

A study on Industrialization and Environment: India

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Abstract: An economy consists of local, regional or national economic structures. Economy has a macroeconomic balance it depending on the industry, economic improvement is largely partitioned into three industries, primary, secondary and tertiary form of business activity under which it occurs in relation to the general economy. Most start from being economies centered around agriculture, generating primary stuff. Then the pioneer of progress turns into the secondary area that gives the power of advancement and finally the tertiary area. India has been forced to pass the GDP growth pace ceiling by launching liberal policy approaches and has achieved reforms through multiple areas of the economy. Two types of effects, positive and harmful, are generally known as far as the environmental effect of these improvements is concerned. In India, notwithstanding, no significant environmental changes were actualized during the liberalization cycle to take account of the environmental impact of changing industrial patterns. Industrial manufacturing has an ongoing impact on the environment, starting with the acquisition and disposal of natural properties. The environment alludes to the climate that changes an individual's behaviour and personality. The Earth has a limited capacity, being a finite planet, to supply resources and absorb pollution.

Keywords: Industry, Environment, Economy, Manufacturing, Economic Activities, Resources.

Introduction:

It is important that we initially have a diagram of the industrial area of India in request to examine the impact of industrialization, especially after the liberalization of 1991, on environmental pollution. In India, which is pre-independent, we just apply to industrial improvements as its underlying roots trace back to the bygone era time frame and feature industrial advancement in the post-independence stretch of time by dividing it into pre-and post-change periods. The after effect of industrialization in request to achieve economic improvement has been global environmental degradation. The process of economic transformation of society from primary activities (e.g. agriculture) to those based on manufacturing or secondary activities has been described as industrialization. Agriculture, livestock rearing, fishing or even forestry may sustain the pre-transformed society. Depending on technological development, an industrialised economy is characterised by high or low processing of raw materials obtained from primary production. Such processing, in the form of skilled or unskilled labour and materials, entails more or less added value. Processing and value-addition, compared to the individual raw materials, increase the market

price of the goods many times over. Secondary economic activities are, therefore, more productive than primary ones.

An industrialised economy is characterised by an urbanised society, where the population is concentrated in urban areas and compared to the primary activities, there is an indirect interaction among man and nature. High levels of energy consumption and waste generation are characterised by an industrial-urban ecosystem and have intense environmental and resource implications.

India is known for its biodiversity lavishness, innumerable of the photographs shown portraying India is of the wilds: magnificent mountains, green wood timberlands, natural life filled sunlit meadows.

Objectives:

- To study about Industries and Environment.
- To analyze the Industries according to intensity of Pollution.
- To study inter-linkage between Industries and Environment.

Research Methodology:

The data has been taken from the secondary source. We took data from Economic Survey Report published from Ministry of Finance, Govt. of India. For analyze the changes between 1973-74 and 2013-14, appropriate statistical technique has been used. Graphical Representation of data has also been used.

Industrialisation in India:

Jawaharlal Nehru, Indian PM from year 1947 to 1964, looked industrialization as the path to calm destitution. For his nation, which had as of late regained political force, industrialization guaranteed independence, external economies accruing from technical advancement have also additionally advertised. It is believe that the potential for fares and agriculture is restricted, by skewing trade conditions and emphasizing import substitution, India's legislatures have taxed agriculture, giving need to heavy industry.

Since the 20th century, the environmental consequences of industrialization have been at the heart of the environmental debate. The major points of discussion are resource depletion and pollution due to it. Intensive exploitation of mineral and energy resources, forests and oceans requires large-scale, automated production in industries, coupled with excessive population growth rates. This quickly exhausts minerals, coal, petroleum, ocean (especially biotic) resources, and leads to deforestation. Mining areas are rapidly converted into degraded landscapes, or spoils of mines.

The most extensive and unboundable form of pollution is, perhaps, air pollution from industries and automobiles. The processing of raw materials in the cement and plaster industries in Paris, for example, expels a large amount of SPM into the air. The contribution of fly ash from thermal power plants is significant. Degenerative and acid rain causative gases such as SO_2 and NO_2 are generated by the burning of biomass, fossil fuels and ore processing; green house gases such as CO_2 ; gases depleting O_3 , harmful to human health. When fumes of poisonous gases escape into the ambient air, disasters can happen.

Industrial Sector: Pre-Reform and Post Reform Period:

The industrial area recorded moderate however steady development over the period in question with regard to its share of the total national output. There was an ascent of simply 2.3 percent throughout nearly two decades. In the end, the share of agriculture decreased, however its position was taken over by the

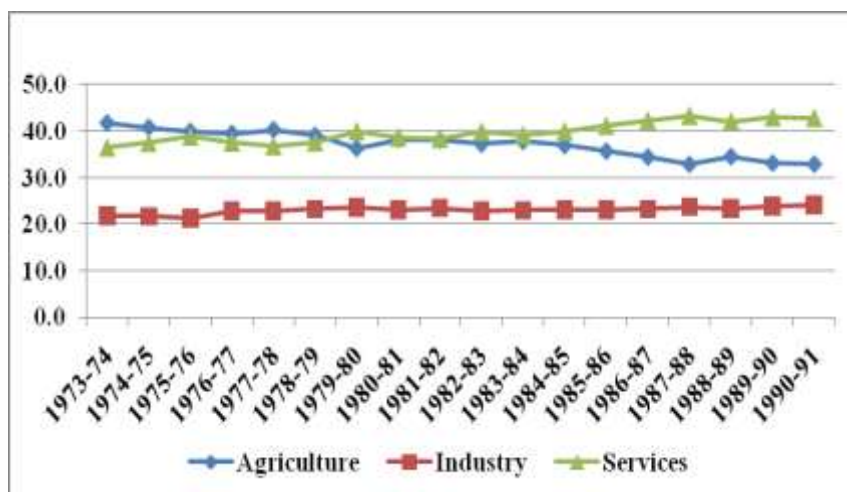
administrative area, with almost no increase in the proportion of the industrial zone (table 1). The main reason for this is that insufficient attention to agglomeration and economies of scale is considered to have brought about certain unhealthy characteristics, for example, technological stagnation, low profitability, exploitative relations of production, negative proportions of factors and perennial reliance on endowments.

Table 1: Sectoral Share in the pre-reform period at factor cost as a percentage of Gross Domestic Product

Year	Industry	Agriculture	Services
1973-1974	21.7	41.8	36.5
1974-1975	21.7	40.9	37.5
1975-1976	21.2	40.0	38.8
1976-1977	22.8	39.6	37.6
1977-1978	22.8	40.4	36.8
1978-1979	23.2	39.2	37.6
1979-1980	23.6	36.4	40.0
1980-1981	23.0	38.3	38.7
1981-1982	23.4	38.2	38.4
1982-1983	22.8	37.3	39.9
1983-1984	22.9	37.9	39.2
1984-1985	23.0	37.0	39.9
1985-1986	23.1	35.8	41.2
1986-1987	23.2	34.5	42.3
1987-1988	23.7	33.0	43.3
1988-1989	23.3	34.6	42.1
1989-1990	23.8	33.2	43.0
1990-1991	24.1	33.0	42.8

Source: Economic Survey (2092-2093)

Figure 1: Changes in GDP's Sectoral Share 1973-91



In the post-Reform period, the industrial sector:

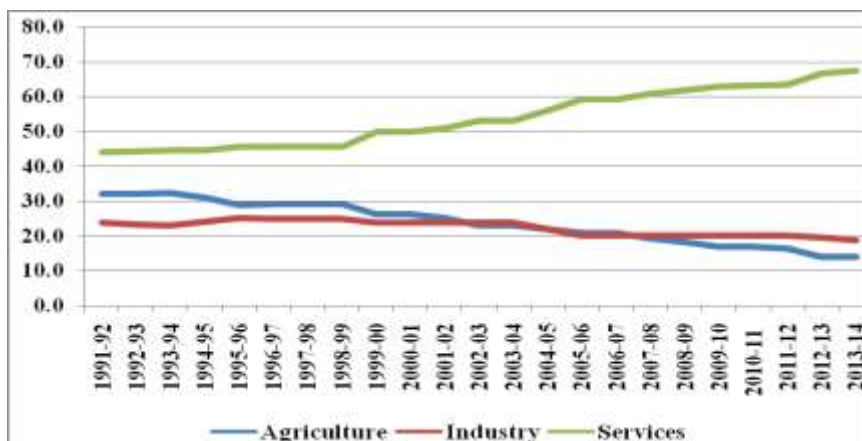
The share of GDP in the industrial area (Table 2) remained constant, with a slight decrease in the last year or two, suggesting that, at this point, the capacity of this area was not completely abused. An innovative and genuine area is demanded by the accessible world of foreign trade and the rapid technical change characterizing this region.

Table 2: Sectoral share at factor cost such as percentage in the post-change time frame of Gross Domestic Product

Year	Industry	Agriculture	Services
1991-1992	23.8	32.1	44.1
1992-1993	23.4	32.3	44.3
1993-1994	23.0	32.5	44.5
1994-1995	24.1	31.1	44.8
1995-1996	25.1	29.0	45.8
1996-1997	25.0	29.3	45.8
1997-1998	25.0	29.3	45.8
1998-1999	25.0	29.3	45.8
1999-2000	23.8	26.2	50.0
2000-2001	23.8	26.2	50.0
2001-2002	23.7	25.2	51.1
2002-2003	23.7	23.1	53.2
2003-2004	23.7	23.1	53.2
2004-2005	22.0	21.9	56.1
2005-2006	20.0	20.9	59.1
2006-2007	20.0	20.9	59.1
2007-2008	20.0	19.3	60.7
2008-2009	20.1	18.1	61.7
2009-2010	20.1	16.9	62.9
2010-2011	20.1	16.8	63.0
2011-2012	20.0	16.5	63.5
2012-2013	19.6	13.9	66.4
2013-2014	18.7	13.9	67.4

Source: Economic Survey (2015-2016)

Figure 2: Changes in GDP's Sectoral Share 1992-14



Division of Industries by Intensity of Pollution:

India has been forced to pass GDP growth pace ceiling by launching liberal policy approaches and has achieved reforms through multiple areas of the economy. Two types of effects, positive and harmful, are generally known as far as the environmental effect of these improvements is concerned.

The positive effects or advantages are that these improvements offer an answer to the 'business misfortune' issue that is prominent in the case of environmental properties. Bad effects or costs imply that due to the absence of stringent environmental restrictions, the growth of output yield would further eliminate the environmental pollution issue. India's major industries include the materials industry, food processing, science, concrete, steel, software for mining, oil, and so on. The Ministry of Environment and Forests has classified manufacturing units like orange, red and green with low, medium and high emission capacities, individually, on the basis of the capacity for emissions.

Table 3: Division of industries by intensity of pollution

Red (Identified as heavily pollution and covered under Central Action Plan)	Orange	Green
Distillery Including Fermentation industry	Tiers and tubes vutcanization, vutcanisation, retreading, molding.	Industries in small Scale, Cottage/village category suggested under notification of the state govt./union territory for issuance of simplified all those industries or processes which are not covered under the “Red and/or “Orange” category NOC/Consent from State Pollution Control Board/Pollution Control Committee, as the case may be. All those industries or processes which are not covered under the “Red” and/or “Orange” category like;
Sugar (excluding Khandsari)	Hotels and Restaurants	Atta Chakki, Dal and rice mills
Fertilizers	Food including fruits, vegetable, fish processing and processing of tea and coffee.	Bakery products
Pulp and Paper	Organic nutrients	Chilling plants and cold storage and ice-cream making

Pharmaceuticals	Flour mills (excluding domestic Aatta Chakki)	Cotton, Woolen hosiery, handloom and apparel making
Dyes and Dye-intermediates	Pesticides/Insecticides/Fungicides/Herbicides/Agro chemical formulation	Sports goods
Pesticides	NPK Fertilizers/Granulation	Bamboo and cane manufacturing
Oil refinery	Pharmaceuticals formulation	Furniture and carpentry
Tanneries	Non-alcoholic beverages (Soft drinks)	Power looms and handlooms
Petrochemicals	Fragrances and industrial perfumes	Electronics and electrical goods
Cement	Stone crushers	Printing press
Thermal Power Plant	Surgical and medical products not involving effluent/emission generating processes	Garments stitching and tailoring
Iron and Steel	Cotton Spinning and Weaving	Candles and toy making
Zinc, copper and aluminum smelters	Pulverizing units	Mineralised water

The red group share industries grew from 24 percent in 1980-81 to around 31.3 percent in 2013-14 in total factories, reflecting a steady growth. The orange gathering firms have the most elevated percentage of the quantity of factories and the total number of representatives participating. The ware area detailed the greatest ascent, as well as the total usage of individuals, moving from simply 1.3 % to 9.8% in 1980-81 and 2013-14.

Environmental pollution:

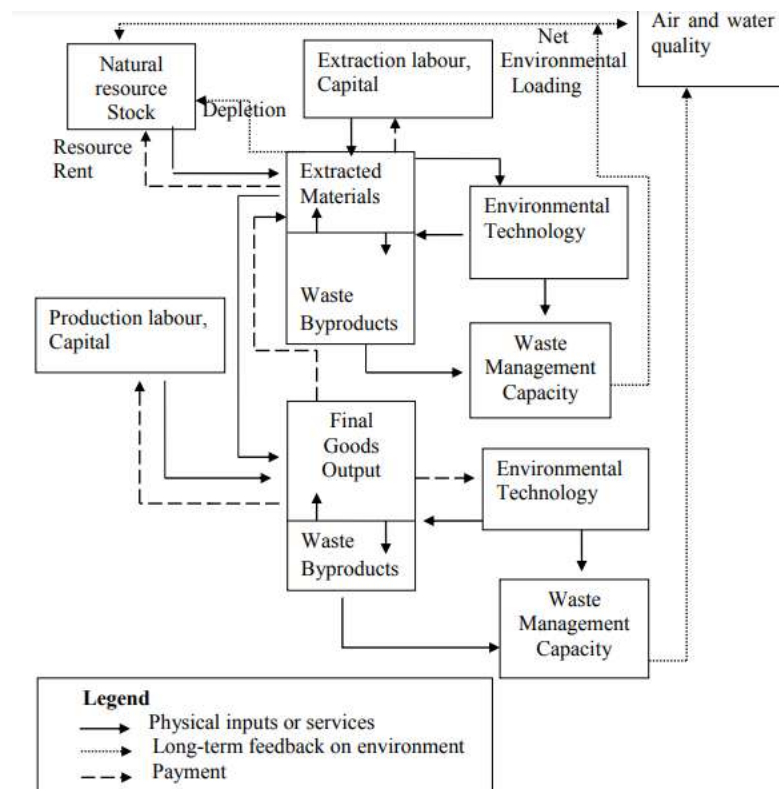
In Latin, the term pollution is gotten from “pollutionem”, means “to make it unsanitary”. It is the being there of a poisonous or hazardous material that contaminates the environment or that is added to the biological framework. The ambient weight is determined by the magnitude of the waste items transferred through the pattern of production and consumption. Then contaminants accumulate in the atmosphere in the far-fetched occasion that the volume of waste surpasses the potential for environmental assimilation.

Natural resources play a crucial role in the processes of production as valuable inputs. In addition,

economic activity invariably generates material residuals which enter the environment as waste or polluting emissions. The Earth has a limited capacity, being a finite planet, to supply resources and absorb pollution. A fundamental question is how different economic activities influence the use of natural resources and the generation of pollution. In this section, we will illustrate the effect of different activities on the environment. Two activities have been undertaken, which are highly dependent on environmental resources, agriculture, and industrial production.

In request to accomplish a prosperous, sudden unforeseen development, all these natural assets restoration and management strategies are crucial, or environmental destruction will diminish the agricultural region's viability. This will have a major impact on the production and improvement of this current area, yet additionally overall economy.

Figure 3: Inter-linkages between industry & environment:



An idea of the interrelationship between the industrial zone and the environment is given in Figure 3. Industrial fields and the environment are firmly related, since the exploitation of various natural assets as raw materials involves industrial turn of events. To communicate the final yield, these assets are then combined with labor and capital. The most fundamental link between the environment and industry is this. The processing of resulting waste includes natural extraction and production of final yield, and waste that isn't consumed by the earth has a negative impact on water & air quality and may create a detrimental impact on the productive usage of natural properties. It is another critical partnership between the economy

and the environment.

Nevertheless, through the production of environmentally stable innovations and cycles which can be utilized to minimize waste intensity and to handle the residual waste, the industrial area also gives types of environmental assistance. Several mechanical gadgets for reducing pollution have been created by factories, for example, cyclone authorities, scrubbers, bag houses, electrostatic precipitators for the purification of muddled air and water.

Conclusion and Suggestions:

India is vast country as well as fast growing economy of the world. Through this study we analyzed the contribution of industries that are responsible for spread pollution. We cannot shut the industries because it is necessary for independency and development but we can adopt the methods through industries could spread less pollution or least environment damage. We need to manage the pollution, no need to reduce the contribution of industries in development. Below are some suggestions through we can balance the Problems of industrialization and its impact on environment.

- Legislators can help to reduce the impact of Industrial Pollution by making strict laws and its implementation.
- Industries can reduce their reliance on a product that causing pollution.
- Treating industrial waste to remove toxic material, so rest of the waste material can be disposed of safely. It is required that each factory implements proper procedures to purify cleanse their waste byproducts.
- Industrial Revolution changed our view to see the world. But now we have realized the problem that industrial development destroying our environment, so now it is our responsibility to fix the problem and search out the alternate way to development without destroying our environment.

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