteen facility by FCI, of Rs. 10.55 lakhs which is equal to 29.72 per cent as compared to previous year. The actual amount spent on Canteen during the year 1983-84 was Rs. 46.03 lakhs.

During the year 1984-85, the amount spent on canteen was Rs. 54.87 lakhs, which is an increase of Rs. 8.82 lakhs, equal to 19.15 per cent as against previous year i.e. 1983-84.
During the year 1985-86, an amount of Rs. 64.8 lakhs was spent by FCI on Canteen being an addition of Rs. 9.93 lakhs, equal to 18.10 per cent over the previous year of 1984-85.

The maximum increase in the expenditure incurred by FCI on canteen was 55.36 per cent during the year 1980-81 as compared to its previous year i.e. 1979-80.

The expenditure incurred by FCI on Transport facility was Rs. 9.08 lakhs during the year 1979-80, which increased to Rs. 12.76 lakhs during the year 1980-81, being an increase of Rs. 3.68 lakhs or 40.53 per cent over previous year i.e. 1979-80.

The year 1981-82 has recorded an increase of Rs. 2.57 lakhs in the expenditure incurred by FCI on 'Transport' facility, equivalent to 20.14 per cent over the previous year i.e. 1980-81. The amount spent on 'Transport' during the year 1981-82 was Rs. 15.33 lakhs.

During the year 1982-83, the expenditure incurred on 'Transport' was Rs. 15.10 lakhs being a decline of Rs. 0.23 lakhs equivalent to 1.50 per cent over the previous year of 1981-82.
The expenditure incurred on transport has been increased to Rs. 26.36 lakhs during the year 1983-84. This increase is equivalent to Rs. 11.26 lakhs or 74.57 per cent as compared to previous year 1982-83.

During the year 1984-85, an amount of Rs. 31.56 lakhs spent on 'transport' which is an increase of Rs. 5.2 lakhs or 19.73 per cent as against previous year i.e. 1983-84.

During the year 1985-86, the amount spent on 'Transport' was Rs. 33.94 lakhs being an increase of Rs. 2.38 lakhs or 7.54 per cent over previous year i.e. 1984-85.

The maximum increase in expenditure on transport as compared to previous year was recorded at 74.57 per cent during the year 1983-84 and maximum decrease in expenditure on transport during the period (1979-80 to 1985-86) under study was 1.5 per cent recorded in the year 1982-83.

The amount spent by FCI on social and cultural activities was Rs. 11.72 lakhs during the year 1979-80. This has increased to Rs. 14.25 lakhs during the year 1980-81, resulting in an increase of Rs. 2.53 lakhs, equivalent to 21.59 per cent as against previous year, i.e. 1979-80.
During the year 1981-82, the expenditure incurred on 'social and cultural activities' has further increased to Rs. 47.19 lakhs, being an increase of Rs. 32.94 lakhs or 231.16 per cent over previous year of 1980-81.

During the year 1982-83, the amount spent on Social & Cultural activities has come down to Rs. 6.33 lakhs which is a decline of Rs. 40.86 lakhs or 86.59 per cent as compared to previous year i.e. 1981-82.

The amount spent on "social and Cultural activities" has increased to Rs. 10 lakhs during the year 1983-84. This increase is equivalent to Rs. 3.67 lakhs or 57.98 per cent over the previous year 1982-83.

The year 1984-85 has recorded a decline of Rs. 0.25 lakhs, equal to 2.5 per cent in respect of expenditure incurred on 'social and cultural activities', when compared to previous year 1983-84. The amount spent on this head during 1984-85 was Rs. 9.75 lakhs.

During the year 1985-86, the amount spent by FCI on 'Social and Cultural activities' was Rs. 12.45 lakhs, which has resulted in an increase of Rs. 2.7 lakhs, equal to 27.69 per cent over previous year of 1984-85.
Maximum increase and decrease in the amount spent on 'Social and Cultural activities' as against previous year was 231.16 per cent during the year 1981-82, and 86.59 per cent during the year 1982-83 respectively.

7.2.2 **FCI's Staff Benefits per Employee:**

The expenditure incurred by FCI on staff benefits is continuously increasing as evident from Table-30. Similarly the expenditure incurred by FCI on staff-benefits per employee is also increasing throughout the period under study as shown in Table-31.

Table-31 provides the trend of staff benefits expenditure per employee. It was Rs. 0.041 lakhs during the year 1981-82 and reached to Rs. 0.072 lakhs during the year 1985-86. The overall increase in staff benefits expenditure per employee has amounted to Rs. 0.031 lakhs, equal to 75.61 per cent as compared to the previous year of 1981-82.

The expenditure on staff benefits per employee was Rs. 0.041 lakhs during 1981-82 and has increased to Rs. 0.043 lakhs during the year 1982-83.
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<th>Access/Inaccess to General Public Percentage</th>
</tr>
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<tr>
<td>2059-60</td>
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<td>69.58%</td>
</tr>
</tbody>
</table>
This increase is equal to Rs. 0.002 lakhs or 4.88 per cent as compared to the previous year 1981-82.

During the year 1983-84, the value of staff benefits per employee was Rs. 0.055 lakhs which is an increase of Rs. 0.012 lakhs, equal to 27.91 per cent as against previous year 1982-83.

The expenditure incurred on staff benefits per employee was Rs. 0.062 lakhs during 1984-85 being an increase of Rs. 0.007 lakhs or 12.73 per cent as against previous year 1983-84.

During the year 1985-86, the staff benefits expenditure per employee accounted to Rs. 0.072 lakhs, which is an increase of Rs. 0.01 lakh equal to 16.13 per cent as compared to previous year i.e. 1984-85.

7.2.3 Co-efficient of Correlation between FCI's Net Losses and FCI's Staff Benefits Expenditure:

The term correlation refers to "relationship between two variables in which, changes in value of one variable, results in changes in the value of the other variable." 

Correlation in two series need not always be the result of their mutual inter-dependence but a third
TABLE-31

FCI's EXPENDITURE ON STAFF BENEFITS PER EMPLOYEE

<table>
<thead>
<tr>
<th>Years</th>
<th>Expenditure on staff benefits (Rs. Lakhs)</th>
<th>No. of Officers &amp; Staff as on 31st March</th>
<th>Expenditure on Staff Benefits per employee (Rs. Lakhs)</th>
<th>Increase/Decrease as against previous year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-80</td>
<td>451.30</td>
<td>NA</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1980-81</td>
<td>497.57</td>
<td>NA</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1981-82</td>
<td>578.58</td>
<td>13,946</td>
<td>0.041</td>
<td></td>
</tr>
<tr>
<td>1982-83</td>
<td>588.22</td>
<td>13,812</td>
<td>0.043</td>
<td>0.002(4.88)</td>
</tr>
<tr>
<td>1983-84</td>
<td>741.79</td>
<td>13,594</td>
<td>0.055</td>
<td>0.012(27.91)</td>
</tr>
<tr>
<td>1984-85</td>
<td>814.05</td>
<td>13,221</td>
<td>0.062</td>
<td>0.007(12.73)</td>
</tr>
<tr>
<td>1985-86</td>
<td>925.31</td>
<td>12,920</td>
<td>0.072</td>
<td>0.015(16.13)</td>
</tr>
</tbody>
</table>

Notes: 1. Figures in column Increase/Decrease as against previous year are in Absolute Terms.
2. Figures in parenthesis represent percentage Increase/Decrease as against previous year.
3. Per Employee expenditure is calculated by the Research Scholar.

factor may also influence the relationship between two series.

In "inexact sciences" the study of correlation may not be precise and accurate as is possible in "exact sciences". 
But approximate results can be achieved. 2

Co-efficient of Correlation is calculated to study the correlation between two variables. If there exists correlation between two variables, it does not mean that their relationship is constant.

Correlation can be either positive or negative. 3 When the values of two variables change in the same direction, so that an increase in the value of one variable is associated with the increase in the value of another variable, or a decrease in the value of one variable results in decrease in the value of another variable, the correlation is said to be "positive".

On the other hand, if both the variable move in directions opposite to each other so that an increase in the value of one variable results in decrease in the value of another variable or decrease in the value of one variable results in increase in the value of another variable, the correlation is said to be "Negative".

3. Ibid, P.482.
If the relationship between two variables is such that the increase/decrease in the value of one variable results in a fixed proportionate increase/decrease in the value of another variable, the correlation is said to be 'Perfect Correlation'. A perfect correlation may be 'Positive' or Negative'. If both the variables move in the same direction of increase/decrease and their variations are in fixed proportion, the correlation is said be "Perfect Positive Correlation". In case both the variables move in directions opposite to each other, in a fixed proportion, the correlation is called as "Perfect Negative Correlation". It is also possible that there may not exist any correlation between two variables.

According to Karl Pearson's formula, coefficient of correlation is "obtained by dividing the sum of the products of corresponding deviations of the various items of two series from their respective means, by the product of their standard deviations and the number of pairs of observations."

The coefficient of correlation varies between the two limits of +1 and -1. When there is 'perfect positive correlation' its value would be +1. When there is 'perfect' negative correlation' its value would be -1. The mid points i 0, which shows that there is no correlation.

4. Ibid, P. 486
5. Ibid,
The formula to calculate coefficient of correlation:

\[ r = \frac{\sum xy - n (\bar{a}_1 - \bar{x}_1)(\bar{a}_2 - \bar{x}_2)}{n \cdot \sigma_1 \cdot \sigma_2} \]

where

\( r \) = coefficient of correlation

\( a_1 \) = Actual Arithmetic Average of first series.

\( a_2 \) = Actual Arithmetic Average of second series.

\( x_1 \) = Assumed Arithmetic Average of first series.

\( x_2 \) = Assumed Arithmetic Average of second series.

\( \sum xy \) = Sum of products of deviations from the assumed average.

\( n \) = Number of pairs of observations.

\( \sigma_1 \) = Standard deviation of first series.

\( \sigma_2 \) = Standard deviation of second series.

FCI is a loss incurring organisation and its losses are continuously increasing, since reorganisation in April, 1978, with a very few exceptions where the losses have declined but never disappeared totally.

Despite of huge losses, FCI is incurring expenditure towards Staff-Benefits. As in this segment of the chapter we are concerned with the study of FCI's Social Accountability towards Employee-group, an attempt is made to find
2. All the calculations are done by the research scholar accepting the formula

\[ r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}} \]

Notes: 1. The data relating to PCL's net losses and expenditure on staff benefits is

<table>
<thead>
<tr>
<th>Year</th>
<th>$x_i$</th>
<th>$y_i$</th>
<th>$x \bar{x}$</th>
<th>$y \bar{y}$</th>
<th>$x_iy_i$</th>
<th>$x_i^2$</th>
<th>$y_i^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985-86</td>
<td>179.39</td>
<td>90.36</td>
<td>177.21</td>
<td>80.36</td>
<td>15793.9</td>
<td>16158.36</td>
<td>8173.68</td>
</tr>
<tr>
<td>1986-87</td>
<td>125.13</td>
<td>75.96</td>
<td>127.88</td>
<td>75.96</td>
<td>9351.84</td>
<td>11800.04</td>
<td>5824.54</td>
</tr>
<tr>
<td>1987-88</td>
<td>10.67</td>
<td>3.96</td>
<td>11.8</td>
<td>3.96</td>
<td>42.2</td>
<td>117.64</td>
<td>15.76</td>
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<tr>
<td>1988-89</td>
<td>3.97</td>
<td>3.79</td>
<td>3.97</td>
<td>3.79</td>
<td>16.67</td>
<td>15.05</td>
<td>14.47</td>
</tr>
<tr>
<td>1989-90</td>
<td>6.21</td>
<td>3.01</td>
<td>6.92</td>
<td>3.01</td>
<td>20.52</td>
<td>19.75</td>
<td>9.07</td>
</tr>
<tr>
<td>1990-91</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.016</td>
<td>0.016</td>
<td>0.016</td>
</tr>
<tr>
<td>1991-92</td>
<td>1.74</td>
<td>1.74</td>
<td>1.74</td>
<td>1.74</td>
<td>3.0636</td>
<td>3.0636</td>
<td>3.0636</td>
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<tr>
<td>1993-94</td>
<td>2.96</td>
<td>2.96</td>
<td>2.96</td>
<td>2.96</td>
<td>8.784</td>
<td>8.784</td>
<td>8.784</td>
</tr>
<tr>
<td>1994-95</td>
<td>1.74</td>
<td>1.74</td>
<td>1.74</td>
<td>1.74</td>
<td>3.0636</td>
<td>3.0636</td>
<td>3.0636</td>
</tr>
</tbody>
</table>

\[ \sum x_i = 157.1 \quad \sum y_i = 90.36 \quad \sum x_i^2 = 16158.36 \quad \sum y_i^2 = 8173.68 \]

Expected benefits: 4.22 years

Staff benefits = PCL's net losses + expenditure on staff benefits

Variance of correlation coefficient: 0.32

Table - 32
Is there any correlation between FCI's Net losses and expenditure on Staff Benefits, if so to what extent?

Table-32, gives the process of calculation of coefficient of correlation between FCI's Net loss and FCI's expenditure on Staff Benefits. The formula used is of Karl Pearson's Coefficient of Correlation. The coefficient of correlation between FCI's Net Losses and FCI's expenditure on Staff Benefits is +0.14. This shows that there is positive correlation between these two variables i.e. when the FCI's losses have increased the expenditure on Staff Benefits also increased during the period under study. It means, the increasing amount of losses did not affect the increasing trend of expenditure on Staff Benefits. This may be because of two reasons, one is as the coefficient of correlation is +0.14 which is substantially less than the +1 value of Perfect Positive Correlation. Though there is positive correlation between FCI's Net losses and FCI's expenditure on Staff Benefits but it is far behind the +1 value of "Perfect positive correlation". This concludes that there is no "Perfect Positive Correlation" between FCI's Net Losses and FCI's expenditure on Staff Benefits. Moreover, as the amount spent on Staff Benefits activities is just fractional as compared to the amount of losses incurred
by FCI (for eg. in the year 1979-80 the Net Losses were Rs. 48.63 lakhs whereas the expenditure incurred on staff benefits was Rs. 4.51 lakhs), thereby it does not affect FCI's decision to spent on staff benefits. As a result we find FCI is incurring increasing amount of expenditure on staff benefits alongwith its increasing amount of losses.

The second reason why there exists a positive correlation between FCI's net losses and expenditure incurred by FCI on staff benefits is the fact that in the situation of huge losses being incurred by FCI, the management did not want to crop up another problem of employee-dissatisfaction hence, it is continuously increasing expenditure on staff benefits irrespective of the losses.

7.2.4 Coefficient of Correlation between FCI's Sales Turnover and FCI's Staff Benefits expenditure:

Sales turnover constitutes the only major source of revenue for organisations like FCI which is engaged in the production of chemical fertilisers. Naturally the Sales Turnover will determine the trend of expenditure on various heads including expenditure on staff benefits. In this chapter, an attempt is made to see, whether there exists any correlation between FCI's Sales Turnover and Expenditure incurred by FCI on Staff Benefits.
Table-33, gives the details of calculations of coefficient of correlation between FCI's Sales Turnover and Expenditure incurred on Staff Benefits. The coefficient of correlation is +0.59. Thus, there is 'positive Correlation' between FCI's Sales Turnover and Expenditure incurred by FCI on Staff Benefits. It means, as the Sales Turnover increases the expenditure on Staff Benefits will also increase and vice versa.

For obvious reasons, the Sales Turnover being the only major source of revenue to FCI, will influence the trend of expenditure on various heads including 'Staff Benefits' and the volume of Sales Turnover is directly correlated to expenditure on Staff Benefits.

7.2.5 **FCI's Death-Benefit Scheme** :

A Death-Benefit scheme has been introduced w.e.f. 3.10.1983 for the benefit of employees of all the FCI/NFL group of companies. Whenever death of any employee occurs, in any of FCI/NFL group of companies each employees contributes Re. 1/- towards this Death Benefit Scheme and approximately a sum of Rs. 37,000/- (depending upon the total strength of employees of FCI/NFL group of Companies on the date of the death of the employee) is paid to the dependents of the deceased employee. This scheme covers
### Calculation of Coefficient of Correlation

<table>
<thead>
<tr>
<th>Years</th>
<th>Sales Turnover</th>
<th>Sales Turnover squared</th>
<th>Deviation from the mean</th>
<th>Deviation squared</th>
<th>PCI's Sales Turnover</th>
<th>PCI's Sales Turnover squared</th>
<th>Deviation from the mean</th>
<th>Sales Turnover squared</th>
<th>Product of Deviation</th>
<th>Coefficient of Correlation</th>
</tr>
</thead>
</table>

Note: The data relating to PCI's Sales Turnover and Expenditure incurred on staff benefits.

### Notes
1. The data relating to PCI's Sales Turnover and Expenditure incurred on staff benefits.
2. All the calculations are done by the research scholar accepting the respective years.

### Formula of Karl Pearson's Coefficient of Correlation

\[
\text{Coefficient of Correlation} = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left( \sum x^2 - \frac{\left( \sum x \right)^2}{n} \right) \left( \sum y^2 - \frac{\left( \sum y \right)^2}{n} \right)}}
\]

Where:
- \(x\) and \(y\) are the variables whose correlation is to be determined.
- \(n\) is the number of observations.

The calculations for the table above follow this formula.
the entire staff (workmen as well as officers) of FCI/JFL group of companies. As on 31st March, 1985, dependents of 74 deceased employees of FCI have got the benefit under the scheme.

Thus, FCI was discharging its Social Accountability towards its employees successfully. The amount spent on Staff Benefits is consistently rising during the period under study. Consequently the expenditure incurred on Staff Benefits per employee is also rising despite the continuous increase in the losses.

On one hand, the coefficient of correlation between FCI's Net Losses and FCI's staff benefits is +0.14 which shows that there is positive correlation between them. The increase in losses is not affecting the increasing trend of expenditure on staff benefits.

On the other hand, the coefficient of correlation between FCI's Sales Turnover and FCI's expenditure on Staff Benefits is +0.59. It shows that there is high degree of positive correlation between FCI's Sales Turnover and expenditure on Staff Benefits. As the volume of Sales Turnover influences the amount to be spent on different items of expenditure including staff benefits.
The Third interest-group towards which FCI's Social Accountability is to be studied in this chapter is 'Consumers'. Consumers are considered as the most important interest group which a business enterprise deals with. In this context, two important parameters are selected to study the FCI's Social Accountability towards consumers. One is expenditure incurred on Research and Development activities and the other is FCI's overall promotional activities undertaken with special reference to two adopted Districts, i.e. Rae Bareli and Patna.

The expenditure incurred on Research and Development will obviously help in improving the quality of the products and reducing its costs. The important Social Accountability of an enterprise towards its customers would be providing better quality goods at reasonable price. Research and development is the means to achieve better quality products at reasonable price. For this reason the expenditure incurred on R & D is chosen to measure the Social Accountability of FCI.

On the other hand, as the consumers of FCI are those related to agriculture or in other words 'Farming Community' who are rural based. An analysis of various activities undertaken by FCI to impart fertiliser use knowledge and for
the socio-economic development of the rural masses will help in studying its social accountability towards its own consumers.

7.3.1 **Trend of R & D Expenditure**:

Table-34 gives an account of expenditure incurred by FCI on R & D during the period (1978-79 to 1985-86) under study.

Table-34 reveals that R & D expenditure has a mixed trend of increase and decrease during the period under study. The R & D expenditure was Rs. 53 lakhs in the year 1978-79 which increased to Rs. 74.41 lakhs in the year 1979-80, thereby registering an increase of Rs. 21.41 lakhs equal to 40.40 per cent as compared to previous year 1978-79.

During the year 1980-81, the R & D expenditure has declined to Rs. 52.43 lakhs. This decline has amounted to Rs. 21.98 lakhs or 29.54 per cent as compared to previous year of 1979-80.

The expenditure incurred on R & D by FCI, has further declined to Rs. 47.04 lakhs during the year 1981-82, this decline amounts to Rs. 5.39 lakhs or 10.28 per cent over the previous year i.e. 1980-81.
The year 1982-83 has recorded an increase in the R & D expenditure of Rs. 5.27 lakhs equal to 11.20 per cent over previous year of 1981-82. The actual amount spent on R & D during the year 1982-83 was Rs. 52.31 lakhs.

For the year 1983-84 and the year 1985-86, the R & D expenditure is not disclosed by the Annual Reports of FCI. However, during the year 1984-85, an amount of Rs. 5.55 lakhs was incurred on R & D, which amount to a 100 per cent increase compared to previous year i.e. 1983-84, assuming that no expenditure was incurred by FCI on R & D during this year.

### TABLE - 34
TREND OF R & D EXPENDITURE INCURRED BY FCI

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditure incurred on R &amp; D (Rs. Lakhs)</th>
<th>Increase/Decrease as against previous year (Absolute terms)</th>
<th>Increase/Decrease as against previous year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-79</td>
<td>53.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1979-80</td>
<td>74.41</td>
<td>21.41</td>
<td>40.40</td>
</tr>
<tr>
<td>1980-81</td>
<td>52.43</td>
<td>-21.98</td>
<td>-29.54</td>
</tr>
<tr>
<td>1981-82</td>
<td>47.04</td>
<td>- 5.39</td>
<td>-10.28</td>
</tr>
<tr>
<td>1982-83</td>
<td>52.31</td>
<td>5.27</td>
<td>11.20</td>
</tr>
<tr>
<td>1983-84</td>
<td>Nil</td>
<td>-52.31</td>
<td>-100.00</td>
</tr>
<tr>
<td>1984-85</td>
<td>5.55</td>
<td>5.55</td>
<td>Infinite</td>
</tr>
<tr>
<td>1985-86</td>
<td>Nil</td>
<td>- 5.55</td>
<td>-100.00</td>
</tr>
</tbody>
</table>

Note: The Increase/Decrease in expenditure on R & D is as compared to previous year, both in Absolute terms and percentage and is calculated by the Research Scholar.

7.3.2 Coefficient of Correlation between FCI's Sales Turnover and FCI's R & D Expenditure:

In organisations like FCI which produces chemical fertilisers, the Sales Turnover will be the major source of its Revenue and its volume will influence the expenditure on different activities. Naturally, while allocating funds on Research Development Programmes, the management of FCI will have to take into account the Sales Turnover. But is there any direct relationship between FCI's Sales Turnover and Expenditure on R & D, and if so, what type of relationship exists between these two variables and to what degree they are correlated with each other is examined with the help of coefficient of correlation.

Table-35 gives the process of calculation of coefficient of correlation between FCI's Sales Turnover and FCI's expenditure on R & D.

The coefficient of Correlation between FCI's Sales Turnover and FCI's expenditure on R & D is -0.84. It shows that there is 'negative correlation' between FCI's Sales Turnover and FCI's expenditure on R & D. It means that as the Sales Turnover increases, the expenditure on R & D will decrease in FCI. The another feature of this correlation is that its value being -0.84/inclining towards -1 value, which represents Perfect Negative Correlation. It shows
that there is high degree of Negative Correlation between FCI's Sales Turnover and FCI's expenditure on R & D.

The importance of Research & Development activities is commonly accepted. But the trend of R & D expenditure as represented by coefficient of correlation in comparison to Sales Turnover is alarming. When FCI is continuously incurring losses, the R & D activities require more attention and rigorous exercise. But the amount spent on R & D is neither consistent nor increasing, rather it is showing a declining trend over the period. The various causes of losses being analysed in the chapter-6 reveal that the problems relating to Equipment, Process, mismatch of design, Repairs and Replacements in Annual Turn Around Job etc. are considerable. All these problems can be resolved with the help of intensive research and development activities of different processes, equipments, materials etc; thereby the production losses can be reduced to a large extent, consequently its financial losses can be reduced considerably, if not totally wiped out.

7.3.3 FCI's Overall Promotional Activities:

The Ministry of Agriculture, Government of India has launched an Intensive Fertiliser Promotion Campaign (IFPC) in selected districts form Kharif 1981. For each selected district a lead manufacturer has been identified to undertake various promotional activities. The objective of
2. All the calculations are done by the Research Scholar, accepting

\[ n = 8 \]

\[ \sum \text{Sales Turnover} = 25.38 \]

\[ \sum \text{Exp.} = 85490.63 \]

\[ \sum x^2 = 25.38 \]

\[ \sum y^2 = 0.61 \]

\[ \sum xy = -192.14 \]

<table>
<thead>
<tr>
<th>Year</th>
<th>y</th>
<th>x</th>
<th>( x^2 )</th>
<th>( y^2 )</th>
<th>( xy )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-88</td>
<td>60.0</td>
<td>0.0</td>
<td>0.30</td>
<td>6265.81</td>
<td>79.1</td>
</tr>
<tr>
<td>1984-88</td>
<td>0.058</td>
<td>-0.24</td>
<td>0.66 &amp; 131.34</td>
<td>74.1</td>
<td></td>
</tr>
<tr>
<td>1983-84</td>
<td>0.0</td>
<td>-0.13</td>
<td>0.16 &amp; 130.33</td>
<td>37 &amp; 3.25</td>
<td></td>
</tr>
<tr>
<td>1983-84</td>
<td>1.02</td>
<td>0.0</td>
<td>0.04</td>
<td>6292.09</td>
<td>70.0</td>
</tr>
<tr>
<td>1982-84</td>
<td>1.00</td>
<td>0.0</td>
<td>0.04</td>
<td>6214.78</td>
<td>72.0</td>
</tr>
<tr>
<td>1981-82</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>6214.78</td>
<td>72.0</td>
</tr>
<tr>
<td>1981-80</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>6214.78</td>
<td>72.0</td>
</tr>
<tr>
<td>1979-80</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>6214.78</td>
<td>72.0</td>
</tr>
<tr>
<td>1978-79</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>6214.78</td>
<td>72.0</td>
</tr>
</tbody>
</table>

**Notes:**
1. The data relating to PCL’s sales turnover and expenditure on
   R & D has been taken from PCL’s annual reports for the respective
   years.

On Research and Development

PCL’s Sales Turnover and Expenditure

Calculation of Coefficient of Correlation between

<table>
<thead>
<tr>
<th>Sales Turnover</th>
<th>R &amp; D Expenditure</th>
<th>Years</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Sales Turnover</th>
<th>R &amp; D Expenditure</th>
<th>Years</th>
</tr>
</thead>
</table>

**Table 35**
this programme was to promote fertiliser consumption in selected district. The FCI has adopted 22 villages in 11 selected Districts under IFP Campaign. The period Kharif represents April to September and Rabi represents October to March of the year.

Table-36 gives the details of overall promotional activities undertaken by FCI during the year 1983-84 to 1985-86.

During 1983-84 the total Plot Demonstrations made by FCI were 631, of which the Plot Demonstrations in IFPC Districts were 181, thereby sharing 28.68 per cent of the total Plot Demonstrations made during the year. The block demonstrations made were 4 in number during 1983-84 and all of them were in IFPC Districts. The Group Discussions arranged by FCI during 1983-84 were 1251 in number, of which 25.34 per cent (i.e. 317 in number) were in IFPC Districts. The number of Field Days celebrated during 1983-84 were 225, of which 77 Field Days celebrated were in IFPC Districts, sharing 34.22 per cent of the total Field Days during the year. During 1983-84

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6. FCI Marketing Division booklet, 'Intensive Fertiliser Promotion Campaign at a glance in Adopted District- Rae Bareli.'
the Kisan Melas organised were 32 in number, of which 17
i.e. equivalent to 53.13 per cent of the Total Kisan Melas
were in IFPC Districts. The number of Training Programmes
arranged by FCI for the farmers were 126 during 1983-84, of
which 66 were in IFPC districts, thereby sharing 52.38
per cent of the total number of Training Programme arranged
for farmers during the year. During 1983-84, the Dealers
Training Programmes arranged by FCI were 16, of which 93.75
per cent i.e. 15 in number were arranged in IFPC districts.
The printed copies of the literature distributed among
farmers were 279 thousand in number during the year
1983-84 of which 88.26 thousand were in IFPC districts.
The share of IFPC districts worked out to 31.63 per cent
of the total number of copies of the literature distributed
by FCI during 1983-84. The number of soil samples tested
were 17.76 thousands in IFPC Districts during 1983-84. The
Bio-gas plants installed were 37 in number during the year
1983-84 and all of them were in IFPC Districts. The
number of Service Centres opened were 7 during 1983-84,
of which 85.71 per cent (i.e. 6 in number) were in IFPC
Districts. The number of villages adopted were 20 in
IFPC Districts during 1983-84. The Mini-Kits of fertilisers
and seeds distributed among the farmers were 6.13 thousand
during 1983-84.
During 1984-85, the total number of plot demonstrations made by FCI were 531 in number, of which 159 i.e. 29.94 per cent were in IFPC Districts. The number of block demonstrations made during the year 1984-85 were 8 and all of them were in IFPC Districts. There were 1041 number of Group Discussions arranged by FCI during 1984-85, of which 272 (i.e. equal to 26.13 per cent) were in IFPC Districts. The number of field days celebrated during 1984-85 were 177, of which 48.59 per cent (i.e. equal to 86 in number), were in IFPC Districts. The number of Kisan Melas celebrated were 34 during the year 1984-85, of which 21 i.e. equal to 61.76 per cent of the total number of Kisan Melas celebrated during the year, were in IFPC Districts. The number of Farmers Training Programmes arranged by FCI during 1984-85 were 322, of which IFPC Districts accounted for a share of 30.75 per cent (i.e. equal to 99 in number). There were 81 programmes arranged by FCI Dealers Training during 1984-85, out of which 41.98 per cent (i.e. 34 in number) were in IFPC Districts.

The number of printed copies of the literature distributed by FCI, among farmers were 288 thousand during 1984-85, of which 40.63 per cent (i.e. equivalent to 117 thousand), were in IFPC Districts. The number of soil samples tested were 23.91 thousand during 1984-85, of which
Table contd...

<table>
<thead>
<tr>
<th>1983-84</th>
<th>1985-86</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. Promotional Activity</th>
<th>Overall in IPC 1984-85</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Kisan Mela reset
4. Field Days
3. Group Discussions
2. Stock Demonstrations
1. Plot Demonstrations

<table>
<thead>
<tr>
<th>6. Training Programmes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.222</td>
</tr>
</tbody>
</table>

**H- H- h**

329
3. PC's annual report for the year 1985-86.

2. PC's marketing records for the year 1983-84 and 1984-85.

Institute of Management Development, New Delhi.

Marketing, presented in executive development programme (1985) PC's regional manager article titled "management of functional areas -

SOURCE: 1. The figures for the year 1983-84 and 1984-85 are based on joint, 1. Percentage increase/decrease is calculated by research scholar.

NOTES: 1. NA = Not available.

<table>
<thead>
<tr>
<th>Item</th>
<th>1983-84</th>
<th>1984-85</th>
<th>1985-86</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Kts (in 000)</td>
<td>10.00</td>
<td>11.42</td>
<td>12.85</td>
</tr>
<tr>
<td>2. Distribution of milk</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>3. Villages adopted</td>
<td>21</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>4. Service centres opened</td>
<td>8</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>5. 30-gas plants installed</td>
<td>37</td>
<td>31</td>
<td>27</td>
</tr>
<tr>
<td>6. Soil testing (No. of samples in 000)</td>
<td>9.2</td>
<td>8.78</td>
<td>8.2</td>
</tr>
<tr>
<td>7. Distribution of litera</td>
<td>288.0</td>
<td>279.0</td>
<td>270.0</td>
</tr>
<tr>
<td>8. 1976</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>9. 1977</td>
<td>4</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>
40.9 per cent (i.e. 9.78 thousand) were in IFPC Districts. The number of Bio-gas plants installed were 38 during the year 1984-85 of which 89.47 per cent (i.e. equal to 34 in number) were in IFPC Districts. The number of Service Centres opened by FCI during 1984-85 were 8 and all of them were situated in IFPC Districts. There were 21 villages adopted by FCI during 1984-85, all of them were in IFPC Districts. The number of Mini-kits (of seeds and fertilisers) distributed among the farmers by FCI were 17.41 thousand during 1984-85, of which 59.85 per cent (i.e. equivalent to 10.42 thousand) were in IFPC Districts.

Most of the Promotional Activities of FCI during the year 1985-86 represent a declining trend as compared to the year 1983-84.

During the year 1985-86, the number of Plot Demonstrations conducted by FCI were 481. This shows an overall decline of 23.77 per cent as compared to 1983-84.

The number of block demonstrations conducted by FCI were 48 during the year 1985-86 which shows an overall increase of 1100 per cent as compared to 1983-84. The Group Discussions conducted by FCI during the year 1985-86 were 984, this shows a decline of 21.24 per cent as against the year 1983-84. The number of Field days celebrated were 190 during the year 1985-86 being a decline of 15.56 per
cent over 1983-84. During the year 1985-86, there were 11 Kisan Melas being celebrated by FCI, which amounts to a decline of 65.63 per cent as against the year 1983-84. The number of Farmers Training Programmes arranged by FCI were 136 during the year 1985-86, which is an increase of 7.94 per cent as compared to 1983-84. The number of Dealers Training Programmes conducted were 15 during the year 1985-86, resulting in a decline of 6.25 per cent as compared to 1983-84. The pieces of literature distributed were to the tune of 230 thousand during the year 1985-86 amounting to a decline of 17.56 per cent as compared to the year 1983-84. The number of soil samples tested by FCI were 9.2 thousand during the year 1985-86. No bio-gas plant was installed during the year 1985-86, thereby it has resulted in a hundred per cent decline as compared to the year 1983-84. Similarly no Service Centre was opened during the year 1985-86, thereby a hundred percent decline is recorded as compared to 1983-84.

There is no information available regarding the villages adopted and the distribution of Mini Kits during the year 1985-86.

Thus, the analysis of overall promotional activities undertaken by FCI during the year 1985-86 reveals that there is considerable decline in the level of Promotional
Activities as compared to the year 1983-84. This is an unfortunate event that on one hand FCI's losses are continuously mounting each year and on the other hand its promotional activities are declining each year. One justification of this declining level of Promotional Activities due to FCI is the fact that its capacity utilisation in almost all of the plants is declining, thereby its quantum of production is declining. The basic idea of promotional activities is to enhance fertiliser consumption in selected Districts, which is not supported by the physical quantity of production, as a result the promotional activities are to required/be suppressed.

Thus, FCI was not able to discharge its social accountability towards consumers in terms of the level of overall promotional activities, which are shrinking gradually.

7.3.4 FCI's Intensive Fertiliser Promotion Campaign in Adopted District - Rae Bareli:

The Rae Bareli District was allotted to FCI under Intensive Fertiliser Promotion Campaign during Kharif 1982. The main objective of this programme is to increase fertiliser consumption in selected districts.

Table-37 gives an account of FCI's Intensive Fertiliser Promotion Campaign in Adopted District Rae Bareli.
The various promotional activities undertaken by FCI to increase the fertiliser consumption in this District during the year 1982-83 to 1984-85 are given in detail.

During the year 1982-83, 20 demonstrations were conducted during Kharif season and 20 demonstrations were conducted in Rabi season.

During the year 1982-83, the Group Discussions held were 24 in Kharif and 24 in Rabi season. The Farmers Training Programmes arranged were 12 in Kharif and 12 in Rabi season, 4-field Days were celebrated each in Kharif and Rabi season.

One Kisan Mela was organised during Kharif and one in Rabi season. 80-wall paintings were done during Rabi season of 1982-83. 7,000 pieces of literature were distributed among farmers during the Kharif season and 3,000 pieces in Rabi season of the year 1982-83. The number of Soil Samples tested were 1900 in Kharif season and 1883 in Rabi season of 1982-83.

During the year 1983-84, 20 Demonstrations were done in Kharif season and 6 in Rabi season. The Group Discussions conducted were 24 each in Kharif and Rabi season of 1983-84. The farmers training programmes conducted were 12 each in Kharif and Rabi season. 6-Field Days were celebrated during Rabi season of 1983-84. 1-Kisan Mela was arranged
### Campaign at a Glance in Adopted District - Rae Bareli

**Social:** ICT Marketing Division's booklet on intensive pillar & promotion

- **Notes:** 1. Charter Season Represents Period between April-September
- **2. Charter Season Represents Period between October-March.

<table>
<thead>
<tr>
<th>Test</th>
<th>10. 1990 Samples</th>
<th>1990/00</th>
<th>600</th>
<th>800</th>
<th>1000</th>
<th>1988</th>
<th>3000</th>
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</table>

### PDC's Intensive Pillar & Promotion Campaign in Adopted District - Rae Bareli

**Participants:** 1984-85 1982-83 1983-84 1984-85 1982-83
each in Kharif and Rabi season of 1983-84 and one Exhibition was organised during Rabi season. During the Rabi season of 1983-84, 30 wall paintings were done and 3-hoardings were displayed. 2000 pieces of literature were distributed during Kharif and 3000 in Rabi season of 1983-84. The number of soil samples tested were 3000 in Kharif and 800 in Rabi season of 1983-84.

During the year 1984-85, the demonstrations done by FCI in Rae Bareli District were, 20 each in Kharif and Rabi season. The Group discussions held were 25 each in Kharif and Rabi season of 1984-85. There were 13 Farmers’ Training Programmes conducted each during Kharif and Rabi season. 10-Field Days were celebrated by FCI during Kharif season and an equal number of Field days in Rabi season of 1984-85. The Kisan Mela organised during Kharif season was one and two in Rabi season of 1984-85. 30-Wall Paintings and 10-Special Hoardings were displayed during Rabi season. 2,000 pieces of literature were distributed during Kharif and 5,000 in Rabi season. The number of soil samples tested were 500 in Kharif and 1900 in Rabi season of 1984-85.

There is a repetition of performance as far as the year 1984-85 is concerned as compared to 1982-83. The number of demonstrations done were 20 each in Kharif
and Rabi season just equal to 1982-83 performance. The Group Discussions were 25 each in Kharif and Rabi season of 1984-85 thereby registering one demonstration increase as compared to 1982-83. Similarly the number of Training Programmes conducted for Farmers has shown an increase of one programme in each season as compared to 1982-83. The number of field days celebrated were 10 each in Kharif and Rabi season of 1984-85, thereby an increase of 6-field days each in both the seasons of 1982-83 is recorded. The number of wall paintings were 80 in Rabi of 1982-83, which reduced to 30 in Rabi of 1984-85. Special hoardings were not arranged during Rabi 1982-83 and in Rabi of 1984-85 it has reached to 10. The literature distribution has reduced to 2000 during Kharif of 1984-85 as compared to 7000 in 1982-83, Kharif. It has increased to 5000 in Rabi 1984-85 as compared to 3000 during Rabi 1982-83.

In addition to the promotional activities discussed above the following are some of the steps taken by FCI in the Rae Bareli District, for overall development of farming community.

1. **Extension work on 20-point Programme**: FCI is making efforts to create necessary knowledge of fertiliser use and improved farming methods among farmers by:
i) making special efforts to increase production of pulses and vegetable oil seeds.

ii) pursuing them for implementing programme of social forestry.

iii) training farmers to increase irrigation capacity by stopping misuse of irrigational water.

iv) paying an incentive of Rs. 300 to 500 per 3io-gas plant installed on motivation of FCI's personnel.

v) helping in procuring loans from Banks for installation of 3io-gas plant.

2. Free Supply of Agricultural Implements: FCI is making available the agricultural implements like Seed-cum-Fertiliser drills, Hand sprayers free of cost to farmers, so far it has provided 2 numbers Seed-cum-Fertiliser drills and 5 numbers Hand sprayers.

3. Celebrating National Agricultural Inputs Fortnight:

   This programme is conducted by FCI in coordination with Department of Agriculture, lead banks and other credit issuing agencies. During the year 1983-84 and 1984-85 (Kharif and Rabi seasons) FCI has distributed free of cost:

   Mini Kits of Urea (10 Kg. Packets) 2850 Nos.
   Mini Kits of Seeds 70 Nos.
4. **Credit-cum-Input Melas** in every season are conducted by FCI in the district, some details are:

i) **Kharif/1983** (Jachharawan) : 5.0 Mls Swastik Brand Urea @ 20 Kg. each distributed to 250 farmers.

ii) **Rabi/1983** (Mukhatia) : 20 Kg. Varun Toriya @ 1 Kg. per farmer was distributed.

iii) **Rabi/1983-84** (Lodhwaria) : 50 small and marginal farmers were provided Toriya and wheat seeds.

iv) **Rabi/1983-84** (Lodhwaria adopted village) : 100 small and marginal farmers were provided with wheat-seeds and fertilisers. 5 foot sprayers and 1 medium philips transistor was also given.

v) **Rabi/1983-84** (Mukhatia) : 50 small and marginal farmers were provided with wheat seeds.

vi) **Kharif/1984** (Chhatoh) : 500 small and marginal farmers were provided with 5 Kg. Urea each.

vii) **Rabi/1984-85** (Qasimpur) : 5 Kg. Urea amongst 800 small and marginal farmers each.

vii) **Rabi/1984-85** (Satawan) : 5 Kg. each Urea among 800 small and marginal farmers.

Note: (Name of the places are given in parenthesis).

7.3.5 **Season-wise Consumption of Fertilisers in Adopted District Rae-Bareli**:

The Promotional Activities undertaken by FCI in Rae Bareli District are explained with the help of Table-37. To know what is the impact on fertiliser consumption in Rae Bareli District, Table-38 is prepared which provides
necessary information on season-wise fertiliser consumption. An analysis of Table-38 reveals, the extent to which the FCI's promotional activities have influenced the fertiliser consumption in Rae Bareli District.

A glance at Table-38 reveals that there is an increasing trend of fertiliser consumption in Rae Bareli District over the period 1981-82 to 1984-85 under study. The fertiliser consumption during 1981-82 was 17,651 Metric Tonnes (MTs). It has gradually increased to 23,907 MTs during 1982-83, to 26,260 MTs, during 1983-84, and to 26,854 MTs during 1984-85 respectively. This increase if measured in per cent as compared to previous year amounts to 35.44 during 1982-83, 9.84 during 1983-84 and 2.26 during 1984-85 respectively.

The season-wise consumption of fertilisers in Rae Bareli District was 3,580 MTs. during Kharif and 14,071 MTs during Rabi season of 1981-82. During the year 1982-83, the fertiliser consumption was 2,970 MTs. during Kharif (i.e. a decline of 17.04 per cent compared to Kharif 1981-82) and 20,937 MTs during Rabi (i.e. an increase of 48.8 per cent as compared to Rabi 1981-82). During the year 1983-84 the fertiliser consumption has increased to 6,669 MTs during Kharif, (being an increase of 124.55 per cent over
Table 3.1: Infant Consumption of Puffed RICE

<table>
<thead>
<tr>
<th>Year</th>
<th>Rice %</th>
<th>Decrease/Increase (%)</th>
<th>Metric Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-84</td>
<td>1.90</td>
<td>1.90</td>
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<td>1982-83</td>
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<tr>
<td>1981-82</td>
<td>1.88</td>
<td>1.88</td>
<td>1.88</td>
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</tbody>
</table>

Notes: M = Metric Tonnes
Kharif 1982-33) and 19,591 MTs during Rabi season (being a decline of 6.43 per cent over Rabi of 1982-83). The fertiliser consumption during 1984-85 has increased to 6,873 MTs during Kharif (being an increase of 3.06 per cent over 1983-84 Kharif) and 19,981 MTs during Rabi (being an increase of 1.99 per cent over Rabi of 1983-84).

7.3.6 FCI's Intensive Fertiliser Promotion Campaign in Adopted District - Patna:

Ministry of Agriculture, Government of India, allotted Patna District to Fertiliser Corporation of India during Kharif 1982, as a lead manufacturer to carry out Intensive Fertiliser Promotion Campaign. The objective of this programme is to increase fertiliser consumption.

Table-39 gives the particulars of Promotional Activities undertaken by FCI in the adopted District-Patna during the period from 1982-83 to 1984-85. During the year 1982-83 the number of Demonstrations conducted were 3 in Kharif and 6 in Rabi season. Group Discussions arranged were 9 in number during Kharif and 18 in Rabi of 1982-83. Field Days celebrated were 3 each in Kharif and Rabi season. There were 4-farmers Training Programmes being conducted during Kharif and 5 in Rabi season, whereas Dealers' Training Programmes were limited to 2 in each season.
<table>
<thead>
<tr>
<th>Particulars</th>
<th>Knoll Road</th>
<th>Knoll Road</th>
<th>Knoll Road</th>
<th>Knoll Road</th>
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</thead>
</table>

**Notes:**
1. TSP = Triple Super Phosphate
2. MTS = Metric Tonnes
3. MJA = Maximum Jointed Area
4. Field Days
5. Farmers' Training
6. Dealers' Training
7. X-Rays
8. Soil Testing
9. Soil Testing
10. Seed-Com-Pertiliser
11. Seed-Com-Pertiliser

**Source:** PCI Marketing Division's booklet on "Intensive Pertilizer" Piata.
1-Kisan Mela was organised in each season of 1982-83. Whereas, 700 soil samples were tested during Kharif and 1200 in Rabi season. One Bio-gas plant was installed during Kharif season. Seed-cum-Fertiliser Drills 2 in number were distributed in each of 1982-83.

During the year 1983-84, 6 demonstrations were held in each season. The Group Discussions conducted were 18 in number in each season, whereas Field Days celebrated were 3 in number in each season. Farmers' Training Programmes conducted were 9 in number in Kharif and 4 in Rabi Season. The Dealers' Training Programmes were 2 in number in each season of 1983-84. 10 Metric Tonnes of Triple Super Phosphate was distributed during Kharif of 1983-84. 800 Soil samples were tested during Kharif and 1400 in Rabi season. 3-biogas plants were installed during Kharif of 1983-84. 2 Seed-cum-Fertiliser Drills were provided in each season of 1983-84.

During the year 1984-85, 6 Demonstrations were conducted in Kharif and 5 in Rabi season. 1-Block Demonstration was conducted in Rabi season. The number of Group Discussions held were 18 and Field Days celebrated were 3 in Kharif season. Farmers' Training Programmes conducted were 5 in Kharif and 1 in Rabi season. There were 2 Dealers' Training
Programmes being conducted in Kharif season and 1-Kisan Mela was organised in each season of 1984-85. The Mini Kits distributed were of 6 MTs Urea in Kharif season and 1 MT Urea in Rabi season. 1200 Soil samples were tested by FCI in Patna District during Kharif and 1300 in Rabi season. The Seed-cum-Fertiliser Drills distributed among farmers were 2 in each season of 1984-85.

The Promotional Activities of FCI were almost showing a repetition of performance during 1984-85 as compared to 1982-83. The major changes are:

1. The total number of demonstrations conducted during 1982-83 were (3+6) 9, it has risen to (6+5) 11 during 1984-85.

2. The Group Discussions were 9 and 18 in Kharif and Rabi season respectively, found reduced to a total of 18 in Kharif season of 1984-85.

3. Field Days celebrated were 3 in each season of 1982-83, it has reduced to only 3 in Kharif season of 1984-85.

4. Farmers' Training Programmes were (4+5) 9, in 1982-83, has reduced to (5+1) 6 in number during 1984-85.
5. Dealers' Training Programmes were 2 in each season of 1982-83 and it has declined to a total of 2 in Kharif season of 1984-85.

6. During the year 1982-83, there was no Mini Kits distribution and in 1984-85, 6 MTs. of Urea was distributed in Kharif season and 1 MT of Urea in Rabi season.

7. Soil samples tested were 700 and 1200 in Kharif and Rabi season of 1982-83 respectively, this has increased to 1200 and 1300 in two seasons of 1984-85 respectively.

In addition to above promotional activities, FCI has decided to open an Agro Service Centre in adopted District Patna.

**Agro-Service Centre in Patna District:**

Under the IPPC Programme intensive efforts are being made to start an Agro-Service Centre. The various items that would be made available in Agro Service Centre include Chemical Fertiliser (NPK), Certified Seeds, Seed-cum-Fertiliser Drill, Pump Sets, Sprayers, Pesticides, along with Literature etc.
The Agro-Service Centre will help the farmers in the following ways:

i) Ready availability of quality seeds, fertiliser and other agro-input materials.

ii) Reasonable price of input material as they will not be sold through an outside agency like distributors/dealers.

iii) Agro-service centre would provide all inputs at one place thereby minimise transport costs.

iv) As the Agro-service Centre would be operated by farming community the sense of involvement and mutual trust will prevail there.

7.3.7 Season wise Consumption of Fertilisers in Adopted District Patna:

The main objective of Promotional Activities of FCI is to enhance fertiliser consumption in the selected District so that overall agricultural development takes place in broader sense and the socio-economic upliftment of farming community (i.e. its customers) is possible.

To test as to whether the promotional activities undertaken by FCI in adopted District - Patna, has resulted in an increase in fertiliser consumption in this District, Table-40 is prepared.
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<tbody>
<tr>
<td></td>
<td>35.96%</td>
<td>8.0%</td>
<td>2.9%</td>
<td>1.9%</td>
<td>0.0%</td>
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<td>1222</td>
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<td>947</td>
<td>853</td>
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<td>50.50</td>
<td>36.50</td>
<td>27.50</td>
<td>18.50</td>
<td>12.50</td>
<td>10.50</td>
</tr>
</tbody>
</table>
| Notes:   | 1. **KTS** = Keerf Tones | 2. Increase/Decrease is against previous year | 3. Figure in parentheses indicate over all increase in Keerf consumer consumption during the year 1984-85 (chart). | 4. Increase/Decrease is calculated by the research scholar. | **SOURCE:** PCC Marketing Division's booklet on intensive retailer promotion campaign in a district - Patna.
An analysis of Table-40 reveals the season-wise consumption of fertilisers in adopted district-Patna, during the period 1981-82 to 1984-85. The total fertiliser consumption in Patna district was 11,512 MTs. during 1981-82, and it has increased to 12,122 MTs. during 1982-83. This increase amounted to 5.3 per cent as compared to 1981-82. The fertiliser consumption has further increased to 18,244 MTs. during 1983-84, which is 50 per cent increase over previous year 1982-83.

During the year 1981-82 the fertiliser consumption was 2,083 MTs. in Kharif season. This has declined to 1,939 MTs. during Kharif of 1982-83 being a 6.91 per cent decline as compared to Kharif 1981-82. During the Rabi season of 1981-82, the fertiliser consumption was 9,429 MTs, this has risen to 10,183 MTs. during Rabi of 1982-83, thereby an increase of 8 per cent was registered as compared to Rabi 1981-82. During the year 1983-84 Kharif, the fertiliser consumption has substantially increased to 4,399 MTs. being an increase of 126.87 per cent over Kharif 1982-83. During the Rabi season of 1983-84, the fertiliser consumption was 13,845 MTs, being an increase of 35.96 per cent over 1982-83 Rabi season.

Thus, FCI has failed to discharge its social accountability towards consumers in terms of R & D expenditure which is neither consistent nor increasing but represents
a haphazard rise and fall. The trend of R & D expenditure as reflected by Coefficient of Correlation in comparison to Sales Turnover is alarming, as it is -0.84. It means there is a high degree of negative correlation between R & D expenditure and the Sales Turnover. The situation of equipment failure, process problems, mis-match of design etc, require an intensive research on the part of FCI, but it shows an entirely different trend. The R & D expenditure is decreasing when the Sales Turnover is increasing.

The overall promotional activities were declining during the year 1985-86 as compared to 1983-84. May be because the main object of promotional activities is to enhance fertiliser consumption which is not supported by increasing amount of physical quantity of its output. Thus, in terms of overall promotional activities FCI's performance is not satisfactory.

Under the Intensive Fertiliser Promotion Campaign, Rae Bareli District was allotted to FCI during Kharif, 1982. The effectiveness of the campaign launched by FCI can be observed in view of the increase in fertiliser consumption in Rae Bareli District. The overall increase in fertiliser consumption during the year 1984-85 (Kharif and Rabi) was of 52.14 per cent as compared to the year 1981-82 (Kharif and Rabi).
The Patna District was allotted to FCI during Kharif 1982. The overall increase in fertiliser consumption was 386.89 per cent during (Kharif) 1984-85 as compared to (Kharif) 1981-82.

Thus, FCI has discharged its social accountability successfully towards consumers in the two selected Districts of Rae Bareli and Patna. As the object of promotional activities being enhancement in the level of fertiliser consumption in these districts is achieved by FCI.

7.4 FCI's Social Accountability towards Community:

The fourth segment or interest group towards which FCI has Social Accountability is the 'Community'.

There are several expectations a community has from the business enterprise. Providing employment to persons from certain unprivileged categories will naturally be a service to the community at large. Government has issued guidelines to Public Enterprises in respect of employment of persons from certain categories considered to be unprivileged. FCI being a Public Sector Unit is following the guidelines of Government. In this segment of the chapter, an analysis of persons employed from unprivileged categories is made, to see as to what extent, FCI is discharging its social accountability towards community by providing employment to them.

7.4.1 Trend of Persons Employed from Unprivileged Categories:

Table-41 provides details of persons employed from unprivileged categories by FCI during 1984-85 and 1985-86.
The unprivileged categories include persons belonging to Scheduled Caste (SC), Scheduled Tribe (ST), Ex-Servicemen (ES)/Dependants of those Killed in Action (DKA) and Physically Handicapped (PH) categories in the context of present study. The persons employed from other than these categories may be treated as 'general category' in the present study.

The total number of persons employed from unprivileged categories by FCI during the year 1984-85 were 2,561. Out of which, 1,621 persons were from Scheduled Caste category amounting to 63.3 per cent. The number of persons employed from Scheduled Tribe (ST) category were 684 amounting to 26.71 per cent, of the total number of persons employed from unprivileged categories during 1984-85. There were 200 persons employed from Ex-Servicemen (ES)/Dependants of those Killed in Action (DKA) category and 56 from Physically Handicapped category, amounting to 7.81 per cent and 2.19 per cent respectively, of the total number of persons employed from unprivileged categories during 1984-95.

During 1985-86, the total number of persons employed from unprivileged categories in FCI were 2,427. Out of which 1,547 were from 'SC' category amounting to 63.74 per cent of the total number of persons employed from unprivileged categories. The persons employed from 'ST' category were 638, and 'ES/DKA' category were 187 sharing 26.29
### Table 41

<table>
<thead>
<tr>
<th>Year</th>
<th>PH</th>
<th>ST</th>
<th>SC</th>
<th>Terms</th>
<th>Phillips</th>
<th>S/DKA</th>
<th>Absolute % Inc</th>
<th>Actuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-84</td>
<td>752</td>
<td>192</td>
<td></td>
<td></td>
<td>56</td>
<td>602</td>
<td>-2.6%</td>
<td>704</td>
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<tr>
<td>1984-85</td>
<td>684</td>
<td>162</td>
<td>2561</td>
<td></td>
<td>56</td>
<td>602</td>
<td>-1.8%</td>
<td>704</td>
</tr>
<tr>
<td>1985-86</td>
<td>653</td>
<td>154</td>
<td>1000</td>
<td></td>
<td>56</td>
<td>602</td>
<td>-2.3%</td>
<td>704</td>
</tr>
<tr>
<td>1986-87</td>
<td>650</td>
<td>154</td>
<td>1000</td>
<td></td>
<td>56</td>
<td>602</td>
<td>-0.2%</td>
<td>704</td>
</tr>
<tr>
<td>1987-88</td>
<td>647</td>
<td>154</td>
<td>1000</td>
<td></td>
<td>56</td>
<td>602</td>
<td>-0.4%</td>
<td>704</td>
</tr>
</tbody>
</table>

**Notes:**
- Figures in parentheses indicate % change from previous year and total.
- Figures calculated by the Research Scholar.
- % Increase/Decrease is as compared to previous year and total.
per cent and 7.7 per cent respectively of the persons employed from unprivileged categories during the year 1985-86. 55 persons were employed from 'PH' category which amounts to 2.27 per cent of the total number of persons employed from unprivileged categories during 1985-86.

7.4.2 Share of Persons Employed from Unprivileged Categories in the Total Employment of FCI:

In order to see what is the share of persons employed from unprivileged categories in FCI's total employment, Table-42 is prepared.

A glance at Table-42 reveals that there were 13,221 persons on FCI's roll of employment as on March 31st, 1985. This strength of persons has declined to 12,920 as on March 31st, 1986. This decline of 301 persons during 1985-86 is equal to 2.28 per cent, as compared to previous year 1984-85.

Of 13,221 persons on the roll of FCI's employment during 1984-85, 1,621 persons were from 'SC' category and 684 from 'ST' category. The share of 'SC' category has come to 12.26 per cent and of 'ST' Category, 5.17 per cent of the total number of persons of FCI's roll during 1984-85. The number of persons employed from 'SS/DKA, category was 200 and from 'PH' category 56, amounting to 1.51 per cent.

BY the Research Scholar.

2. Figures in parentheses indicate % share in total and is calculated.

NOTES: 1. * Including general category as on 31st March of respective year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Persons Employed</th>
<th>SC</th>
<th>ST</th>
<th>Total</th>
<th>Total 5/DA</th>
<th>Total 26. Total 10. Total 10. of Unemployed Cases</th>
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</thead>
<tbody>
<tr>
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<td>(18.78)</td>
<td>(0.43)</td>
<td>(1.45)</td>
<td>(4.94)</td>
<td>(11.97)</td>
</tr>
<tr>
<td>1986-87</td>
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<td>2427</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1987-88</td>
<td>(100.0)</td>
<td>(19.37)</td>
<td>(0.42)</td>
<td>(1.51)</td>
<td>(5.17)</td>
<td>(12.26)</td>
</tr>
<tr>
<td>1988-89</td>
<td>13,221</td>
<td>2561</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL NUMBER OF PERSONS EMPLOYED BY PCI AND THE SHARE
and 0.42 per cent respectively of the total number of persons on FCI's roll of employment during 1984-85. Thus, of 13,221 persons being on the FCI's roll of employment during 1984-85, 2,561 persons were from unprivileged categories amounting to 19.37 per cent.

Excluding 'general category' the share of persons employed from 'SC' category was highest (12.26%) and from 'ST' category was second highest (5.17%) and from 'PH' category being lowest (0.42%) of the total number of persons on FCI's roll of employment during 1984-85.

During 1985-86 the total number of persons on FCI's roll of employment were 12,920 of which 1,547 were from 'SC' category, 638 from 'ST' category, 187 from 'SS/DKA' category and 55 from 'PH' category. The share of persons employed from 'SC' category amounts to 11.97 per cent, from 'ST' category to 4.94 per cent, from 'SS/DKA' category to 1.45 per cent and from 'PH' category it amounts to 0.43 per cent of the total number of persons on FCI's roll of employment during 1985-86. Thus, out of 12,920 persons on FCI's roll of employment during 1985-86, 2,427 persons were employed from unprivileged categories amounting to 18.78 per cent. Excluding "general category" the share of persons employed from 'SC' category was highest (11.97%), from 'ST' category
being second highest (4.94%) and from 'P4' category being lowest (0.43%) of the total number of persons on FCI's roll of employment during 1985-86.

7.4.3 **Unit-wise Breakup of persons Employed from Unprivileged Categories by FCI**:

Table-43, gives the details of persons employed from unprivileged categories in different units of FCI.

During year 1984-85, there were 2,561 persons employed by FCI belonging to unprivileged categories. Of which 88 persons were employed in FCI's Central Office, 989 in Sindri Unit, 445 in Gorakhpur Unit. The number of persons employed from unprivileged categories were 333 in Ramagundam Unit, 479 in Talcher Unit and 227 in Marketing Office of FCI during 1984-85.

FCI's Central Office employed 3.44, Sindri Unit employed 38.62 and Gorakhpur Unit employed 17.38 percentage respectively of the total number of persons employed from unprivileged categories by FCI during 1984-85. The number of persons employed from unprivileged categories in Ramagundam unit were 13 percent, in Talcher Unit 18.7 per cent and in Marketing Office 8.86 per cent of the total number of persons employed from unprivileged categories by FCI during the year 1984-85.
| Source: PCI's Annual Report of the Respectve Year |

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*From Unfilled Cells Categories

*Unfill Blank Up Or Persons Employed

Table: 43
During the year 1984-85, the highest share was of Sindri Unit employing 38.62 per cent, second highest share was of Talcher Unit employing 18.7 per cent and the lowest share was of Central Office employing 3.44 per cent of the total number of persons employed from unprivileged categories by FCI.

During 1985-86, 2,427 persons were employed from unprivileged categories by FCI, of which 91 were employed in the Central Office of FCI, 961 in Sindri Unit, 444 in Gorakhpur Unit, and 340 in Ramagundam Unit. The Talcher Unit has employed 471 persons and Marketing Office of FCI has employed 120 persons from unprivileged categories during 1985-86.

FCI's Central Office has employed 3.75 per cent, Sindri 39.6 per cent, Gorakhpur 18.29 per cent and Ramagundam Unit has employed 14.01 per cent of total number of persons employed from unprivileged categories during the year 1985-86. Whereas, the Talcher Unit has employed 19.41 per cent and Marketing Office of FCI has employed 4.94 per cent of the total number of persons employed from unprivileged categories during the year.

The number of persons employed from unprivileged categories in Central Office has increased by 3.41 per cent, in Sindri Unit it has declined by 2.83 per cent, in
Gorakhpur Unit it has declined by 0.23 per cent during 1985-86 as compared to 1984-85. Whereas in Ramagundam Unit, the number of persons employed from unprivileged categories has increased by 2.10 per cent, and in Talcher Unit, it has declined by 1.67 per cent and in Marketing Office it has declined by 47.14 per cent during the year 1985-86 as compared to its previous year.

The highest share of persons employed from unprivileged categories was of Sindri Unit (39.6%), second highest share was of Talcher Unit (19.41%) and the lowest share of persons employed from unprivileged categories was of Central Office (3.75%), of the total number of persons employed from unprivileged categories by FCI during 1985-86.

7.4.4 Unit-wise Employment of Persons from 'SC' Category in FCI:

The number of persons employed from 'SC' category in different units of FCI can be studied with the help of Table-44.

Analysis of Table-44 reveals that the total number of persons employed from 'SC' category by FCI were 1,621 during 1984-85. Of which 63 persons were working in Central Office, 546 working in Sindri, 412 working in
Gorakhpur Unit, 234 were working in Ramagundam Unit, 225 were working in Talcher Unit and 141 persons were working in Marketing Office. It means, the Central Office has employed 3.89 per cent, Sindri, 33.68 per cent, Gorakhpur Unit, 25.42 per cent and Ramagundam Unit 14.44 per cent of the total number of persons employed from 'SC' category during 1984-85. The Talcher Unit has employed 13.88 per cent and Marketing Office has employed 8.69 per cent of the total number of persons employed from 'SC' category during the year. The highest share of employment of persons from SC category was in Sindri Unit (33.68%), second highest share was in Gorakhpur Unit (25.42%), and the lowest share was in Central Office (3.89%) during the year 1984-85.

During the year 1985-86, the total number of persons employed from 'SC' category declined to 1,547, (i.e. decline of 4.57 per cent as compared to previous year 1984-85). Out of 1,547 persons employed from 'SC' category by PCI, 65 were in Central Office, 530 were in Sindri, 410 were in Gorakhpur, 242 in Ramagundam, 219 were in Talcher and 81 were in Marketing Office during 1985-86. The persons employed from 'SC' category during 1985-86 were 4.2 per cent in Central Office, 34.26 per cent in Sindri Unit, 26.5 per cent in Gorakhpur Unit, 15.64 per cent in Ramagundam Unit, 14.16 per cent in Talcher Unit and 5.24 per cent in Marketing Office. The highest share of persons employed

3. Figures in parentheses indicate percentage share in total, and is calculated.

2. % Increase/Decrease is as against previous year and

NOTES:

1. SC = Scheduled caste

<table>
<thead>
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<th>Year</th>
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<th>1984-85</th>
</tr>
</thead>
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</tr>
<tr>
<td>5.24</td>
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<td>32.42</td>
</tr>
<tr>
<td>0 - 2.93</td>
<td>4.93</td>
<td>5.17</td>
</tr>
<tr>
<td>3.18</td>
<td>5.30</td>
<td>5.63</td>
</tr>
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<td>42.55</td>
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<td>81</td>
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<td>10.84</td>
</tr>
<tr>
<td>65</td>
<td>63</td>
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<tr>
<td>3.18</td>
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<td>June-Release</td>
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</tr>
<tr>
<td>July-Release</td>
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</tr>
<tr>
<td>June-Release</td>
<td>46.50</td>
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</tr>
<tr>
<td>July-Release</td>
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<td>50.00</td>
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<td>Absco</td>
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<td>% Inc.</td>
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<tr>
<td>% Inc.</td>
<td>Absco</td>
<td>Absco</td>
</tr>
</tbody>
</table>

UNIT-WISE EMPLOYMENT OF PERSONS FROM SC, CATEGORY IN PCI

TABLE - 44
from 'SC' category was in Sindri Unit (34.26%), second highest share was in Gorakhpur Unit (26.5%), and the lowest share was in Central Office (4.2%). The number of persons employed from 'SC' category were increased by 3.18 per cent in Central Office, declined by 2.93 per cent in Sindri Unit, declined by 0.49 per cent in Gorakhpur Unit, increased by 3.42 per cent in Ramagundam Unit, declined by 2.67 per cent in Talcher Unit and declined by 42.55 per cent in Marketing Office during the year 1985-86, as compared to its previous year i.e. 1984-85.

7.4.5 Unit-wise Employment of Persons from 'ST' Category in FCI:

The number of persons employed from 'ST' category in different units of FCI can be analysed with the help of data furnished in Table-45.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Persons Employed</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Office</td>
<td>7</td>
<td>1.02</td>
</tr>
<tr>
<td>Sindri Unit</td>
<td>419</td>
<td>61.26</td>
</tr>
<tr>
<td>Gorakhpur Unit</td>
<td>5</td>
<td>0.73</td>
</tr>
<tr>
<td>Ramagundam Unit</td>
<td>30</td>
<td>4.39</td>
</tr>
<tr>
<td>Talcher Unit</td>
<td>170</td>
<td>24.85</td>
</tr>
<tr>
<td>Marketing Office</td>
<td>53</td>
<td>7.75</td>
</tr>
</tbody>
</table>

The total number of persons employed from 'ST' category were 684 during 1984-85. Of which 7 persons were employed in Central Office, 419 were in Sindri Unit, 5 were in Gorakhpur Unit, 30 were in Ramagundam Unit, 170 were in Talcher Unit, and 53 were in Marketing Office of FCI. The share of Central Office was 1.02 per cent, of Sindri Unit 61.26 per cent, of Gorakhpur Unit 0.73 per cent, of Ramagundam Unit 4.39 per cent, of Talcher Unit 24.85 per cent and of Marketing Office 7.75 per cent of the total number of persons employed from ST category during 1984-85.
The highest share was of Sindri Unit (61.26%), the second highest share was of Talcher Unit (24.85%) and the lowest share was of Gorakhpur Unit (0.73%) of the total number of persons employed from 'ST' category.

During the year 1985-86, 638 persons were employed from ST category, which is a decline of 5.73 per cent as compared to previous year 1984-85. Out of 638 persons employed from ST category, 8 persons were employed in Central Office, 411 were in Sindri Unit, 6 were in Gorakhpur Unit, 29 were in Ramagundam Unit, 168 were in Talcher Unit, and 16 were in FCI's Marketing Office. The share of Central Office was 1.25 per cent, of Sindri Unit it was 64.42 per cent, of Gorakhpur Unit was 0.94 per cent, of Ramagundam Unit it was 4.55 per cent, of Talcher Unit 26.33 per cent and of Marketing Office, it was 2.51 per cent, of the total number of persons employed from ST category during 1985-86. The highest share was of Sindri Unit (64.42%), the second highest share was of Talcher Unit (26.33%) and the lowest share was of Gorakhpur Unit (0.94%), of the total number of persons employed from ST category.

The number of persons employed from ST category has increased by 14.29 per cent in Central Office, declined by 1.91 per cent in Sindri Unit, increased by 20 per cent in Gorakhpur Unit, declined by 3.33 per cent in Ramagundam Unit, declined by 1.18 per cent in Talcher Unit and decreased
<table>
<thead>
<tr>
<th>Source: RCI's Annual Report of the Research Scholar</th>
</tr>
</thead>
</table>

3. Figures in parentheses indicate percentage share in total and previous year and as compared to previous year and previous months.

### Notes: 1. SP = Scheduled Tribe |

<table>
<thead>
<tr>
<th>Year</th>
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<th>Central</th>
<th>Ramagundam</th>
<th>Gokachpura</th>
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</thead>
<tbody>
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<td>1989-90</td>
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<tr>
<td>1990-91</td>
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<td>1992-93</td>
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<td></td>
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</tbody>
</table>

\[ \text{Source: RCI's Annual Report of the Research Scholar} \]

\[ \text{Notes: 1. SP = Scheduled Tribe} \]

\[ \text{Table} 45 \]
by 69.81 per cent in Marketing Office as compared to previous year 1984-85.

7.4.6 **Unit-wise Employment of persons from ES/DKA Category in FCI**:

The total number of persons employed from ES/DKA category in different units of FCI can be analysed with the help of Table-46.

Analysis of Table-46 reveals that 200 persons were employed from ES/DKA category by FCI during 1984-85. Of which 9 persons were employed in Central Office, 14 were in Sindri Unit, 23 were in Gorakhpur, 58 were in Ramagundam Unit, 75 were in Talcher Unit, and 21 were employed in Marketing Office. The share of Central Office was 4.5 per cent, of Sindri Unit 7 per cent, of Gorakhpur Unit 11.5 per cent, of Ramagundam Unit 29 per cent, of Talcher Unit 37.5 per cent and of Marketing Office 10.5 per cent of the total number of persons employed from ES/DKA category during 1984-85. The highest share was of Talcher Unit (37.5%) and second highest share was of Ramagundam Unit (29%) and the lowest share was of Central Office (4.5%) of the total number of persons employed from ES/DKA category.
**SOURCE: PCIT's Annual Report of the Research Scholar**

3. Figures in parentheses indicate percentage shares in total and is calculated by the

2. % Increase/Decrese is as compared to previous year and

- % Increase/Decrease is as compared to previous year and

---

<table>
<thead>
<tr>
<th>Year</th>
<th>Base</th>
<th>Terms</th>
<th>Decree</th>
<th>*****</th>
<th>Loose</th>
<th>Increase/Decrease</th>
<th>% Increase/Decrease</th>
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<tbody>
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<td>1985-86</td>
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<td>23</td>
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</tr>
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<td>92</td>
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<td>9</td>
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<td>10</td>
<td>9</td>
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<td>1982-83</td>
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<td>21</td>
<td>10</td>
<td>10</td>
<td>9</td>
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</tbody>
</table>

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**NOTES:**
1. **PDA** = PD/SA/SA, **PDA/SA** = PD/SA/SA, **PD/SA/SA** = PD/SA/SA
2. **PDA** = PD/SA/SA, **PDA/SA** = PD/SA/SA, **PD/SA/SA** = PD/SA/SA

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**UNIT-WISE EMPLOYMENT OF PERSONS FROM ES/DA, CAFS/RV IN PPA**

**TABLE 46**
During the year 1985-86, 187 persons were employed from LS/DKA category, which is a decline of 6.5 per cent as compared to previous year. Out of 187 persons employed from LS/DKA category, 9 persons were employed in Central Office, 10 were in Sindri Unit, 23 were in Gorakhpur Unit, 58 were in Ramagundam Unit, 75 were in Talcher Unit, and 12 were in Marketing Office. The share of Central Office was 4.8 per cent, of Sindri Unit 5.35 per cent, of Gorakhpur Unit 12.3 per cent, of Ramagundam Unit 31.02 per cent, of Talcher Unit 40.11 per cent and of Marketing Office 6.42 per cent of the total number of persons employed from LS/DKA category by FCI during 1985-86. The highest share of employment of persons from LS/DKA category was in Talcher Unit (40.11%), second highest share was of Ramagundam Unit (31.02%) and the lowest share was of Central Office (4.8%). However, there was no change in the number of persons employed from LS/DKA category in Central Office, Gorakhpur, Ramagundam and Talcher Units, whereas in Sindri Unit, it has declined by 28.57 per cent and in Marketing Office, it has declined by 42.87 per cent during 1985-86, as compared to 1984-85.

7.4.7 Unit-wise Employment of Persons from 'PH' Category in FCI:

The number of persons employed from 'PH' category in different units of FCI can be studied with the help of Table-47.
Analysis of Table-47 reveals that 56 persons were employed by PCI from 'PH' category, during 1984-85. Out of which 9 persons were employed in Central Office, 10 were in Sindri Unit, 5 in Gorakhpur Unit, 11 in Ramagundam Unit, 9 in Talcher Unit and 12 in Marketing Office. The share of employment of persons from 'PH' category in Central Office was 16.07 per cent, in Sindri Unit 17.86 per cent, in Gorakhpur Unit 8.93 per cent, in Ramagundam Unit 19.64 per cent, in Talcher Unit 16.07 per cent, and in Marketing Office 21.43 per cent during the year 1984-85. The highest share of employment of persons from 'PH' category was in Marketing Office (21.43%), the second highest share was (19.64%) in Ramagundam Unit, and the lowest share was in Gorakhpur Unit (8.93%).

During the year 1985-86, the number of persons employed from PH category were 55, which is a reduction of 1.79 per cent as compared to previous year 1984-85. Of 55 persons employed from PH category, 9 were in Central Office, 10 were in Sindri Unit, 5 in Gorakhpur Unit, 11 in Ramagundam Unit, 9 in Talcher Unit, 11 in Marketing Office. The share of persons employed from PH category was 16.36 per cent in Central Office, 18.19 per cent in Sindri Unit, 9.09 per cent in Gorakhpur Unit, 20 per cent in Ramagundam Unit, 16.36 per cent in Talcher Unit and

Calculations by the Research Scholar.

3. Figures in parentheses indicate percentage share in total and is

2. % Increase/Decrease is as against previous year.

Notes: I. PH = Physically Handicapped.

<table>
<thead>
<tr>
<th>Year</th>
<th>Base</th>
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<th>Terms Decrease/June Release</th>
<th>Total</th>
</tr>
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<td>118.6</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE 47
20 per cent in Marketing Office during the year 1985-86. The highest share of persons employed from PH category was (20 per cent) in Ramagundam Unit and Marketing Office, the second highest share was in Sindri Unit (18.19 per cent) and the lowest share was in Gorakhpur Unit (9.09 per cent) during the year 1985-86. There was no change in the total number of persons employed from 'PH' category in different unit of FCI except in Marketing Office where it has declined by 8.33 per cent during the year 1985-86 as compared to previous year 1984-85.

7.5 Summary:

To study social accountability of FCI two types of parameters are chosen—'Economic Parameters' and 'Social Parameters'. The Social Accountability of FCI is studied in this chapter with the help of 'Social Parameters'. For this purpose various interest groups towards which FCI has social accountability are divided into four major segments. They are shareholders, employees, consumers and community. Each group is studied individually to see what actions FCI has taken to discharge its social accountability towards them.

FCI's Social Accountability towards shareholders (in this case the Government of India because FCI is a Central Government owned company) is studied with the help
of "Return of Total Shareholders Equity (ROTSE)" which reveals how the company has utilised the owners funds in terms of Returns.

The Return of Total Shareholders Equity (ROTSE) shows an overall increasing trend of losses incurred by FCI during the period 1978-79 to 1985-86 under study.

The second group is of 'Employees' towards which FCI has social accountability. To study FCI's social accountability towards this group, expenditure incurred by FCI on six staff benefit activities are chosen.

The total expenditure incurred by FCI on staff benefit activities was Rs. 451.30 lakhs during 1979-80 which was continuously increasing and reached to Rs. 925.31 lakhs during the year 1985-86, registering a growth of Rs. 474.01 lakhs equivalent to 105.03 per cent, as compared to 1979-80.

During the period from 1979-80 to 1985-86, the expenditure incurred on township occupies top rank. The expenditure incurred on medical facilities occupies second top position during the period from 1979-80 to 1985-86.

However, in terms of expenditure, the lowest priority was given to 'Transport' during the period from 1979-80
to 1981-82. Whereas 'Social and Cultural Activities' got lowest priority during the period from 1982-83 to 1985-86.

The amount spent on township shows an overall increasing trend except in one year where it has declined by 1.62 per cent (in 1980-81) as against previous year. The expenditure incurred on maintenance of School and educational facilities also shows a continuous rising trend during the period under study. The amount spent on medical facilities also provides similar rising trend during the period (1979-80 to 1985-86) under study. The expenditure incurred by FCI on Transport shows an overall increasing trend with an exception in the year 1982-83, when the expenditure has reduced by 1.5 per cent as compared to previous year 1981-82. The expenditure incurred on "Social and Cultural Activities" also shows an increasing trend during the period from 1979-80 to 1985-86 under study, with two exceptions. During the year 1982-83 the expenditure incurred on Social and Cultural Activities has reduced by 86.59 per cent as compared to previous year, which is the highest decline as against previous year, during the period of study.

The expenditure on 'staff benefits per employee' shows a continuous increasing trend during the period under study. The maximum increase in the expenditure incurred
on 'Staff benefits per employee' as against previous year, was Rs. 0.012 lakhs equal to 27.91 per cent during the year 1983-84.

The correlation refers to relationship between two variables i.e. an increase/decrease in one variable results in increase/decrease in another variable. If both the variables move in the same direction, the correlation is said to be 'positive correlation' and in case both the variables move in directions opposite to each other, the correlation is called "Negative Correlation". The Correlation varies between +1 (Perfect Positive Correlation), and -1 (Perfect Negative Correlation) however, Zero indicates non-existence of correlation between two variables.

The coefficient of correlation between FCI's net losses and FCI's expenditure on staff benefits is +0.14 which shows a positive but low degree of correlation between these two variables. Being positive correlation, it is clear that as FCI's losses are increasing, the expenditure on staff benefits is also increasing. This can be justified for two reasons, one is that the expenditure on staff benefits is fractional as compared to the quantum of losses incurred, thereby the losses does not affects management thinking towards staff benefits expenditure. On the other hand, as
FCI is incurring huge losses and in such situation, the management did not intend to create employee dissatisfaction affecting industrial peace, hence, in spite of increase in quantum of losses, the expenditure on staff benefits is not curtailed.

The coefficient of correlation between FCI's Sales Turnover and FCI's expenditure on Staff Benefits is +0.59 value, this shows that there is positive correlation i.e. the increase in Sales Turnover will support increase in expenditure on Staff Benefits and vice versa. Moreover this positive correlation is of high degree as it is inclining towards +1 (perfect positive correlation) which is obvious for the reason that Sales Turnover being the only major source of revenue, its volume will influence the allocation of expenditure on various heads including 'Staff benefits'.

The third interest group towards which FCI has Social Accountability is 'Consumers'. Consumers are considered as the most important interest group which a business enterprise deals with. To study FCI's social accountability towards consumers, two parameters are selected, one is expenditure incurred on Research & Development and the other is FCI's overall Promotional Activities undertaken with special reference to two adopted districts i.e. Rae Bareli and Patna.
As the consumers of FCI are those related to Agriculture or Farming Community, who are rural based. An analysis of various activities undertaken by FCI not only to impart fertiliser-use knowledge but for overall development, of the farming community helps in studying social accountability of FCI towards its consumers.

The importance of Research and Development activities has universal acceptance but the expenditure incurred by FCI on this head was neither consistent nor increasing, but shows a haphazard rise and fall. The trend of R & D expenditure as represented by Coefficient of Correlation in comparison to Sales Turnover/alarming. The Coefficient of Correlation between FCI's Sales Turnover and R & D expenditure is -0.84 i.e. a high degree of negative correlation because it is inclining towards- 1 value which represents Perfect Negative Correlation.

It means as the Sales Turnover was increasing the expenditure on R & D was declining during the period under study. As FCI is continuously incurring, losses, the R & D activities require more attention and rigorous exercise. Various causes responsible for production loss in FCI that are being analysed in Chapter-6 reveals that the problems relating to Equipment failure, process trouble mis-match of design, repairs and replacement in Annual Turn Around Job etc; are considerable. All these problems
can be resolved with the help of intensive research and development programmes, thereby the production losses can be reduced to a larger extent, if not totally wiped out.

The Ministry of Agriculture, Government of India has launched an Intensive Fertiliser Promotion Campaign (IFPC) in selected districts from Kharif 1981. For each selected district a lead manufacturer has been identified to undertake various promotional activities to enhance fertiliser consumption in these districts.

An analysis of overall promotional activities undertaken by FCI during the year 1985-86 reveals that there is considerable decline in the level of promotional activities as compared to the year 1983-84.

One justification of declining trend in FCI's promotional activities may be the fact that its capacity utilisation is declining in almost all of its plants, thereby the quantum of production in physical terms is also declining. The basic idea of promotional activities is to enhance fertiliser consumption in selected districts, which is not supported by physical quantities of production, as a result the promotional activities were required to be suppressed.
The Rae Bareli District was allotted to FCI under Intensive Fertiliser Promotion Campaign during Kharif 1982. There is an increasing trend of fertiliser consumption in FCI's adopted district Rae Bareli during the period 1981-82 to 1984-85 under study. The overall increase in fertiliser consumption during the year 1984-85 (Kharif and Rabi) was of 52.14 per cent as compared to the year 1981-92 (Kharif and Rabi).

The Patna district was allotted to FCI during Kharif 1982 to carry out Intensive Fertiliser Promotion Campaign. There was an overall increase in fertiliser consumption of 386.89 per cent during Kharif 1984-85 as compared to Kharif 1981-82 which is an achievement on the part of FCI.

The fourth segment or interest group towards which FCI has social accountability is the "Community". The community has several expectations from business enterprise, providing employment to unprivileged categories is one of them. The public sector enterprises have special role to play and the Government has issued guidelines to public sector units in respect of employment of persons from unprivileged categories.

The total number of persons employed from unprivileged categories is showing a declining trend. During 1984-85, 2,561
persons were employed from unprivileged categories, which decreased to 2,427 during 1985-86 amounting to a decline of 5.23 per cent as compared to its previous year. The trend of decline is found in all unprivileged categories.

The total number of persons on FCI's roll of employment were 13,221 during 1984-85 which declined to 12,920 during 1985-86 being a decrease of 301 persons, equal to 2.28 per cent as compared to its previous year. Of the 13,221 persons on FCI's roll of employment during 1984-85, 2,561 persons employed were from unprivileged categories, amounting to 19.37 per cent. Of the 12,920 persons on FCI's roll of employment during 1985-86, 2,427 persons employed were from unprivileged categories amounting to 18.78 per cent.

There were 2,561 persons employed from unprivileged categories during the year 1984-85. The highest share was of Sindri Unit (38.6 per cent), second highest share was of Talcher Unit (18.7 per cent) and the lowest share was of Central Office (3.44 per cent) of the total number of persons employed from unprivileged categories during 1984-85.

During the year 1985-86, 2,427 persons were employed from unprivileged categories by FCI. The highest share was of Sindri (39.6%), second highest share was of Talcher
Unit (19.41%) and the lowest share was of Central Office (3.75%) of the total number of persons employed from unprivileged categories during the year 1985-86.

1,621 persons were employed from SC category by FCI during 1984-85. The highest share was in Sindri Unit (33.68%), second highest share was of Gorakhpur Unit (25.42%), and the lowest share was of Central Office (3.89%).

During the year 1985-86, 1,547 persons were employed from SC category by FCI. The highest share of persons employed from SC category during the year 1985-86 was in Jindri (34.26%), the second highest share was in Gorakhpur Unit (26.5%), and the lowest share was in Central Office (4.2%).

684 persons were employed from ST category during 1984-85 by FCI. The highest share of persons employed from ST category was in Sindri (61.26%), the second highest was in Talcher Unit (24.85%) and the lowest share was in Gorakhpur Unit (0.73%).

During the year 1985-86, 638 persons were employed from ST category. The highest share of persons employed from ST category was in Sindri Unit (64.42%), the second highest share was in Talcher Unit (26.33%) and the lowest
share was in Gorakhpur Unit (0.94 per cent) during the year 1985-86.

200 persons were employed from "D/D category during the year 1984-85. The highest share of persons employed from "D/D category was in Talchur Unit (37.5%), second highest share was in Ramagundam Unit (29%), and the lowest share was in Central Office (4.3%) during the year 1984-85.

During the year 1985-86, 187 persons were on FCI's roll of employment from "D/D category. The highest share of persons employed from "D/D category was in Talchur Unit (40.11%), second highest share was in Ramagundam Unit (31.02%), and the lowest share was in Central Office (4.8%).

56 persons were employed from PH category during 1984-85. The highest share of employment of persons from PH category was in Marketing Office (21.43%), the second highest share was in Ramagundam Unit (19.64%), and the lowest share was in Gorakhpur Unit (8.93%) during 1984-85.

During the year 1985-86, 55 persons were employed from PH category. The highest share of employment of persons from PH category was in Ramagundam Unit (20%) and Marketing Office (20%), the second highest share was in Sindri Unit (18.19%), and the lowest share was in Gorakhpur Unit (9.09%).
CHAPTER - 8

FINDINGS OF THE SURVEY
In order to have an insight into managerial views regarding the concept of Social Accountability and its implementation, a questionnaire (Annexure II) was prepared. Response of middle-level-managers of FCI was obtained by personal visits to FCI's Central Office at New Delhi. There are 137 middle-level-managers in FCI's Central Office, of which 17 percent response could be obtained. The middle-level-management is chosen for questionnaire study, because they are involved in the implementation of FCI's policies.

The middle-level-managers of various departments of FCI fall under the pay scale of:

a) Rs. 960-Rs. 1610, Rs. 1350-Rs. 1870 and
b) Rs. 1563-Rs. 2160.

The analysis of the questionnaire is done in this chapter.
### TABLE - 48

**ACCEPTANCE OF THE CONCEPT OF SOCIAL ACCOUNTABILITY**

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Q.1 whether a Company has Social Accountability</th>
<th>No.</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td></td>
<td>23</td>
<td>100</td>
</tr>
<tr>
<td>NO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**: 23 100

When asked whether the managers accept that a company has Social Accountability, cent per cent response was positive, as evident from Table-48.

---

Note: 1. No. = Number  
2. Q. = Question number in the Questionnaire (Annexure II)
When the middle-level-managers were asked to suggest a priority among selected groups to whom a company is socially responsible. The response was as given in Table-49.

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Government</th>
<th>Customers</th>
<th>Employees</th>
<th>Shareholders</th>
<th>Society</th>
<th>Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Per cent</td>
<td>No.</td>
<td>Per cent</td>
<td>No.</td>
<td>Per cent</td>
<td>No.</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>35</td>
<td>8</td>
<td>35</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>9</td>
<td>11</td>
<td>48</td>
<td>8</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>13</td>
<td>2</td>
<td>9</td>
<td>10</td>
<td>43</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>-</td>
<td>8</td>
</tr>
</tbody>
</table>

TOTAL: 23 100 23 100 23 100 23 100 23 100 23 100

35 per cent of the Respondents were of the opinion that the Government should be given first priority, 9 per cent were of the opinion that Government should be given second priority, 13 per cent were of the opinion that third priority should be given to Government, 9 per cent were in favour of the Government being given fourth priority, 17 per cent
had a view that the Government being given fifth priority and 13 per cent of the respondents gave sixth priority to the Government. 4 per cent of the respondents did not give any response towards this group.

35 per cent of the respondents have given first priority to customers, 48 per cent of them have given second priority and 9 per cent have given third priority to customers being a group towards which a company has social accountability. 4 per cent of the respondents had a view that customers be given fourth priority. 4 per cent of the respondents have not given response towards this group.

18 per cent of the respondents were of the opinion that Employees should given first priority in respect of discharge of Social Accountability. Whereas, 35 per cent were of the opinion that second priority should be given to Employees, and 43 per cent of the respondents were of the opinion that Employees should be given third priority. Whereas, 4 per cent of the respondents have given fifth priority to employees.
4 per cent of the respondents have given second priority to Shareholders, 13 per cent of the respondents were of the opinion that third priority should be given to them and 17 per cent had a view that shareholders be given fourth priority, another 17 per cent had a view that fifth priority be given to shareholders. 13 per cent of the respondents were of the opinion that sixth priority be given to shareholders. 36 per cent of the respondents did not give any response towards this group.

Regarding the priority to be given to the 'Society', as a group towards which a company has Social Accountability, 9 per cent of the respondents have given first priority, 4 per cent of the respondents were of the opinion that second priority to be given, 26 per cent were of the opinion that fourth priority should be given, 31 per cent were of the opinion that fifth priority should be given and 26 per cent of the respondents have given sixth priority. However, 4 per cent of the respondents have given no response towards this group.
22 per cent of the respondents were of the opinion that the suppliers should be given third priority, 43 per cent of them were of the opinion that fourth priority should be given to suppliers. Whereas 17 per cent of the respondents were of the view that fifth priority should be given to suppliers and 9 per cent viewed that sixth priority should be given to them. Another 9 per cent of the respondents have not given any response towards the suppliers.
TABLE - 50

PARAMETERS TO MEASURE SOCIAL ACCOUNTABILITY

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Suggestions</th>
<th>Response</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Achievement of the objectives of the company</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Customer Service</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>3.</td>
<td>Implementation of 20-point programme</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>4.</td>
<td>Pollution Control</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>5.</td>
<td>Community Development Programme</td>
<td>17</td>
<td>74</td>
</tr>
<tr>
<td>6.</td>
<td>Safety &amp; Security of employees at their residences near operating plants</td>
<td>13</td>
<td>57</td>
</tr>
<tr>
<td>7.</td>
<td>Accidents</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td>8.</td>
<td>Medical Facilities</td>
<td>14</td>
<td>61</td>
</tr>
<tr>
<td>9.</td>
<td>Educational Facilities</td>
<td>12</td>
<td>57</td>
</tr>
</tbody>
</table>

When PCI's middle-level managers were asked to suggest parameters to measure Social Accountability, the response was as mentioned in Table-50. Analysis of the Table-50 reveals that 'Achievement of the objectives
of the company' was considered to be the most important parameter to measure Social Accountability of a Company backed by 100 per cent respondents. The importance of 'Community Development Programmes' is expressed by 74 per cent of the respondents. 'Medical facilities' being a parameter was suggested by 61 per cent of the respondents, 'safety and security of employees at their residences near workplace' was backed by 57 per cent of the respondents. Providing 'Educational Facilities' was considered as parameters to measure Social Accountability of a company by 52 per cent of the respondents, whereas measures to avoid 'Accidents' has been considered as another parameter by 35 per cent of the respondents. 'Implementation of 20-point programmes' and 'pollution control' have been suggested, each by 22 per cent of the respondents. 'Customer Service' is considered as a parameter to measure Social Accountability of a company by 17 per cent of the respondents.
Table-51 gives the opinion of the respondents regarding the question about who should monitor the Social Accountability. Analysis of the Table-51 reveals that 39 per cent of the respondents were of the opinion that 'Management' should monitor the Social Accountability of a company. Another 39 per cent of the respondents were of the opinion that 'Management and Government' should jointly monitor the Social Accountability. However, 22 per cent of the respondents were of the view that the Government is most suitable to discharge monitoring function of Social Accountability.
On the question whether FCI has specific budget allocation towards Social Accountability measures, 96 per cent of the respondents agreed that it has, whereas 4 per cent of the respondents have denied, as shown in Table-52.

<table>
<thead>
<tr>
<th>Response Category</th>
<th>No.</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>22</td>
<td>96</td>
</tr>
<tr>
<td>NO</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>NO Response</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>23</td>
<td>100</td>
</tr>
</tbody>
</table>
When asked as to how much expenditure FCI would like to incur on various Social Accountability measures, majority of the respondents i.e. 87 per cent did not respond. Whereas 9 per cent of the respondents were of the opinion that 25 per cent of the Sales Turnover to be spent on Social Accountability Measures and 4 per cent of the respondents have given their opinion that 20 per cent of profit should be spent on Social Accountability measures.
<table>
<thead>
<tr>
<th>Actions taken by FCI</th>
<th>No.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Towards Employees:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Facilities</td>
<td>23</td>
<td>100</td>
</tr>
<tr>
<td>Educational Facilities</td>
<td>23</td>
<td>100</td>
</tr>
<tr>
<td>Canteen</td>
<td>23</td>
<td>100</td>
</tr>
<tr>
<td>Transport</td>
<td>22</td>
<td>96</td>
</tr>
<tr>
<td>Housing</td>
<td>23</td>
<td>100</td>
</tr>
<tr>
<td>Recreation</td>
<td>14</td>
<td>61</td>
</tr>
<tr>
<td>Sports &amp; Games</td>
<td>13</td>
<td>57</td>
</tr>
<tr>
<td>Uniform</td>
<td>10</td>
<td>44</td>
</tr>
<tr>
<td>Death-benefit-Scheme</td>
<td>18</td>
<td>78</td>
</tr>
<tr>
<td>Group Personal Accident Scheme</td>
<td>17</td>
<td>74</td>
</tr>
<tr>
<td><strong>Towards Community:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kisan Melas</td>
<td>20</td>
<td>87</td>
</tr>
<tr>
<td>Field Days</td>
<td>21</td>
<td>91</td>
</tr>
<tr>
<td>Distribution of Mini Kits of Fertilizers &amp; Seeds</td>
<td>15</td>
<td>65</td>
</tr>
<tr>
<td>Free Test of Soil Samples</td>
<td>13</td>
<td>78</td>
</tr>
<tr>
<td>Pollution Control</td>
<td>16</td>
<td>70</td>
</tr>
</tbody>
</table>

*Table-Contd....*
<table>
<thead>
<tr>
<th>Actions taken by FCI</th>
<th>No.</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertiliser distribution</td>
<td>10</td>
<td>44</td>
</tr>
<tr>
<td>Outlets in Remote areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment of local persons where plants are operating</td>
<td>10</td>
<td>44</td>
</tr>
<tr>
<td>Employment of persons from unprivileged categories</td>
<td>9</td>
<td>35</td>
</tr>
<tr>
<td>Adult Education</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Educating small family norms and distribution of contraceptives</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>Social Forestry</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Providing Medicines and clothing to poor people around its Central Office &amp; operating plants</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

When asked about the actions taken by FCI to discharge its Social Accountability, the middle-level-managers have responded as evident from Table-54.

The response can be divided into two categories, one is actions taken by FCI to discharge its Social Accountability towards employees and the other is towards community as a whole.

The various actions enumerated by FCI middle-level-management in respect of employee group are, Medical facilities, Educational Facilities, Canteen
and Housing facilities backed by 100 per cent respondents. Whereas Transport facility is backed by 96 per cent respondents, Recreation by 61 per cent respondents and Sports and Games is supported by 57 per cent of the respondents. 44 per cent of the respondents have mentioned that Uniform provided by FCI, and 58 per cent of the respondents have mentioned that Death Benefit Scheme are actions taken by FCI to discharge its Social Accountability. 74 per cent of the respondents have mentioned that Group Personal Accidents Scheme is an action taken by FCI to discharge its Social Accountability.

Towards Community as a whole, the action enumerated by FCI middle-level-management are Kisan Melas, supported by 87 per cent respondents, Field Days supported by 91 per cent respondents and Distribution of Mini Kits of Fertilisers and Seeds was supported by 65 per cent of the respondents. Free Test of Soil Samples and Pollution Control were treated as actions taken by FCI to discharge its Social Accountability by 78 per cent and 70 per cent of the respondents respectively. 'Fertiliser distribution outlets in remote areas' was supported by 44 per cent of the respondents, 'employment of local persons where the
plants are operating' was also supported by 44 per cent of the respondents. 'Employment' of persons from unprivileged categories' was supported by 35 per cent of the respondents, and Adult Education was supported by 30 per cent of the respondents. 'Educating Small Family norms and distribution of contraceptives' was treated as an action taken by FCI to discharge Social Accountability, by 22 per cent of the respondents. 'Social Forestry' was supported by 30 per cent of respondents whereas, 'Providing medicines and clothing to poor people living around FCI's Central Office and its Operating Plants' was considered as an action taken by FCI to discharge its Social Accountability by 18 per cent of the respondents.
Generally it is said that public sector is discharging social accountability more actively than the private sector. When asked to the middle-level-managers of FCI, as to which sector is discharging social accountability actively, 48 percent of the respondents agreed that only public sector is discharging social accountability actively. Whereas 52 percent of the respondents were of the opinion that public and private both the sectors are actively discharging social accountability (as evident from Table-55).

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Public Sector</th>
<th>Private Sector</th>
<th>Both the Sectors</th>
<th>No Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>Per cent</td>
<td>No.</td>
<td>Per cent</td>
</tr>
<tr>
<td>YES</td>
<td>11</td>
<td>48</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NO</td>
<td>12</td>
<td>52</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No Response</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

TOTAL: 23 100 - - 23 100 - -
TABLE - 56

SOCIAL ACCOUNTABILITY AND PROFITS OF THE COMPANY

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Whether Discharge of Social Accountability is a constraint on the profits of the Company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>23</td>
</tr>
</tbody>
</table>

Regarding the most controversial question, whether Social Accountability is a constraint on the profits of the company, opinion of the middle-level-managers of FCI is analysed in the Table-56. 65 per cent of the respondents accept that discharge of Social Accountability is not a constraint on the profits of the company. While 31 per cent of the respondents were of the opinion that discharge of social accountability is a constraint on the profits of the company. Whereas, 4 per cent of the respondents had a view that discharge of social accountability is partly a constraint on the profits of the company.
When asked about the difficulties encountered in discharge of Social Obligations, the only answer found by all the respondents was 'the limited availability of Finance', as evident from Table-57.

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Response Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>23</td>
<td>100</td>
</tr>
</tbody>
</table>

**TOTAL : 23 100**
Table 58 gives the response on the question whether FCI has a Written Policy Statement concerning Social Accountability. Analysis reveals that 83 per cent of the respondents agreed that FCI has written policy statement concerning Social Accountability. Whereas 17 per cent have denied it.
Summary:

The analysis of the opinion of the middle-level managers of FCI reveals that all the respondents have accepted that a company has social accountability. 35 per cent of the respondents were of the opinion that customers should be given the first priority, and another 35 per cent of the respondents were of the opinion that the government should be given the first priority, among the groups towards which a company has social accountability.

48 per cent of the respondents were of the opinion that customers should be given second priority, whereas, 35 per cent of the respondents viewed that employees should be given second priority among groups towards which a company has social accountability.

43 per cent of the respondents were of the opinion that employees should be given third priority and 22 per cent of the respondents have given third priority to suppliers.

43 per cent of the respondents were of the view that suppliers should be given fourth priority and 26 per cent were of the view that society should be given fourth priority.
31 per cent of the respondents have given fifth priority to society and 17 per cent have given fifth priority to Government and another 17 per cent of the respondents have given fifth priority to suppliers and similarly 17 per cent of the respondents have given fifth priority to shareholders, as a group towards which a company has social responsibility. 26 per cent of the respondents were of the opinion that society should be given sixth priority and 13 per cent were of the opinion that shareholders should be given sixth priority and another 13 per cent were of the opinion that Government should be given sixth priority among various groups.

When the respondents were asked to suggest parameters to measure social accountability, 'achievement of the objectives of the company' was supported by 100 per cent respondents. The 'Community Development Programmes' was suggested as a parameter by 74 per cent of the respondents and 'Medical Facilities' was considered as parameter to measure social accountability by 61 per cent of the respondents.

Regarding the monitoring of social responsibility, 39 per cent of the respondents agreed that Management is most suitable and another 39 per cent of the respondents
agreed that management and government should jointly monitor social responsibility measures.

In reply to the question, whether FCI has specific budget allocation, 96 per cent of the respondents answered 'Yes' whereas, 4 per cent have denied.

When asked as how much expenditure FCI would like to incur on Social Accountability measures, 87 per cent of the respondents did not reply. Whereas, 9 per cent of them were of the opinion that 25 per cent of the Sales Turnover and 4 per cent of the respondents were of the opinion that 20 per cent of the Profit should be spent by FCI on various Social Accountability measures.

When FCI's middle-level-managers were asked to mention the actions taken by FCI to discharge its social accountability, 100 per cent of the respondents have mentioned Medical facilities, Educational facilities, Canteen and Housing. Transport facilities was mentioned by 96 per cent of the respondents, and Field Days was supported by 92 per cent of the respondents.

48 per cent of the respondents were of the opinion that public sector is actively discharging social respon-
sibility and 52 per cent were of the view that both the sectors i.e. Public and Private are actively discharging social responsibility.

65 per cent of the respondents observed that discharge of social accountability is not a constraint on the profits of the company whereas 31 per cent felt that it is a constraint on the profits of the company.

The only difficulty in respect of discharge of Social Accountability as revealed by the survey was the limitation of Finance, supported by 100 per cent respondents.

In reply to the question whether FCI has written policy statement towards social accountability, 83 per cent of the respondents agreed and 17 per cent have denied it.
Chapter 9

CONCLUSIONS AND SUGGESTIONS

9.1 Conclusions:

9.1.1 Economic Parameters.
9.1.2 Social Parameters.
9.1.3 Questionnaire Analysis.
9.1.4 Test of Hypothesis.

9.2 Suggestions:

9.2.1 Suggestions to Improve Capacity Utilisation
9.2.2 Suggestions to Improve Managerial Efficiency
9.1 CONCLUSIONS

The present Research is intended to study the Social Accountability of Fertiliser Corporation of India. For this purpose, two types of Parameters are selected, one is to study the Social Accountability of FCI in terms of its economic operations. The another type of parameters is selected to study the Social Accountability of FCI towards different interest groups which are affected by the operations of FCI directly or indirectly. The former category of parameters is termed as 'Economic Parameters' and the latter is 'Social Parameters'.

The 'Economic Parameters' are selected with a view to study, how FCI performs its economic functions, i.e. its Production, Capacity utilisation, Factors affecting capacity utilisation, its Financial and Down time production losses.

The 'Social Parameters' are selected with a view to study, how FCI is protecting the interest of various interest-groups of the society of which it is a part. For this purpose, the various segments of the society are allocated into four major interest groups viz., Shareholders, Employees, Consumers (i.e. Farming Community).
and community at large. To study how FCI is protecting the interest each group of the Society, different social functions have taken into account. To study the interest of 'Shareholders', 'Return' on their Equity is chosen. Towards 'Employee-group', the amount spent by FCI on various Staff-benefit activities are studied. In respect of 'Consumers', the expenditure incurred on Research and Development, level of various promotional activities undertaken by FCI are taken into consideration. Whereas, to study the interest of the 'Community', employment of persons from unprivileged categories by FCI is studied.

The Conclusions of the study are briefed here:

9.1.1 Economic Parameters:

a) Capacity Utilisation of FCI Plants:

Analysis of the production figures reveal that the maximum capacity utilisation of Sindri Rationalisation Plant (SRP) was 13.5 per cent, of Sindri Modernisation Plant (SMP), it was 59.0 per cent, of Corakhput Unit, it was 62.9 per cent, of Ramagundam Unit, it was 47 per cent, and of Balcher Unit, it was 24.2 per cent during the period under study.
During the period under study (i.e. 1978-79 to 1985-86) the share of loss incurred by Sindri Unit was highest as compared to other FCI Units with a single exception of 1982-83 when Talcher Unit's loss was highest. The Gorakhpur Unit's share of loss continuous to be the lowest among FCI Units except in the year 1984-85 when the Ramagundam Unit's share of loss was lowest as compared to other FCI Units.

The Fertiliser Industry Coordination Committee (FICC) has determined certain consumption norms for each plant based on the nature of feedstock, technology and other factors. But during the period under study, the FCI plants could not adhere to these norms and their consumption was above these norms, with the exception of the year 1981-82, when Ammonia Consumption was below the FICC norm and in 1980-81 and 1981-82 the Steam Consumption in Sindri Unit was below the norm. The Ramagundam and Talcher Units are similar in respect of Feedstock, Technology and Capacity, but the input consumption of Ramagundam Unit was less than the Talcher Unit's consumption though above the FICC norms.

Among the different causes responsible for FCI's production losses during the period from 1979-80 to 1985-96 under study, the 'Equipment Problems' were responsible for
the highest share of loss. The other causes were non-availability of raw material and feedstock, poor quality of raw materials, power cut, voltage dips, age-old factor of the plant, new technology, defective equipments under foreign contract, delay in completion of Annual-Turn-Around-Job, strike in related organisation etc.

b) Profitability Ratios:

Four types of ratios are calculated to see the relationship between FCI's net losses and other variables like Sales Turnover, Capital Employed, Gross Block and Assets. All the ratios are in negative representing FCI's losses.

The Return on Turnover (ROT) ratio was increasing every year during the period from 1978-79 to 1980-81, and it has been declined during the period from 1981-82 to 1984-85.

The Return on Capital Employed (ROCE) ratio was declining during first three years i.e. 1978-79, 1979-80 and 1980-81 and thereafter it was increasing every alternate year.

The Return on Gross Block (ROGB) ratio was increasing during the years, 1978-79, 1979-80, 1981-82, 1983-84 and 1985-86, whereas, it was declining during 1980-81, 1982-83 and 1984-85.
The Return on Assets (ROA) ratio was increasing during the period 1978-79 to 1981-82 whereas it has declined during the years 1982-83 and 1984-85 and it has increased during the years 1983-84 and 1985-86.

Thus, in terms of Economic Parameters, it may be concluded that FCI has failed to discharge its social accountability. Because, its plant-wise capacity utilisation has declined and it could not adhere to input consumption norms determined by FICC, thereby increasing the cost of production. The cost of production is rising in FCI because of two important reasons. One is 'lower level of production', as a result of which the economies that can be reaped at, higher level of production are lost, and the other reason is 'high input consumption' due to frequent 're-starts' and 'unscheduled production stoppage'.

The four profitability ratios represent how deteriorating conditions are being faced by FCI. The Return on Assets (ROA) has increased by 787.5 per cent during 1985-86 as compared to 1978-79. The Return on Turnover (ROT) ratio has increased by 149.7 per cent during the year 1985-86 as compared to 1978-79. The Return on Gross Block (ROGB) ratio has increased by 31.25 per cent.
during 1985-86, as compared to 1978-79, and Return on Capital Employed (ROCE) ratio has increased by 62.41 per cent during 1985-86 as compared to 1978-79. As all these ratios are in negative values, their increase represents the amount of losses incurred by FCI in relation to different variables like assets, turnover, gross block and capital employed.

9.1.2 Social Parameters:

The study of FCI's social accountability with the help of 'Social Parameters' has resulted in the following findings:

a) 'Shareholders Group':

Shareholders expect that the business organisation would give them maximum possible returns. FCI being a Central Government owned company, its shareholder is the Government of India. The Return on Total Shareholders' Equity (ROTE) reveals how the company has utilised the funds of the owners and what are the returns. As FCI is incurring losses since its reorganisation in 1978 April, the ROTE figures are in negative and directly reflect the trend of losses. The ROTE figures show that the
is overall an increasing trend of losses during the period 1978-79 to 1985-86, under study.

Thus, FCI has failed to discharge its social accountability towards the 'Shareholders' in terms of returns.

b) **Employees Group** :

To study employees group, six staff benefit activities are chosen and amount spent by FCI on them is studied. The expenditure incurred by FCI on staff benefits shows a steep increase during the period from 1979-80 to 1985-86 under study. The increase in the expenditure was to the tune of Rs. 474.01 lakhs equal to 105.03 per cent during 1985-86 as compared to 1979-80. The amount spent on township shows an overall increasing trend except in one year (i.e. in 1980-81) when it has declined by 1.62 per cent as against previous year. The expenditure incurred on maintenance of school and educational facilities also shows a continuous rising trend during the period under study. The amount spent on medical facilities and canteen also reflect a similar trend of increasing. The expenditure incurred on transport shows an overall rising trend with an exception of the year 1982-83 when it has declined by 1.5 per cent, as compared to previous year 1981-82. The expenditure incurred on social and cultural
activities shows an increasing trend during the period 1979-80 to 1985-86 under study with two exceptions. The expenditure on 'Staff Benefits per employee' shows a continuous rising trend during the period under study.

The coefficient of correlation between FCI's net losses and FCI's expenditure on Staff Benefits is +0.14. This represents a low degree positive correlation. Being positive correlation, it shows that as FCI's losses are increasing, the expenditure incurred on Staff Benefits is also rising. This may be because of two reasons. One is that the amount spent on Staff Benefits is fractional as compared to the quantum of losses being incurred, thereby the losses does not affects the trend of staff benefit expenditure. The other reason may be as FCI is incurring huge production losses in such a situation, the management does not want to create labour disputes, as a result, the expenditure on staff benefits gets inflated year by year, inspite of increase in losses. Moreover the rise in cost of various goods and services may also have a bearing on staff benefit activities and the expenditure is bound to increase.

The coefficient of correlation between FCI's Sales Turnover and FCI's expenditure on Staff Benefits is +0.59. This reflects a high degree of positive correlation,
because it is inclining towards the Perfect Positive Correlation value of +1. It means as the Sales Turnover was increasing, the expenditure on Staff Benefits was also increasing and vice versa. The reason is obvious, as the Sales Turnover being the only major source of revenue, its volume will influence the allocation of expenditure on various heads including 'Staff Benefits'.

In view of the above trends, it can be concluded that FCI has discharged its Social Accountability towards 'Employee-Group'.

(C) Consumers Group:

To study FCI's Social Accountability towards this group, expenditure on Research and Development and the level of promotional activities are chosen.

The importance of R & D activities is universally accepted but the expenditure incurred by FCI on this head is neither consistent nor increasing but represents a haphazard rise and fall.

The Coefficient of Correlation between FCI's Sales Turnover and R & D expenditure is -0.84. It means that there is negative correlation between these two variables i.e. an increase in Sales Turnover results in decline in R & D expenditure and vice versa. It is high degree negative correlation because it is inclining towards the perfect Negative Correlation value of -1. In the state of increasing amount of production losses being suffered
by FCI due to equipment problem, process problem, mis-match of design, delay in completion of the Annual Turn Around Job etc; intensive research activities are required to resolve them.

The Ministry of Agriculture, Government of India, has launched an Intensive Fertiliser Promotion Campaign (IFPC) in selected districts from Kharif 1982. For each selected District, a lead manufacturer is identified to undertake various promotional activities. The main object of this campaign is to increase fertiliser consumption in selected Districts.

An analysis of overall promotional activities undertaken by FCI, during the year 1985-86 reveals that there is considerable decline in the level of promotional activities as compared to the year 1983-84. This may be for the reason that the overall capacity utilisation of FCI plants is declining thereby the quantum of Physical production is also declining. The main purpose of promotional activities is to enhance fertiliser consumption, and if it is not backed up by increasing amount of production of fertilisers by FCI, the promotional activities are required to be suppressed as happened in FCI.

The Rae Bareli District was allotted to FCI under IFP campaign in Kharif 1982. Various promotional activities are undertaken by FCI in this District. The fertiliser consumption in this District has increased after the IFP campaign was taken up by FCI. The overall increase in fertiliser consumption during the year 1984-85 (Kharif and Rabi) was 52.14 per cent as compared to the year 1981-82 (Kharif and Rabi).
The District of Patna was allotted to FCI during Kharif 1982 under IFP Campaign. After undertaking various promotional activities by FCI the overall increase in fertiliser consumption during the year 1984-85 (Kharif) was of 386.89 per cent as compared to the year 1981-82 (Kharif), which is an achievement on the part of FCI.

Thus, in terms of R & D expenditure FCI has failed to discharge its Social Accountability towards consumers.

The overall increase in fertiliser consumption in the district of Rae Bareli and Patna shows that FCI has discharged its Social Accountability towards these small segments of the consumers.

d) Community:

To study how the interest of the community is protected by FCI, the number of persons employed from unprivileged categories is taken into account.

The total number of persons employed from unprivileged categories is showing a declining trend. During 1984-85, 2561 persons were employed from unprivileged categories which has decreased to 2,427 during 1985-86 amounting to a decline of 5.23 per cent as compared to previous year. This trend of decline is found in all unprivileged categories.

The total number of persons on FCI's roll of employment during were 13221 during 1984-85 which came down to 12920/1985-86 being a decline of 2.28 per cent as compared to previous year.
Of the 13221 persons on FCI's roll of employment, during 1984-85, 19.37 per cent were from unprivileged categories. Of the 12920 persons on FCI's roll of employment during 1985-86, 18.78 per cent were from unprivileged categories.

Of 2561 persons employed from unprivileged categories by FCI during 1984-85, the highest share was in Sindri Unit (38.6 per cent), and the lowest share was in Central Office (3.44 per cent). Of 2427 persons employed from unprivileged categories during 1985-86, the highest share was in Sindri Unit (39.6 per cent) and the lowest in Central Office (3.75 per cent).

1621 persons were employed from SC category by FCI during 1984-85. The highest share was in Sindri Unit (33.68 per cent) and the lowest share was in Central Office (3.89 per cent). During 1985-86, 1547 persons were employed from SC category, of which the highest share was in Sindri (34.26 per cent) and the lowest share was in Central Office (4.2 per cent).

684 persons were employed from ST category during 1984-85 in FCI. Of which highest share was in Sindri (61.26 per cent), and the lowest share was in Gorakhpur (0.73 per cent). During 1985-86, 638 persons were
employed from ST category, of which highest share was in Sindri Unit (64.42 per cent) and the lowest share was in Gorakhpur Unit (0.94 per cent).

200 persons were employed from JS/DKA category during 1984-85 of which highest share was in Talcher Unit (37.5 per cent) and the lowest share was in Central Office (4.5 per cent). During the year 1985-86, 187 persons were employed from JS/DKA category of which the highest share was in Talcher Unit (40.11 per cent) and the lowest share was in Central Office (4.8 per cent).

56 persons were employed from PH category during 1984-85, of which the highest share was in Marketing Office (21.43 per cent) and the lowest share was in Gorakhpur Unit (3.93 per cent). During 1985-86, 55 persons were employed from PH category, of which highest share was in Ramayundam Unit (29 per cent) and the lowest share was in Gorakhpur Unit (9.09 per cent).

However, decline in total number of persons employed from unprivileged categories and the total strength on FCI's roll of employment may find justification on the ground that FCI is already suffering due to surplus staff, and such a decline in the total strength and correspondingly in the numbers of persons
from unprivileged categories is in the overall interest of the organisation.

In terms of employment of persons from unprivileged categories in FCI, it is observed that there was a decline of 5.23 per cent during 1985-86 as compared to 1984-85, whereas the total number of persons on FCI's roll of employment has declined by 2.28 per cent during 1985-86 as compared to 1984-85. Both these figures represent that in terms of employment, FCI has failed to discharge its social accountability towards the community.

9.1.3 Questionnaire-Analysis:

The analysis of the opinion of the middle-level managers of FCI reveals that all the respondents have accepted that a company has social accountability. 35 per cent of the respondents were of the opinion that customers should be given the first priority, and another 35 percent of the respondents were of the opinion that the government should be given the first priority, among the groups towards which a company has social accountability.

48 per cent of the respondents were of the opinion that customers should be given second priority, whereas, 35 per cent of the respondents viewed that Employees
should be given second priority among groups towards which a company has social accountability.

43 per cent of the respondents were of the opinion that employees should be given third priority and 22 per cent of the respondents have given third priority to suppliers.

43 per cent of the respondents were of the view that suppliers should be given fourth priority and 26 per cent were of the view that society should be given fourth priority.

31 per cent of the respondents have given fifth priority to society and 17 per cent have given fifth priority to Government and another 17 per cent of the respondents have given fifth priority to suppliers and similarly 17 per cent of the respondents have given fifth priority to shareholders, as a group towards which a company has social responsibility. 26 per cent of the respondents were of the opinion that society should be given sixth priority and 13 per cent were of the opinion that shareholders should be given sixth priority and another 13 per cent were of the opinion that Government should be given sixth priority among various groups.
When the respondents were asked to suggest parameters to measure social accountability, 'achievement of the objectives of the company' was supported by 100 per cent respondents. The 'Community Development Programmes' was suggested as a parameter by 74 per cent of the respondents & 'Medical facilities' was considered as parameter to measure social accountability by 61 per cent of the respondents.

Regarding the monitoring of social responsibility, 39 per cent of the respondents agreed that Management is most suitable and another 39 per cent of the respondents agreed that Management and Government should jointly monitor social responsibility measures.

In reply to the question, whether FCI has specific Budget allocation, 96 per cent of the respondents answered 'yes' whereas, 4 per cent have denied.

When asked as how much expenditure FCI would like to incur on Social Accountability measures, 87 per cent of the respondents did not reply. Whereas, 9 per cent of them were of the opinion that 25 per cent of the Sales Turnover and 4 per cent of the respondents were of the opinion that 20 per cent of the Profit should be spent by FCI on various Social Accountability measures.
When FCI's middle-level-managers were asked to mention the actions taken by FCI to discharge its Social Accountability, 100 per cent of the respondents have mentioned Medical facilities, Educational facilities, Canteen and Housing. Transport facilities was mentioned by 96 per cent of the respondents, and Field Days was supported by 91 per cent of the respondents.

48 per cent of the respondents were of the opinion that public sector is actively discharging social responsibility and 52 per cent were of the view that both the sectors i.e. Public and Private are actively discharging social responsibility.

65 per cent of the respondents observed that discharge of social accountability is not a constraint on the profits of the company whereas 31 per cent felt that it is a constraint on the profits of the company.

The only difficulty in respect of discharge of Social Accountability as revealed by the survey was the limitation of Finance, supported by 100 per cent respondents.

In reply to the question whether FCI has written policy statement towards social accountability, 83 per cent of the respondents agreed and 17 per cent have denied it.
9.1.4 Test of Hypothesis:

On the basis of findings of the research it is concluded that:

(i) FCI being a loss incurring unit has failed to discharge its social accountability as assumed earlier, because earning profit is primary social accountability of a company. The public sector units cannot be immunised from profit earning. Rather they are more responsible to earn profit because public money is invested in them and public has more expectations of them.

The Return on Shareholders' Equity is in negative because of FCI's losses which help to conclude that towards shareholders FCI has failed to discharge its social accountability. In terms of expenditure incurred on Staff Benefits, as the amount spent on various heads is increasing it may be said FCI has discharged social accountability towards employee-group. The expenditure on Research & Development activities was showing a rise and fall trend
and the level of overall promotional activities has been declining. Thus, towards consumers FCI has failed to discharge its social accountability.

But the promotional activities undertaken by FCI in the Districts of Rae Bareli and Patna have resulted in increase in fertiliser consumption in these districts thereby FCI has discharged its social responsibility, towards this segment of the consumers.

Towards community/large FCI could not discharge social responsibility/accountability because the number of persons employed from unprivileged categories was declining.

(ii) Discharge of social accountability is not the reason for FCI's losses. Thus, the assumption that due to discharge of Social Accountability FCI was incurring losses, proved wrong. Because if we analyse the expenditure incurred by FCI on Staff Benefits, for instance it is clear that such an expenditure is so fractional that it does not affect the trend of profit or losses. Further, the coefficient of correlation between FCI's Net Losses and expenditure on Staff Benefits is positive correlation indicating an increase in loss is being followed by increase in expenditure on Staff Benefits.
(iii) Majority of the respondents from FCI's middle-
level-management agree that discharge of Social 
Accountability is not a constraint on the profits 
of the company, rather it benefits the organisation in two ways. On one hand it benefits employees and their efficiency is enhanced, on the other hand its good will is inflated due to social responsibility activities. Hence earlier assumption that FCI's middle-level-management considers that discharge of social accountability is a constraint on the profits of the company was wrong.

Similarly, the opinion of 52 per cent of the respondents of the FCI's middle-level-management was surprising that Public Sector and Private Sector both are actively discharging social accountability whereas, 48 per cent of the respondents were of the opinion that public sector alone is discharging social accountability more actively. Thus, the assumption that the FCI's middle-level-management considers that Public Sector is discharging its Social Accountability more actively than private sector was wrong.
9.2 Suggestions:

The main problem of FCI is its inability to enhance its capacity utilisation to 80-90 per cent of the Installed capacity, and control the input consumption as per FICC norms. A loss incurring unit is a burden on the society, and the primary social accountability of a company is to earn profit and it is more so when the unit is in public sector. Once FCI is able to overcome the major problems i.e. of equipment failure, it will naturally earn profits which will enable it to incur more expenditure on R & D activities and on staff benefits, undertake promotional activities on a larger scale, more village adoption will become possible, employment of persons from unprivileged categories would be given more weightage, various development programmes would be taken up for overall development of the society, thereby discharge its social accountability more successfully.

9.2.1 Suggestions to Improve Capacity Utilisation of FCI

The following suggestions are offered, on the basis of various factors found affecting capacity utilisation of FCI:

(1) The problem of new technology in Ramagundam and Talcher plants can be overcome with the help of intensive R & D activities and experiences of other countries though on a smaller
scale will be of use to FCI. Qualified engineers may be deputed to other countries and their experiences may be properly utilised. Attempts should be made to avoid recurrence of similar defects.

(2) Special Incentive schemes may be formulated for reducing the incidence of equipment failure and enhancing capacity utilisation of the plants.

(3) Another major problem of power cut can be resolved to a greater extent with the help of installation of captive power plants because plant shut down due to power cut would cause more loss compared to the cost of this alternative arrangement.

(4) The high ash-contents of Coal supplied to coal-based plants causing the choking of the plants can be resolved with the help of two alternatives. Techniques available for reducing the ash-contents may be applied or supply of coal with lesser ash-contents may be arranged, provided the additional cost on transportation justifies the likely benefits.

(5) The defective equipments supplied under foreign contracts has also affected FCI's capacity utilisation. Most of the time, the guarantee period offered by the manufacturer could not be availed due to delay in installation of the plant, hence,
the installation of the plant should be completed within the stipulated period to avail guarantee benefit, and avoid defective equipments.

(6) Delay in completion of Annual Turn-Around (ATA) job was another reason affecting FCI's capacity utilisation. Proper supervision of the ATA Job will help in avoiding plant shut down for longer duration.

(7) Intensive R & D activities should be taken up and expenditure on this head should be enhanced to reduce the major cause of equipment failure.

(8) The over staffing factor of FCI should be controlled.

When each problem has a remedy and problems are controllable, then what went wrong with FCI that it was unable to control these problems and accordingly failed to discharge its social accountability is a question of concern. The fact that:

(i) Other Public Sector fertiliser companies are earning profits (those once were under FCI's control) and being public sector units they are also under the framework of social accountability.
The middle-level-management of FCI agrees that discharge of social accountability was not a constraint on the profits of the company, as revealed by the questionnaire, the another factor which required attention is the 'Managerial Efficiency' or it may be called as 'Managerial Honesty'.

9.2.2 Suggestions to Improve Managerial Efficiency:

The main factors responsible for 'Managerial Inefficiency' and suggestions to remedy them are briefly mentioned below:

(a) Managers at the verge of Retirement:

It is observed that there is limitation for a person's initiative, dynamism, innovative thinking which gradually dies as the persons becomes age-old. This is one of the reasons that the Managers who are at the top of the hierarchy of FCI are promoted on the basis of their length of service, disregard to their merit in the concerned subject. As a result there would be no carrier prospects further to these age-old managers who have a period of just 5 years or so to retire, their functioning has adversely affected the work-environment of FCI in more than one ways.
(i) They are reluctant to contact with people at lower levels of management, as a result, there is no 'inflow' of correct information.

(ii) As they are near-retirement their decision taking process is dominated by the factor of "too safe playing" rather than taking up new challenges, making innovative contributions etc.

(iii) The most important than the above two discussed factors is the 'compromise' these managers seem to do at the verge of their retirement. When the procedure adopted in deciding crucial factors like choice of Technology, contracts with foreign agencies etc., are observed resulting in continuous repairs and replacement of plants, expiry of guarantee period before the installation of the plant, detecting defective equipments later etc., seem to be all deliberately created problems of those few hands who are endowed with the responsibility of these crucial decisions which have its impact over the entire life of the plant. And the reason is not that our country has lacking good technocrats, but because some 'compromise'
was made by few hands in consideration of their 'personal interest'. They chose the technology, they approve the foreign contracts, they delay the installation of the plant, they report defective equipments later, they did not replace the equipment to enable continuous repairs and the cumulative effects go on multiplying day-by-day resulting in huge amount of losses. New terminology is developed, instead of using the term 'Installed capacity' they say 'targeted capacity', to conceal that something was done wrong in the past. These all events seems to have inter-linked with each other.

Normally plants are manufactured at 115 per cent capacity and manufacturer determines its 100 per/capacity, thus keeping a 15 per cent margin of performance above the Original capacity claimed. But when a plant is made to operate for eg; at 100 (000 MT) and it can run unto 115 (000 MT) and there are number of examples where like Indian Farmers Fertiliser Cooperative Limited (IFFCO) the installed capacity has been surpassed and the production is above 100 per cent capacity, the question arises as to why certain plants (like in PCI) are reducing their original capacity or 'Installed capacity' to the self-created term like 'Targeted capacity'. A
plant either should not run, but when it utilises 62.9 per cent capacity as in 'Barakpur Unit' for example, then it means that it can be made to utilise 100 per cent of its capacity provided there is "willingness" on the part of management to do so.

(a) **Closure of Sindri Plant**:

The managerial decision to close one of the plants at Sindri is subject to criticism for three reasons. Firstly, the plant when was producing at lower capacity, it was earning something but its closure has resulted in losing the possible earnings from this plant. Secondly, the wear and tear due to closure of the plant will increase in addition to incurring of certain fixed costs irrespective of its closure. The third important ill-consequence was that the closure of the Sindri Plant has resulted in absorption of workforce of Sindri in other plants. FCI has already facing the problem of surplus staff, now closure of Sindri has multiplied this cause.

Because of over-staffing, there are several groups formed by workers. Evil practices like few workers taking leave on medical and other grounds resulting in the need to work over-time began.
Thus, the ills of 'Compromise' at the top-level have reached the lowest hierarchy of the management of FCI taking different forms and the whole system has become a messy.

There are units in public sector which are earning profits, having high capacity utilisation of the plants, with good work-culture, but in FCI things went just opposite in such case the above mentioned observations will certainly have a bearing on the overall working of the organisation. To improve Managerial Efficiency the following suggestions are made:

(i) The scheme of promotion should be revised and instead of mere length of service, Merit-cum-Seniority should be made basis of promotion to higher levels of hierarchy.

(ii) The crucial decisions like choice of technology, agreements with foreign agencies, repairs and replacement on large scale, should not be the subject matter of limited hands of Top managers of FCI and Ministry Officials. The Government should set up certain bodies of experts in different areas, and such matter should be referred to at least two groups and their
comments should be taken up seriously to avoid likely 'compromise' between few hands.

(iii) Improper utilisation of authority and power both by the top managers and ministry officials should be stringently penalised.

(iv) The financial position of top officials and Ministry officials should be strictly checked to detect the cases of corruption.

(v) Defining of authority and responsibility at each level is not enough but its meticulous implementation should be assured.

(vi) A clear demarcation of Economic Goals and Social Goals should be made, to help studying discharge of Social Responsibility of public sector units like FCI.

(vii) Transfer of managers from one public sector company to another should be promoted to share the experiences.

Thus it is not very difficult to pin point the loopholes of the public sector management and remedy them provided the Government is serious in doing so and
the job is entrusted to those who are not motivated by the "compromises". But the political affiliation is said to prevail over all such decisions and actions, and if it is true, to what extent the Government can isolate itself from the clutches of the political entities is a crucial matter. And the question as to how the responsibility of those few hands who play with the fortunes of the masses (because it is the public money that is invested in public sector) can be tied up with the corresponding accountability and even their personal possessions and property be subject to strict scrutiny, remains to be examined in the future researches.
APPENDICES
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APPENDIX - II

J U E S T I O N N A I R E
ON
"MANAGERIAL ATTITUDES TOWARDS SOCIAL ACCOUNTABILITY"

Dear Sir/Madam,

Please find here with a list of questions concerning "MANAGERIAL ATTITUDES TOWARDS SOCIAL ACCOUNTABILITY". The purpose of this questionnaire is to obtain information on different aspects of Social Accountability, e.g. whether managers accept the Social Accountability of a company? Do they have any priority of groups to whom a company is socially responsible? Who should monitor Social Accountability? etc; in Indian context. The information so obtained will help in having an insight into managerial views on Social Accountability and its future in India.

In connection with the enclosed questionnaire I assure you that the identity of the respondent will not be revealed and the information so obtained will remain confidential and be used strictly for academic and research purposes only.

Your cooperation in filling the questionnaire and providing additional information and suggestions will certainly be helpful in improving the quality of the present research project.

Anticipating whole-hearted response,

Thanking you,

Sincerely,

(SYED ABDUL WADEER)
Department of Commerce
AMU, ALIGARH.
QUESTIONNAIRE

1. Do you accept that a Company has social Accountability?
(Please mark ✓) YES ( ) NO ( )

2. If Social Accountability of a Company is directed towards following groups or people, how would you rank them?
(Please rank as 1,2,3,4,5,6)

a) Government ( )
b) Customers ( )
c) Employees ( )
d) Shareholders ( )
e) Society at large ( )
f) Suppliers ( )

3. In your opinion what should be the parameters to measure Social Accountability of a Company?
   a) ..............................................................
   b) ..............................................................
   c) ..............................................................
   d) ..............................................................
   e) ..............................................................
   f) ..............................................................
   g) ..............................................................
   h) ..............................................................

4. To ensure that every company discharges its Social Accountability, who should monitor it? (Please mark ✓)
   a) Management ( )
   b) Trade Unions ( )
   c) Government ( )
   d) Accountants ( )
   e) Pressure Groups ( )
   f) Others, please specify ( )

5. Did your organisation provide specific budget allocation towards different Social Accountability measures?
(Please mark ✓) YES ( ) NO ( )
6. Discharge of Social Accountability involves expenditure, so how much your organisation would like to incur? (Please specify in figures)
   a) as % of Sales turnover
   b) as % of Profit
   c) any other

7. What are the actions taken by your company to discharge its Social Accountability?
   a) ........................................
   b) ........................................
   c) ........................................
   d) ........................................
   e) ........................................
   f) ........................................
   g) ........................................
   h) ........................................

8. Which Sector do you think is actively discharging its Social Accountability?
   (Please mark ✓)
   a) Public Sector ( )
   b) Private Sector ( )
   c) Both the Sectors ( )
   d) No Sector ( )

9. Is the discharge of Social Accountability a constraint on the profits of the company?
   (Please mark ✓)
   YES ( )
   NO ( )
10. **What are the difficulties encountered by your company in discharging of Social obligations?**
   
   a) ........................................................................
   b) ........................................................................
   c) ........................................................................
   d) ........................................................................
   e) ........................................................................
   f) ........................................................................

11. **Is there any written Policy Statement of your company concerning Social Accountability?**

   (Please mark ✓)     YES ( )     NO ( )

   If yes, please furnish a copy of it.

   Any Suggestions or Comments related to the matter.

Thank you very much for your help and cooperation.

Respondent's NAME ..............................................

DESIGNATION ..............................................

ADDRESS ......................................................

......................................................
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