CHAPTER 1

INTRODUCTION

Genesis of Industrialization

Industrialization is the second of the greatest transformations experienced by the human economy. The first was the beginning of agriculture almost two thousand years ago, an adoptive change that adapted man to a non-nomadic pursuance and led to the emergence of the first permanent human settlements across the globe. Prior to the eighteenth century the major part of human activity in any part of the world was bonded to extract the necessities of life from nature at first by hunting and gathering, then by agriculture, fishing and mining. The beginning of the eighteenth century provided an efficient source of power, the steam engine, enabling people to seek solace from manual and hard labor. The steam engine was used to run other more complex machines. It revolutionalized transportation leading to the laying of vast railway networks across the land and great fleets of merchant steamers over the seas. All this provided the progressive world with vital trade links to distant corners of the world.

In a large and more fundamental sense industrialization came to involve the basic transformation of an agrarian society. This transformation brought with it consequential changes in a series of interactions between the pre-existing agricultural society and the compulsions of the industrialization process. It touched upon behavior patterns, value systems, faith and belief systems, structure of social groupings and economic arrangements: Industrialization, thus, results in the economic progress coupled with a marked improvement in the quality of life of a people. It is derivative than to presume that industrialization has had more to do with the transition of a community from agricultural pursuits.

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for livelihood to activities that revolved around the labor intensive manufacturing of goods.

By the middle of the eighteenth century, all the pre-requisites for what Rostow\(^3\) (1960) terms "take offs" into industrial growth were present in England. Thus, the industrial revolution originated in England and spread rapidly to Holland and Belgium over the Rhine river in continental Europe, then United States, France and Northern Italy\(^4\) and slowly made its inroads into other parts of the world.

The Industrial Revolution resulted in concentration of production in factories, specialization of labour, which in turn increased productivity. By the middle of the nineteenth century it was replaced by electricity and petroleum as a source of power\(^5\) (Madden, 1995). The demand for raw materials and newer products grew which forced the industrialized nations to establish their colonies in Africa, Asia, Latin America and on the islands of the Pacific. The industrialized nations exploited the natural resources of these countries. With the passage of time colonial rivalries and economic competitions were the two main factors, which led to the two World Wars of the twentieth century. Thus, the anti-colonial movements succeeded in overthrowing foreign domination as the economies of the European States were weakened by the two Wars. The new governments introduced programs to "modernize" their areas in other words, to industrialize.

Industrialization is a process of transformation of a predominantly agricultural economy into one where the manufacture of goods increasingly contributes to overall outputs and exports. As a corollary the percentage share of people employed in agriculture declines and that in industry increases\(^6\) (Mann, 1993). Careful examination of historical industrial revolution especially that of

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\(^5\) Ibid

Great Britain reveals other changes in the economic and social organization of production and distribution which are necessary accomplishments of industrialization; a high degree of division of labor and specialization; the use of mechanical, chemical and power driven as well as intellectual aids of production. The systematic application of science and technology in the organization of production points to the essence of industrialization. It is a method of organizing production to reduce the real cost per unit of producing goods and services. Industrialization in this wider sense has less to do with the transition from agriculture activities to manufacturing activities than with a more general process called modernization. For example, in development literature it is common to include the commercialization and modernization of agriculture that involves scientifically developed techniques to increase the fertility of soil, protect crops from insects and introducing high yields varieties of seeds as well as tractors and combine harvesters. New Zealand which drives 77 percent of its export earnings from agriculture products is an “industrialized” country in this sense.

The beginnings of industry coincided with a scientific revolution that brought advances in medicine, agriculture, transportation and communication that collectively improved the lives of millions of people. Improved communication and education have altered the roles of women and have reduced birth rates in some of the Asian, African and South American countries. The improved medical and sanitation practices have sharply reduced death rates and fostered rapid population growth.

Research has demonstrated that industrialization is directly related to national and individual income, urbanization and transportation networks, education, health care and welfare programs and overall quality of life (Hedley, 1992). While the world population has increased fivefold in the past two hundred years, the number of people living in urban areas has increased five times more.

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7 Ibid
In India, for example, rural poverty and caste are forcing many people, especially the unskilled and the landless to seek employment in the large cities. Lack of successful land reforms, the extremes of rural poverty, better chances of work and income in the city, improved and increased mobility through transport encouraged this movement. The population of Bombay grew from 2.3 million to 10 million in the decade between 1971 and 1981, with Delhi and Calcutta experiencing similar growth rates.

The Aftereffects of the Industrialization Process

Nevertheless, industrialization has not been an unmixed blessing. The under-developed countries assumed and argued that industrialization provided a unique panacea to problems of poverty, security and overpopulation. Contemporary society appears to be in eminent danger of choking on its own wastes. Our society is gradually exhausting the natural resources which sustain us and is consequently destroying the ecosystem of our planet. Former subsistence agriculturalists and artisans had to become factory workers in the process of industrialization with the resultant alienation and loss of skills and forms of art. A large variety of fold art forms began to be threatened by extinction.

Rapid industrialization has led to the degradation of the environment. The fast-paced development in science and technology has enabled the production of such substances (of which the plastics are an obvious example) that were not in existence before the 20th century. Most of them circulate separately from the environment but some are led into its wastes and find no natural breakdown pathways which leads to accumulation of such substances which form potential hazards for the sustenance of human life. Bioaccumulation of D.D.T., aldrin and other similar compounds produced concentrations in non target organisms that

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were many hundreds of thousands of times\textsuperscript{10} the application rates (Ware, 1983). Some herbicides carried with them contaminants from the manufacturing process such as TCDD (dioxin) while the herbicides were themselves not toxic to human, dioxins are teratogenic to human fetuses, as was shown during the after the Vietnam war. Another example of this process is the introduction of natural substances into environments where they are not normally present, e.g. in case of coastal oil spills. Though the action of waves and bacteria does eventually break down the oil surface, it is a very slow process, in the meantime the mortality to plants, animals and micro-organisms is very high.

One of the major impacts of industrialization on the whole world is a net addition of carbon to the atmosphere. In the UK, there is the 66 percent of land that has remained in the same use over the last 50 years has accumulated 2.2 million tonnes of carbon per year, and 34 percent of this has caused the net emission of 0.9 million tonnes of carbon into the atmosphere per year\textsuperscript{11}. Industrialization has led to depletion of the stratospheric ozone layers and has enhanced the Green House effect. The depletion of the ozone layer has been caused by the sustained release of a group of pollutants called chloro-fluoro carbons (CFCs) into the atmosphere. These chemicals are used in alcohol propellants, refrigerants components and certain chemical gas and other chemical plants. High carbon dioxide production has also enhanced the atmospheric warming. This could result in the rise of the sea level, more extremes of the weather, localized collapses of ecosystems and wide spread risk to food production, water supplies and public health to say nothing of the contamination of the soil and the surface and underground waters.

Human health is also affected by industrial pollution. Pearce and Warford (1993) have argued that the most important and immediate consequences of


\textsuperscript{11} Ibid
environmental degradation\textsuperscript{12} take the form of damage to human beings. They argued that diarrheas are a common occurrence in many countries with 3 to 5 million cases being recorded every year. The other commonly occurring water borne diseases due to industrial pollution are diarrhea, cholera, gastrointestinal infections, skin, bone, blood, lung and various other forms of carcinogenic disease. The environmental devastation is usually centered on and around heavy industrial complexes. The formal process of industrialization is the result of foreign investment and the growth of small and medium enterprises, on which it is often difficult to exert pollution control. Taiwan, for example, has more than 80,000 small factories which are responsible for the rapid economic growth and also equally responsible for the dramatic pollution rate.

Concerns to Protect the Environment

The industrial nations today experience such a multitude of connectivities that it is impossible to encompass them all in any short account. In the industrial areas themselves many environmental changes spring from the developing of different types of installation and the associated housing, transport, and other urban features. Both planned and accidental emissions occur. Such is the power of industry that it exerts an impact on regions thousands of kilometers away, especially on their environment by exploiting the natural resources. Industrialization has led to the manipulation of the environment. Nuclear and industrial wastes are the best examples, along with the environmental manipulation which has resulted in phenomena like geothermal warming, acid rain and depletion of the ozone layer.

Although the Industrial revolution was a period of great technical achievement and economic development, it also marked the beginning of increasingly serious environmental deterioration. The rapidly growing population,

new urbanization and industrialization created local and regional environmental stress through such elements as sewerage disposal, mineral extraction, energy conversion and the sprawl of activities adjacent to the rural land. The tragedy of process of rapid industrialization is the assumption that the process can survive in isolation without impacting the larger world system in which it is primarily located. The equation between nature and human civilization was not appreciated by early industrial revolutions. Resources of the mother earth were perceived to be infinite and its exploitation as the fundamental right of human populations. What happens to ecological balances or what detrimental consequences new chemical combinations were having on human health were not even part of the expanding agenda of growing market economies.

One common feature, which can be seen in the study area also, is the "spatial concentration of industrial process" of all kinds, which produces changes in environment on a very large scale. Spatially extensive urban industrial zones in the Tokyo-Hiroshima belt or the Boston-Washington DC corridor are classic example of the early processes of industrialization. The development of allied units alongside the industrial factories including the housing, transportation, leisure facilities, sanitation etc, all are seen as developmental activities but are not aimed in any way at the local population.

Thus, it can be safely said that the industrialization results in concomitant changes in the environment to say nothing of the changes being experienced by the community. In the present study, an attempt is made to assess the impact of industrialization on an agrarian society.

Rural Industrialization

In the early fifties the process of industrialization of those pockets that are called rural was started with the launch of the Community Development Programme in 1952. Later in 1959, a study sponsored by the Ford Foundation of the United States on “India’s Food ‘Crisis and Steps to Meet it” ushered in a new programme, namely, the Intensive Agriculture District Programme which was started in seven selected districts in India. It was followed by the recommendation of the Venkatappiah Committee leading to the introduction of other area specific and need based programmes in the seventies. The twin programmes were covered by the Fourth Plan and even during the fifth plan these were continued with a wider prospective. Till the seventies the Government Programmes were encircling around the western kaleidoscopic development model, which was not necessarily conducive to the Indian situation.

In 1977, the government showed keen interest for the development of rural areas. After considerable debates and discussion on the issue, the Integrated Rural Development Programme, a strategy for rural reconstruction was undertaken in 1978 to uplift the rural poor.

Historical Perspective on Industrialization in India

After the battle of Plassey in 1757, the British East India Company was able to conquer most of the states of India and that was the start of the colonial exploitation of India. During this period of colonial rule, the company looted almost all valuable wealth and riches of India and sent it to England. In August 1858, the British parliament passed a Bill entered as “An Act for the Better Government of India”. By this Act, the territories of the East India Company were

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transferred to the British Crown and the conquest of India by the British was complete.

The British rulers were not at all interested in the development of Indian economy as such. The economic transformation, which included commercialization of agriculture, the development of different industries, the growth of railways, the spread of irrigation facilities, the expansion of education etc. were all initiated by the by British with the sole motive of accelerating the process of drain from the Indian economy.

The process of Industrialization in India can be traced back\(^\text{17}\) to 1750 onwards. India was well known for its industrial products. The most important industry at that time was the textile industry. The well-known products were the Dacca muslin, dhotis, and dupattas of the textile industry of Ahmedabad, Chikankaris of Lucknow, sarees of Pune and Madurai etc. These products were quite famous in India and abroad. Moreover, the silk fabrics produced in Bengal, Trichirapalli, Mysore and Ahmedabad were also quite popular. The woolen fabrics like the Kashmiri shawls produced in Kashmir and some parts of Punjab were quite famous within the country and also in Europe. A large number of metal articles of copper, brass etc., were also manufactured in India and the industries were located in Banares, Nasik, Pune, Tanjore, Hyderabad etc. Besides these industries, the other industries which were existing in India at the time of the arrival of the East India Company included stone carving, gold and silver thread work, enameled jewelry, sandal wood work, marble work, and glass bangles besides the products of the tanning industry and the leather workers, as also the melting and forging of iron, for ship building etc.

There was a time, however, when the tide of favor of the Company swung away from the Indian shores and instead of being a source country for their imports became a dumping ground for exports generated by their factories which

\(^{17}\) P.K Dhar. Indian Economy. New Delhi: Kalyani Publishers
at that point in time were undergoing an Industrial Revolution. The goods of the British factory products started entering into the country and played havoc with the Indian economy because they were sold at a much cheaper rate. The Indian handicraft industries had to face severe competition with these cheap factory products of the British. During the colonial rule, the British enforced its commercial and other policies on the Indian people. The laissez – faire policy enforced by the British had thus created a very serious gap as an impact on the traditional economy of India. The trade policy of the British threatened the home industries leading to a total change in the production system of our country, exporting raw material, tea etc. and importing British industrial products. Thus, the introduction of the British policies ruined the precious resources of India.

Since the beginning of the nineteenth century, the Industrialization of India was initiated by the Britishers not for the motive of economic growth of India but for the sake of making profit. In the early parts of the nineteenth century, the nascent Indian industrialists had been swept out of existence by the more advanced industrialists of Britain, who were backed by political and military power. The Indian industrialists were the Parsies, the Marwahis, Gujaratis, Jains and the Chettiar. With the exception of the manufacture of cotton goods industrial development of India up to 1914, was virtually nil. The British government actually discouraged establishment of industries. The Indian economy was gradually converted into an agricultural colony by the British who were exporting agricultural commodities like rice, wheat, jute, cotton, oilseeds, tea etc and importing British goods.

The demand it raised for factory goods in India also resulted in a substantial fall in the imports from England and other countries. This provided an additional incentive to increasing production of iron and steel, cotton and woolen textiles, jute, leather goods etc. As a result there was an increase in the production of goods. But the fast paced development was slowed down due to the absence of heavy industries and machine tools.
In 1923, the then Government of India accepted the recommendation of the First Fiscal Commission\(^{18}\) and offered protection to some selected Indian industries against foreign competition. During the period of 1924-39, various major industries like iron and steel, cotton textiles, jute, matches, sugar, paper and pulp industry etc., were brought under the protection scheme. This led to rapid expansion of industries in India. These protected industries eliminated foreign competition totally. The outbreak of the Second World War in 1939 changed the industrial scenario of India and increased the demand for manufactured goods substantially.

**The Indian Industrial Scene Post Independence, Port Reforms**

After Independence in 1947 the country embarked on an ambitious task of planned economic growth to move the country out of the critical stagnation in the pre-independence era. The country had to also reckon with the after effects of partition. During the two hundred years of British rule, no serious effort was ever made by the British to develop basic and heavy industries. In the post-Independence period, India started to develop several kinds of industries especially concentrating on the basic and heavy industries on the basis of economic planning. The public sector industries in India are engaged in producing goods like coal, steel, light and heavy engineering goods, power, petroleum, minerals, and metals fertilizers, chemicals and pharmaceuticals, textiles, transportation equipments and consumer goods. Similarly, the private sector corporate units are mostly engaged in manufacturing and processing of textiles, metal products, chemical, construction materials, electronics, leather and leather goods, manufacture of food stuffs and the processing involved, commerce, construction and agro-based industries etc.

\(^{18}\) Ibid
Most economists agree that industrialization in a given area will occur only when several vital ingredients are present in that area i.e., market for the increased production of goods; a source of power to replace muscle power in the production of goods; raw materials to fuel increased production; a cheap and mobile source of labor; a reliable transportation system to bring the raw material to the place of production and transportation of the manufactured goods to the markets; and the raising of an entrepreneurial class with sufficient capital to make and market the goods and willingness to risk their capital, and government favorably disposed towards trade and commerce. But all these ingredients were not evenly present and distributed in India.

Due to the whatever and whenever availability of these ingredients, locational patterns of industrial development have taken place in particular states like Maharashtra, West Bengal, Tamil Nadu, Gujarat and Uttar Pradesh. Locational pattern of Indian industries is not balanced. Some regions have concentration of industries whereas many other regions are industrially backward. Government has taken various steps for the decentralization of industries and gradual dispersal of industries into some backward regions. In the new industrial policy 1991, stress has been laid on the dispersal of industries among the backward areas by providing certain special concessions in respect of taxes, credits etc. The Sixth and the Seventh Plan of the country also laid emphasis on dispersal of industries in order to develop the backward regions of the country.

The industrial sector has achieved a significant position in diversifying its productive capacities. India has entered almost every field of industrial activities viz. mining and metallurgical industries, capital goods industries even producing highly sophisticated equipment necessary for the production of steel, fertilizers, software, refinery products, chemicals and petro-chemical industries, medium

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and heavy engineering industries, fertilizers and paper industries, power and transportation industry, construction industry etc. There has been significant development in basic infrastructural services, consultancy and design engineering services and the innovative capacity to improve and adapt modern technologies in connection with the development of the country.

There has been considerable industrial development since independence. According to V. Reddy\textsuperscript{21}, we have done better in the latter half of the 20\textsuperscript{th} century than during the first half and far better in the final two decades. The economic policy of the nineties has virtually removed many of the constraints on economic growth, which in itself is an achievement and a necessary condition for the rest of the goals of a civil society. The external sector has become comfortable in the sense that there are no foreign currency constraints on growth now. For systematic industrial development the need of the time is the focused role of government which demands both professional and personal integrity among all the participants.

The present study has concentrated on the areas taken up for industrialization in a small yet significant belt of Punjab [generally considered a Backward Area] whereby the researcher could take up a long-term and sustained investigation into the systems that were operational on the part of the local inhabitants and the industrialists. This area too had been earmarked for development through the processes of industrialization. Thus, to obtain a specific perspective of the impact and the experiences of the inhabitants the study was taken up keeping in mind the following main objectives of the study:

Objectives of the study

1. To examine the creation of new employment opportunities, if any, due to the advent of Industrialization.

2. To map social transformation caused by industrialization.

3. To assess the impact of industrialization on the rural economy.

4. To know whether industrialization has had any impact on the quality of education provided in the study villages.

To test the short term and long term impact of the presence of the industrial houses in the study area it was thought pertinent to pose certain hypothetical queries which could be validated or invalidated on the basis of the accumulated field data once the data collection had been completed and the analysis was returned. The points for the validation of hypothesis set under the preliminary premises of research are as below:

1. Initiation of industrial projects promotes regional development and upliftment of local people by providing employment opportunities.

2. Industries disturb the social order and generate local level social tensions.

3. Traditional social structures are subjected to social pressure brought about by the migrant populations and destabilize the existing networks of social relationships.

4. Resources generated by industrialization are expected to improve infrastructure for education and health

5. Industries are expected to be non-polluting and provide better quality of life
Industrial income is expected to supplement the income generation abilities of farmers with small land holdings.

Once the basic premises of the classic empirical research are returned it would be interesting to note the validation of some of the hypothesis premises and the invalidation of others. But on the whole it is attempted to obtain a wide angled view of the impact of industrialization on an agrarian society in an economically backward area like the Kandi area of Punjab that comprises Nawanshahr and the study area.