CHAPTER - 1
INTRODUCTION

Finance is regarded as the life-blood of a business firm. Efficiency in performance of a firm depends on the proportion of funds invested in the form of fixed assets and current assets like inventories, receivables, cash and marketable securities. Ownership, controllability, liquidity and profitability are important aspects of corporate business life. No firm can survive if it has no profitability or liquidity. A firm may exist without making profits only for a short period but cannot survive for a longer period. A firm that does not make profits may be treated as sick but the one that does not have a liquidity may soon face downfall and eventually die. Financial Analysis has thus become a basic and broad measure of judging the performance and efficiency of a business firm.

FINANCIAL ANALYSIS – A CONCEPTUAL FRAMEWORK

Financial management is concerned with raising financial resources and their effective utilization towards achieving the organization’s goals. This requires application of appropriate financial methods or tools. The term ‘financial method’ or ‘financial tool’ refers to any logical method or technique to be employed for the purpose of measuring the effectiveness of firm’s actions and decisions. Decisions regarding accepting or rejecting future projects can
be done using financial analysis. A firm confronts this problem of taking decision whether the proposed course is the right one or any other course can help in better achievement of the firm's goals. At that time the use of financial tools will greatly reduce this uncertainty and make the decision-making much easier.

**Tools for Financial Analysis**

Cost of capital helps in deciding the sources from which the funds are to be raised. In case of different sources of finance, such as shares, debentures, loans from financial institutions, banks and public deposits, the financial manager takes into account the cost of capital and opts for that source which is the cheapest one. The cost of capital is also taken into consideration for determining the optimum capital structure.

Financial Leverage or Trading on Equity is another tool which helps the financial manager in increasing the return to equity shareholders. Capital Budgeting Appraisal Methods such as, pay-back period, average rate of return, internal rate of return, net present value and profitability index help the financial manager in increasing the return to equity shareholders. ABC analysis, cash management models, aging schedule of inventories and debtors' turn-over ratio help the financial manager in effective management of current assets.
Comparative financial statements disclose changes in items of financial statements over time in both rupees and percentage form. It will identify the factors which have affected profitability or financial position of the firm.

In common size statements all the items are converted into common units by expressing them as the percentage of a key figure. It shows the relative significance of the items contained in the financial statement and facilitate comparisons. It also indicates whether the company is managing assets efficiently or not.

Index number analysis helps to study the changes that have occurred during the period. It indicates the progress of the business by showing the ups and downs in its activities.

Funds flow analysis and cash flow analysis techniques help the financial manager in determining whether the funds have been procured from the best available source and they have been utilized in the best possible way. Projected fund flow analysis and projected cash flow analysis help the financial manager in estimating or arranging for the future working capital or cash needs.

Ratio analysis is another method for evaluating different aspects of the firm. Analysis and interpretation of various accounting ratios give a better understanding of the financial condition and performance of the firm than what one could have obtained only through a perusal of financial statements.
FERTILISER INDUSTRY – AN OVER VIEW

As the years went by man became less of a wanderer and more of a settler. Families, clans, and villages developed, and with them came the development of the skill we call agriculture. It is generally agreed that one area in the world that shows evidence of a very early civilization is Mesopotamia, situated between the Tigris and the Euphrates rivers where the present Iraq is situated. Writings dating back to 2500 B.C. mention the fertility of the land. It is recorded that the yield of barley during this period was 86-fold and even 300-fold in some areas, which means, of course, that for every unit of seed planted 86 to 300 units were harvested.

Herodotus,¹ the Greek historian, reporting on his travels through Mesopotamia some 2,000 years later, mentions the phenomenal yield obtained by the inhabitants of this land. The high production was probably the result of a well-developed irrigation system and soil of high fertility, attributable in part to annual flooding by the river. Theophrastus, writing around 300 B.C., referred to the richness of the Tigris alluvium and stated that the water was allowed to remain on the land as long as possible so that a large amount of silt might be deposited.

In time man learned that certain soils would fail to produce satisfactory yields when cropped continuously. The practice of adding animal and vegetable manures to the soil to restore fertility probably developed from such

observations, but how or when fertilization actually began is not known. Greek mythology however, offers one picturesque explanation. Augeas, a legendary King of Elis, was famous for his stable, which contained 3,000 oxen. This stable had not been cleaned for thirty years. King Augeas contracted with Hercules to clean the stable out and agreed to give him 10 per cent of the cattle in return. Hercules is said to have accomplished this task by turning the River Alpheus through the stable, thus carrying away the accumulated filth and presumably depositing it on the adjacent land. Augeas then refused the promised payment for this service, whereupon, a war ensued, and Augeas was put to death by Hercules.

In the Greek epic The Odyssey, attributed, to the blind poet Homer, who is thought to have lived between 900 and 700 B.C., the manuring of vineyards by the father of Odysseus is mentioned. The manure heap, which would suggest its systematic collection and storage, is also referred to. Argos, the faithful hound of Odysseus, was described as lying on such a heap when his master returned after an absence of twenty years. Having recognized his master, Argos wagged his tail feebly and "went down into the blackness of death". These writings suggest that manuring was an agricultural practice in Greece nine centuries before the birth of Christ.

Theophrastus (372-287 B.C.) recommended the abundant manuring of thin soils but suggested that rich soils be manured sparingly. He also endorsed a practice considered good today—the use of bedding in the stall. He pointed
out that this would conserve the urine and bulk and that the humus value of the manure would be increased. It is interesting to note that Theophrastus suggested that plants with high nutrient requirements also had a high water requirement.

The truck gardens and olive groves around Athens were enriched by sewage from the city. A canal system was used, and there is evidence of a device for regulating the flow. It is believed that the sewage was sold to farmers. The ancients also fertilized their vineyards and groves with water that contained dissolved manure.

Manures were classified according to their richness or concentration. Theophrastus, for example, listed them in the following order of decreasing value: human, swine, goat, sheep, cow, oxen and horse. Later Varro, an early writer on Roman agriculture, developed a similar list but rated bird and fowl manure as superior to human waste. Columella recommended the feeding of snail clover to cattle because he felt that it enriched the human waste.

Xenophon, around 400 B.C., recommended spring ploughing because “the land is more friable then” and “the grass turned up is long enough at that season to serve as manure, but not having shed seed, it will not grow”. He also pointed out that “every kind of vegetation, every kind of soil in stagnant water turns into manure”.
Cato (234-149 B.C.) suggested that poor vineyard land be interplanted with a crop of acinum. It is not known that this crop is, but it was not allowed to go to seed, and the implication is that it was turned under. He also said that the best legumes for enriching the soil were field beans, lupines, and vetch.

Lupine was quite popular with the ancients. Columella listed numerous legume crops, including lupines, vetch, lentils, chick peas, clover, and alfalfa that were satisfactory for soil improvement. Many of the early writers agreed, however, that lupine was the best general-purpose green-manure crop because it grew well under a wide range of soil conditions, was easy to seed, and quick to grow.

India’s fertiliser industry has made steady progress. Its energy consumption and capacity utilization are comparable to the best in the world. The investment cost as well as conversion cost is low. However, plants in India are seriously handicapped by the substantially higher cost of feedstock. The Rs.350-billion industry is not free from troubles. In fact, there has been no new investment in the fertiliser sector in the last ten years.

The significant role played by the Indian fertiliser industry in tackling the most important challenge is feeding the ever-growing population. With limited resources for sustainable agriculture can never be undermined. It is a fact proved beyond doubt that the application of chemical fertilisers is a ‘must’ to nourish the infertile soil that feeds the ever-growing population not only in India but also in the whole world.
Given the threat of constant shrinkage in the total availability of arable land for cultivation, thanks to the euphoria of urbanization and industrialization in developing countries like India, the responsibility of the fertiliser industry becomes all the more important in providing food security to the nation in partnership with the government and the farmers.

It is hence only logical that such a vital industry should by itself remain healthy and then grow further commensurate with the need of the nation in terms of food grain production. It is time for both industry and Government to understand and appreciate this objective clearly, and accordingly identify measures that need to be adopted to ensure safe and sound agriculture, stability of the industry and prosperity of the nation at large.

The following are some of the thrust areas that need to be focused on by the industry and government to evolve further strategies for sustainable agriculture leading to an assured food security in the 21st century: Fertiliser requirement plan, balanced fertilization, fertiliser pricing policy and technological progress.

Phosphatic and potassic fertilisers were decontrolled on August 25, 1992. This led to a rise in their prices and a sharp fall in their consumption. A separate subsidy scheme (called concession scheme) was then introduced to cushion the impact of increase in the prices of these fertilisers.
Fertiliser consumption came down in the 1990s mainly because of high prices and falling agricultural growth. The decline was especially sharp in phosphatic fertilisers.

India’s fertiliser policy suffers from conflicting objectives. On the one hand, the government wants to provide fertilisers to the farmers at low prices. On the other, it wants to protect domestic producers from import competition. Also, the government wants to reduce the subsidy bill. All these goals cannot be achieved simultaneously.

SIGNIFICANCE OF THE STUDY

Fertilisers are used almost by all the farmers. Chemical fertilisers have now come to be recognised in the countryside as one of the most important farm inputs. Tamil Nadu is a state with various types of land endowed with many types of natural resources, different types of tillers, climate, soil, rainfall, water supply and agricultural finance aspects. Various crops are also cultivated. Fertilisers play a significant role in deciding the output and financial stability of the farmers.

Fertiliser is one of the powerful resources to the man who wrests his living from the soil. The economic development of the nation mainly depends on its agricultural productivity.
Viability of a firm rests on the strength of its operating structure and financial structure. When both are strong, a credit manager does not have much to worry about, and when both are weak he might as well forget his receivables. But in between there are several firms who suffer from weaknesses in either of the structures. If the operating structure of a firm is good but its financial structure is poor, there is a chance that the firm would be able to make a turn around by suitable modification of its financial structure. A fertiliser firm is no exception to this viability norm.

The study attempts to know the amount of finance required for smooth running of a fertiliser unit. It facilitates to frame investment in fixed assets and working capital management policies, which have a great effect on the profitability, liquidity and its structural health of the units. The study on financial analysis will go a long way in solving many problems faced by the industry. This study may provide some insight to the future researchers in this field and they may intensify their research further.

**Importance of Fertilisers**

In India, 10 states alone account for 80 percent of the fertiliser consumption whereas they have gross cropped area of only 70 per cent. These states are Uttar Pradesh, Punjab, Andhra Pradesh, Tamil Nadu, Maharashtra, Gujarat, Karnataka, West Bengal, Haryana and Madhya Pradesh. This not only shows the skewed pattern of consumption but also indicates that there is a
tremendous potential for increased use of fertilisers in other states where the consumption at present is low.

It is Punjab that has always been leading the other states in terms of consumption of Nitrogen per unit of gross cropped area followed by Andhra Pradesh, Haryana, Tamil Nadu and Uttar Pradesh. There are only 7 states in India having higher fertiliser consumption per hectare compared to the national average which confirms the earlier observation that there is a great potential for increasing fertiliser consumption in India.

**Fertiliser imports**

Fertiliser imports have to be so tailored as to bridge the gap between the anticipated domestic production and anticipated consumption. This calls for considerable amount of fine tuning. If the anticipated consumption does not materialise because of the adverse weather conditions (inadequate rainfall) and imports are effected assuming ‘normal’ weather conditions, “glut” situations will prevail as was witnessed with manufactures leading to distress sales and ‘price wars’. On the other hand, too little imports might lead to shortages (at least in pockets) if the weather conditions turn out to be extremely favourable and there is a sudden spurt in demand for fertilisers.

The location of fertiliser plants is generally dictated by the easy availability of raw materials from either domestic sources or imports. There is, therefore, considerable variation as between the four zones in respect of
fertiliser production. While some zones have surplus production or are only marginally deficient, others have to depend on other zones or imports to meet a substantial part of their requirements. In respect of phosphates both the North and the South will be dependent either on the West / the East zones or imports to meet a significant part of their requirements in coming years. These factors will have considerable impact on the logistics of fertiliser distribution.

With fertiliser prices remaining more or less constant as was the case between June 1982 and July 1991, coupled with marginal increase in procurement prices announced by the Government from time to time, economics of fertiliser use at the farmers' level was favourable. Given favourable weather conditions one can project with reasonable assurances, and accuracy, the likely fertiliser demand/consumption for both short-term and long-term.

It would be worthwhile at this juncture to recapitulate (a) the circumstances under which the Government was compelled to take certain undesirable decisions in the recent past and (b) the decisions themselves and their effect on fertiliser consumption.

**STATEMENT OF PROBLEM**

The demand for fertiliser has been growing steadily in Tamil Nadu. But the production of fertiliser is not adequate. A special feature of this industry is continuous production and seasonal consumption. One of the major problems
in the use of fertiliser to the crops at the optimum level of usage is yet to be identified. Outmoded farming techniques, fluctuations and inelasticity of crop output, more dependence on natural resources such as rain and temperature also cause maximum fluctuations in the agricultural sector.

Productivity in agriculture depends on social, technological and economical factors. The consumption pattern of fertilisers also varies due to local and environmental factors. The use of fertiliser also depends upon the tenancy system. If the period is for short duration, the level of applying fertiliser may come down. Lack of credit and marketing facilities with regard to agricultural produce are also considered as factors influencing fertiliser consumption. Some of the major factors which affect fertiliser consumption are weather, adequate moisture -- through irrigation and assured rains, ready and timely availability of fertilisers, credit availability, fertiliser response, input-out put price relationship, promotion and extension. A careful study will bring out the importance of various factors and their inter-play in fertiliser consumption. Since separate time series data quantifying the impact of different variables are not available, it is difficult to assess the role of each individual factor on the consumption of fertiliser. Of all the factors finance is the most vital one that affects the performance of fertiliser industry to a maximum extent.
Fertiliser units are also facing the problems relating to finance due to various internal and environmental factors. Many industrial units are facing the problem of inappropriate financial structure, poor utilization of assets, inefficient working capital management, absence of costing and pricing, absence of financial planning and budgeting, improper utilization or diversion of funds, liquidity problems, inadequate inventory control and credit restraints. These problems are specifically addressed and analysed in this study.

OBJECTIVES

The main objectives of the study are:

i. To review the growth and development of fertiliser industry at international and national levels in general, and Tamil Nadu in particular;

ii. To analyze the financial performance of the fertiliser industry in Tamil Nadu;

iii. To study the management of working capital of fertiliser industry in Tamil Nadu;

iv. To compare the financial performance and operational efficiency of the fertiliser companies in Tamil Nadu; and

v. To offer suggestions for improving the financial performance and operational efficiency of fertiliser industry in Tamil Nadu.
HYPOTHESES

The following hypotheses are framed and tested in this study.

i) The investments, current assets and current liabilities do not influence the net fixed assets of the selected companies.

ii) There is no significant influence of gross profit, depreciation, interest, profit before tax towards profit after tax of the selected fertiliser units.

iii) There is no variation in operating income among the selected companies.

iv) There is no variation in manufacturing expenses among the selected companies.

v) There is no significant influence of material, manufacturing expenses, personnel expenses, selling and administrative expenses towards operating income of selected fertiliser units.

vi) There is no significant influence of material, manufacturing expenses, personnel expenses, selling and administrative expenses towards cost of sales of selected companies.

vii) There is no variation in fixed assets to turnover ratio among the selected companies.
METHODOLOGY

The study on the performance analysis of selected fertiliser companies is an analytical study. The study relies heavily on secondary data and supplemented by primary data. The primary data are collected through personal interview with the officials in the finance departments of the selected companies. For this purpose, the fertiliser units are visited by the researcher. General Manager, Finance Manager, Chief Accounts Officer, Purchase and Stores Manager of the selected companies are interviewed for getting additional information and also for ascertaining the various policies and practices followed by them. Secondary data are collected from the records of the sample units and from the published records of the companies. The company managements are providing only the printed materials such as Annual Reports, Balance sheets and Government Research Publications and these are utilized in full for the purpose of analysis.

SELECTION OF UNITS

Since this study is an analytical study relating to the performance of fertiliser industries in Tamil Nadu, the financial performance of fertiliser companies in Tamil Nadu are considered for analysis. Census method is followed in the selection of units. There are four fertiliser industrial units in Tamil Nadu. They are Madras Fertilisers Limited (MFL), Southern Petrochemical Industries Corporation Limited (SPIC), E.I.D. Parry (India)
Limited (PARRY) and Neyveli Lignite Corporation (NLC). Out of these four major fertiliser units, Neyveli Lignite Corporation is focusing more on Coal, Lignite and Power rather than on fertiliser. Hence that unit is not considered in this study. The other three important units operating in Tamil Nadu are considered for the purpose of this study. The selected companies are Madras Fertilisers Limited (MFL), Southern Petrochemical Industries Corporation Limited (SPIC) and E.I.D. Parry (India) Limited (PARRY). There are some companies engaged in manufacturing fertiliser mixtures and zinc sulphates in Tamil Nadu, and these units are not considered for the purpose of this analytical study.

**STUDY PERIOD**

The period of study for this research work is limited to ten years that is from 1993-94 to 2002-2003. However, the data relating to production and consumption at national and international levels are collected for more than ten years for analysing the overall results and growth models. National and International level data are collected for a period of more than 10 years for the purpose of predicting various management styles with reference financial management.
TOOLS USED

The study is analytical in nature and hence the statistical tools such as mean, regression techniques, correlation co-efficients, autocorrelation coefficient, Durbin-Watson d-test, multicollinearity and ANOVA techniques are used. Trend and Index numbers are also used to understand the future performance of the fertiliser companies. Emphasis is given to balance sheet ratios, ratios relating to net sales, liquidity, profit and loss account, growth ratios and payout. The Analysis of Variance techniques, ‘t’ test and ‘F’ test are used for testing the hypotheses. Assessment of working capital is done by selecting a few important parameters such as working capital ratio, current assets to total assets ratio, current assets to sales ratio and other ratios. Item-wise analysis of the elements/components of working capital to identify the items responsible for change in working capital is done. Discriminant analysis is used for efficiency analysis.

LIMITATIONS

The study relies on the published annual reports of the companies and records of statistical officials. Hence the results are based on the annual reports only. Almost all the financial tools and some statistical tools are employed for analysing the performance. The inherent nature of the limitations of the tools that are employed may also exist in the analysis.
CHAPTERISATION

The study is divided into seven chapters.

Chapter I provides Introduction, significance of the study, problems, objectives, hypotheses, methodology, sampling techniques and area of the study.

Chapter II contains review of literature in the field of financial management and fertiliser research, and the improvement of the current study from the earlier studies.

Chapter III deals with the growth and the development of fertiliser industry at international, national and at state levels.

Chapter IV is dedicated for the company-wise analysis of the performance of the selected units for a period of ten years with the help of financial and statistical tools.

Chapter V shows the comparative quantitative analysis of data with various advanced analytical tools based on the profit and loss accounts and balance sheets of the selected companies.

Chapter VI is dedicated for analysing the efficiency of the sample companies and for comparing the results with help of ratio analysis and discriminant analysis.

Findings, suggestions and conclusion are given in the final chapter.