

A SOCIOLOGICAL STUDY OF AN OIL INDUSTRY IN ASSAM

(OIL AND NATURAL GAS CORPORATION LIMITED)



PRANJAL SARMA

The Book

Industries occupy a unique place in a nation's economy. They are the key source where goods are manufactured for the satisfaction of human wants. They provide employment and the social life of the people is to a large extent influenced by industries.

A Sociological Study of an Oil Industry in Assam (Oil and Natural Gas Corporation Limited) is an outcome of a doctoral research aimed to find out the social structure of ONGC in Assam, the social background of the employees of ONGC and the people residing in the surrounding areas and the worker-management relationship in ONGC. The study also focus on the interaction between the ONGC and its neighbourhood in a sociological perspective. In particular, subjects like industrial sociology, sociology of personnel management and industrial relations, organizational structure, recruitment and selection process, promotion, wage and salary administration, performance appraisal, employees training, transfer, absenteeism and turnover, employees safety and industrial health, industrial disputes, discipline and disciplinary action, trade union, grievances and grievance handling, rewards and incentives, benefits and employees services, social change and development have been discussed. The most outstanding features of the book is that it has attempted to reveal the social reality in terms of the values of the Industrial society in India and Assam in particular.

This book will be of great interest to students, scholars, teachers, planners and administrators, sociologists, psychologists and management thinkers while constituting an invaluable reference tool for all social scientists.

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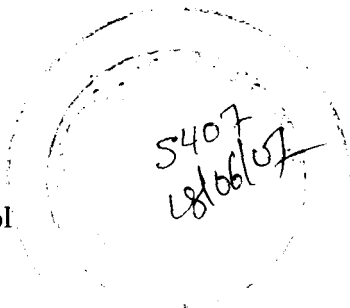
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Introduction

Industries occupy a unique place in the economy of a nation. They are the key sources where goods are manufactured for the satisfaction of human wants. They provide employment to people. The social life of the people is influenced by industries which produce goods and services as per the different tastes and income levels of the people. They are the significant aspect of the economic life of man. The industries help us to understand the role played by technocrats, workmen and industrialists in the production of goods and services. They guide the potential job-seekers in planning their careers.

Gisbert (1972:3) defined industry as "the application of complex and sophisticated methods to the production of economic goods and services. These complex methods, which imply the use of machines, have been devised in order to improve the quantity and quality of production". He further says that: man, in a certain way, has always been 'industrial'. He has always used tools to obtain food and to satisfy his needs. The use of tools and machines are far more complicated with the introduction of more advanced industries. Man has always been not only a user of tools but also a maker of them, *homo faber*. This is because he was intelligent and could adjust means to ends in order to achieve his objectives. He was, in short, *homo sapiens* (intelligent man) and, as such, was also *homo industrialis* or industrial man. The original Latin word for

industry is 'industria' which means skill and resourcefulness. In this sense we speak of an industrious man connoting a diligent, shrewd worker.

In the words of Moore (1969:4) "Industry refers to the fabrication of raw materials into intermediate components or finished products by primarily mechanical means dependent on inanimate sources of power."

Moore (Ibid:5) further states that 'Industry' presents itself in the modern world by its products as well as its processes, and no country is likely to get far with its quest for economic growth without becoming a part of the industrial system at least in the utilization of products. For instance, improved seed varieties and chemical fertilizers for agriculture represent an aspect of industrialization, just as antibiotics or insecticides do for improved health.

Macmillan Student Encyclopedia of Sociology (1987: 169) define industrialization as "a process of transformation of a predominantly agricultural economy into one where the manufacture of goods increasingly contributes to overall output and exports. As a corollary, the percentage share of people employed in agriculture declines and that in industry increases." Cherunilam (1994:1) observes that "Industrialization may be defined as a process which accelerates economic growth; affects structural changes in the economy, particularly in respect of resource utilisation, production functions, economic generations, occupational pattern, population distribution, and foreign trade; and induces social change." So it is a process which increases income, brings about structural changes in the economy and induces certain social changes.

Industrialization, in simple terms, refers to sustained economic growth with the application of tools, machines and other modern technologies which are known as inanimate sources of power. Initially it took the form of factory production, later spreading to agriculture and services. Economic growth on the other hand can be defined as increased per capita income. It is commonly defined as a increase in a country's national income over a period of time in real terms.

In the words of Moore (1969:5) "economic development implies structural change in addition to mere increase in output. Development entails establishing or revamping fiscal, financial, and fiduciary mechanisms. It involves institutional changes in the precise sense of alterations in the laws and other rules of conduct, organizational changes in the management of production and distribution, and sooner or later, changes in the location, definition and motivation of economic activity". He says that many of the changes implied by the term economic development are themselves not strictly economic as they are precedent to, accompaniments of, or early consequences of changes in the place of production.

Schneider (1971:1) while referring to industrial institutions states that 'Industrial institutions form just one part of our large and complex society. Yet social scientists often label it an 'industrial society'. This title reflects the fact that industrialism is by far our most important mode of production, just as guild production or slave production have predominated in other times and in other cultures. By calling our society 'industrial', social scientists also imply that in innumerable direct and indirect ways industrialism places its stamp on our culture as a whole; that it shapes men's lives, moulds our institutions, and in the long run helps shape the values, ideals, and goals of society as a whole".

To comprehend what are the basic elements of industrial organisation, it is important to explain certain terms usually associated with such organisations. So I would briefly discuss some of them before going into details of industrial developments in India.

Factory and Workers

Basically a factory means a place where raw materials are converted into semi-finished goods or finished products. It is an establishment to carry out manufacturing process with the help of men, machines, tools and materials. Max Weber (1947: 245) insists that the factory is limited to "organised workshops where non-human means of production are fully appropriated

by an owner but workers are not; where there is internal specialization of functions and where mechanical power and machines which must be 'tended' are used." *The Concise Oxford Dictionary of Sociology* (1994: 171) defines factory system as "[a] system of manufacturing involving the concentration of materials, fixed capital, and a labour-force, in one or more workplaces or plants.... as a productive system it processes three main types of efficiency gains for the owner or controller: economic, by allowing advantages of scale, while reducing the costs of distribution of raw materials and finished product; technical, by making possible deskilling of craft labour, and the use of machines; and managerial, by increasing the scope for disciplined control of the effort bargain."

In India, the Factories Act 1948 is the principal central law which regulates the condition of work in factories all over the country. The idea of defining a factory by this law is to decide the scope of the protections provided in it, that is, who can enforce or demand the facilities in this act. The Act, 1948 [Section 2 (m)] defines a factory as "any premises including the precincts thereof

- (i) Whereon ten or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of power, or is ordinarily so carried on, or
- (ii) Whereon twenty or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on without the aid of power, or is ordinarily so carried on, but does not include a hotel, restaurant or eating-place".

In the above definition of factory the word 'premises' refers to open land or land with building or building alone and the term 'precincts' refers to a space enclosed by walls.

From this definition, it is clear that a factory is a premise where a manufacturing process is carried on with (i) ten or

more workers with the aid of power or (ii) twenty or more workers without the aid of power. Thus the act defines a factory with reference to: (i) premises, (ii) manufacturing process, (iii) number of workers, and (iv) use of power. If any of these requirements is not complied with, then the activity cannot be called a factory under the Factories Act 1948.

The word 'power' is used to mean electrical energy, or any other form of energy which is mechanically transmitted and is not generated by human or animal agency [Factories Act 1948: Section 2 (g)]. The term 'manufacturing process' has also been defined widely in Factories Act 1948: Section (2k). It means any activity which involves making, altering, repairing, packing, treating or adopting any article or substance for its use, sale, delivery, disposal, etc. It also includes activities like pumping oil, water, sewage, transmitting power, repairing ships, storing and preserving any article in cold storage and so on.

The term 'manufacture' comes from the Latin word 'manus', which means 'hand', and 'facture' which means 'making'. But nowadays it refers to goods made by hand as well as machines. *The Concise Oxford Dictionary of Sociology* (1994:393) defines manufacturing as "the making of articles and goods for sale as commodities. Manufacturing makes up the greater part of what is sometimes referred to as the secondary sector of the economy."

The manufacturing activity thus brings about a change in the form of raw materials into semi-finished or finished goods through a conversion process. The production of these goods have to gain mobility as they are treated, processed and moved from one place to another before they acquire a market value. Thus the manufacturing activity requires a man-designed and machine-supported process. The inputs needed for this process are land, labour, capital and enterprise. They are known as factors of production. These factors of production are instrumental in fulfilling the goals and objectives of any organization.

Here we can briefly explain the basic factors of production. 'Land' refers to all natural resources used in production, including mineral deposits, climate and land itself. 'Labour' means any effort, which can be skilled, unskilled or semi-skilled in form. 'Capital' means the stock of man-made resources, which are used for future production of other goods. This includes both fixed and working capital. Fixed capital includes buildings, machinery, equipment and so on and working capital consists of investment in raw materials, stock of partly finished goods and cash for running day-to-day business. 'Enterprise' on the other hand refers to a undertaking where all the factors of production are coordinated by the entrepreneur.

The Factories Act 1948[Section 2 (1)] further defines worker as a person employed directly or by or through any agency (including a contractor) with or without knowledge of the principal employer, whether for remuneration or not, in any manufacturing process, or in cleaning any part of the machinery or premises used for a manufacturing process, or in any other kind of work incidental to, or connected with, the manufacturing process or the subject of the manufacturing process but does not include any member of the armed forces of the union.

On the other hand the concept of employment involves three components, viz., employer, employee, and contract of employment. The 'employer' is one who employs, that is, one who engages the services of other persons. The 'employee' is one who works for another for wages. The employment is the contract of service between employer and employee whereunder the employee agrees to serve the employer subject to his/her control and supervision.

The concept of work is defined by How (1994:40) as "physical or mental effort to perform tasks, or duties that affords one the accustomed means of livelihood". According to him, people need to work for the money it brings to enable them to live, and another very important reason for people needing work is because of the satisfaction the job can bring

either through having an opportunity to develop relationships on the job or from the strong feeling of personal accomplishment in doing the job.

Similarly, a workman is a person employed by an employer to work for him/her in return for remuneration. The relationship of employer and workman is essential in order to treat a person as workman. This relationship is created by a legal contract which includes an agreement between the employer and the workman. The agreement indicates the terms and conditions of work, place and timings of work and it also indicates the wages, rights, duties and responsibilities of the workman.

The Industrial Disputes Act 1947[Section 2 (s)] states that a workman means any person (including an apprentice) employed in any industry to do any manual, unskilled, skilled, technical, operational, clerical, or supervisory work for hire or reward, and the terms of employment be expressed or implied. However, those doing managerial and administrative work are excluded from the definition of a workman. On the basis of work done, we can have different types of workman like unskilled workers, skilled workers and semi-skilled workers. An unskilled worker is any normal person who need not acquire any special skill, by training or otherwise, to perform his/her work. Some of the examples of unskilled workers are loaders and unloaders of materials, peons, sweepers, helpers and so on.

A worker, who has on the other hand, acquired some skill by education, training, practice, or experience is termed as a skilled worker. Any skilled work requires a worker to obtain the necessary skills by any of the above mentioned means. A skilled workman makes frequent use of his/her brains (technical knowledge), apart from his/her physical labour. For example, masons, carpenters, iron-smiths, mechanics are skilled workers.

Some jobs need lesser degree of skill. Semi-skilled workers can perform these jobs. The difference between a skilled and a semi-skilled workman is only on the level or degree of skill

which one has to practise. Some of the examples of semi-skilled workers are: welders, drill operators, spray painters and so on.

Employment of workers can be done on a regular or casual basis. Regular workers are the permanent workers and they become a permanent part of the organization on the basis of the terms and conditions applicable to them. They cannot be removed from service without a due process and usually they get an annual increment of pay. On the other hand, casual workers work subject to the availability of work and they cannot demand work as a matter of right. Their contract is a short term contract and they do not usually get any annual increment.

After defining factory and worker, we can finally outline some of the features of a factory as commonly understood. Namely, factory uses raw materials to transform it into semi-finished or finished products by using machines and power. The basic principle in the factory system is the principle of division of labour which separates jobs on the basis of different specialisation. On the basis of the scale of production factories can be classified into small, medium or large factories. Nowadays these factories are controlled by professional groups of management with various legal regulations.

Depending on the length of time for which production is carried on, an industry may be called as seasonal (e.g. sugar industry, which carries on production only for a part of the year) or perennial where production is carried on throughout the year (e.g. automobiles). Likewise genetic industries include activities connected with breeding and rearing of animal and growing plants. Agricultural activity forms a part of this group. ONGCL, Coal India Ltd and timber industries are good examples of extractive industries which involve extraction of the produce from the natural source.

The functioning of industry depends on the organizational capability of those who carry on and manage it. Organization refers to a planned process through which the resources of an enterprise in men, materials, machines and money are brought

together. We will discuss in length about organization in the third chapter.

The success of any organization depends on many factors. Industrial relations can be considered as one of the important factors in this regard. Any organizational study will be superficial if industrial relations is not taken into account. Tripathi (1989:439) says that the term industrial relations "denotes the collective relationship between management and employees in an industrial organization." He further says "good industrial relations means absence of disputes between the two parties and existence of understanding, co-operation and partnership between them."

The new industrial set-up has given birth to the capitalistic economy which divided the industrial society basically into two groups: the workers and the capitalists. The interests of these two groups are not always the same. The conflict in their interests results into industrial disputes. The main reasons of industrial disputes are (i) Economic (ii) Managerial (iii) Political and (iv) other reasons.

The most common causes of industrial disputes in the present time are economic in nature. We can categorise five different constraints that come under economic causes, such as: (i) wage increase, (ii) dearness allowance, (iii) high industrial profits and bonus, (iv) working conditions and working hours and (v) modernisation and automation of plant and machinery.

There are other causes that can lead to direct industrial disputes and they arise out of the denial of certain basic needs of the workers such as medical, education and housing facilities and so on by the employers. Again, there are managerial causes of disputes as well and they can arise from causes like: (a) denial of recognition of Trade Unions, (b) defective recruitment policies, (c) irregular lay off and retrenchment, (d) defiance of agreement and code of conduct and code of discipline with a view to harassing or exploiting the employees thereby encouraging strike and (e) inefficient labour leadership.

The political leaders/workers very often misuse the industrial workers to serve the political purpose and instigate them to launch strike, gherao and bandh against the industrial organization and the managers. The workers sometime launch strike or protest against the employers when any employeec is punished in the form of transfer, reduction of wage, suspension or retrenchment or sometimes in protest of police atrocities and so on.

Effective industrial relations have tremendous impact on the basic functions of management like planning, organizing, motivating and controlling. Planning, as a function of management is the conscious preparation for a further course of action to achieve the desired results. It also involves deciding and arranging of a course of action in advance from all available alternatives for accomplishing the desired results in a economic way. The intended course of action is sketched out in great details with the help of a complex chain of plans like policies, procedures, programmes and budgets focused on objective of the enterprise. Only effective industrial relation can make the above course of action in planning successful. After planning it is important that management should carry out those plans in a organised way. A good relationship between management and the workers are needed to enable the workers' participation in the management of any organization. Good industrial relation helps in bringing each and every individual connected with the organization to closer and co-operative contact. This helps in reducing the disparity between the managers and the managed. Thus organizing is an important managerial activity which depends on cordial industrial relations that brings together the manpower and material resources for achievement of the objectives of the organization..

In any organization there is close relationship between industrial relations and motivation. As human beings are full of various qualities, like emotions, aspirations, sentiments, capacities to participate or to withhold such participation, it is therefore, a very difficult task to be successful in this regard

unless a good industrial relation is maintained between the employer and the employees. By virtue of good relations between the manager and the workers, a congenial atmosphere prevails within the organization itself, and the workers become loyal to the management. Thus, the workers and the operators remain ready to abide by the direction of the manager and help the organization to become a real success.

Controlling, as a management function, ensures qualitative and quantitative performance of work in the organization for completing plans and achieving objectives. Under this function, measuring standards or yard sticks are established and communicated to managers so that they can regulate employee's performance and can work by self-control. Therefore, without good relation between the managers and the workers, it would be quite impossible on the part of an organization to achieve its desired goal.

INDUSTRIAL DEVELOPMENT IN INDIA

Indian economy even now is mainly agrarian, but we have different industries which have existed in the pre-independence era. Saroj Upadhyay (2005:142) writes "When India got its independence after long period of subjugation, its land and people were a picture of distress, removed from great events of its past glory and splendour. A whole creative side of Indian civilization and vibrant economy of Ancient and Medieval India had shrunk under the foreign rule. Down to the eve of British rule India had rich and prosperous economy due to its flourishing agricultural and manufacturing industries." He further says "Indian industries not only met all local ones but also enabled India to export finished products which had a world-wide market. Indian exports consisted chiefly of manufacturers like cotton and silk fabrics, muslins, calicos, artistic ware, silk and wollen cloth. Kashmiri shawls and carpets; jewelry, stone carving, filigree work in gold and silver, and artistic work in marble, sandalwood, ivory, and glass formed other important industries, products of which are in great demand the world over." But this sound economy in a way started to decline under the impact of British connection.

Since independence the industrial structure of India again started to grow stronger. During the five year plans (1951 onwards), the industry has been expanded and diversified. Industry has shifted from small and medium scale enterprises to larger mills and factories, which in turn have helped to develop modern towns and cities.

Different industrial clusters have developed in India. The eastern industrial cluster extends over southern Bihar (now Jharkhand), West Bengal and Orissa. This region is rich in iron ore, coal and other minerals. Hence iron and steel industry has developed in Jamshedpur, Durgapur, Bokaro and Rourkela. Jute mills are the prominent industries expanded along the banks of Hoogly. The main reasons of development of these industrial set-ups, besides the availability of minerals, are the power resources from Damodar valley corporation, cheap labour from thickly populated states and effective means of transport.

The other major industrial set-ups in India has developed in and in-between Mumbai and Vadodara through Surat and Bharuch. These areas are famous for cotton textile and chemical industries but now it has become important for petro-chemical and pharmaceuticals also.

In the southern part of India, the states of Andhra Pradesh, Tamil Nadu, Karnataka and Kerala, have developed a few small industrial clusters. The belt comprising Coimbatore-Madurai-Chennai have abundance of cotton textile, electrical goods, chemical and leather industries. There are some industrial centres with specialized products e.g. tool and machine industry at Bangalore, ship-building and fertilizer industry at Vishakhapatnam and oil refinery at Cochin.

In the belt of Delhi, Haryana, Punjab and Western Uttar Pradesh a number of industries have developed e.g. textiles, machinery, automobile, electronics, cycle, agricultural machinery and pharmaceutical industries. To remove the regional imbalances industries at places like Bhilai, Ujjain, Bhopal and Jagdishpur are established.

Now if we look at the north-eastern part of India, the state of Assam has many industries but the main two well-developed modern industries here are tea and oil. Besides, there are plywood industries, jute mills, sugar mills, cement factories, saw mills, match factories, paper mills, gas and hydro thermal power plant, petrochemicals industries, mini iron and steel mills, medium sized railway workshops, aluminium-ware factories, hardboard factories, the fertilizer factory, coal industry, handloom and textiles industries, industries related to bamboo and cane furniture works, printing presses, brass and bell metal industries, pottery making, glass industry, sericulture and so on. P. K. Dhar (1996: 113) mentions that "...the industrial sector in the state had been centralized around some particular sectors like tea, petroleum, coal, jute and forests." Among all the industries in Assam, the significance of oil industry is paramount to promote industrial development in the state.

It is an established fact that any country's economic growth is, to a large extent, reflected in the pattern of growth of its energy consumption and India is no exception. The Indian petroleum industry has made very impressive growth and has played an extremely vital role in the industrial development of the country. It has been a major source of many industries, transportation, and household fuels and a supplier of feedstock and fuel to a large number of downstream units.

BIRTH OF THE INDIAN OIL INDUSTRY

Oil was first discovered in India in 1866 in Upper Assam. This was seven years after the world's first discovery of oil - in Pennsylvania, USA - by Colonel E. L. Drake in 1859. Actual oil production started after Assam Railway and Trading Company (ARTC), which was doing exploratory work, struck oil in 1889 at Digboi. The exploration work was almost immediately taken up by the Burmah Oil Company (BOC) in the Upper Assam area.

The Indian petroleum industry remained static between 1900-1950 with crude production and refining being done only

in Assam. During this period, the petroleum products were imported to meet the extra requirements.

In 1956, the government of India formed the Oil and Natural Gas Commission (ONGC) and subsequently Oil India Limited (OIL) as a joint venture with Burmah Oil Company (BOC) for exploration and production of crude oil. Efforts in Assam and Gujarat helped to increase the crude production to 6.8 MMT per annum by the early seventies.

During the mid-seventies, ONGC discovered large crude oil reserves in the offshore area of Bombay High and the production reached a level of 10.5 MMT per annum by 1980-81. In the next decade, India witnessed a three-fold increase in crude oil production and recorded a production of 34.0 million tonnes in 1989-90. During the same period, the offshore exploration activities commenced in Krishna-Godavari and Cauvery basins in Southern India. Annual Report of Ministry of Petroleum and Natural Gas (1996-97:10) shows that ONGC has produced 21.560 million tonnes of crude oil during the year 1996-97 (upto Dec. 96) against the target of 23.452 million tonnes for this period. Total natural gas supply during this period was 13069.15 million cubic meters against the target of 12457.77 million cubic meters. Recently, in its 50th year of existence, Petroleum Minister Murli Deora said in the Golden Jubilee celebrations of the company that ONGC produces just over 26 million tonnes of crude oil annually which meets one fourth of India's oil requirement. Deora further said that ONGC has done a commendable job in shaping the national pursuit of energy from discovering six out of seven producing basins in India, ONGC has foot-print in fourteen countries overseas for sourcing oil and gas for the nation. (As reported by PTL, published in The Assam Tribune, Dibrugarh Edition, Aug 15, 2006.)

PETROLEUM, NATURAL GAS AND PETROCHEMICALS

Petroleum is an inflammable liquid found naturally as crude oil. It contains hydrocarbons as paraffin, cycloparaffin, naphthalene and aromatic compounds.

Crude petroleum is obtained from beneath the earth's surface by drilling wells. It is black when extracted, but sometimes amber red, brown or even colourless. The crude is formed by the decay of tiny sea creatures million of years ago in much the same way as coal is formed from dead vegetation. The dead creatures formed layers on the sea bed buried in mud. These deposits were trapped by upheavals in the earth's crust over millions of years. They underwent chemical changes and slowly turned by heat and compression into underground reservoirs of petroleum (Figure-1.1 & 1.2 is taken from ONGC Reporter: The Corporate Journal of the Oil and Natural Gas Commission, 1984. p 14-15)

Petroleum is formed by decomposition of marine organisms which are preserved and finally sealed by finely grained sediments deposited on them. Such favourable conditions were afforded by the stagnant waters of lagoons, gulfs and inland seas where animal and vegetable life once abounded. By the weight of sediment assisted by the action of bacteria, the organic remains were transformed into oil and gas by heat and pressure.

Like crude petroleum, natural gas is also a valuable resource that remains hidden deep in the belly of the earth. Natural gas is known to occur in close proximity with oil several thousand metres below the surface of the earth or in the bed of the seas. In many areas it occurs by itself, not necessarily in association with oil. This reservoir is found in India in places far removed from each other as Tripura in the extreme east and Rajasthan in the extreme west. It is found elsewhere also.

Natural gas is found in porous rocks of the earth's crust with or near the accumulation of crude oil. The typical gas consists of hydrocarbon having a very low melting point. Natural gas comes in two forms, that is, associated gas and free gas. The first one remains mixed with crude petroleum and the second one is found in a natural state. The gas is a clean, convenient and odourless combustible gaseous fuel which can be used for cooking and heating purposes. It can

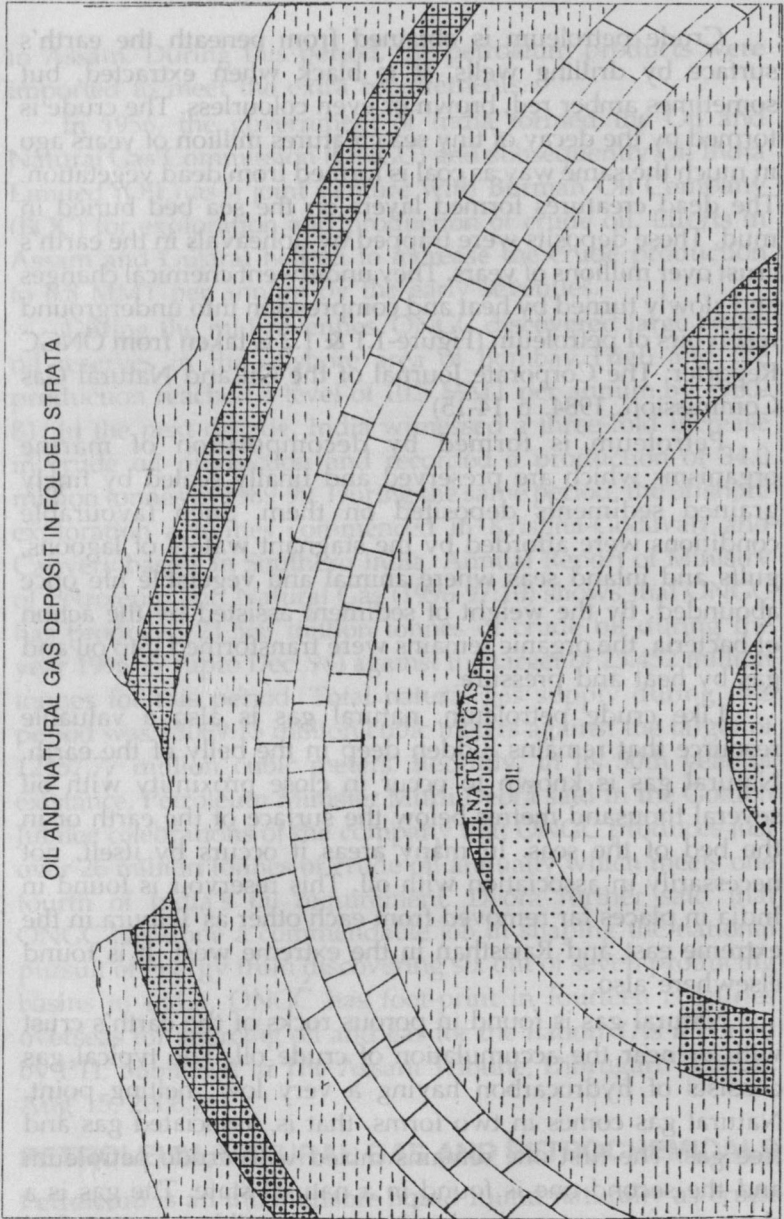


Figure 1.1

A TYPICAL OIL TRAP IN INCLINED BEDDING

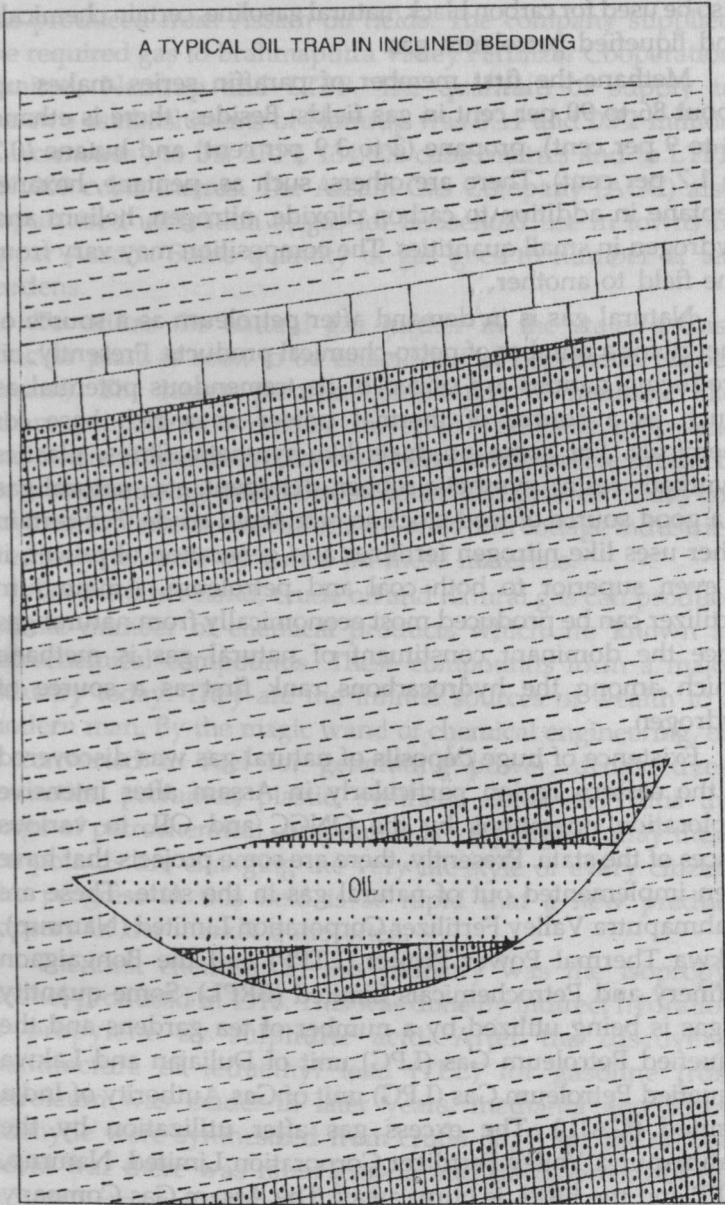


Figure 1.2

also be used for carbon black, natural gasoline, certain chemicals and liquefied petroleum gas.

Methane-the first member of paraffin series makes up about 86 to 90 per cent in gas fields. Besides, there is ethane (8 to 9 per cent), propane (2 to 3.9 per cent) and butane (0.7 to 1.7 per cent). There are others, such as, pentane, hexane, heptane in addition to carbon dioxide, nitrogen, helium and hydrogen in small quantities. The composition may vary from one field to another.

Natural gas is in demand after petroleum as a source of energy for a number of petro-chemical products. Presently, oil producing nations are seized of its tremendous potential as much as a source of thermal power as a rich base for chemicals. For some products like synthetic fibres, plastics (synthetic resin), synthetic rubber, detergent, etc., natural gas is a good source of feed-stock as petroleum crude. For certain other uses like nitrogen fertilizer and generation of power, it is even superior to both coal and petroleum. Ammonium fertilizer can be produced most economically from natural gas since the dominant constituent of natural gas is methane which among the hydrocarbons rank first as a source of hydrogen.

Existence of huge deposits of natural gas was discovered in the eastern region particularly in Assam after intensive exploration operations by the ONGC and OIL in various places of the state. Presently, there are some projects that have been implemented out of natural gas in the state. These are Brahmaputra Valley Fertilizer Corporation Limited (Namrup), Lakwa Thermal Power Project (LTPP) and the Bongaigaon Refinery and Petrochemicals Limited (BRPL). Some quantity of gas is being utilized by a number of tea gardens and the Liquefied Petroleum Gas (LPG) unit of Duliajan and Lakwa Liquefied Petroleum Gas (LPG) unit of Gas Authority of India Limited (GAIL). The excess gas after utilization by the Brahmaputra Valley Fertilizer Corporation Limited, Namrup, LTPP and the BRPL is burnt away. The Assam Gas Company (AGC) was formed in 1961 in order to utilize the natural

gas produced from Assam oil fields. The company supplied the required gas to Brahmaputra Valley Fertilizer Cooperation Limited, Namrup and LTPP. The quantum of supply to the two establishments of Namrup was 0.11 and 0.72 million cubic metres ; to the BRPL 134,000 cubic metres and to LTPP 887,000 cubic metres. The Assam Gas Company (AGC) also popularised utilization of gas for household use in towns of upper Assam. Some quantity of gas goes to number of tea gardens.

To utilize the natural gas further in the state, a Gas-Cracker plant is soon to be established at Lepetkatta (upper Assam). The heavy paraffin compounds of methane like ethane, propane etc. would be converted to ethylene, propylene and others. These materials would give innumerable products for manufacturing a number of household articles of day-to-day needs. Various medium, small-scale and cottage industries are likely to come up based on these materials.

On the other hand, crude oil and natural gas can produce infinite number of chemical products which are known as petrochemical compounds. These compounds form a major industry today. They are the infinite sources of wealth to a modern man. By the magic wand of chemical engineering, oil is converted to fuel for generating power, drugs, dyes, cosmetics, perfumes, plastic, synthetic fibres etc. Thus the range of petrochemical compounds is very high. Today these compounds are changing the very life-style of every citizen. The progress in this field is so rapid that a new product appears in the market quite often.

The first chemical in this industry was the isopropyl alcohol produced in 1918. This was done by indirect hydration of propylene by sulphuric acid. After the discovery, manufacture of tetraethyl lead (TEL) for gasoline from petroleum was made. In later years, methanol and acetaldehyde were synthesized from crude oil. After the second world war there was rapid growth and development of the industry for preparation of explosives, nitric acid and nitroglycerine, toluene, styrene, ammonia, synthetic rubber and a

host of other chemicals. Polymer and catalysis fields have received a great impetus. As a result of polymerisation, propylene, ethylene and proper products have been obtained.

Lipsticks, household detergents, polythene bottles, plastic utensils, car accessories, foam rubber, synthetic tyres and fibres, radio components, paints, varnishes, adhesives, weed killers, insecticides and fertilizers are just a few examples of petrochemicals.

The Indian Petrochemical Corporation Limited (IPCL) was formed in 1989 in order to utilize the petrochemical products of India. To utilize the crude oil and natural gas of the state, the Bongaigaon Refinery and Petrochemicals Limited (BRPL) was established at Bongaigaon in 1980. It is now producing all the vital products. The polyester unit has a capacity to produce 30,000 metric tonnes of fibre. The unit is now in full operation. The fibres are expected to be converted into yarn in the spinning mills and later to be blended with a number of cellulosic products. The handloom and the power-loom sectors of the state will have the needed raw materials for commercial production of cloth. In order to utilize the total production of fibre 25,000 power-looms would be needed. Moreover there is another petrochemicals industry in Namrup (upper Assam) named as Assam Petrochemicals Limited.

The refining of Oil

Crude oil is made up of several different kinds of liquids or fractions. The refining of oil is based on the principle of fractional distillation which makes use of the fact that these different liquids have different boiling points. The fractionating column is a steel cylinder rising vertically and is divided into sectors by a number of perforated plates called trays. They have a short pipe covered with a bubble-cap rising from them. The crude oil is first heated by a furnace and then passed into the lower part of the fractionating column. By now, most of the fractions in the oil are already boiling, so they vaporise and rise up the column through the holes in the trays, losing heat as they rise (Figure - 1.3 is taken from ONGC Reporter:

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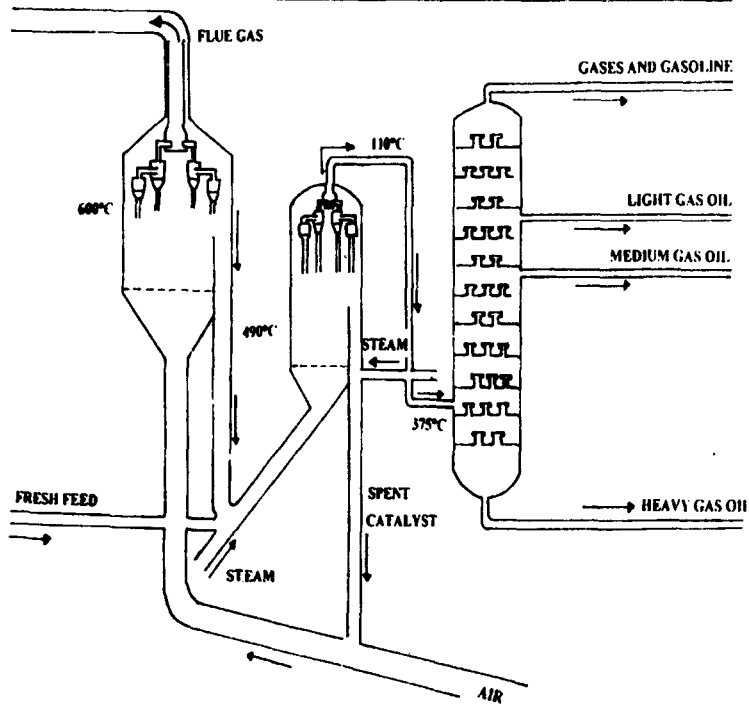
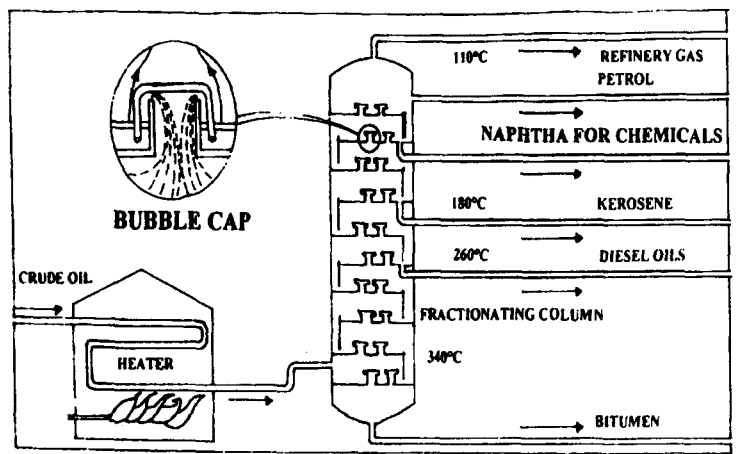


Figure 1.3

The Corporate Journal of the Oil and Natural Gas Commission, 1984. p 20).

When each fraction reaches the tray where the temperature is just below its own boiling point, it condenses and changes back into liquid. When this happens, the different fractions are gradually separated from each other and are drawn off by pipes. A residue of asphalt and tar sinks to the bottom of the column, from where it is tapped off.

After distillation, the fractions may either directly form finished products or may be further refined in secondary processes like catalytic cracking, coking, viz. breaking, hydro-desulphurisation and solvent refining, to produce the various, desired finished products.

Oil products and their uses

Crude oil consists of a very large number of hydrocarbons-chemical compounds of hydrogen and carbon. Different combinations of hydrogen and carbon produce various oil products like petrol, kerosene and naphtha.

Earlier, petroleum was only used for heating and burning. With the invention of the internal combustion engine, however, petroleum became the major power source for the automobile industry and, later on, for the development of petrochemicals and fertilizers.

Now, the cars we travel in, the planes we fly in and the ships we sail in, are all run with oil products like petrol, aviation fuel and diesel oil.

Kerosene, gas, and fuel are still widely used as sources of heating or illumination in factories, hospitals, hotels, offices, schools and homes. Kerosene and petroleum gas are also used for cooking. Lubricating oils and greases are used for making machinery run smoothly. While making lubricants, paraffin wax is extracted from the oil. This wax is used for making candles, food packages, bread wrappers, ice-cream cartons and many more products.

Oil has no waste products. Even the thick residue at the base of the fractionating column gives bitumen, which is used

for laying roads, water-proofing and coating. Research is being carried out in the laboratories of major oil producing and consuming countries of the world, to discover if petroleum can serve mankind further. Thus, we can say that the story of oil has no end. It is still unfolding itself and will go on for years to come.

OIL AND NATURAL GAS CORPORATION LIMITED (ONGCL):

The industry selected for our study is Oil and Natural Gas Corporation Limited (ONGCL). This particular Oil Industry was chosen because it is one of the largest organisations and is one of the most profitable oil industries in Assam. ONGC is an industry under the crucial energy sector exclusively dedicated to exploration and production of hydrocarbon.

Late Keshav Dev Malaviya, after he became Minister for Natural Resources in 1955, announced publicly that oil exploration would be launched by government of India. A lot of criticism was voiced to the effect that this was a highly risky venture to play with taxpayers' money. However, Malaviya remained undaunted and started Oil and Natural Gas Directorate towards the end of 1955 with Dehradun as its headquarters. Mr A.M.N. Ghosh who was senior superintending Geologist in the Geological Survey of India was appointed as Director. The Directorate began to function with a nucleus of a few Geoscientists and staff drawn from the Geological Survey of India. An aeromagnetic survey over 250,000 sq. kms. in the plains of Punjab and the Gangetic plains and another 45,000 sq. kms in Rajasthan, mostly desert area was arranged to be carried out by a Canadian team with an aid of about £400,000 provided by Canada under the Colombo plan. These magnetic surveys furnished the basic data to select suitable areas for more geophysically sustainable areas for more geophysical surveys. A team of Soviet experts toured some parts of India and suggested a plan for oil exploration. A few experts from West Germany and the USA also visited India and advised regarding the exploration.

After considering all the reports of these foreign experts, it became evident that a bigger organization with corporate responsibility would be essential. So, the government established the Oil and Natural Gas Commission in August, 1956 with Mr. Keshav Dev Malaviya as the Chairman. Oil and Natural Gas Directorate was absorbed in the commission and Mr. A.M.N. Ghosh was appointed as technical member of the commission.

Oil and Natural Gas Corporation Limited (then Oil and Natural Gas Commission) started exploratory surveys in Assam in the year 1957. After delineation of Desangmukh and Rudrasagar structure of Sibsagar district in 1958 by Geological and Geophysical Surveys, ONGC started exploratory drilling in 1959 at both the structures. First oil was struck at Rudrasagar in 1960, followed by Lakwa in 1964 and at Geleki in 1968. ONGC, Eastern Regional Business Centre (ERBC) is increasing its exploration in various parts of the Eastern Region and making all efforts to increase production from the existing fields.

The operational activities of ONGC Eastern Region covers one lakh sq. kms sedimentary tracks falling in the states of Assam, Meghalaya and Nagaland. ONGC has so far drilled about 1112 wells and produced nearly 47.74 MMT of oil and 9339 million cubic metres of natural gas. For operational efficiency it has adopted exploration, drilling, operation and technical services functioning as independent business groups with commercial approach supported by finance, administrative and materials management function under the overall administrative control of executive director.

The Regional Headquarters of Eastern Regional Business Centre (ERBC) is located at Nazira in the district of Sibsagar and its different projects are:

1. Assam Project: Control base at Nazira.
2. Dhansiri valley Project: Control base at Jorhat.
3. Cachar Project: Control base at Silchar.

In addition, there is central workshop at Sibsagar which caters for the maintenance and repairing of equipments used for drilling operation in this part of the country as well as elsewhere.

Presently ONGC is operating its five main trunk pipelines viz.,

- (i) Lakwa-Moran pipeline.
- (ii) Rudrasagar-Lakwa pipeline.
- (iii) Geleki-Dikhow junction.
- (iv) Geliki-Jorhat pipeline.
- (v) Borholla-Jorhat pipeline.

These pipelines transport crude oil to ONGC terminal at Moran and Jorhat for its onward pumping to Guwahati Refinery, Barauni Refinery and Bongaigaon Refinery and Petrochemicals Ltd. through the Oil India pipeline.

At present ONGC, Eastern Regional Business Centre (ERBC) has a total strength of manpower of about 10,500 employees directly employed. Out of which 96 per cent representation is given to the locals in class III and IV posts and 60 per cent in the officer cadre of class I and II is earmarked for the locals.

ONGC is also committed to the uplift of quality of life of the people in and around its operational areas in the Eastern Region. ONGC gives assistance/support in the areas of education, health care and family welfare, community development, development of infrastructure facilities, sponsoring professional meets, conventions, seminars and so on.

The study is directly concerned with Oil and Natural Gas Corporation Limited (ONGCL) and a village named 'Lakwa Charingia Konwar gaon' situated near an oil field of ONGC in Sibsagar district. The Sibsagar district of Assam is selected for field study because of the fact that the Regional Headquarters of Eastern Regional Business Centre (ERBC) is located at Nazira in the district of Sibsagar.

A brief profile of Assam

Before going to depict a picture about the area of the study, it is necessary to present a brief overview of the state of Assam as the Sibsagar district is within the state of Assam. In the following paragraphs a brief overview of the state of Assam

in general, Nazira (the headquarters of Eastern Regional Business Centre) and Sibsagar district in particular is given.

The state of Assam is situated in the heart of the north-east corner of Indian sub-continent. It is located in between latitude 24°10' N to 27°58' N and longitude 89°49' E to 97°26' E. It is surrounded by Bhutan and Arunachal Pradesh on the north; Nagaland, Manipur and Arunachal Pradesh on the east; Meghalaya, Mizoram and Tripura on the south; and Bangladesh, Meghalaya and West Bengal on the west. Assam is connected with the rest of Indian union by a narrow corridor in West Bengal that runs for 56 kms below the foothills of Bhutan and Sikkim.

The state's climate is of humid type in the plains and sub-alpine in the hills. Rainfall in Assam is one of the highest in the world. It varies between 178 and 305 cm. All this rainfall is concentrated in four months, that is, from - June to September. Average maximum temperature is 30°C (in summer) and 16°C (in winter)

The word Assam is perhaps derived from the Sanskrit word 'Asoma' meaning uneven or peerless. The land whose enchanting picture is conjured by name 'Assam' is in fact peerless, judged by her exquisite natural beauty, cultural richness and human wealth. Assam also means uneven for its geographical diversity.

It was known as 'Pragiyotisha' or the place of eastern astronomy in the earliest days and mentioned frequently in Indian scriptures, mythologies and poetical works as 'Kamrupa'. This eastern most state came to be known as 'Assam' after the mighty Ahoms conquered the land in 1228.

The first known mythological monarch of the land was Narakasura, a mighty and powerful king of Asura Dynasty. His successor, Bhagadatta, figured in the Mahabharata war leading a vast army against the Pandavas. The Bhagavat and Vishnu-Puran narrate the story of another king Banasura who fought against Sri Krishna, when Banasura's daughter Usha was kidnapped by Anirudha, the grandson of Sri Krishna. On another occasion also, Sri Krishna fought against king

Bhismaka of Kundil in his bid to marry Bhismaka's daughter Rukmini.

Bhaskar Varman, who flourished in the seventh century was one of the greatest monarchs of eastern India. Other powerful dynasties ruling over Assam prior to the Ahoms were the Salastambhas, Palas, etc. A part of Assam including the present Coochbehar was ruled by Koch rulers from the early part of 16th century to the early part of the 17th century.

The advent of the Ahoms across the eastern hills in 1228 A.D. was the turning point of Assam history . They ruled Assam nearly for six centuries (1228-1826) till the Burmese entered Assam through eastern borders and overran the territory destroying the power of the Ahom royalty. By the treaty of Yandabu in 1826 A.D., the Burmese ceded Assam to the East India Company. Since then Assam came under the British rule. But the British had a tough time governing the land as the people of Assam united in their struggle for overthrowing the British rule till the birth of our country as an Independent Nation.

About 63 per cent of the state's working force are engaged in agriculture and allied activities. The Principal food crop is rice. Cash crops are jute, tea, cotton, oil seeds, sugarcane, potato, and various fruits, which are grown on a smaller scale. The state has a gross cropped area of about 35 lakhs hectare, more than 79 per cent accounting for food grain crops. Paddy alone covers about 26 lakh hectare. Area under forests cover 10,064 sq. km. Production of food grains during 1994-95 was estimated at 39.71 lakh tonnes.

Of the agricultural-based industries, tea occupies an important place. Tea gardens in the state occupy an area of about 2.30 lakh hectare. Assam has over 800 tea plantations and contributes 15.6 per cent of world's tea production and 55 per cent of the country's tea output.

Assam is the first state in the country where oil was struck in 1889 at Digboi. Petroleum and petroleum products amount to a large share of the country's total output of petroleum and natural gas. The state has four oil refineries, Digboi, Noonmati

(Guwahati), Bongaigaon and Numaligarh Refinery. Besides, a public sector fertilizer factory at Namrup, the other industries located in the state are oil mills, sugar, jute, silk, paper, plywood manufacture, rice and oil mills. A polyester spinning mill has also been established at Kamrup district.

Assam holds a unique position in respect of mineral oil production. Other minerals found in the state are coal, limestone, refractory clay, dolomite and natural gas.

The cottage industries of Assam includes handloom, sericulture, manufacture of cane and bamboo articles, carpentry, smithy and manufacture of brass utensils. Assam is the largest producer in the world of the golden coloured 'Muga Silk'. An export oriented handloom project has been established at Sualkuchi to exploit the export potentialities of Eri and Muga silk textiles.

A total of 4,69,001 hectare of irrigation potential has been created so far. Two major, five medium and 1,278 minor irrigation schemes have been completed.

Assam has an installed capacity of power generation of about 534.4 MW. The major power stations are Chandrapur Thermal Project, Lakwa Thermal Project, Namrup Thermal Project and a few Mobile Gas Turbine units alongwith 4x5 MW mini hydroelectric project. Nearly 95 per cent of the villages numbering 21,845 have been covered under rural electrification upto 1995.

Some of the other miscellaneous facts regarding the state of Assam are that the total area of Assam is 78,438 sq.km with a total population of 2,24,14,322 as per 1991 census. Out of that population, 1,16,57,989 are males and 1,07,56,333 are females. The urban population of Assam is 11 per cent, that is, 24,87,795 and rural population is 89 per cent which numbers 1,99,26,527. As many as 7.4 per cent (16,59,412) of the population are scheduled caste and 12.8 per cent (28,74,441) of them are scheduled tribe according to 1991 census. The literacy rate of Assam is 53.42 per cent where the literacy rate of male is 62.34 per cent and in case of female it is 43.70 per cent.

After the brief profile of Assam it is worthwhile to introduce the reader to the places where control base of the present study of ONGCL is located.

Sibsagar

Sibsagar, the modern name of an ancient town, which was one of the former capitals of the Ahom kingdom, now throbs with the activities of full-fledged industrial town. Nevertheless, the district can still conjure up images of historic wonder and obtained its pinnacle of glory during the reign of Ahom kings. This is the place from which the Ahoms ruled the whole province of Assam from 1228 to 1826.

Nowadays, Sibsaagar presents the unique spectacle of industrial transformation of a silent town in the backdrop of relics of bygone days. Situated at a distance of 350 kilometers from Guwahati, Sibsaagar (earlier known as Rongpur) was the capital of the Ahom kingdom from 1699 to 1788. The town, dedicated to Lord Siva - its name literally means the ocean of Siva and reminds us of a powerful empire.

The ONGC which started its operation in exploration and production of hydrocarbon in this region since the late fifties has accelerated the pace of industrial development to such an extent that Sibsaagar no longer remains a silent town having only its rich glory and heritage of number of historical monuments of rare historical and archaeological significance of Ahom kings. The prevailing milieu of industrial development has coalesced into a harmonious blend carrying the unique message that our future is built not through clash of the past and the present but through the harmonious reconciliation between the best of our past and the present. If ONGC has given the dimension of material development and prosperity, the past glory and heritage with which Sibsaagar is associated, has given the dimension of spiritual and cultural richness.

Nazira

Nazira the headquarters of Eastern regional Business Centre is located in the district of Sibsaagar on a sharp bend of river Dikhow, close to the place of low forest-clad of Naga foot-hills

which meet the verdant plains of upper Assam. Once, Head office of British Company known as Assam Tea Company, it now throbs with full swing oil activities and taking strides in changing the socio-economic scenario of the area. ONGC, with its expansion of activities in this region, has maintained rare harmony of growth preserving natural beauty and culture of the small township.

The Oil and Natural Gas Corporation Limited (ONGCL) in Sibsagar district of Assam includes the Assam project with control base at Nazira. The Regional Headquarters of Eastern Regional Business Centre (ERBC) is also located at Nazira in the district of Sibsagar. The village selected to study the impact of the oil industry is called 'Lakwa Charingia Konwar gaon' under the Khaluwa block in Sibsagar district of Assam. It is located just opposite Lakwa ONGC colony which is 20 km away from Nazira, the ONGC's headquarters of Eastern Region and it is 35 km away from Sibsagar town in Sibsagar district of Assam. The village has 176 households with a total population of 1232 of which 587 are males and 645 are females.

Review of the Literature

Sociological studies of industrial organizations is an important aspect of industrial sociology. The sociologist is interested in studying the internal structures of industrial units either in relation to each other or in relation to the social environments within which the units function. Such studies can be undertaken in the spirit of purely scientific inquiry on the lines taken by Gouldner (1954), Warner and Low (1947), Burns and Stalker (1963) Sengupta (1987), Somashekharappa (1990) and so on. On the other hand, studies of industrial organizations may be based on the social scientist's acceptance of certain goals such as efficiency or productivity and thus assume the form of applied research, as in the case of Jaques (1951), Sofar (1961) Sabharwal (1988) and others. Similarly, Sharma (2000) pointed out that the organisations that enjoy enduring success have shown that the business strategy and practices must keep adapting to the changing world.

There are also academic studies of industrial organizations as whole units. Sheth (1968), Basiskar (1969) and Unwala (1958) have analysed the structures of relationship among people working in a factory in relation to the social and cultural framework within which they live. Sharma (1987) has attempted to study the nature of industrial organization in India-- both private and public. Sengupta (1987) studied small industry as a social system. Sabharwal (1988) in a study of selected textiles units in Punjab analysed approaches to organizational structure and its effectiveness. On the other hand Ramaswamy's book (1983) focused the inter-relationship between work, union and community. Bhowmik (1981) studied the phenomenon of class formation in the plantation system. Other studies have been conducted on certain specific aspects of work in industrial organization, such as morale, motivation, communication, incentives, absenteeism. Although most of these studies have been undertaken with a view to analyse problems of efficiency or productivity, they provide valuable insights into the sociology of industrial organisations. The most well-known, among these researches is Rice's study (1959) of work organization in a textile mill in Ahmedabad. Rice showed that a work-group could be geared to higher productivity if its internal structure is socially and psychologically acceptable to the members. Some fundamental questions have been raised about the validity of Rice's findings by Roy (1969) but Rice's main contribution lies in the use of the concept of a production unit as a socio-technical system and this concept was subsequently used (directly or indirectly) by some other researchers like Chowdhry and her colleagues (1952, 1955, 1957), Dayal (1957), Vaid (1967) and so on.

Numerous studies deal with the relevance of employees' motivation and morale to their productivity. The influence of demographic factors, social background, working conditions, unions, technology, on workers' motivation or adjustment to work has been studied by Lambert (1960), Bali (1967), Ganguli (1957, 1955, 1954), Sharma (1968), Vaid (1967) Kester (1968) and Sharma (1987). Lambert (1960) and Sharma (1969) point

out the significance of technology, age and education, for understanding workers motivation. Kester (1968) shows that age and education are the only important factors influencing motivation. Akhtar et.al. (1967) attempt to relate workers' job-satisfaction to important factors such as management structures and managerial styles. Sharma and Kaur (2000) deals with only one dimension of work motivation, namely, job satisfaction which is by far the most widely used indicator of work motivation. Similarly Kao (1999) says that even if an organisation wishes to remain 'domestic', there is increasing pressure on it to inculcate global perspectives and values among its employees. On the other hand Sinha (2001) takes the position that there is a triangular interdependence among the conceptualisation of organisations, the nature of effective leadership and the measures of organisational development - all three of them are jointly influenced by changing emphasis on cultural imperatives, market conditions, and global forces.

Behavioural phenomenon such as absenteeism among workers has engaged the attention of several social scientists (Avshesh: 1965, Jayaraman:1958, Vaid: 1967, Sharma: 1970, Desai: 1966, Ahmad and Saiyadain: 2000). These scholars have tried to study the degree of absenteeism in relation to social and cultural factors, working conditions, age, health, skill and so on. Vaid (1967) classified the concept of absenteeism and suggested a four-fold typology of absentees on the basis of social and personality attributes of workers. Whereas Ahmad and Saiyadain (2000), while identifying factors that contribute to absenteeism examined three clusters of factors dealing with individual, environment and work.

Similarly, some interesting studies are available on the role of incentives (Basu: 1966, Chowdhry and Trivedi: 1952, Nanda:1967, Pathak: 1969, Sheth: 1967). The moral implicit in most of these studies is that the workers' acceptance of incentive schemes depends on the ability of such schemes to meet workers' social as well as economic needs. Also, the introduction of an incentive scheme brings about structural and cultural changes in the organizations. So does the

introduction of new technology or of new management structures. These are all illustrations of social change within organizations. Such changes are likely to result in tension and conflict in the man-man relationship as well as in the man-work relationship within the organization. Rice (1959) and the studies by Chowdhry and Trivedi (1952) have handled this aspect of industrial sociology. On the other hand, Virmani's book (2000) discussed various Human Resource management issues such as alignment of corporate strategic goals with HRD and training, technical training and workers education, technological change and transfer of technology, collective bargaining and the changing industrial relations scenario.

Some studies on the other hand reflect different aspect of industrial sociology such as conflicting worlds of working mothers, gender aspects like sexual equality, forms of production and women's labour. Notable among these studies are Jain (1987), Baud (1992), Kalpagam (1994) and so on. Jain (1987) in her study has dealt with the 'nature of gender relations' focussing particular attention on the problems, privileges and future prospects of women workers in the Nimari tea plantation in Assam. Baud discusses forms of production and women's labour in respect to gender aspects of industrialization in India and Mexico. Kalpagam has studied labour and gender in respect to urban India.

There have been a few attempts to analyse specific roles in industry, especially the role of the supervisor. Amin (1963), Desai (1960), Ganguli, Goswami and Ghosh (1967, 1957) and Sheth (1969) have studied the perceptions or expectations of the supervisory jobs by supervisors themselves and by others. They have pointed out the discrepancies between role-expectations by various groups as well as between role-expectations and actual practices. Gross and his associates' (1958) studies of specific role-structures and role-conflicts have contributed to sociological theory and methodology. Garg et. al (1993) have studied some young managers having MBA degree in terms of their role, identity and their life space in social as well as work organisations in Indian society.

Mohan et. al (2001) tried to analyse some factors which could help managers to overcome obsolescence. It was found that the desire for personal accomplishment and job involvement were two of the factors which help to overcome professional obsolescence.

Many writings on industrial relations assume the form of general discussions and projections on how to improve industrial relations and productivity. The relations between managements and trade unions are largely regulated by the government through legislation or voluntary constraints mutually accepted by the parties. Hence, the large part of discussion on industrial relations is focused on the governments' labour policy. While some studies analyse the role adopted by the government in a historical-political-economic context, others point out the adverse effect of government interference on the discretion and initiative of both managements and unions. Some studies in this area are based on managerial unionism. Kanhere (1982) analysed the characteristics of white collar trade unionism on the basis of a study of the emergence and development of officers' trade union movement in the nationalised banks. Sharma (1993) emphasised that managerial unionism is an inevitable outcome of advanced industrialisation which creates large bureaucratic organisations.

Some studies on the other hand, analyse the existing institutions such as the grievance procedure (Goyal: 1959) and the tripartite consultative machinery of the government (Mathur and Sheth: 1969). A few studies, however, provide significant sociological insights into the industrial relations systems in the country. Meyer's book (1958) is based on a large number of interviews with managers, union leaders and government officers. Kennedy (1967) met a cross-section of people in all the groups, and subsequently analysed and evaluated the government labour policies in India in the context of the environment of labour management relations. Similarly, Ratnam and Sinha (2000) in their study provide diverse perspectives on trade union challenges at the dawn of twenty first century.

Several scholars have studied the structure of industrial relations in individual industries such as, Jain's study of the public sector (1960), the studies by Johri, Gavin and Agarwal in the Ports and Docks (1968) and the study in the building industry by Johri and Pandey (1964). Most of these studies are socio-economic surveys.

A large number of social scientists regard free collective bargaining between labour and management as the best and organizationally the most viable basis of industrial relations. Notable among these scholars are Sur (1965), Krishna Pillai (1964), Pandit (1958), Subha Rao (1961). On the other hand, De (1969) has recently argued that collective bargaining is likely to prove dysfunctional to labour-management cooperation and understanding in the Indian background.

There are several studies of the various forms of labour-management cooperation in industry, Rudrabasavaraj (1967) and Mehrotra (1967) have discussed the value of the suggestions scheme for industrial efficiency. Ramaswamy's book (2000) strives to capture the shifting trends in the theoretical understanding of labour relations and human resource management. However, the main institutionalised and controversial form of labour participation in management is the Joint Management Council (JMC) recommended by the tripartite consultative machinery and accepted by representatives of both employers and workers. Some studies (Mhetras:1966) regard the JMC as reasonably successful while others have an ambivalent opinion on it (Das: 1964). A series of case studies done by Sheth et.al (1967) have however concluded that the JMCs, as such, hardly function in industry.

The sociological studies of conflict are extremely important, but, a period of conflict makes managers and workers more disagreeable to research than they are during the normal period. Studies of conflict are therefore among the most difficult. However, several studies of strikes are available in India. These include strikes in different areas and industries, such as government employees' strike (Choudhury: 1969), Bombay textile mills strike (Joshi: 1966), The Tata Steel strike

(Kannappan: 1959), plantations strike (Mukhopadhyaya: 1946). Strikes have been found to be related to different factors such as wages (Devasagayam: 1951, Kumar: 1964), union rivalry and union attitude to management (Mohan Das: 1967). The most comprehensive studies of industrial conflict have however been by De and Srivastava (1958) and by Dayal, Srivastava and Alfred (1969). These authors have related the strike and gheraos to the organizational factors as well as the economic and political factors in the external environment.

Also, there are numerous studies of social change and socio-economic studies of industrial towns such as Jamshedpur (1959) and Chittaranjan (1964) in India which dealt with the social consequences of industrialization. Bhagat and Dixit (2000) examined the impact on workers of Supreme Court judgement of 8th July, 1996 regarding closure/relocation of hazardous units in Delhi. Nichoff (1959), Neale (1956) and Orans (1958) believed that as industrialization grows in a society, value-patterns will change in the direction of the western modes of social life and thought. Sachchidananda and Mandal (1985) have thrown light on impact of industrialisation on tribal life of Bihar. The volume is based on a study of those sections of the tribals which suffer from economic insecurity and who are engaged in industries at Jamshedpur and Hatia as unskilled or semi-skilled workers. Haredia (1986) pointed out that transition from pre-industrial to industrial society seems to admit of equifinality and the end product is modernity which is multidimensional. Ram (2001) conducted a cross national study on industrialization and sex segregation in the labour market. The study concludes that sex segregation and women's economic marginalisation are primarily a reflection of the overall societal economic inequality, whether or not it accompanies industrialization.

Scope, Significance and Objectives of the study

Industry is an area which is the concern of all the social scientists. It has elicited the interest of the economists, sociologists, psychologists, management scientists, historians,

industrial relations specialists and social workers. For the last fifty years or so sociologists in India have been discussing the following list of questions regarding industrial workers:

1. **Social background of industrial workers:** How do industrial workers compare with the rest of the Indian population in terms of their demographic characteristics, educational achievements, their position in the social and economic hierarchy etc? What is the extent of their association with the rural-agricultural nexus of the Indian society?
2. **Recruitment and commitment:** what factors draw the workers into industrial jobs? How are they recruited to specific organizations and jobs? To what extent are they committed to industrial jobs? What choices are open to them while they work in current jobs?
3. **Attitude towards work:** Why does the worker work? What kind of needs, satisfactions does he/she look for? To what extent does he/she accept the demands placed on him/her by modern technology and industrial organization?
4. **Social consequences of industrial work:** What are the life chances and aspirations of industrial workers vis-a-vis other sections of the society? How are workers differentiated among themselves? To what extent do they constitute a distinct interest-group or class in the society? What is the nature and extent of their involvement in trade unions? What role do they perceive for themselves in achievement of the goals of a modern industrial society committed to economic growth and social equality?

The present study is one more attempt to study the industry of Oil and Natural Gas corporation Limited in Assam at the micro-level through intensive field work. Such study on the social structure of the organization, worker-management relationship and interaction between the industry and its neighbourhood is the first of its kind in Assam as well as in

the north eastern region of the country. It depicts ways of living and thinking in and around the industrial township of Sibsagar (Assam) which is situated almost 350 kilometers from Guwahati. In a sense, this study attempts to throw light on sociology of industrial organization, sociology of industrial relations and some effects of industrialization.

India is endeavouring to become a modern industrialized society. It is envisaged that industrialization would ensure a richer life for the people and provide a means that would transform the traditional society based on particularistic and ascriptive criteria to one based on universalistic and achievement standards. The country has made several strides in this direction. The process of change has touched new areas and brought into its fold people alien to an industrial culture. Who are the people that are drawn into this process? What is their social background? How significant is their socio-personal background in their adaptation to the new environment? What is the social structure of the organization? How is their worker-management relationship? What are the effects of industrialism on their traditional values and standards? These are the questions with which policy-makers, managers, administrator and academicians should be concerned. This work on an oil industry, that is, Oil and Natural Gas Corporation Limited in Assam, undertakes to answer some of these questions.

The main objectives of the study are:

1. To make a study of the organizational structure of the oil industry—ONGC.
2. To analyse the social background of the respondents of the study.
3. To examine the Worker-Management relationship in ONGC.
4. To analyse the interaction between the industry (ONGC) and its neighbourhood in order to find out their impact.

Methodology

Oil and Natural Gas Corporation Limited (ONGCL) was chosen for the present study because it is one of the largest and oldest organisations and is one of the most profitable oil industries in Assam. While studying this organization we have taken into account the social background of the respondents, organizational structure and the worker management relationship. Any study based on an industry is incomplete if its impact on the society is not examined. Keeping this fact in mind, after a comprehensive study of the first three objectives, the study concentrates on the impact of the industry on a micro level. For this purpose the village 'Lakwa Charingia Konwar gaon' was selected. It was taken into consideration on two grounds. In the first place, its nearness to the ONGC's Lakwa colony and secondly, the village contained eleven numbers of drilled wells of ONGC which are very important for studying its impact on the village.

First of all a survey was made in order to tap information regarding the organization structure of Oil and Natural Gas Corporation Limited and its trade unions and about the mentioned village. Then a list was made which composed of different types of workers and managers in different departments of Assam project of Eastern Regional Business Centre (ERBC). Finally, it was decided to interview some workers and some managers of different departments of Eastern Regional Business Centre (ERBC) of Assam project.

For operational definition, we consider all the employees of ONGC, ERBC (Assam Project) whose scale of pay is below Rs.4500-7150 during 1.1.1992 to 31.12.1996 and those of them who are not in E-O level as 'workers' and those employees whose scale of pay is Rs.4500-7150 and above and those who are placed in executive level as 'managers'.

The respondents of the present study are of four types - the workers, the managers, the villagers and a few prominent citizens. Fifty (50) employees of the management cadre, that is, 'managers' out of total 3176 managers of Upper Assam project and 150 workers including blue collar as well as white

collar out of 4577 workers of upper Assam project were chosen as respondents from the ONGC organization. Thus in case of managers it is 1.57 per cent representation of the total managers of upper Assam project and in case of workers the sample consists of 3.28 per cent representation of the workers of upper Assam Project. These respondents were chosen by the method of purposive sampling. We also tried to give representations of different strata of the employees while doing purposive sampling method. Table-1.1 shows department-wise selection of 'workers' and 'managers' of the ONGC organization:

Table: 1.1. Department-wise Selection of Respondents

Sl.No.	Department	Workers		Managers	
		Nos.	%	Nos.	%
1.	Exploration Business group	17	11.33	8	16
2.	Operation Business group	59	39.33	7	14
3.	Technical Business group	26	17.33	5	10
4.	Drilling Business group	21	14	4	8
5.	Support Services group	27	18	26	52
	Total	150	100	50	100

Also table-1.2 (a) and table-1.2 (b) will indicate the designations of 'workers' and 'managers' who were selected as respondents of the study.

Table: 1.2 (a) Designation of the Worker-respondents

Sl. No.	Designation	Workers	
		Nos.	%
1.	W-I (Rs.2282/-) Jr. Attendant/Jr. Helper/ Jr. Khalasi/Jr. Dresser etc	4	2.67
2.	W-II (Rs.2340/-) Attendant Gd. III/ Helper Gd. III/Khalasi Gd.-III/Dresser Gd.-III etc.	2	1.33
3.	W-III (Rs.2370/-) Attendant Gd. II/ Helper Gd. II/Khalasi Gd.-II/Dresser Gd.-II etc.	13	8.67

Contd...

Contd... table 1.2(a)

4.	W-IV (Rs.2472/-) Attendant Gd. I/ Helper Gd. I/Khalasi Gd.-I/Dresser Gd.-I etc.	6	4
5.	W-V (Rs.2532/-) Sr.Attendant Gd. II/ Sr.Helper Gd. II/Khalasi Gd.-II/Dresser Gd.-II etc.	4	2.67
6.	W-VI (Rs.2718/-) Sr.Attendant Gd. I/ Sr. Helper Gd. I/ Sr. Khalasi Gd.-I/Sr. Dresser Gd.-I etc.	2	1.33
7.	W-VII (Rs.4280/-)Head Attendant/ Head Helper/Head Khalasi /Head Dresser etc.	8	5.33
8.	A-I (Rs.2370/-)Jr. Asstt. Tech (Elect.) etc.	9	6
9.	A-II (Rs.2472/-). Asstt. Tech (Elect.)/ Asstt. Rigman (Drilling) etc.	6	4
10.	A-III (Rs.2532/-) Jr. Tech. (Elect.)/Rigman (Drilling) etc.	39	26
11.	A-IV (Rs.2718/-)Chargeman (Elect.)/ Topman (Drilling) etc.	7	4.67
12.	Top of class III (Rs.2802/)Jr. Engineer (Elect)/ Jr.Engineer (Drilling) etc.	6	4
13.	S-I (Rs.4280/-) Asstt. Foreman (Elect.)/Asstt. Foreman (Drilling) etc.	3	2
14.	S-II (Rs.4750/-) Foreman (Elect.)/Foreman (Drilling) etc.	17	11.33
15.	S-III (Rs.5700/-) Sr.Foreman (Elect.)/ Sr. Foreman (Drilling) etc.	14	9.33
16.	S-IV (Rs.6650/-) Chief Foreman (Elect.)/ Chief Foreman (Drilling) etc.	11	6.67
	Total	150	100

Table: 1.2 (b) Designation of the Manager-respondents

Sl. No.	Designation	Managers	
		Nos.	%
1.	Regional Director (RD)	1	2
2.	Group General Manager (GGM)	1	2
3.	General Manager (GM)	4	8
4.	Personnel & administrative (P & A) Officer	19	38
5.	Engineers	15	30
6.	Doctors	1	2
7.	Chemists	2	4
8.	Geologist	2	4
9.	Geophysicist	2	4
10.	Security Officer	1	2
11.	Fire Officer	1	2
12.	Finance & Accounts (F&A) Officer	1	2
	Total	50	100

In addition to 'workers' and 'managers' as the respondents of the study, 100 households out of 176 households of a village named 'Lakwa Charingia Konwar gaon', situated near ONGC's Lakwa Colony were chosen to study the interection between the industry (ONGC) and the people of the surrounding region. It may be noted that, usually the heads of the households were chosen as the respondents. Moreover, a few prominent citizens of the area near the ONGC, Assam project ae also chosen as respondents. The respondents of the last wo categories, that is 'villagers' and 25 members of 'prominent citizens' were chosen by purposive sampling method.

A set of seven schedules (after pre-testing) were administered for collecting data. The first, the second and the third schedules were designed to tap information regarding the organization of ONGC and its trade unions and about the village 'Lakwa Charingia Konwar gaon'. These schedules were manual schedules. On the other hand four printed schedules were administered to the respondents which includes 'workers', 'managers', 'villagers' and 'a few prominent citizens'.

The study is based mainly on the data collected both from the primary and secondary sources. The primary data are gathered through survey, interview method and observation. The secondary data were based on books, journals, official documents, magazines, newspapers and other published materials. We have tried to analyse the data collected from our respondents in such a way that the general picture of the ONGC industry in Sibsagar district of Assam is brought out.

Due to limited time given for the collection of data, for our study we have taken 325 number of respondents who live in the district of Sibsagar. They were interviewed during June 1999 to December 1999.

During the field-work, we also faced some problems. Firstly to get the permission letter for conducting the research work in ONGC organization took 18 months. In the process of data collection, we also come across certain problems. Many of the respondents were reluctant to answer some of the questions asked in the interview schedule which they thought as 'too personal' and it cannot be disclosed to others. Some of them were reluctant, specially the 'managers', to reply to the questions because of their busy schedules. Sometimes we had to go to the same manager for several times to canvass the schedule and it was a bitter experience.

Another kind of serious problem we faced in the study is that we failed to get the statistical data of last five years or more regarding different aspects in different tables we produced. It is mainly due to the limited time that the ONGC's officials have allotted to us to conduct the present research in their premises.

Some of the respondents of the study, including the managers, workers, villagers and prominent citizens, believe that we are related with Government's/ONGC's inspection purpose. But when we specifically told them that it was purely for academic purpose, their misconception regarding our visit was removed. As a whole it was a novel experience both to them and to us.

Chapter Scheme

This book comprises six chapters. The chapter one - introduction, discussed various academic and methodological aspects besides giving a short history of ONGC. The second chapter is about social background of the respondents. The third chapter deals with the social structure of the organization and fourth chapter is about the worker-management relationship. The fifth chapter highlights the interaction between the industry and its neighbourhood. The last chapter gives a summary of the significant findings of this work.