CHAPTER 4

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CHAPTER 4
A CASE STUDY : FERTILISER SECTOR

4.1. INTRODUCTION

After going into the managerial practices of PEs in general, it would be logical to undertake in-depth studies of some selected PEs. This will enable the researcher to see whether the general findings of the earlier chapters are corroborated by the case-study.

There have been a few comparative studies aimed at differentiating the managerial practices in PEs from those followed in the private companies. Attempts were also being made to compare the financial performance of public corporate industries as a group with the financial performance of private corporate industries as a group. Some experts thought of comparing a PE with a private firm operating in the same industry. But, unfortunately there are very few industries in which both PEs and private enterprises of a comparable size, product and age are allowed to operate simultaneously. Again, it is often argued that due to the differences in the environmental set-ups of PEs and private firms, such a comparison may not be meaningful.

But, there has not been any attempt

• to compare managerial practices and financial performances of a single PE in two time periods. OR
• to compare two PEs operating in the same industry but differing in the financial results.

In the present chapter and the next, the researcher proposes to compare the working of two PEs each from the Fertiliser sector and the Pharmaceutical industry showing opposite financial results.

4.2. CHOICE OF PEs

For the case studies, two PEs from two industries are chosen from among the eight pairs identified on the basis of financial results during 1987/88 to 1991/92. PEs matched on all other norms except the norm of financial results were considered for the primary round of selection. In order to eliminate bias in the financial results caused by the time period, financial results of all the PEs were studied for 5 consecutive years. Comparable PEs from the profit-making and loss-making were chosen. The choice was made in accordance with the Sengupta Committee - norm for ascertaining sickness of a PE, viz. 5 consecutive years of losses.
For the final choice, two criteria were considered; they were as follows:

- Availability of individual COPU reports, because many PEs are not covered by the COPU even once in their life-time.
- Availability of a private comparable enterprise

Since the fertiliser and pharmaceutical sectors fulfilled these conditions, they were chosen.

Chapter 4 deals with the following PEs from the fertiliser sector:
- Rashtriya Chemicals and Fertilisers Ltd. (RCF).
- Hindustan Fertiliser Corporation Ltd. (HFC).

RCF had been making profits, while HFC had been incurring losses during 1987/88 to 1991/92. Apparently, the only difference between the two PEs seems to be their financial performance. There is not much difference in the scale of production, age of the plants and the products. Both the PEs were incorporated in 1978 by reorganising the Fertiliser Corporation of India (FCI), which was a reorganised company as a result of the merger of erstwhile ‘Hindustan Chemicals and Fertilisers Ltd.’ and the ‘Sindri Fertilisers and Chemicals Ltd.’. The fact that they were under the same management, suggests that there was not even a difference in the work culture.

Fertiliser factories in the private and the co-operative sectors were showing better performance than the public-sector fertiliser companies (as a group) during the same period. Therefore, inclusion of a private company operating in the fertiliser-manufacturing would have made the comparison meaningful. It would have acted as a control group. The researcher tried to identify a comparable enterprise from the private sector, but finally had to be contented with the comparison between two PEs.

Following reasons can be cited:

- Fertiliser factories in the public sector are capacity-wise not comparable with the private companies. (Appendix 4.1.)
- Experience with the private pharmaceutical company was discouraging enough to conclude that the private companies are not likely to co-operate in the research-work.
- To make the two case-studies similar, it is considered appropriate to exclude a private company from the scope of the study.

Experience regarding the collection of primary data from RCF and HFC has been different. In spite of all efforts at the top level, official information was not made available by HFC (cf. Appendix 1.2.). RCF was the only PE among the four which readily supplied information/annual reports and partially filled in the questionnaires. Ex-officials and officials of RCF seemed very co-operative.
The researcher has based her conclusions on the available primary/secondary data and the unofficial information provided by the officials/ex-officials.

FCI was covered thrice (before 1978), RCF twice and HFC once by the COPU till 1991/92. Items covered by the COPU reports are not identical and a major part of reports contain information on the ‘projects’. Hence item-wise comparison is rendered difficult. BPE reports are also referred in order to obtain statistical data.

**Conclusion 4.1. Conclusions from the experience of PEs can be stated thus:**

- **PE-managements which are confident about the working of their enterprise are willing to furnish information.**
- **COPU reports on individual PEs are not kept handy either by COPU or by the concerned PEs. This shows negligence and lack of sense of importance in respect of the ritual of COPU-evaluation.**

### 4.3. HISTORICAL BACKGROUND (FERTILISER INDUSTRY)

India primarily being an agrarian economy, augmentation of the volume of agricultural output has occupied a high priority in the Government policy in post-Independence period. The easiest and the surest method of increasing agricultural yield in a short span is the use of artificial nutrients.

Even the British-India Government was thinking of starting fertiliser-production in India in pre-second world war period. The only fertiliser used in India then was the ammonium sulphate. Out of the total consumption of 25000 tonnes, 5500 tonnes were indigenously manufactured and the rest was imported. (73.3%).

In 1942, the ‘Grow More Food Campaign’ recognised for the first time that using fertilisers is one of the surest and the quickest means of increasing food-production. Central Fertiliser Pool was created by the Government for the distribution of the available fertilisers under the quota allotted by the International Emergency Food Council and the indigenous production. In 1943, the Food grains Policy Committee recommended setting up of a factory. The Technical Mission was specially appointed to advise the British India Government, which submitted its report in 1945.

The Mission recommended production of Ammonium Sulphate only to be carried out in a single factory, located preferably in the Gangetic plane. Use of water-gas made from the coke was recommended. Greater portion of equipment and materials would have to be imported and training for the technical staff was felt necessary.
Sindri Fertiliser and Chemicals Ltd. was set up in the public sector as per the recommendation of the ‘Food Grains Policy Committee(1943)’ which started production in 1951. By that time there started emerging a considerable gap between the demand and supply of fertilisers. In the years 1947/48 and 1948/49 the demand was 230,000 tonnes and 250,000 tonnes as against the supply of 110,000 tonnes and 116,000 tonnes respectively.

In the 1st plan top priority was given to agriculture, but not much could be done for the development of fertiliser industry. In 1956, the Fertiliser Production Committee submitted its report which preferred ‘sulphate-nitrate.’ The Committee had visualised four different plant-combinations and four different locations. It was suggested that the choice of location should be limited to Bombay, Neyveli, Vijaywada and Itarsi. Considering the demand projections and the economic scales of production, the Committee had said, “we would urge that the production target should be increased to an extent which will admit the establishment of two independent production-units at two different places without any sacrifice of overall economy.”

Due to inadequacy of essential inputs, actual production fell short of the targets in spite of some new plants and capacity-expansion in the old ones. The merger of the Sindri Fertilisers & Chemicals Ltd. with the Hindustan Chemical & Fertilisers Ltd. to form the Fertiliser Corporation of India (FCI) for better co-ordination amongst fertiliser PEs and launching of three new projects at Trombay, Nahorkatiya and Gorakhpur were the important events in the early sixties.

FCI was entrusted with one project after another, though the factories were spatially distributed in different regions of the country because of the Government-policy to have at least one fertiliser company in every state. Due to new developments, it was no more felt necessary to have fertiliser factories in the vicinity of economic supplies of coke and coal.

By 1977, FCI was responsible for 17 fertiliser projects; 7 running and 10 under various stages of implementation. It was one of the largest multi-unit PE controlling over 26% of the country’s installed capacity of nitrogenous fertilisers. The organisation had become too large to tackle the problems of management, co-ordination and control. Hence it was felt that reorganisation of public sector fertiliser units was desirable.

A working group, known as the Fazal Committee was set up in mid-seventies to work out the modalities of reorganisation. After inter-ministerial consensus the criteria for allocation of units under new companies were decided. Geographical location, process and technology used in different units were some of the major criteria. This would have facilitated specialisation and made it easier to overcome the teething troubles of the individual units. There were some disadvantages of reorganisations, but balance of advantages seemed to lay in going for reorganisation.
4.4. INCEPTION OF RCF AND HFC

In 1978, the Government reorganised the FCI and the National Fertiliser Ltd. to form the following PEs:
- Fertiliser Corporation of India (FCI)
- National Fertilisers Ltd. (NFL)
- Hindustan Fertiliser Corporation Ltd. (HFC)
- Rashtriya Chemicals & Fertilisers Ltd. (RCF)
- Projects and Development India Ltd.

Following units/organisations were allotted to HFC and RCF:

**HFC**
- Production unit at Namrup
- Production unit at Barauni
- Production unit at Durgapur
- Project under construction at Haldia
- Eastern Marketing Zone
- Fertiliser Promotion & Agricultural Research Centre
- Purchase & Liaison office at Calcutta
- Agronomy Wing at Sindri

**RCF**
- Production unit at Trombay (Old plants).
- Trombay IV Expansion project under implementation
- West and South marketing Zones
- Bombay purchase & Liaison office

Project at Thal-Vaishet was in the pre-construction stage which was subsequently taken up by RCF.

Table T 4.1 gives some factual information about RCF and HFC.

<table>
<thead>
<tr>
<th>Items</th>
<th>RCF (1)</th>
<th>HFC (2)</th>
<th>Percentage of (2) to (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorised Capital</td>
<td>800</td>
<td>750</td>
<td>93%</td>
</tr>
<tr>
<td>Paid-up capital</td>
<td>551.69</td>
<td>620</td>
<td>121.3%</td>
</tr>
<tr>
<td>Loans from the Government</td>
<td>34.04</td>
<td>848</td>
<td>2491%</td>
</tr>
<tr>
<td>Employment</td>
<td>5857</td>
<td>9642</td>
<td>164%</td>
</tr>
<tr>
<td>Net Sales</td>
<td>1015.11</td>
<td>251.55</td>
<td>24.78%</td>
</tr>
<tr>
<td>Net profit/loss</td>
<td>18.78</td>
<td>(-) 330.53</td>
<td>-</td>
</tr>
<tr>
<td>Accumulated deficit</td>
<td>0</td>
<td>1511.67</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: BPE report 1991/92

Table T 4.2. Net profit/loss (1987/88 to 1991/92) (Rs. in crores)

<table>
<thead>
<tr>
<th>Year</th>
<th>RCF</th>
<th>HFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987/88</td>
<td>53.17</td>
<td>(-) 104.84</td>
</tr>
<tr>
<td>1988/89</td>
<td>69.95</td>
<td>(-) 156.38</td>
</tr>
<tr>
<td>1989/90</td>
<td>48.81</td>
<td>(-) 169.79</td>
</tr>
<tr>
<td>1990/91</td>
<td>40.76</td>
<td>(-) 231.43</td>
</tr>
<tr>
<td>1991/92</td>
<td>18.78</td>
<td>(-) 330.53</td>
</tr>
</tbody>
</table>

Source: BPE reports
In terms of paid-up capital, loans from the Government and the volume of employment HFC is larger than the RCF but HFC’s figure for net sales is smaller than that of RCF. HFC’s figures for the paid-up capital, Government loan and employment are 121.3 %, 2491 % and 164.6 % of the RCF’s. Its total capacity is 54.5 % of that of RCF and sale is 24.78 % of that of RCF. RCF has profits for all the 5 year, though the volume of profit has decreased every year. Net of loss HFC has increased year after year. RCF does not have accumulated loss to its name and HFC’s accumulated loss is 201 % of the paid up capital. Thus RCF is definitely in a much better position than the HFC. (Appendix 4.2., 4.3.)

Since the projects of these two PEs had been under the same management till 1978 the points of similarity are many. They can be enumerated as follows:

- Both are subjected to the same amount of autonomy and the same monitoring / regulating mechanisms, since both are under the same Ministry.
- Both are engaged in the production of Nitrogenous fertilisers, intermediates and industrial products.
- Both are equally affected by the pricing policy and subsidy-policy of the Government as regards the Nitrogenous fertilisers.
- Both enjoy same concessions in respect of price-preference by other public institutions and are such the same obligations to adhere the Government rules, procedures and guidelines.
- Projects under both the PEs were implemented with the assistance of foreign aid and foreign technical know-how. Namrup and Trombay plants were set-up by using US loan. Appointment of private companies from USA for obtaining the equipment/plant designs became obligatory under the terms and conditions of the loan.

Prime facie points of difference are as follows:

- RCF and its units are located in a single state viz. Maharashtra while various units and organisations of HFC are situated in different states like Assam, Bihar, West Bengal. Head offices of the promotional and service organisations are situated in still different places like West Bengal and Rajasthan. The corporate office is in New Delhi while the running units are in the Eastern region.
- At the time of reorganisation, promotional organisation and service wings which were initially meant for all the projects under FCI were allotted to the HFC. They were unnecessarily huge for the newly born PE.
- RCF has a wider product-range. HFC has the capacity to manufacture only Nitrogenous fertilisers. RCF has the 120,000 MT capacity to manufacture phosphetic fertilisers as well.

These points of difference might have affected HFC’s performance. The quality of project-planning and implementation was equally bad and the agreements equally defective in case of the projects which were later allotted to these two PEs. But multi-regional location has resulted in lack of co-ordination.
Observation 4.1. HFC was unable to take advantage of certain centralised services of a multi-unit organisation meant to minimise overhead costs. Better delegation of power at the unit level which becomes necessary because of regional seclusion of various units from the head-office is either not achieved or not effective so as to minimise avoidable delays. Individual units of HFC have also suffered from locational disadvantages because of the remoteness from the centres of industrial development.

At the time of reorganisation of FCI, HFC was placed in a disadvantageous position. Comments by COPU are quite eloquent. “Allocation and grouping of various units, divisions and personnel at the time of reorganisation was inadequate and incongruous......”. “The outcome was that HFC was born unhealthy....... being handicapped with a number of technological, design and equipment deficiencies.”

Observation 4.2. The points which went against HFC at the time of reorganisation can be summarised thus:

- The marketing establishment intended to be divided and distributed was never so handled afterwards.
- Promotional wing called Fertiliser Promotional And Agricultural Research Division with around 1300 employees which was meant for the entire erstwhile FCI was left with HFC in its entirety.
- Thus, HFC was burdened with excess staff which proved to be a continued financial burden.
- HFC faced the problem of paucity of experienced personnel, due to a drain of experienced and qualified staff when they were given an option to choose a new undertaking.

Wider product range of RCF proved to be beneficial to the concern because the price-control policy of the Government (1977) covered all Nitrogenous fertilisers leaving ‘Suphala’ and other phosphetic, potassic fertilisers out of its coverage for quite some time. Since HFC units produced only Nitrogenous fertilisers, no flexibility was left to HFC as far as their entire production was concerned. They had to bear and absorb continuous increase in the prices of inputs, freight etc.

Observation 4.3. Thus, entire output of fertiliser by HFC remained under strict control and HFC could not increase share of intermediates/industrial products in the total output.

Conclusion 4.2. All these factors which went against HFC were completely beyond the control of the management. These things were decided at the Ministerial level.
4.5. PERFORMANCE AND PRACTICES

Both the companies came into existence when the running plants had already gone into production. Hence earlier reports on FCI and FCI-projects were referred in order to collect information about the initial decisions, project formulation/implementation etc. Differences in the project-planning and the implementation has little meaning since projects presently under both the companies were under FCI before 1978. Yet, the researcher went into it because initial decisions and project-planning/implementation can have ever-lasting impact on the operational and financial performance. These differences will not be attributable to different managements though the possibility of a qualitative difference in the project-implementation cannot be denied. Because, along with the P&D division of FCI, the unit-level managements were directly concerned with the implementation.

4.6. PROJECT FORMULATION & PROJECT PLANNING

Since both the PEs acquired the plants from the FCI when they came into existence, the corporate offices of PEs do not have any information about project-proposals, project-reports etc. Some information about some projects is available in the COPU reports on FCI.

Chronologically, Trombay plants (old ones) and the Namrup (I) plants were the earliest plants which presently belong to RCF and HFC respectively.

Table T 4.3 gives details about the time taken for formulation of these projects.

Table T 4.3 Data on Project-Formulation

<table>
<thead>
<tr>
<th>Details</th>
<th>Trombay</th>
<th>Namrup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of conceiving the project</td>
<td>June 1955</td>
<td>1954</td>
</tr>
<tr>
<td>Date of receipt of the Technical F.R.</td>
<td>January 1959</td>
<td>September 1959</td>
</tr>
<tr>
<td>Date of receipt of DPR</td>
<td></td>
<td>May 1960</td>
</tr>
<tr>
<td>Date on which Government clearance was received</td>
<td>April 1959</td>
<td>June 1960</td>
</tr>
<tr>
<td>Selection of site</td>
<td>1959/60</td>
<td>August 1961</td>
</tr>
<tr>
<td>Total time taken</td>
<td>About 4 years</td>
<td>About 6 years</td>
</tr>
</tbody>
</table>

Source: Pg. 33 COPU 6th R, 3rd L.S.

Time taken for project formulation was 2 years more in case of the Namrup project than the Trombay project. This is partly because of the longer time taken for preparation of FR and partly because of the extra time taken for the preparation of DPR. In case of the Trombay plants no DPR was prepared.

Observation 4.4. Trombay project was conceived later and yet the Ministry did not feel it necessary to ask for a DPR, when DPR was being prepared for the similar project at Namrup under the same Ministry. It is true that procedural details of project-planning were not streamlined in late fifties. But there is no logical justification for this type of discrimination when the Ministry was aware of the desirability of a DPR.
Detailed information about the pre-formulation and formulation stage of Namrup II and III plants, Barauni project and Durgapur project is not available. However, some information about the project-formulation is available in case of Trombay IV and V and Thal-Vaishet projects (now under RCF) and about the Haldia project (now under HFC). It throws light on the unusual delays in the formulation and planning of the FCI projects, even after a fairly long experience in project-planning.

Trombay IV, V

The Government had approved the Trombay IV project in 1970 which was to produce 6.60 lakh tonnes of complex fertilisers. Details about the phases of initial formulation are not available, but references are made to the subsequent changes in the pre-conceived projects. The process was developed by M/S Stami Carbon (Holland) and FCI paid basic design fees of Rs. 8.64 lakhs. The estimated cost was Rs. 43.60 crores which was revised in 1971 to Rs. 57.68 crores.

The World Bank Mission examined this project in December 1971 and declared that it was not suitable to Indian needs. Hence, the scope of the project was revised and thus the initial consultation fees of Rs. 8.64 lakhs paid to the Dutch firm became infructuous. This expenditure incurred on the initial consultation was written off by the Board of Directors in 1975. The estimated cost of the revised project was Rs. 37.5 crores which was revised by FCI to Rs. 44.01 crores. The target of production in the revised project was less than the initially approved plant-targets which stood at 3.75 lakh tonnes instead of 6.60 lakh tonnes.

The Government approved this revised project in October 1974 and the World Bank gave a loan worth US$ 33 millions. But revision of cost-estimates was felt necessary and the revised cost stood at Rs. 76.27 crores which meant more than 100% cost escalation on the initial estimate and 73% cost escalation on the revised estimate. The most important factor responsible for the upward revision was price-escalation which accounted for 47% increase in the cost. The revised project got the Board approval in July 1977 and the Government approval in October 1978.

Observation 4.5. Thus, the project which was already approved by the Government in July 1970 had to be reconsidered and got the final approval in October 1978. Eight years were spent for reformulating the already approved project. This had two repercussions:

- Initial consultation fees were proved to be infructuous.
- Due to price-escalation during these 8 years the project cost increased by more than 100%.

Whether the loss to FCI and to the Nation on account of cost-escalation and postponement of production by 8 years is more than the possible loss from possibly less-viable initial project is a debatable issue.
Conclusion 4.3. But it undoubtedly proves the low quality of project-planning of FCI. The Nation and FCI had to bear the real-loss more than can be arithmetically worked out due to defective / inadequate initial project-planning and time taken for re-formulation of the new project. In the finally approved project, production capacity was reduced by 43.2% while the estimated capital cost increased by 75%.

In case of the Ammonia plant, the Urea plant of Trombay V, similar things are observed. The estimated capital cost was Rs. 111.40 crores when the Government gave its approval in 1974. But the decision regarding the feed-stock base changed twice. Instead of fuel-oil, naphtha was considered first and then the gas from Bombay High. This necessitated revision of project-cost which originally came to Rs. 90.25 crores and which was later updated to Rs. 169.97 crores in 1978. In this case also 78% increase was due to price escalation.

The Vaishet Project
The Vaishet project was in the stage of project formulation in 1978. In 1977 two working groups were set-up for inviting tenders and short-listing the consultants. The Negotiating Committee gave its report in March 1979, after which the Ministry evaluated the whole project. The Committee of Secretaries endorsed it in June 1979 and a draft contract with M/S C.F. Braun was prepared in December 1979. However, the Government decided to reassess the proposal and appointed an Expert Committee which selected another Company viz., Haldor Topsoe for the Vaishet project.

Possibly the decision to select another consultant / to reassess the proposal in the post-re-organisation period was based on the opinions expressed by the management of the newly born enterprise, RCF. (Projects launched hereafter by the RCF-management show better-planning). The final acceptance was given by the Government in September 1980. Thus it took 3 more years to arrive at a final decision because of the anxiety on the part of the Government to strike balance between economy and reliability of the technology. The initial estimated cost of Rs. 511.34 crores had to be revised to Rs. 889 crores and the actual project-cost is Rs. 919 crores.

The Haldia Project
This project was conceived, formulated and implemented by FCI and was later on taken up by the HFC in 1978. Project-planning was found to be equally defective. Government decision to go in for the indigenous technology to the maximum extent was proved to be very expensive. PEs like Bharat Heavy Plates & Vessels could not supply the equipment in the prescribed time-limits. Even the private indigenous manufacturers could not stand up to expectations. Hence, changes in basic designs of vital sections and changes in the sources of supply of critical equipment became inevitable. Involving more than 11 firms for detailed engineering was another mistake, which blurred the responsibility. Due to such planning-deficiencies, the project
which was expected to be completed in 42 months from the zero date was mechanically completed in November 1979 as against the expected date of March 1976.

**Observation 4.6.** It is clear from the above discussion that with the exception of the Trombay I project, DPRs on all the other projects were prepared, but

- they were defective.
- due to frequent changes in the vital designs, the initial planning became meaningless.

Commenting on the formulation and implementation of Trombay IV and V, COPU observed, “The Committee are left with an impression that the project-formulation and implementation were marked by ubiquitous piecemealness of approach. The authorities have not evidently learnt much from the past experience.”

“Lack of foresight and co-ordination, wrong choice of technology, defective contracts, absence of monitoring and control of physical and financial progress of projects, non-enforcement of performance guarantee and disregard of financial discipline are some of the outstanding features of the style of their functioning and these have endured.”

“The Committee cannot absolve the Ministry, erstwhile FCI and its P&D Division (now PDIL) for the serious lapses in project-planning, execution and monitoring.”

**4.7. AGREEMENTS**

The agreements with the collaborators are marked with all sorts of defects and lacuna. COPU had devoted a section in a special report to the ‘Quality of Agreement’ signed by the FCI for Trombay unit. (26th Report, 4th Lok Sabha).

Because of the tied loans obtained from USA, FCI was obliged to purchase plants and equipment from the firms in USA, though it resulted in 15% increase in the total equipment-cost in case of Trombay (I, II, III) and Namrup (I) plants.

Agreements were signed with:

- M/S Chemico (USA) for the Ammonia, Urea and the Nitric Acid plants in June 1961.
- Chemical & Industrial Corporation of USA (USA) for the Nitro-Sulphate plant in May 1962.
- M/S Girdler Corporation of USA (USA) for the Methanol plant in February 1964.

Defects and inadequacies of agreements can be summarised thus:

- Though there was a provision for the time-frame in which to get the plant erected, there was no penal clause which left FCI at a disadvantageous position.
• There was an element of ambiguity about the conditions under which the collaborators were required to share the financial burden in case of non-completion of erection work within a prescribed period.

• There was no provision for liquidated damages on non-completion of plant in the prescribed time.

• The collaborators were under no legal obligation not to walk off after the expiry of contract. Hence, supplemented contract was signed by the MD, FCI which contained all the inadequacies present in the original agreement. Hence, no penal action could be taken against the collaborators even when they failed to demonstrate operation before the expiry of supplemental agreements. Two extensions had to be granted and the burden was fully borne by the FCI.

• Because of their vulnerable position, the MD withdrew all legitimate claims made by the management against Chemico.

• FCI suffered financial loss due to the contracts having been awarded to an inexperienced contractor in case of Nitro-sulphate plant and Methanol plant.

• There was vital omission in the agreement for the supply of refinery-gas and naphtha. There was no provision for the minimum relative density of gas/naphtha which resulted in the annual loss to the extent of Rs. 1.2 crores to FCI.

The FCI had to go to the International Arbitration Tribunal (Paris) for the claims and had to incur expenditure of Rs. 9.56 lakhs on the enforcement proceedings. Ultimately, the arbitration claims/award was not realised. Due to the legal implications arising out of the International Arbitration, the one-man commission appointed for fixing the responsibility of such ‘defective agreements’ could not complete its enquiry for 10 years (1969 to 1979) and the expenditure on the commission amounted to Rs. 10.22 lakhs.

Conclusion 4.4. The direct and indirect cost that the FCI had to bear for the defective agreements is much more than can be perceived. COPU reports have not gone into the details of project formulation and agreements signed for the other projects of FCI (now under HFC), but there is strong ground to believe that the same defects/inadequacies might be present in case of Namrup, Barauni, Durgapur and Haldia Projects.

4.8. FOREIGN EXCHANGE RELEASE

The projects at Namrup and Trombay had a foreign-exchange component in the capital cost. Government took a long time for allocating the foreign-exchange in both the cases.

Table T 4.3. Foreign Exchange release

<table>
<thead>
<tr>
<th></th>
<th>Namrup</th>
<th>Trombay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Clearance</td>
<td>June 1960</td>
<td>April 1959</td>
</tr>
<tr>
<td>Date on which foreign-exchange was released</td>
<td>August 1962</td>
<td>December 1960</td>
</tr>
<tr>
<td>Time taken for release</td>
<td>26 months</td>
<td>20 months</td>
</tr>
</tbody>
</table>

120
In case of Trombay IV and V some irregularities were observed. In spite of unambiguous instructions from the Government for PEs to obtain a specific release of foreign-exchange before making any foreign-exchange commitments, FCI went ahead with agreement.

Conclusion 4.5. The PEs were put in a dilemma; either they had to wait indefinitely for the foreign-exchange release from the Government or to face the consequences for not sticking to Government instructions.

4.9. PROJECT IMPLEMENTATION

Project-implementation of FCI was as defective as the project-planning. For some projects FCI signed 'turn-key' contracts like the Methanol plant at Trombay. The foreign consultants were fully responsible for the timely erection of plant and establishment of the equipment. In some cases provision for penal clauses was made. For example, in case of Methanol plant FCI could withhold the balance payment of 5% plant price because of the delay of 2 months in erection and delay in the demonstration rounds. There were some vital changes in the plant-design which were detrimental to the interests of FCI.

Conclusion 4.6. This improvement in the project-planning and implementation is the only sign of FCI's inclination to learn from the old mistakes, because Methanol plant was the last plant to be signed among the six plants at Trombay. (February 1964)

In case of another projects the P&D Division of FCI used to be mainly responsible for the implementation. Hence, managements at unit level and the P&D division jointly implemented the projects.

Table T 4.4. Time-Overruns (Trombay)

<table>
<thead>
<tr>
<th>Plant</th>
<th>Date of signing agreement</th>
<th>Original schedule</th>
<th>Actual date</th>
<th>Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia*</td>
<td>June 1961</td>
<td>Nov. 1963</td>
<td>Oct. 1965</td>
<td>23 months</td>
</tr>
<tr>
<td>Nitric Acid</td>
<td>June 1961</td>
<td>Nov. 1963</td>
<td>Oct. 1965</td>
<td>23 months</td>
</tr>
<tr>
<td>Sulphuric Acid*</td>
<td>June 1961</td>
<td>Nov. 1963</td>
<td>Jan. 1966</td>
<td>26 months</td>
</tr>
<tr>
<td>Nitro-phosphate*</td>
<td>May 1962</td>
<td>Nov. 1963</td>
<td>Nov. 1965</td>
<td>24 months</td>
</tr>
<tr>
<td>Methanol</td>
<td>February 1964</td>
<td>Nov. 1965</td>
<td>Oct. 1966</td>
<td>11 months</td>
</tr>
</tbody>
</table>

* The time-schedule was revised thrice. Source: Pg. 16, CPDP 26th Report, 4th Lok Sabha

As against the normal time-schedule for erection of fertiliser project as observed by the United Nations Fertiliser Mission (December 1960 to February 1961) of 35/47 months FCI projects took 52/71 months for erection.

Some of the major reasons given by the management are as follows:

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• After obtaining a loan from USA, tenders had to be re-invited from USA because of the condition imposed by USA to acquire plant/machinery from the American sources alone.
• Change in the product-pattern in case of nitro-phosphates.
• Delay in obtaining necessary clearances the Government agencies.
• Diversion of imported equipment to ports other than Bombay due to congestion.
• Delay in the erection due to unusually heavy monsoons.
• Dispute between the management and the suppliers regarding the quality of work.
• Non-availability of power / water.

Data about cost-overruns of the Trombay project is not available but the actual cost of production of the products was much more than initial estimates of cost of production. No plant could achieve the rated capacity which necessitated modifications, replacements and additions.

Conclusion 4.7. Hence, one cannot conclude that delay in the project-implementation is not attributable to overcautiousness or managements' insistence on the quality of work and attempts for perfection. It is a reflection of general level of inefficiency, lack of awareness about the possible impact of time over-runs on financial performance and apathetic attitude of the management and teams under the management.

Project implementation in the later period: Since the Ammonia, Urea, Nitro-phosphate and Methanol plants at Trombay (I, II, III) were functioning below their rated capacity (capacity utilisation ranged between 11.6% to 21.25% and 12.65% to 53.73% during 1965/66 and 1966/67) following measures were taken with additional capital investment.
• Rehabilitation Scheme
• Debottlenecking scheme
• Diversification scheme
These schemes were implemented during 1968 to 1979.

Rehabilitation scheme
It included additions, replacement and modification to the existing plants. The whole scheme was approved by the Board in 1967 to be completed within 3 years, with the initial estimated cost of Rs.100.20 lakhs which was revised downwards to Rs. 83.61 lakhs. Some items were ultimately dropped and 5 items involving Rs.39.59 lakhs were not completed till 1976; the scheme continued for 9 years.

Under the scheme a Phosphoric Acid Plant was to be set up. The initial cost estimate was Rs. 1.5 crores, which had to be revised five-times and the actual cost stood at Rs. 5.04 crores (236% increase). In 1969, it was decided by the FCI to purchase the process and to entrust the installation-work to P&D Division of FCI. Tentative time-schedule was fixed at June 1973, but there was a time-overrun of 18 months and it was completed in January 1975. Thus, the total
time taken for the completion (from the date of Board approval) works out to be more than 7 years. It was later on observed that the rated capacity of 30,000 tonnes could not be achieved.

Supplementary gassification scheme to increase the capacity of Ammonia plant (from 1.06 lakh tonnes to 1.19 lakh tonnes) and the Methanol Plant (from 0.18 lakh tonnes to 0.375 lakh tonnes) was approved by the Board in 1969 and by the Government in November 1969. The estimated cost of Rs. 2.29 crores had to be revised and actual cost amounted to Rs. 3.46 crores (51.9% increase). Even after completing the project, Ammonia plant could not achieve expected increase in capacity, it was less than 20% of the expectations. On the suggestions of RCF (by then RCF was formed) additional expenditure of Rs. 64.95 lakhs on air-compressor was incurred to combat the problem of power-fluctuations. Methanol plant could achieve the rated capacity in 1977/78. It means that it took 12 years for the plant to achieve rated capacity from the date of its commencement, that too after incurring additional expenditure.

Erection of the gassification plant was expected to be completed in March 1971 (30 months from the zero date) but it was completed in February 1974. All sorts of defects and irregularities were observed by COPU.

Short-comings of project-implementation can be summarised as follows:

- A special cell was established in 1967 in the enterprise to monitor the implementation and rehabilitation scheme, but it did not furnish regular reports to the Board and the Board did not bother to keep itself informed.
- FCI violated the Government instructions to obtain a specific foreign-exchange release before making any foreign exchange commitments. Tenders were not invited before awarding the contract to an American company in spite of unambiguous instructions from the Government to invite tenders from USA, UK, Japan and West Germany before awarding contracts to foreign parties.
- Process which was accepted by FCI was not in common use, yet FCI did not find it necessary to work out analysis of comparative economies.
- A contract awarded to the International Ore And Fertiliser Corporation by FCI was finalised in May 1970 and the Government approval was obtained in November 1970. This is a serious type of lapse.
- Expenditure on the scheme was actually approved by the Board in 1978 i.e. after the implementation of the scheme. The reasons for this irregularity as forwarded by FCI - management are sufficient to throw light on the irresponsible behaviour and negligence on the part of the management. They said that the Feasibility Report was not traceable, hence, RCF could not furnish the information to the Ministry. On the top of it, the letter from the Ministry which asked for the information, was misplaced in RCF.
- Factor for which FCI management/RCF management cannot be held fully responsible is the inability of other central PEs to supply vital equipment in the prescribed period. For example, BHEL could supply the air-compressor to RCF in 1979 though order for the same
was placed in September 1976. Similarly there was a delay of 19 months on the part of Bharat Heavy Plates & Vessels Ltd. in the execution of an order for the supply of Waste-Heat Recovery system.

De-bottlenecking Scheme

In order to overcome the bottlenecks in the achievement of rated capacity in NPK and Urea plants some modifications and replacements were felt necessary. The scheme for NPK plant with the estimated cost of Rs. 2.67 crores was approved in June 1973. Actual cost did not exceed, but there was a time-overrun of 8 months. The project was completed in August 1975 instead of the prescribed date in December 1974.

In case of the Urea-plant, modifications were suggested by M/S Technip (fees - Rs. 1.42 lakhs). The Government approval was obtained in June 1973. By September 1974 it was decided to accept the modifications costing about Rs. 1.29 crores, but by that time decision regarding Trombay V expansion had already been taken which made these modifications unnecessary. So the fees paid to the consultants were proved to be infructuous.

Out of 6 diversification schemes which were felt necessary because of a long time taken for stabilisation of production, 4 schemes fetched the expected improvements. Time taken for the completion ranged between 32 months to 65 months from the date of sanction.

Implementation of Trombay IV, V

Capital-cost had to be revised twice and it resulted into 100% increase in the capital expenditure over the initial cost-estimates and 75% increase over the revised estimates. Actual expenditure could be kept below the revised estimates.

Time-overrun of 20 months over the initial and 14 months over the revised schedule is recorded. The project was completed in January 1979. It was claimed by the FCI that regular quarterly review-meetings were being held, monthly reports were furnished and net-work techniques were also used. Yet the project could not be completed in time. After completion design deficiencies were observed and only 66% of the rated capacity could be achieved. This again necessitated a rehabilitation scheme costing around Rs. 2.8 crores. M/S Udhe, the contractor accepted limited liability for non-fulfilment of rated-capacity and design deficiency and bore Rs. 1.26 crores (45%) of the additional expenditure on the Trombay IV plant.

Trombay V

P&D division of FCI and SNAM the foreign consultants were the agencies for the implementation. This time the FCI had taken precaution to work out comparative capital-cost and product-cost before choosing the technology. Provision of penal clauses for delays and non-fulfilment of rated capacity is another sign of improvement. But, the time-overrun of 12 months was recorded.
Implementation in the Post-Reorganisation Period by RCF

Trombay V expansion-project was commissioned as per schedule in 1981/82 and in the trial run of the Urea plant 110% capacity-utilisation was achieved. There was no cost-overrun. That project was fully implemented in the post-reorganisation period. The Government approved the Thai project in May 1979 and the contract was awarded to M/S Haldor Topsoe in January 1981. According to the initial time-schedule the project was to be completed within 45 months from signing the agreement. Thus, due date of completion was October 1984, but the project was completed in September 1984. Dates for the first production and the commercial production were October 1984 and March 1985 respectively.

Observation 4.7. Thus for the first time in the history of fertiliser projects, the project was completed without 'any time-overrun.'

However there was a cost-overrun of 79.72% and 3.31% over the initial and revised cost estimates (initial estimate of Rs. 511.34 crores, revised estimate Rs. 889 crores, actual cost Rs. 919.0 crores.) The plant could achieve rated capacity in the initial run.

23 rehabilitation schemes were conceived and launched by RCF management since its inception. The object has been restoration of the old plants to their full-capacity. Partial technology updating, energy conservation and improvement of stream days have been the specific measures tried through these schemes. 17 schemes were completed till November 1992. Schemes for air-pollution control (14 schemes) and water-pollution control (12 schemes) costing Rs. 25.63 and Rs. 19.24 crores were launched/completed by the management.

In the absence of complete data about time overruns and cost-overruns one cannot conclude either way about the quality of project-implementation. Since initial targets and time-schedules are revised as and when required and since the BPE reports always compare the actuals with the revised estimates/targets, it becomes impossible to decide whether or not the projects were completed in time and within estimates. For example, BPE report 1989/90 says that in case of Ammonia Rehabilitation project (completed in July 1990) there was neither cost-overrun nor time-overrun. But in the 1986/87 Report and 1987/88 Report of BPE following data was furnished.

| Probable date of commissioning | October 1989 |
| Initial cost                  | Rs. 52 crores |
| Revised cost                  | Rs. 66 crores |

This clearly indicates that there was a time overrun of 9 months and cost-overrun of 26% over the initial estimate.

Available information on a few schemes suggests that the schemes were completed within prescribed time-schedule, but the problem of cost-overrun still continues. For example, following schemes were completed in time.
1. Suphala Rehabilitation project - Phase I (Initial cost Rs. 7.5 crores, revised cost Rs. 13 crores, Actual cost Rs. 14.6 crores)

2. NOX Abatement Scheme. (Estimate: N.A., Actual: Rs. 0.80 crores.)


4. Pollution Control Scheme in Urea Plant. (Estimate: Rs. 3.34 crores, Actual: Rs. 3.34 crores.)

The researcher has no hesitation in arriving at following conclusion.

Conclusion 4.8. Project-implementation of FCI projects (now under RCF) had been defective in more than one ways. Indicators of inefficient implementation are:

- Time-overruns in all projects/schemes without exception.
- Cost-overrun in all projects/supplemental schemes.
- Non-fulfilment of rated capacity.
- Need for supplemental schemes to achieve expected rated capacity in all cases.
- Failure of supplemental schemes.
- Irregularities and lapses.

FCI policy to entrust implementation work to P&D Division had additional disadvantages. COPU remarked that the practice to rely more on in-house designs and engineering resulted into “costly experiments within the public sector without anyone taking responsibility for it.”

Those disadvantages can be summarised thus:

Conclusion 4.9.

- P&D Division being a division of FCI was not required to sign a formal agreement which led to ineffectiveness of control over erection-work.
- Due to an absence of clear-cut definition of accountability, collaborators were successful in evading the responsibility of process-failure on the pretext of low quality of fabrication / installation work.
- In case of expiry of warantee-period the collaborators could refuse to abide by the conditions of agreement because of delays in the erection work.
- There used to be lack of co-ordination because of multiplicity of the implementation-agencies.

After 1978, the situation showed remarkable improvement under RCF management; though signs of marginal improvement were noticed in the implementation of Trombay IV, V under FCI management.
Conclusion 4.10. The researcher has no hesitation in concluding that in spite of the absence of full and clear data on cost-overruns and time-overruns, the quality of project implementation has improved under the RCF-management. The indicators of improvement are as follows:

- Improvement in the quality of agreements evident from the inclusion of penalty-clauses.
- Completion of Thai project in the prescribed time-schedule.
- Anticipated end-results are fully achieved in the trial runs/initial runs.
- With the introduction of a series of rehabilitation schemes, the company has been able to maintain capacity utilisation of even old plants at Trombay at an impressive level.

4.10. PROJECT - IMPLEMENTATION OF FCI PROJECTS NOW UNDER HFC - MANAGEMENT

No COPU report gives any details about the project-implementation of Namrup, Barauni and Durgapur projects except the time-overruns and time taken from zero-date. Quality of project-implementation was equally bad. (Perhaps worse.)

Table T 4.5. Time taken for completion

<table>
<thead>
<tr>
<th>Projects</th>
<th>Zero-date</th>
<th>Date of commissioning</th>
<th>Total time taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namrup I</td>
<td>1964</td>
<td>January 1969</td>
<td>4 to 5 Years</td>
</tr>
<tr>
<td>Namrup II</td>
<td>1968</td>
<td>October 1976</td>
<td>8 to 8 ½ Years</td>
</tr>
<tr>
<td>Namrup III</td>
<td>1979</td>
<td>October 1987</td>
<td>8 to 8 ½ Years</td>
</tr>
<tr>
<td>Durgapur</td>
<td>1966</td>
<td>October 1974</td>
<td>8 to 8 ½ Years</td>
</tr>
<tr>
<td>Barauni</td>
<td>1968</td>
<td>November 1976</td>
<td>8 to 8 ½ Years</td>
</tr>
<tr>
<td>Haldia</td>
<td>1972</td>
<td>* Not yet</td>
<td>-</td>
</tr>
</tbody>
</table>

* Haldia project mechanically completed in 1979 but its commissioning activities have been suspended since 1986.

Source: P 82, DPE Report Vol. 2 1991/92

Time taken for commissioning from the zero date in case of all the projects in this group has been 8 to 8½ years, with the exception of Namrup I. In case of Trombay plants (Trombay I, II, III), the period was less than 4½ years for 3 plants, 3½ years for one plant and 2½ for one plant. The Trombay IV, V projects were completed in 8½ years and 6½ years from the date of Government approval respectively (zero-date of these projects is not mentioned in any report.).

Observation 4.8. Thus the time taken for these projects (now under HFC) was considerably higher than that required for RCF projects.

Table T 4.6. Time-overruns (HFC)

<table>
<thead>
<tr>
<th>Projects</th>
<th>Time-overrun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durgapur Project</td>
<td>42 months</td>
</tr>
<tr>
<td>Barauni Project</td>
<td>39 months</td>
</tr>
<tr>
<td>Namrup Project (Exp)</td>
<td>39 months</td>
</tr>
</tbody>
</table>

Source: Pg. 9, COPU, 50th Report, 5th Lok Sabha
The reasons for time-overrun were claimed to be the failure of imported equipment and delays in the delivery of indigenous equipment.

**Observation 4.9.** Extent of time-overrun is more in case of FCI project now under HFC than in FCI projects now under RCF. At Trombay it ranged between 11 months to 26 months; but in case of HFC projects it was more than 39 months.

**Haldia Plant**

FCI-management was responsible for the project planning and implementation of the Haldia project. Its commissioning activities started in the post-reorganisation period. As against the original time schedule of 42 months from the zero date, 7 years were taken for mechanical completion (45 months’ delay). Due date of commissioning was fixed at October 1976, but commissioning activities started in 1982 because power was not available. The commissioning activities were suspended in 1986, since they posed variety of problems and proved to be a continuous drain of resources without fetching any results.

Detailed data on various stages of implementation are given in Table T 4.7.

<table>
<thead>
<tr>
<th>Items</th>
<th>Time taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release of foreign-exchange</td>
<td>9 months</td>
</tr>
<tr>
<td>Receipt of basic engineering documents/final specifications</td>
<td>13 months</td>
</tr>
<tr>
<td>Civil works, receipt of equipment</td>
<td>60 months</td>
</tr>
<tr>
<td>Installation of river-water system</td>
<td>12 months</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96 months</strong></td>
</tr>
</tbody>
</table>

**Table T 4.7. Stages of Implementation (Haldia)**

Source: COPU Report 5th Report, 10th Lok Sabha

Major reasons for delay as forwarded by the management were inability of indigenous producers to supply the equipment/machinery. (Including the PEs like Bharat Heavy Plates & Vessels Ltd.) Government decision to rely on the credit facility and to go in for indigenous technology thus proved to be the practical hurdle. Many draw-backs in the implementation and planning were observed. For example, instead of the estimated soil-consolidation area of 23,000 sq.m, consolidation of 54000 sq.m was felt necessary at the time of implementation.

**Cost-overrun**

There is no reference to the cost-overruns of other HFC projects though the possibility of its absence is very very remote in any project with heavy time-overrun. Cost-overrun in case of Haldia project is as high as (624.18 crores) 709 % of the original estimates of Rs. 88.03 crores which had to be revised a number of times.

An instance of a serious lapse was pointed out by the COPU. The last revision of cost was done in 1986 for which there was no approval by the Government till 1990. No attempt was made to fix the responsibility for the irregularity.
Due to frequent breakdowns in the main plant downstream plants could not be commissioned. Because of tied loans, 11 firms were engaged for the basic and detailed engineering documents and 26 firms were responsible for the supply of equipment. This resulted into mismatch and repeated failures of the plant.

According to the report of the consultants from West Germany and Japan, specially appointed for surveying Haldia project, deficiencies in design and fabrication ranged between 50% to 100% due to poor workmanship. Repairs cost Rs. 55.38 lakhs for which the collaborators refused to pay compensation, because the warrantee period had already expired. There was no attempt either to fix the responsibility or to take disciplinary action.

Lack of co-ordination: West Bengal State Electricity Board (WBSEB) was to supply power to the Haldia project. Even though the mechanical completion of the project was delayed by 45 months, the WBSEB could not fulfil the commitment. At last a 20 MW Gas Turbine (cost Rs. 6.91 crores) was imported in 1982. (Three years after mechanical completion).

After ordering complete stoppage of the commissioning activities in 1986, the Government appointed a Technical Committee to find the way out of this situation. The committee recommended commissioning in stages with additional total capital cost of Rs. 14.74 crores. Government did not accept the advice and invited consultants from W. Germany and Japan on whom Rs. 2.70 crores were spent towards consultancy fees and whose advice too was ultimately turned down.

They had recommended additional investment of Rs. 123.88 crores (1st phase comprising of rehabilitation of Ammonia, Urea, Methanol plants) and of Rs. 75.29 crores (2nd phase comprising of rehabilitation of the Nitro-phosphate group of plants) The Government could not accept the proposal because additional investment would have resulted into unusually prices of the products. (Rs. 10741 per tonne as against the normal rate of Rs. 4200 per tonne (155.7% difference) and Rs. 8339 per tonne as against the normal rate of Rs. 5000 per tonne (66.8% difference) ). There has been a difference of opinion between the HFC management and the Ministry about the desirability of additional expenditure and choosing between the two alternatives of DAP plant and NPK plant. The internal rate of return would have been negative after the additional capital-investment instead of anticipated (initially) rate of 16.13%.

Conclusion 4.11.

- Haldia project has been a typical example of an ill-planned, ill-implemented still-born major project in the fertiliser sector. There seems to be no hope of turning it into a viable proposal. Hence the entire capital cost of Rs. 624 crores has gone waste in addition to the recurring costs and the indirect loss of Rs. 321.61 crores due to a stoppage of production (during 1979 to 1990).
• A loss of such a large size would never have been justified as a 'price paid for
learning', even though the management would have learnt a lesson from it.
In this case it cannot be regarded as 'price of learning' since the management
does not seem to have learnt anything from the failure.
• It is most disgusting to see the callousness with which the things were
allowed to deteriorate and continue for such a long period.
• Government's reluctance to take any decision in order to rectify the blunder
or to terminate the project has been the worst part of the whole affair.
• In 1989/90, there were 1819 employees on this still-born project which has
manufactured nothing since 1986. The salary-bill of these employees for the
period 1986/1990 has been Rs. 36.64 crores.

Project-implementation under HFC-management
The only project which was solely implemented by HFC-management was Namrup III. It was
completed in 8½ years. Four projects were commissioned during 1985/90 for which data about
time-overruns and cost-overruns are available

Table T 4.8. Time/cost overruns of HFC projects

<table>
<thead>
<tr>
<th>Projects</th>
<th>Original time schedule</th>
<th>Actual time taken</th>
<th>Original cost estimate</th>
<th>Actual expenditure incurred till 1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namrup III Exp.</td>
<td>66 months</td>
<td>101 months</td>
<td>168.43</td>
<td>282.24 (67.6% increase)</td>
</tr>
<tr>
<td>Captive Power Plant (B)</td>
<td>45 months</td>
<td>99 months</td>
<td>29.88</td>
<td>41.37 (39.4% increase)</td>
</tr>
<tr>
<td>Captive Power Plant (D)</td>
<td>43 months</td>
<td>107 months</td>
<td>12.69</td>
<td>17.65 (39.1% increase)</td>
</tr>
<tr>
<td>Ammonia Storage (H)</td>
<td>24 month</td>
<td>66 months</td>
<td>9.99</td>
<td>10.2 (2.8% increase)</td>
</tr>
<tr>
<td>Ammonia Storage tanks (D)</td>
<td>24 months</td>
<td>133 months</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Ammonia Storage tanks (B)</td>
<td>24 months</td>
<td>87 months</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Source : Pg 34, COPU 5th Report, 10th Lok Sabha

Organisational arrangements: There is a project management for each project under whom
there is a group of engineers and a Manager (Materials). HFC management claims to have a
regular monitoring system and regular review meetings. Network techniques like PERT and
CPM are also used and yet no project has been completed in time.

The management puts the blame on the supplier PEs for not supplying quality equipment within
the prescribed time\(^9\) and the Government for insisting for the purchase of indigenous
equipment. Though the management feels that "the internal factors are not responsible for
delays", the COPU commented "* delays were due to lack of management control and
monitoring by the company. "\(^{14}\)
Conclusion 4.12.

- Project planning and implementation of projects under FCI management (now under HFC) had been full of deficiencies and defects. Even in the pre-reorganisation period those projects recorded considerably heavier time-overruns.

- There is no indication of any improvement even in the post-reorganisation period.

- Project-implementation in HFC has been of an inferior quality as compared to that in RCF.

4.11. OBJECTIVES

No enterprise can operate efficiently unless the objectives of the enterprise clearly stated. There has been a pressing recommendation from all the ad-hoc committees and the COPU for making it obligatory for the PEs to make clear statements of macro-objectives and micro-objectives. BPE had circulated guidelines to the effect in 1979. But RCF has not prepared a separate statement of objectives. When asked about the statement of objectives, the company furnished a copy of Memorandum of Association to the researcher. Since such statement is just a legal formality to overcome possible hurdle in future in the product-diversification of the company, it has little value in the sense implied by the COPU. One would have expected a PE like RCF to fulfil this obligation; especially because RCF has signed MOU with the Ministry and preparation of statement of micro-objectives was one of the pre-conditions of the agreement.

HFC management also ignored the guidelines and argued that broad objectives of the company were always kept in view while formulating yearly budget.

Corporate Plan: RCF has been framing its corporate plans systematically with medium-term and long-term schemes of capital projects. However, COPU found in case of HFC that the company had never formulated any perspective plan or a corporate plan. The annual target-setting for individual plants has also been unrealistic.

Macro-objectives in setting up fertiliser factories in the public sector had been as follows:

- Production of artificial nutrients in order to gear up agricultural production in the short span of time.

- Providing fertilisers to the Indian agriculturists at a fair price.

Public sector fertiliser factories have not been able to bridge the gap between the demand for and supply of fertilisers. Hence as a group they have failed to fulfil this objective. (Appendix 4.4). Similarly, fertiliser prices in India are much higher than in most of the developing countries due to many factors including taxes/duties imposed on the equipment used in the fertiliser factories, and price-rise of inputs. Government gives 30% subsidy and yet the prices are high.
Objectives of the reorganisation were explicitly spelt out by the concerned Ministry as follows:

- To overcome the problems faced by the FCI in organisation, management, co-ordination and control of its projects.
- To facilitate specialisation according to the process used by different plants in fertiliser production.
- To overcome the teething problems of individual plants.

But according to COPU, "due to complications arisen in subsequent years the assumption was proved wrong. (Assumption that HFC would achieve the above mentioned objectives). The COPU commented that the claims of HFC-management that they had been able to achieve the objectives of reorganisation are not borne out by tangible results. The company has gone from bad to worse. The anticipated rate of return on capital employed was fixed at 12% after tax at the time of reorganisation. Actual results have been much below the expectations because HFC never earned profit.

Opposite can be said about RCF. There has been an overall improvement in the working of RCF in the field of control and co-ordination and specialisation. RCF has been successful in overcoming the so-called prolonged teething troubles.

Conclusion 4.13.

- PEs have not appreciated the significance of clear objectives. Even RCF has not prepared a statement of objectives.
- Judging on the criterion of macro-objectives, PEs as a group have failed to achieve both the objectives. But, RCF has without doubt fared well, because RCF has taken comparatively less time for commissioning and has always maintained capacity utilisation around and above 80%. Hence, RCF fertilisers were made available for the customers within short period and in larger quantities than HFC-fertilisers.
- RCF has achieved the objectives of reorganisation, but HFC has failed to do so. Instead, it has gone from bad to worse.

4.12. ORGANISATIONAL STRUCTURE

Organisational structure determines the tiers of management and decision-making. Organisational charts at unit level for both Namrup and Trombay projects under FCI management are available.

Under FCI the organisational set-up of operating units varied from project to project. Ad-hocism prevailed in decisions about the set-up.
Organisational chart of RCF is given in the Appendix 4.5. There are GMs at Trombay and Thal operations who have three tiers under them and they report to the Executive Director (Production) who reports to the CMD. The structure is fairly horizontal.

Not much is known about the new organisational set-up of HFC either at corporate level or at unit level. The COPU report mentions that there has been a dearth of qualified personnel at the senior and middle levels, because at the time of reorganisation many officers opted for other organisations. The company was in need of two Functional Directors under CMD (1990/91). The age composition of senior engineers and Deputy GMs is defective, because most of the officers were between the age of 50-55 years which meant large-scale middle and top level vacancies in the near future.

There is a discussion in the COPU report about the desirability of keeping the corporate office in New Delhi, while all the operating units were situated in the Eastern region. Even after getting instructions from the Government to shift it in the proximity of the operating units, the corporate office continued to remain in New Delhi.

**4.13. PRODUCT-MIX**

There had been a change in the product pattern of Nitro-phosphate which was one of the reason for delay in implementation of Trombay project of RCF. The company manufactures nitrogenous, phosphetic and complex fertilisers and some industrial products. Share of value of the industrial products in the total production was 11.35% in 1991/92. HFC manufactures only nitrogenous fertilisers. Industrial products are manufactured on a very moderate scale constituting only 2.4% (by value) (1986/87).
Nitrogenous fertilisers are under price control since 1977, but phosphetic and potassic fertilisers were brought under the control order for a short period between 1985 to 1992. Suphala constituted 24.59% (by value) of the total fertiliser production and 30.7% of total production belonged to the category of uncontrolled products. (Industrial products + phosphetics).

**Observation 4.10.** Thus 30.7% of output remained outside the price control in case of RCF and in case of HFC only 2.4% of production was outside the control order.

HFC could have diversified the product-mix with proper planning, but the company which could not specialise in the running product-lines could not think of diversifying.

**Conclusion 4.14.** RCF should be given due credit for product diversification and one has to hold HFC management responsible for not being able to diversify the product-mix.

### 4.14. CAPACITY UTILISATION

Volume of output depends on the capacity utilisation. The term ‘capacity utilisation’ denoted a ratio of actual production and the installed capacity, where installed capacity refers to the maximum level of production that an enterprise can theoretically achieve presuming all ideal conditions with a given set of technology/equipment. The term ‘rated capacity’ means an attainable level of production taking into consideration practical constraints.

Higher capacity utilisation ensures larger volume of output on one hand and low per unit cost on the other. In case of most of the fertiliser PEs low capacity utilisation has been a common phenomenon. According to Mr. S.K. Mukherjee, a 10% increase in overall capacity utilisation (by the year 1990) might contribute 800,000 tonnes of N production and lower production costs (disregarding 5/6 chronically deficient plants). 18

While analysing the causes behind low utilisation in 1979/80, BPE report 19 says that many plants in the public sector are reported to have not reached the stage of stabilisation even though some of them were commissioned many years ago. Only following 6 units (which accounted for 23% of the total public sector capacity) were declared stabilised plants where capacity utilisation was comparable with the enterprises in private sector.

<table>
<thead>
<tr>
<th></th>
<th>Nangal - 80%</th>
<th>Gorakhpur - 39%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trombay</td>
<td>95%, 85%</td>
<td>Namrup I - 63%</td>
</tr>
<tr>
<td>Madras</td>
<td>80%, 80%</td>
<td>SAIL - 88%</td>
</tr>
</tbody>
</table>

At that time 38% capacity in public sector was locked up in non-stabilised plants and 37% in the old plants which had outlived commercial life and worked between 44% to 68% capacity
utilisation. Non-stabilised new plants operated between 6% to 45% capacity utilisation due to a variety of reasons.

Therefore the public sector fertiliser plants which accounted for 659,000 tonnes capacity operated at 39.8% capacity utilisation as compared to 86.5% capacity utilisation of private units which accounted for 571,000 tonnes capacity. Comparative data on capacity utilisation is presented in the Appendix 4 for public, private and co-operative sector for 1988/89 to 1993/94.

**Observation 4.11.** It shows how the private sector and the co-operative sector have generally fared better as far as capacity-utilisation is concerned.

On this background, comparison between the capacity-utilisation in fertiliser plants of RCF and HFC would be pertinent.

**RCF :** Due to basic deficiencies in the design and engineering the plants would not achieve rated capacity in 1965/66 and 1966/67. Capacity utilisation had been between 11.6% to 21.55% and 12.65% to 53.73% in 1965/66 and 1966/67 respectively. This necessitated the introduction of modification and rehabilitation schemes to achieve rated capacity. Since 1970/71 there was a progressive increase in the capacity utilisation of all the Trombay units from 70% in 1970/71 to 91% in 1972/73.

The time taken for achieving rated capacity can be regarded as a reliable criterion of performance. In case of RCF, Urea plant (Trombay V) achieved 110% utilisation in the trial round and Thai plant could achieve 60% utilisation on commissioning as per the target. Capacity utilisation of RCF plants has always been above 80%. Overall utilisation has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>1984/85</th>
<th>1985/86</th>
<th>1986/87</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>84%</td>
<td>85%</td>
<td>81%</td>
</tr>
<tr>
<td></td>
<td>1989/90</td>
<td>1990/91</td>
<td>1991/92</td>
</tr>
<tr>
<td></td>
<td>87%</td>
<td>92%</td>
<td>86%</td>
</tr>
</tbody>
</table>

Unit-wise comparative data are presented in table T 4.9.

**HFC :** Even in case of HFC projects the problem of design-deficiency and non-attainment of rated capacity was observed. In Namrup and Durgapur plants breakdowns and mechanical failures were reported. The FCI management had blamed the Government for insisting on the use of indigenous engineering design and equipment on a maximum scale. But failure of imported machinery was also noticeable.

The Namrup unit could achieve 62%, 67% and 78% capacity-utilisation in 1970/71, 1971/72 and 1972/73. Durgapur plant was operating between 50% to 70% capacity-utilisation. In 1979/80 only Namrup I had been one of the fertilisers PEs whose production was reported to be stabilised. This means that Durgapur (1974), Barauni (1976) and Namrup II (1976) had not declared their production as stabilised even after 4 to 6 years after the commissioning (Years in
brackets indicate respective commissioning years). During 1978 to 1981 they operated between 23% to 35% capacity-utilisation. Capacity-utilisation showed a declining trend in spite of modifications and establishment of captive power plants.

Table 4. 9.

Comparative Data on % Capacity Utilisation of different Units of RCF, HFC.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Durgapur</td>
<td>31.4</td>
<td>38</td>
<td>30</td>
<td>33</td>
<td>10</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>Barauni</td>
<td>48.8</td>
<td>25</td>
<td>61</td>
<td>41</td>
<td>24</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>Namrup I</td>
<td>51.1∗</td>
<td>46</td>
<td>38</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Namrup II</td>
<td>44</td>
<td>39</td>
<td>55</td>
<td>43</td>
<td>44</td>
<td>24</td>
<td>-</td>
</tr>
<tr>
<td>Namrup III</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>66</td>
<td>28</td>
<td>51</td>
<td>-</td>
</tr>
</tbody>
</table>

∗The figure indicates combined output of Namrup I and II.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea (T)</td>
<td>N/A</td>
<td>95</td>
<td>91</td>
<td>101</td>
<td>72</td>
<td>60</td>
<td>61</td>
</tr>
<tr>
<td>Suphala</td>
<td>N.A</td>
<td>91</td>
<td>88</td>
<td>88</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
</tr>
<tr>
<td>Trombay (IV)</td>
<td>N.A</td>
<td>74</td>
<td>69</td>
<td>83</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
</tr>
<tr>
<td>Trombay (V)</td>
<td>N.A</td>
<td>82</td>
<td>90</td>
<td>101</td>
<td>81</td>
<td>94</td>
<td>88</td>
</tr>
<tr>
<td>Thai</td>
<td>N.A</td>
<td>N.A</td>
<td>55</td>
<td>70</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NPK</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
<td>121</td>
<td>123</td>
<td>112</td>
</tr>
<tr>
<td>ANP</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
<td>85</td>
<td>74</td>
<td>77</td>
</tr>
<tr>
<td>Urea</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
<td>N.A</td>
<td>91</td>
<td>88</td>
<td>74</td>
</tr>
</tbody>
</table>


Conclusion 4.15. In conclusion one can say that the capacity-utilisation of RCF units has been not only better than that of HFC units but it is comparable with world standards and domestic private units. Indicators are as follows:

- RCF projects could achieve rated capacity at least after rehabilitation/ modifications in the pre-reorganisation period; HFC could not do it.
- RCF projects could attain rated capacity in the initial/trial runs in the post-reorganisation period.
- Average capacity-utilisation of RCF has been always satisfactory.

Capacity utilisation depends on the following factors:

- Quality of technology/equipment.
- Assured supply of inputs/ feed stock of required quality.
- Assured supply of water/power.
- Incidence of breakdowns.
- Maintenance of equipment.
- Availability of funds.
- Stream-days lost on account of industrial relations.
Quality of technology: Projects under HFC and RCF (Trombay) faced the problems of deficiencies in the design/equipment. But RCF could overcome those problems through timely measures like rehabilitation schemes. HFC plants could not do so. HFC’s claim that design deficiencies of imported Montecathini technology (which was never tried earlier) is baseless because Cochin plant would give better performance and better quality of Urea prills by using the same technology.

Assured supply of inputs: In the pre-reorganisation period, Trombay plant faced the problems of low-quality refinery gas and naphtha due to defective agreements which did not include vital provision for relative density of gas/naphtha. But after reorganisation, no such problems could threaten the performance. HFC, however, faced the problems of regular supply due to remoteness of location / natural unforeseen calamities (monsoons) / dependence on the other PEs. ONGC, Oil India Ltd and Coal India Ltd. were the suppliers. Following table gives data about stream days lost on account of insufficient/irregular supply by the suppliers.

<table>
<thead>
<tr>
<th></th>
<th>Ammonia</th>
<th>Urea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namrup II</td>
<td>49</td>
<td>104.5</td>
</tr>
<tr>
<td>Namrup III</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Durgapur</td>
<td>-</td>
<td>107</td>
</tr>
<tr>
<td>Barauni</td>
<td>-</td>
<td>109.5</td>
</tr>
</tbody>
</table>

For 45 days, there was no gas at all because of the defective pump supplied by the Bharat Pumps And Compressors Ltd. (a PE) and due to bundhs, agitations and also because of internal problems of Oil India Ltd. and ONGC. Due to poor quality of coal, the captive power plants set up in HFC plants have created problems in power-generation.

Conclusion 4.16. This once again confirms researcher’s hypothesis that business links with the other PEs (either as a supplier or as a purchaser) have become hurdles in the way of efficient working for PEs.

Assured supply of power/water: Power shortage and power fluctuations have created problems for fertiliser units of RCF and HFC. The State Electricity Boards were responsible for the supply of power. In case of Haldia project, WBESB had committed to supply power for the plants. But in spite of the fact that the plant was to be commissioned after a delay of 3 years, WBESB could not make necessary arrangements. Almost 3 years after the mechanical completion of the plants, gas turbine had to be imported.

In 1989/90, HFC plants faced serious power shortages which led to loss of 21.5, 20.5, 59.47 and 4.65 stream days in Barauni, Durgapur, Namrup I and Namrup II plants respectively. Agreements with the State Electricity Boards were made in early 1970s and the actual requirements of fertiliser plants increased over the years. Some modifications were made by
the State Electricity Boards to bridge the gaps between demand and supply of power. But they were insufficient and ineffective.

Hence it was thought essential to set up captive power plants in the Namrup, Durgapur, Haldia, Trombay and Thal projects to combat the power problems. The Secretary, Department of Fertilisers admitted that due to faulty planning there was no provision for captive power plants in some HFC plants. Though the plants can not depend on captive power plants for their full requirement, captive power plants are necessary to minimise production-losses for a continuous-process industry. They can supply power to vital divisions.

RCF could take advantage of captive power plants, but in HFC plants (1986 to 1990) captive power plants faced problems in power-generation. Thus the measures taken to overcome production-problems became futile.

**Water Supply** : Namrup plant had problems about the quality of river water also.

**Conclusion 4.17.** There is no reason why HFC should have additional disadvantage on account of obligation to use indigenous equipment/inputs preferably from other PEs, because even RCF is under the same obligations. Hence are two possibilities:

a) Similar problems were faced by RCF but they could overcome those problems by better management. AND / OR,

b) Because of favourable financial results, they have not come to the surface in case of RCF. Hence there is further scope for improvement in operational/financial results by removing these obligations/by improving the working of concerned PEs.

**Incidence of breakdowns** : One does not get exact idea about the frequency and severity of problems of breakdowns, down-times and maintenance of the plant about both the PEs. All that one comes across in earlier RCF report is reasons forwarded by the management for shortfalls in production which included frequent breakdowns and longer time taken for the maintenance. COPU report on HFC however gives data on the stream-days lost on account of equipment breakdowns during 1989/90.

<table>
<thead>
<tr>
<th>Plant</th>
<th>Ammonia</th>
<th>Urea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namrup II</td>
<td>72</td>
<td>37</td>
</tr>
<tr>
<td>Namrup III</td>
<td>52</td>
<td>45</td>
</tr>
<tr>
<td>Durgapur</td>
<td>116</td>
<td>13</td>
</tr>
<tr>
<td>Barauni</td>
<td>114</td>
<td>31.5</td>
</tr>
</tbody>
</table>

The number of streamdays lost on this account has been increasing over the years. The management blamed the design-deficiency and equipment. But COPU remarked that the
maintenance system was defective. There was neither a centralised system nor regular staff for the purpose. The company depended on the external/private agencies for routine maintenance. Expenditure on this account was Rs. 446.55 lakhs in 1989/90.

Conclusion 4.18.
- The incidence of equipment-breakdowns shows an increasing trend in HFC.
- In spite of the overstaffing problem, HFC has neither regular staff nor a centralised system for routine maintenance. No enterprise of HFC’s size and age can justify this state of affairs.
- Possibilities of frequent breakdowns can not be totally denied in case of RCF but the chances seem remote because of overall satisfactory performance of the company. At least maintenance-management must be satisfactory enough not to invite the attention of COPU.

Availability of Funds: HFC has been facing liquidity problems because of weak financial position. RCF is in a far better position.

Industrial Relations: All units of HFC are prone to industrial unrest and loss of man-days on account of strikes. Loss of 1250, 23481, 5365 man-days was recorded for 1987, 1988 and 1989 respectively.

Conclusion 4.19. While HFC faced serious problems of industrial strikes, RCF has never faced this problem except in 1982 when 2/3 days were lost.

Thus, the problem of capacity-utilisation in HFC has become chronic because of unsatisfactory conditions mentioned above. Hence the management has asked the Government to think about derating of installed capacity almost to 2/3 of the declared installed capacity. Derating of installed capacity would automatically mean reflexing (upwards) of the retention-price, which in turn would increase the volume of subsidy payable to HFC.

Conclusion 4.20. In short, demand for derating of installed capacity by HFC is in no way going to improve the working of HFC but would provide a claim on higher volume of subsidy.

4.15. COST OF PRODUCTION

Cost of production is another reliable criterion of operational efficiency.

RCF: In the initial period (1966/67), the cost of production for all the products was more than the estimated cost of production. It was more than the cost of production in the Sindri and
Nangal plants. The management argued that it was because of obsolete technology. It continued to be more in spite of efforts of cost-reduction.

Since 1978 the cost of sales has been less than the net sales, but since 1986/87 the cost of sales has been more than the sales receipts. Percentage share of material cost to total cost of production has come down from 63.7% in 1981/82 to 35.41% in 1991/92. Percentage share of manpower cost had also decreased from 3.7% to 2.9% and again increased to 3.98%. This indicates that administrative cost and fixed costs have increased over the years.

**Conclusion 4.21. There is a scope and need for cost-reduction in case of RCF products, because cost of sales has been greater than sales receipts in recent years.**

HFC: Cost of production has been increasing in the HFC plants. There was a steep increase in the cost of production from Rs. 4850 to Rs. 11737 per tonne and from Rs. 4657 to Rs. 8138 per tonne in the two units of HFC from 1987/88 to 1989/90. Percentage share of material cost to total cost steeply decreased from 42.4% to 27.78% and percentage share of manpower cost, which was already high (8.3% in 1981/82), increased to 9.59% in 1991/92. This suggests that administrative cost, manpower-cost and fixed cost have increased. Percentage of cost of sales to sales-receipts was as high as 242.6%.

**Conclusion 4.22. Cost of production of HFC plants has always been higher than the sales-receipts.**

**4.16. PERSONNEL / INDUSTRIAL RELATIONS**

RCF: No report gives any information about the management's efforts to assess man-power requirements or incidence of over-manning. But according to unofficial sources, the problem of over-manning is present in RCF especially at Thal plants, as compared to the private fertiliser plants. Statistical data show an increase in the number of employees. Ratio for value added to capital employed was 43% in 1981/82 which came down to 23.0% and again improved to 35.59% in 1991/92.

RCF never had severe industrial relations problem. But the management's decision to give preference to local labour has made the labour more demanding and conscious about their rights instead of imbibing in them a sense of responsibility.

There has been a single trade union and the management can take union-leaders into confidence and can convince them on major decisions. Participative management is introduced at all levels. The management has tried innovative measures to maintain healthy industrial relations. Approximately 70% and 50% staff has been given accommodation at Thal and
Trombay plants respectively. Net expenditure on the maintenance of townships and other staff benefits amounted to Rs. 14.19 crores and capital expenditure on townships was Rs. 24.61 crores in 1991/92.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Net expenditure on maintenance of Townships</td>
<td>2.93</td>
<td>6.58</td>
<td>14.19</td>
</tr>
<tr>
<td>Capital expenditure on Townships</td>
<td>5.5</td>
<td>16.44</td>
<td>24.61</td>
</tr>
</tbody>
</table>

HFC : Paul Pothen Committee (1986) concluded that the manpower-strength at the time of reorganisation was far beyond the needs of HFC.

National Institute for Training in Industrial Engineering (NITIE) assessed the manpower requirements of the Barauni unit. The then existing (1989/90) strength was 1715 as against the sanctioned strength of 1958 and actual requirement of 1450 persons. No similar studies were made in case of other units.

1819 persons were employed in the Haldia plants. Since 1986, all the commissioning activities are stopped at Haldia; yet these employees continued to be on pay roll. Total expenditure on their emoluments during October 1986 to December 1990 has been Rs. 36.64 crores. Voluntary retirement scheme was introduced under which 334 employees retired but 912 persons were recruited in order to fulfill obligations regarding the reservation policy. Redeployment of the staff at Haldia is not possible due to strong trade unions.

In spite of over-manning and low capacity-utilisation, the incidence of overtime payments has been over Rs. 4½ crores per year during 1987/88 to 1989/90.

In Durgapur plant, the problem of overtime has been one of the important determinant of increasing loss. The Labour Ministry of West Bengal Government got an agreement signed by the HFC to the effect that the management would pay a reasonable amount of overtime.

The man-power problem has one other dimension. There has been a dearth of qualified personnel at the senior and middle levels. The age-composition of the senior officers cadre is defective because majority of them reach superannuation at approximately the same time.

Due to the pressure tactics of Trade Unions and Officers' Associations employees are promoted to higher positions though they do not fulfil requisite qualifications. According to COPU report 77% of the junior engineers are not qualified. Workers have been pressurising management for automatic promotions at higher posts. Suitable new trainees are neither available nor retained. Middle-level employees being indispensable can not be given proper training as and when necessary.

Industrial relations have been strained due to indiscipline, multiplicity of trade unions and unreasonable demands by them without reference to labour productivity. The managerial
persons are demoralised and appear to be helpless in this atmosphere. Production-incentive schemes were tried but they are not giving expected results due to low moral.

The Secretary, Department of Fertilisers opined "......... it is felt that unless the discipline and industrial relations climate improves in these units, there is no assurance that these units will make profit even after solving all the technical problems". 22

<table>
<thead>
<tr>
<th>Years→</th>
<th>1980/81</th>
<th>1986/87</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net expenditure on maintenance of townships</td>
<td>5.09</td>
<td>11.41</td>
</tr>
<tr>
<td>Capital expenditure on townships</td>
<td>9.71</td>
<td>16.74</td>
</tr>
</tbody>
</table>

Conclusion 4.23. In case of personnel management RCF has done definitely better than HFC. All the indicators speak of better personnel management by RCF.

4.17. BOARD OF DIRECTORS/ TOP EXECUTIVES

RCF : Articles of Association of RCF fixed the minimum and maximum number of directors to be between 3 and 12. The President has the right to determine the actual number of Directors.

Usually there are 3/4 official Directors representing Ministry of Fertilisers & Chemicals, Ministry of Finance and Ministry of Agriculture. In addition usually one representative of the State Government of Maharashtra is on the Board. There is a bias in favour of Government Directors as against the BPE guideline to restrict the number of official Directors to 2. Usually the total number of Directors is 8/9 out of which 50% or more are official Directors.

Board of Directors is assisted by the management committee consisting of over 20 members. Part-time directors retire after every AGM by rotation and CMD/part-time MD and Functional Directors occupy the post till the expiry of their tenure.

There has been a continuity in the top-level posts immediately after 1978. During last 4 - 5 years there have been frequent changes and delays in the appointment of regular CMD. According to unofficial information, uncertainty regarding the leadership of RCF has started affecting the work-culture adversely especially at higher level.

HFC : In case of HFC, there are 5 non-official part-time Directors, 1 Director (Finance), and 1-2 non-executive official Directors from the Ministry of Finance to assist the CMD. There is no provision for Functional Directors. Due to procedural technicalities, it is not possible to change the composition of the Board unless the company is reclassified.
There have been frequent changes in the incumbents of the post of CMD. During 1978 to 1990 there have been 7 regular CMDs. HFC has remained without a regular CMD in between two appointments. For example in 1988/89 and in 1990/91, there was an acting CMD for 8 months and 12 months respectively. This has certainly created a feeling of uncertainty and discontinuity. According to COPU report it was because of resignations from the CMDs before superannuation/termination of contract that the HFC had to remain topless on many occasions.

Conclusion 4.24.

- There have been frequent changes in the top-level management in HFC, but RCF had a fairly stable top-level management. Frequent changes in the incumbent at the post of CMD have adverse effects on the preference.
- RCF has a fairly large proportion of official Directors on its Board; HFC Board does not have many official Directors. Hence, the contention that greater representation to official Directors adversely affects the working of PE is proved to be baseless.
- Absence of functional Directors on HFC Board might have adversely affected its performance.
- RCF’s policy to have a Managing Committee to assist the Board might have improved/maintained its performance at a satisfactory level.

4.18. MISCELLANEOUS

Anti-pollution measures: A large scale fertiliser factory has an external diseconomy which traditionally accepts and logically justifies the existence of fertiliser factories in the public sector. RCF has been consciously making efforts to minimise air and water pollution. The Thai plant was planned to be a zero-pollution plant. Stringent pollution-control measures are taken and afforestation programmes are implemented by RCF to keep environmental balance. The effluent are successfully used to make by-products.

Promotional activities of the company include Integrated Rural Development Programmes in 2 villages each from Maharashtra and Andhra Pradesh. It arranges for demonstrations, Krishi melas, soil testing and special training programmes for the farmers. In 1991/92, 477 demonstrations, 44 Krishi melas and 296 soil testing days were organised. RCF also undertook intensive promotional activities in 41 districts of 6 states.

The testing activities through static and mobile laboratories and seeding programmes before launching a new product had already been started at all the plants of HFC. Eastern and Northern regions are being covered by HFC but details about these activities are not known.
The marketing division of RCF has two sub-divisions with regional sub-offices to look after the marketing of fertilisers and industrial output. Aggressive advertising and publicity activities are carried out to maintain the brand-image. Radio, Press and Film advertisements are the instruments used. Distribution network of dealers is being widened and the company has plans for diversification of products. RCF has entered the export market on a very moderate scale since 1989/90. RCF has a well-developed R&D Centre which is engaged in applied research in chemical and agricultural fields. Projects and experiments for energy conservation, use of effluents and research in bio-technology and plant-tissue culture are carried out. Thus apart from being an ideal enterprise, RCF has shouldered the responsibility of a 'public enterprise' in being an ideal employer and a trend-setter in the field of fertilisers.

Conclusion 4.25. RCF has played the role of an ideal employer, an ideal public enterprise and a philanthropist organisation.

4.19. **FINANCIAL PERFORMANCE**

Table T 4.12. contains data about net profit/loss, dividend declared by RCF and HFC since their inception.

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Profit (RCF)</th>
<th>Dividend (RCF)</th>
<th>Net Loss (HFC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978/79</td>
<td>8.14</td>
<td>2.56</td>
<td>22.92</td>
</tr>
<tr>
<td>1979/80</td>
<td>11.04</td>
<td>3.35</td>
<td>34.66</td>
</tr>
<tr>
<td>1980/81</td>
<td>16.53</td>
<td>4.35</td>
<td>54.06</td>
</tr>
<tr>
<td>1981/82</td>
<td>21.26</td>
<td>5.23</td>
<td>48.13</td>
</tr>
<tr>
<td>1982/83</td>
<td>22.47</td>
<td>6.29</td>
<td>55.35</td>
</tr>
<tr>
<td>1983/84</td>
<td>44.05</td>
<td>10.03</td>
<td>72.40</td>
</tr>
<tr>
<td>1984/85</td>
<td>44.35</td>
<td>11.03</td>
<td>72.23</td>
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<tr>
<td>1985/86</td>
<td>32.23</td>
<td>11.03</td>
<td>71.56</td>
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<tr>
<td>1986/87</td>
<td>20.11</td>
<td>11.03</td>
<td>86.22</td>
</tr>
<tr>
<td>1987/88</td>
<td>63.11</td>
<td>11.03</td>
<td>104.84</td>
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<tr>
<td>1988/89</td>
<td>69.95</td>
<td>11.03</td>
<td>156.38</td>
</tr>
<tr>
<td>1989/90</td>
<td>37.78</td>
<td>11.03</td>
<td>169.79</td>
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<tr>
<td>1990/91</td>
<td>40.76</td>
<td>11.03</td>
<td>231.45</td>
</tr>
<tr>
<td>1991/92</td>
<td>18.78</td>
<td>11.04</td>
<td>330.53</td>
</tr>
<tr>
<td>1992/93</td>
<td>(-) 26.68</td>
<td>-</td>
<td>349.44</td>
</tr>
<tr>
<td>1993/94</td>
<td>(-) 12.08</td>
<td>0</td>
<td>366.73</td>
</tr>
<tr>
<td>1994/95</td>
<td>167.19</td>
<td>27.59</td>
<td>-</td>
</tr>
</tbody>
</table>

RCF has been showing net profits for all the years except 1992/93, 1993/94 for which the losses were not attributable to performance of RCF but to some accounting practices (cf. Appendix 4.3. ). The volume of profits and the percentage of gross profit to net-sales (cf. Appendix 4.2.) has declined after 1989/90, but it has gone up in the year 1994/95. The management attributes the declining rate of profitability to the controlled prices and increased custom duties. But, it is evident from the profit & loss statements of RCF that the component of 'other income' has increased in last few years which has been responsible for the net-profit during 1982/83 to 1993/94. Volume of 'other income' has been 6.60 crores, 8.05 crores, 10.77

RCF has been showing net profits for all the years except 1992/93, 1993/94 for which the losses were not attributable to performance of RCF but to some accounting practices (cf. Appendix 4.3. ). The volume of profits and the percentage of gross profit to net-sales (cf. Appendix 4.2.) has declined after 1989/90, but it has gone up in the year 1994/95. The management attributes the declining rate of profitability to the controlled prices and increased custom duties. But, it is evident from the profit & loss statements of RCF that the component of 'other income' has increased in last few years which has been responsible for the net-profit during 1982/83 to 1993/94. Volume of 'other income' has been 6.60 crores, 8.05 crores, 10.77
Hence RCF cannot afford to feel complaisant about the working results and should try to improve operational efficiency and financial results by improved efficiency. It is hoped that such improvements would be made by RCF after partial disinvestment since 1991. (Equity sold worth Rs. 4.13 crores in 1991/92, 1992/93, i.e. 7.49% of the total equity.)

HFC : At the time of reorganisation, the anticipated rate of return on capital was 12% after tax, but HFC has been incurring losses since its inception. There has been a continuous rise in the volume of losses. Actual losses have been higher than the budgeted figures since 1986/87. They were 111%, 116%, 119%, and 125% of the budgeted loss in the years 1986/87, 1987/88, 1988/89 and 1989/90 respectively despite subsidies to the tune of Rs. 296.92 crores during that period. It was the loss-leader in 1989/90 accounting for 8.67% of the total loss incurred by the PEs.

HFC fulfilled two criteria suggested by the Sengupta Committee for deciding a sick PE. It has wiped out the paid-up capital, has incurred losses for more than 5 consecutive years. The company is not in a position to repay loans (Rs. 318.98 crores as in 1989/90) and the interest due (Rs. 475.45 crores as in 1989/90) in addition to the penal interest. In 1988 HFC had sent a proposal for capital-restructuring to the Government of India. Main items of the proposal were as follows:

- To increase equity-base by Rs. 42.28 crores.
- To convert plan-loans to equity-share.
- To derate the normative capacity to 70%.
- To waive the accumulated interest on loans given by the Government of India.
- To give interest-holiday for 5 years on non-plan loans.
- To give moratorium on repayment of residual loans for 5 years, thereafter to be repaid in 5 equal installments.

This proposal for restructuring did not contain any commitment from the management about technical managerial or operational improvements. It tried to show better results on paper, without any real reforms. The proposal was sent back by the Government for updating. Revised proposal was submitted by HFC in 1990 which was under consideration till 1993/94. HFC has been declared as a sick PE and is referred to BIFR in 1993/94. ICICI has been appointed as an operating agency to prepare rehabilitation plan for HFC.

HFC management had the nerve to suggest that after financial restructuring of the company and derating of capacity the plants could have operated for 4/5 years. HFC management further suggested that new grassroots plants be sanctioned at those sites. The estimated cost of new projects was Rs. 1069 crores in 1986.
Government has not given final decision but COPU commented 23 "The Committee can not but deplore such myopic policies and planning by the Government. The Committee are of the view that there is little possibility of HFC turning the corner, without new grassroot plants being sanctioned."

**Conclusion 4.26.** Judging by the past performance, the researcher would not recommend even new grassroot plants to be sanctioned to the management.

**Financial Management**

**RCF:** A system of process costing was in vogue but the company introduced standard cost system based on the retention price norms. Cost-control measures like controlling the quantity of production, physical consumption of materials/utilities were adopted by fixing standards. Inventory level has been brought down by 34% over the last year's figures in 1991/92.

**HFC:** The company has been facing financial crunch and yet it has not been possible for the company to bring down inventory-holding cost which stood at Rs. 7.20 crores in 1990. It was argued that due to locational disadvantages, larger lead time involved in procuring imported spares, obsolescence of spares and inflation in the cost of spares and materials, inventory carrying cost would not be brought down.

Sundry debts of the company as on 31.3.1990 were Rs. 32.98 crores (15.99% of total sales) of which major share is due from the Government departments or PEs.

COPU commented 24 "It is difficult for the Committee to believe that there had been effective monitoring of its (HFC's) performance by the Board of Directors and the Ministry... HFC had not taken adequate steps to overcome the constraints facing it since inception, the Government only aggravated the situation by simply ignoring it."

**Conclusion 4.27.** RCF has fared better than the HFC on the norm of financial performance. In fact, there is sufficient ground to conclude that the favourable financial performance has been the effect of better management.

**SUMMARY**

RCF and HFC were set up in 1978 by reorganising FCI. Though projects under both the PEs were under the same management till then, the management practices and work culture in these PEs have been different. RCF has been able to overcome the constraints because of better management, better work-culture, better planning, flexibility in approach and a comparatively longer tenure of top-executive of good calibre.

HFC case is undoubtedly a case of a chronically sick unit. There is not even remotest possibility of a turn-around in the existing set up. The then Secretary, Department of Fertilisers
expressed similar opinion in a guarded statement when he said - "I am afraid even the Rs. 97 crores of investment that we are talking about is not going to make a difference."

**Recommendation**: Hence the researcher has no hesitation in suggesting that,

- the units / organisations of HFC should be segregated according to the jobs they perform. Fertiliser promotion work may be allowed to continue under category XXV enterprise.

- assets of the remaining units / organisations should be sold after a realistic evaluation by an impartial agency **OR**

- sick plants should be sold out to private parties who are interested in running them with three precautions:
  - Revaluation of assets by an impartial agency.
  - An assurance from the private party in the form of a clause in the agreement to the effect that the enterprise should run for a minimum prescribed period with a penal clause for not fulfilling this condition.
  - Sale-agreement without conditions or ties regarding factors other than the volume of output, price and obligations about environmental balance.
List of References

2. COPU reports that covered FCI, RCF and HFC Committee on Public Undertakings, 6th report, 3rd Lok Sabha. ATR 41st Report 4th Lok Sabha
3. Committee on Public Undertakings, 26th Report 4th Lok Sabha, ATR 35th Report 5th Lok Sabha
5. It was reported that second COPU report on RCF was prepared under the Chairmanship of Mr. A.R. Antule in 1990/91 but it is not available anywhere.
6. Committee on Public Undertakings, 5th Report 10th Lok Sabha. ATR- N.A.
10. Pg. 12, Committee on Public Undertakings, 5th Report 10th Lok Sabha.
11. Pg. 31, Para 2.. 34, Committee on Public Undertakings, 21st Report, 7th Lok Sabha.
12. Pg. 37, Committee on Public Undertakings, 5th Report 10th Lok Sabha
13. Pg. 46, Committee on Public Undertakings, 8th Report 3rd Lok Sabha
14. Committee on Public Undertakings, 21st Report 7th Lok Sabha
15. Pg. 15, Para 1.63 Ibid.
16. Pg. 19, Para 1.83 Committee on Public Undertakings, 21st Report, 7th Lok Sabha.
17. Pg. 34, Committee on Public Undertakings, 5th Report 10th Lok Sabha.
18. Pg. 41, Ibid.
20. Pg. 3, Committee on Public Undertakings, 5th Report 10th Lok Sabha
24. Pg. 48, Committee on Public Undertakings, 5th Report 10th Lok Sabha
Appendix 4.1.

Statement of Comparative capacities (000 MT)

Nitrogenous Fertilisers:

<table>
<thead>
<tr>
<th></th>
<th>HFC</th>
<th>RCF</th>
<th>IGFC</th>
<th>DFCL</th>
<th>GSFC</th>
<th>GNFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>654.0</td>
<td>1000.0</td>
<td>344.0</td>
<td>53.0</td>
<td>59.0</td>
<td>340.0</td>
</tr>
</tbody>
</table>

Phosphetic Fertilisers:

<table>
<thead>
<tr>
<th></th>
<th>HFC</th>
<th>RCF</th>
<th>DFCL</th>
<th>GNFC</th>
<th>GSFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>120.0</td>
<td>53.0</td>
<td>33.0</td>
<td>138.0</td>
<td></td>
</tr>
</tbody>
</table>

IGFCC : Indo-Gulf Fertilisers & Chemicals Corp. (Jagadishpur U.P.)

DFCL : Deepak Fertilisers & Petrochemicals Corp. (Taloja, Maharashtra).

GNFC : Gujarat Narmada-Valley Fertilisers Company Ltd. (Bharuch, Gujarat)

GSFC : Gujarat State Fertilisers Company Ltd.

Note: GSFC's capacity in Phosphetic Fertilisers is comparable with that of RCF, but not with RCF's total capacity.

Appendix 4.6

Data on the sectorwise percentage capacity utilisation

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>'N' Fertilizers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public sector</td>
<td>71.1</td>
<td>66.7</td>
<td>66.3</td>
<td>69.0</td>
<td>69.9</td>
<td>68.3</td>
</tr>
<tr>
<td>Co-op. sector</td>
<td>110.6</td>
<td>107.7</td>
<td>112.4</td>
<td>112.8</td>
<td>111.3</td>
<td>106.6</td>
</tr>
<tr>
<td>Private sector</td>
<td>98.1</td>
<td>96.8</td>
<td>105.0</td>
<td>108.8</td>
<td>106.7</td>
<td>99.7</td>
</tr>
<tr>
<td>'P' Fertilizers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public sector</td>
<td>86.3</td>
<td>53.7</td>
<td>62.4</td>
<td>92.4</td>
<td>82.9</td>
<td>66.3</td>
</tr>
<tr>
<td>Co-op. sector</td>
<td>95.9</td>
<td>72.4</td>
<td>75.4</td>
<td>113.2</td>
<td>99.7</td>
<td>112.0</td>
</tr>
<tr>
<td>Private sector</td>
<td>85.3</td>
<td>69.8</td>
<td>80.3</td>
<td>89.5</td>
<td>78.6</td>
<td>55.7</td>
</tr>
</tbody>
</table>

### Appendix 4.2.

(Rs. In crores)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FCI</td>
<td>HFC</td>
<td>RCF</td>
<td>FCI</td>
<td>HFC</td>
</tr>
<tr>
<td>1.</td>
<td>Authorised Capital</td>
<td>700</td>
<td>500</td>
<td>500</td>
<td>600</td>
</tr>
<tr>
<td>2.</td>
<td>Paid up capital</td>
<td>622.75</td>
<td>317.06</td>
<td>261.47</td>
<td>560.72</td>
</tr>
<tr>
<td>3.</td>
<td>Loan from GOI</td>
<td>417.69</td>
<td>18.0</td>
<td>50.92</td>
<td>566.83</td>
</tr>
<tr>
<td>4.</td>
<td>Working Capital Loan from GOI</td>
<td>1.02</td>
<td>258.82</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Reserves &amp; Surplus</td>
<td>14.78</td>
<td>0.01</td>
<td>43.53</td>
<td>0.01</td>
</tr>
<tr>
<td>6.</td>
<td>Cumulative Depreciation</td>
<td>191.94</td>
<td>141.69</td>
<td>39.46</td>
<td>231.61</td>
</tr>
<tr>
<td>7.</td>
<td>Gross Block</td>
<td>466.50</td>
<td>258.86</td>
<td>140.57</td>
<td>327.22</td>
</tr>
<tr>
<td>8.</td>
<td>Capital Work in progress</td>
<td>721.25</td>
<td>220.85</td>
<td>192.64</td>
<td>406.96</td>
</tr>
<tr>
<td>9.</td>
<td>Working Capital</td>
<td>58.41</td>
<td>(-1)11</td>
<td>73.98</td>
<td>(+)167.64</td>
</tr>
<tr>
<td>10.</td>
<td>Investments</td>
<td>0.02</td>
<td>-</td>
<td>0.05</td>
<td>-</td>
</tr>
<tr>
<td>11.</td>
<td>Deficit</td>
<td>57.29</td>
<td>160.94</td>
<td>0</td>
<td>518.69</td>
</tr>
<tr>
<td>12.</td>
<td>Capital Employed</td>
<td>332.97</td>
<td>(+16.06)</td>
<td>175.07</td>
<td>(-)72.03</td>
</tr>
<tr>
<td>13.</td>
<td>Sales/Operating Income</td>
<td>229.22</td>
<td>120.30</td>
<td>246.32</td>
<td>200.65</td>
</tr>
<tr>
<td>15.</td>
<td>Gross Profit</td>
<td>N.A.</td>
<td>(-)22.43</td>
<td>29.93</td>
<td>(-)32.78</td>
</tr>
<tr>
<td>16.</td>
<td>Interest on Govt. loan</td>
<td>26.84</td>
<td>30.32</td>
<td>5.28</td>
<td>66.60</td>
</tr>
<tr>
<td>17.</td>
<td>Tax Provision</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18.</td>
<td>Dividend declared</td>
<td>-</td>
<td>-</td>
<td>5.23</td>
<td>-</td>
</tr>
<tr>
<td>19.</td>
<td>Net Profit</td>
<td>(-)34.45</td>
<td>(+)48.13</td>
<td>21.26</td>
<td>(-)86.22</td>
</tr>
<tr>
<td>20.</td>
<td>Expenditure on R&amp;D</td>
<td>N.A.</td>
<td>0.1</td>
<td>N.A.</td>
<td>-</td>
</tr>
<tr>
<td>21.</td>
<td>No. of employees</td>
<td>N.A.</td>
<td>9641</td>
<td>4183</td>
<td>10940</td>
</tr>
</tbody>
</table>

### Financial ratios:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>FCI</td>
<td>HFC</td>
<td>RCF</td>
<td>FCI</td>
</tr>
<tr>
<td>1.</td>
<td>Value of production to capital employed</td>
<td>-</td>
<td>134.9</td>
<td>146.3</td>
<td>0.0</td>
</tr>
<tr>
<td>2.</td>
<td>Material cost to cost of production</td>
<td>-</td>
<td>43.8</td>
<td>63.7</td>
<td>42.4</td>
</tr>
<tr>
<td>3.</td>
<td>Manpower cost to cost of production</td>
<td>-</td>
<td>8.3</td>
<td>3.7</td>
<td>8.9</td>
</tr>
<tr>
<td>4.</td>
<td>Value added to capital employed</td>
<td>-</td>
<td>25.3</td>
<td>43.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5.</td>
<td>Cost of sales to net sales</td>
<td>-</td>
<td>152.2</td>
<td>93.0</td>
<td>165.4</td>
</tr>
<tr>
<td>6.</td>
<td>Net sales to capital employed</td>
<td>-</td>
<td>102.9</td>
<td>139.0</td>
<td>0.0</td>
</tr>
<tr>
<td>7.</td>
<td>Gross margin to capital employed</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>Gross profit to capital employed</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Gross profit to net sales</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>Profit before tax to net worth</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Appendix 4.3.

During 1992/93 and 1993/94 the company incurred net loss of Rs. 26.68 crores and Rs. 12.08 crores respectively. But these losses were due to the acceptance of Kuwaiti loan. The exchange-rate of Kuwaiti Dinar increased. Since the loan was shown in the name of RCF which was actually diverted the Government of India, to other use, the Government Rs. 150.88 crores to RCF in 1994/95 as the compensation towards the loss on account of increase in the exchange rate.

Source: RCF Annual Report 1993/94, 1994/95

Appendix 4.4.

(A) Estimates of Requirements and Production of Fertilisers (1978/79 to 1982/83) (000 tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Requirements</th>
<th>Production</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978/89</td>
<td>4980</td>
<td>3300</td>
<td>1680</td>
</tr>
<tr>
<td>1979/80</td>
<td>5610</td>
<td>4110</td>
<td>1500</td>
</tr>
<tr>
<td>1980/81</td>
<td>6300</td>
<td>4730</td>
<td>1570</td>
</tr>
<tr>
<td>1981/82</td>
<td>7020</td>
<td>5220</td>
<td>1800</td>
</tr>
<tr>
<td>1982/83</td>
<td>7800</td>
<td>5850</td>
<td>1950</td>
</tr>
</tbody>
</table>

Source: Pg. 33, Fertiliser News, July 1978 from the FAI Journal: New Delhi [Pg. 25]

(B) Consumption, Production, Imports and capacity. ('000 tonnes).

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption</th>
<th>Production</th>
<th>Imports</th>
<th>Capacity</th>
<th>Gap between Capacity &amp; Production [5] - [3]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979/80</td>
<td>5255.4</td>
<td>2997.4</td>
<td>2005.6</td>
<td>5691.6</td>
<td>2704.2</td>
</tr>
<tr>
<td>1980/81</td>
<td>5551.5</td>
<td>3005.4</td>
<td>2759.0</td>
<td>6121.9</td>
<td>3116.5</td>
</tr>
<tr>
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