

A STUDY OF INDUSTRIAL ENVIRONMENTAL PERFORMANCE IN PUNJAB

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Abstract

The economic development of a region is generally determined by the level of industrial development. The Punjab, which has known for agriculture, is also on its way towards industrialization through development of Small, Medium and Large scale industries. In spite of this, industrial activity also directly transforms the environment through production of industrial wastes, soil and air pollution. The paper aims to identify the current status of industries, their impact on environment. This study examines the role of government agencies in to improve the environmental performance of industries. The findings from the study indicates that the regulations is forcing the companies to comply standards.

Keywords : Enterprises, production activities, pollution, regulations, government agencies, environmental performance

Introduction

The Small, Medium and Large scale enterprises have strong influence on economic and social development of country. The economic development of a region is generally determined by the level of industrial development. The Punjab, which has known for agriculture, is also on its way towards industrialization through development of Small, Medium and Large scale industries. At state level, the government has played a major role in ensuring growth by establishing various institutes to support this sector, In spite of this, industrial activity also directly transforms the environment through production of industrial wastes, soil and air pollution. The industries generate air pollution, water pollution, hazardous waste that turn adversely affects the population health and harm the climate of country. To ensure that this level of impact remains within acceptable limits, there is a need to implement Environmental Legislation. In India, states do not pursue independent environmental policy of their own but adopt the policies formulated at the national level subject to such variations as may be necessary to suit to the local conditions. The central government has also been issuing guidelines to the states on various environmental matters. The sectoral policies and programmes pursued by the states are usually formulated within the framework of the national policies and guidelines. The policies and programmes under environment policy are usually implemented by Central Pollution Control Board (CPCB) through State Pollution Control Boards (SPCBs) in the states.

Micro, small and medium enterprises (MSMEs), plays a very important role in overall industrial development of the country. The Small and Medium enterprises have strong influence on economic and social development of country. They provide employment to people across country and also sound entrepreneurial base. Micro, small and medium enterprises as per MSMED Act, 2006 are defined based on their investment in plant and machinery (for manufacturing enterprise) and on equipment for enterprises providing or rendering services. The defined limit on investment for enterprises to be classified as micro, small and medium enterprises is as follows:

Classification	Manufacturing Enterprises	Service Enterprises
Micro	Rs. 25 lakh	Rs. 10 lakh
Small	Rs. 5 crore	Rs. 2 crore
Medium	Rs. 10 crore	Rs. 5 crore
Large	Rs. Above 10 crore	Rs. Above 5 crore

Source: Ministry of Micro, Small and Medium Enterprises, msme.gov.in/

The economic development of a region is generally determined by the level of industrial development.

Objectives of Study

To identify the current status of industries and their impact on environment.

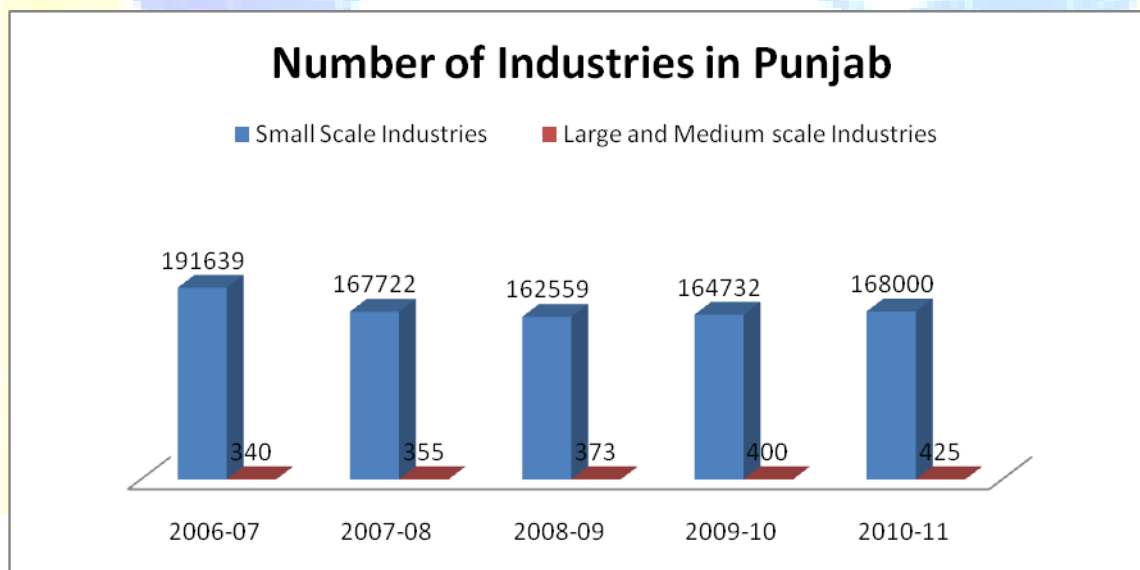
To examine the role of Government agencies towards improving environmental performance of enterprises.

Research Methodology: The process of collection of data has been based on secondary sources only. The background or secondary material based data, required for this research study gathered from the online concerned departments websites, annual reports and relevant research papers.

Current Status of Industries in Punjab:

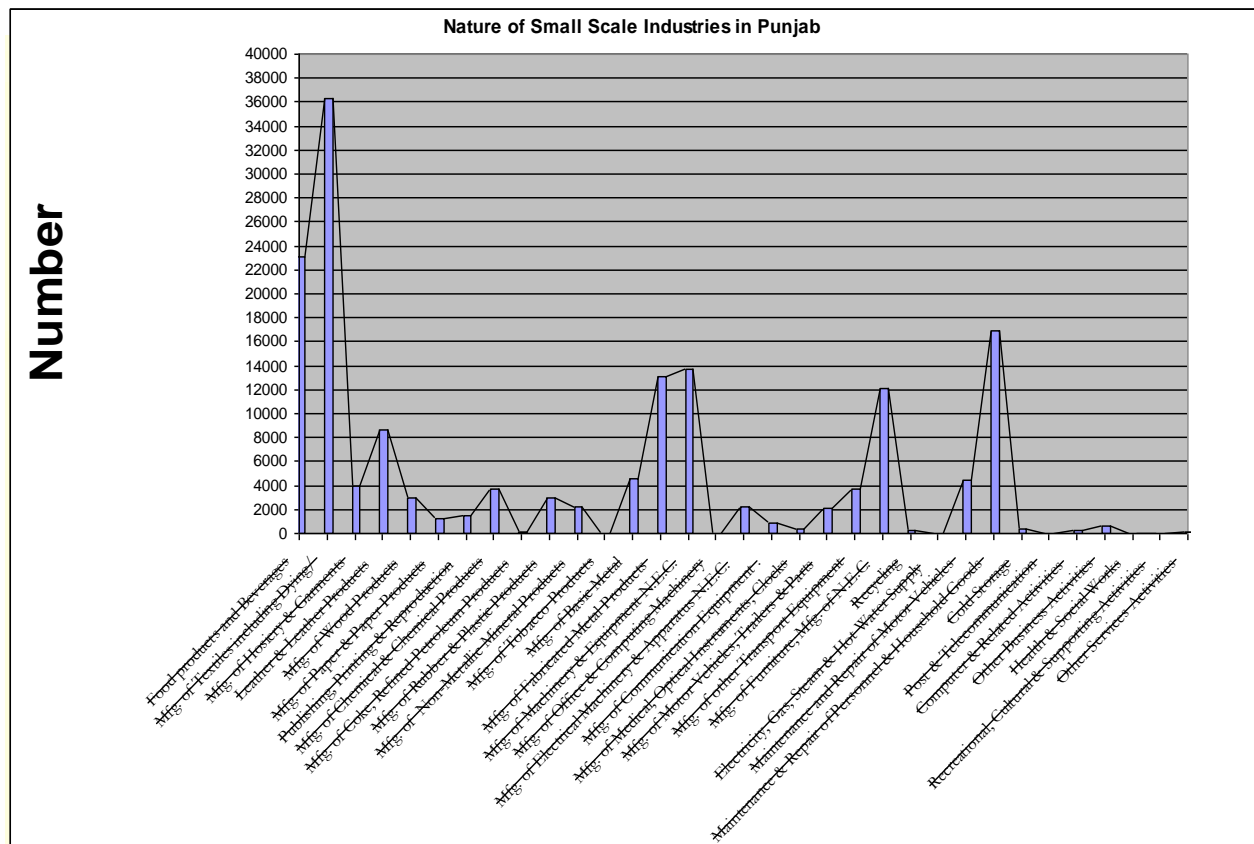
The Punjab, which has known for agriculture, is also on its way towards industrialization through development of Small, Medium and Large scale industries. Around 0.2 million small scale industries and 306 large scale industries are functioning in the state with total production of over Rs. 50 Billion and it provides employment near 9 Lakh as in Figure 1.1. The labour intensity in the SME sector is estimated to be considerable higher than the large enterprises. Thus, this sector has been regarded a priority status by both the Central and the State Governments. At state level, the government has played a major role in ensuring growth by establishing various institutes to support this sector, which includes udyog sahayak, Punjab state industrial development corporation (PSIDC), PFC, **Punjab Small Industry and Export Corporation Ltd. (PSIEC)**, **Punjab Information & Communication Technology Corporation Ltd. (PICTC)**, **Punjab Agro-Industries Corporation (PAIC)**, Punjab Energy Development Agency etc.

MAJOR INDUSTRY-WISE STATUS OF LARGE AND SMALL SCALE INDUSTRIES IN PUNJAB AS ON 31.3.2011



The contribution of SME in industrial development of country is significant. In spite of this, industrial activity also directly transforms the environment through production of industrial wastes, soil and air pollution. An environment polluted by industrial activities in turn adversely affects the population health. Industrialization has resulted in to create pollution that harms the climate of country. In Punjab there has different type of Industries. The Punjab Pollution Control

Board categorized all industries into Red (highly polluting), orange (Moderately polluting) and Green (non-polluting) categories. The Red category industries require clearance from the environmental angle from Competent State Authority of the Department of Environment. In Punjab certain categories of industries are large number like food products and beverages, manufacturing of textile including dyeing, maintenance and repair of machinery, fabricated metal products, manufacturing of chemical products, paper and Pharmaceuticals etc as shown in figure 1.2.



These Industries pose serious problems of air pollution, water pollution and generate hazardous waste. The main pollutants from these industries are particulate matter, oxides of sulphar and nitrogen which are emitted due to burning of fuels and hazardous waste in form of waste oils and solvents. The nature of emission and effluent generated are varied and depend upon nature of Industry.

Nature of Industries and their impact on environment

Types of Industry	Major Water Pollutant	Major air pollutants	Major Hazardous waste
Food products and Beverages	High dissolved solids	Particulates, Odour	Flue gas cleaning residue, Toxic metal-containing residue from used-ion exchange material in water purification, Chemical sludge

	containing nitrogen and fermented starches and allied products		from waste , oil and grease skimming residues from common industrial effluent treatment plants (CETPs) and industry-specific effluent treatment plants (ETPs),
Manufacturing of Textiles including dyeing etc.	High pH, Sulphide, toxic dyes, BOD, colour	Particulates	Textile chemical residues, Chemical sludge from waste water treatment , Process waste sludge/residues containing acid or other toxic metals or organic complexes, Dust from air filtration system
Pulp and paper	Colour, dissolved and suspended solids, BOD and COD, fibre, lignin	Particulates, mercaptans	Spent chemicals, Corrosive wastes arising from use of strong acid and bases, Sludge containing absorbable organic Halides
Metal Products	Low pH, toxicity, heavy metals like chromium, nickel and zinc etc.	Metallic Particulates, CO, SO ₂ , Acid Mist	Silicone -containing residues, Silicone oil residues
Pharmaceuticals	pH, high suspended and dissolved organic matter, COD toxicity	Odour, Particulates	Residues and wastes, Spent catalyst / spent carbon, Off specification products, Date-expired, discarded and off-specification drugs/ medicines, Spent mother liquor, Spent organic solvents
Manufacturing of chemical products			Chemical-containing residue from decontamination and disposal, Sludge from treatment of waste water arising out of cleaning / disposal of barrels / containers, Discarded containers / barrels / liners used for hazardous wastes/chemicals

Government Role in Improving Environmental Performance

Every Industrial developmental activity has an impact on the environment. To ensure that this level of impact remains within acceptable limits, there is a need to implement Environmental Legislation. In India, states do not pursue independent environmental policy of their own but adopt the policies formulated at the national level subject to such variations as may be necessary to suit to the local conditions. The central government has also been issuing guidelines to the states on various environmental matters. The sectoral policies and programmes pursued by the states are usually formulated within the framework of the national policies and guidelines. The policies and programmes under environment policy are usually implemented by Central Pollution Control Board (CPCB) through State Pollution Control Boards (SPCBs) in the states.

The central and state pollution control is responsible for enforcing pollution related regulations. Each board is governed by a council of members and operates through its main and regional offices. The board are independent autonomous organizations working under a broad policy directives from ministry of Government. The Government regulations for environmental issues operated at three levels: Central government:

Years	Large Large & Medium (No. of Units)		Small Scale Industries (No. of Units)	
	With APCD	Without APCD	With APCD	Without APCD
2002-03	396	-	6942	925
2003-04	413	-	7804	747
2004-05	431	-	8016	630
2005-06	417	-	7819	516
2006-07	494	01	8589	384
2007-08	494	0	8975	227
2008-09	394	-	7216	169
2009-10	507		9027	116
2010-11	489		9585	74

policy development, assistance to lower governmental levels. State level: state governments have the right to deviate from the centrally developed policy, although centrally developed legislation cannot be diluted. In addition, state governments have the responsibility to delegate and allocate the different responsibilities and funds to the implementing bodies. The main government agency active at this level is the State Pollution Control Board (SPCB). Local level: this is the most interactive level. Local branches of SPCBs act on this level to implement the policies developed at the central level and are allocated responsibilities and funds by the state governments.

Years	Large Large & Medium (No. of Units)	Small Scale Industries (No. of Units)
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	With ETP	Without ETP	With ETP	Without ETP
2002-03	386	1	1847	751
2003-04	405	2	1787	540
2004-05	05	1997	472	9143
2005-06	466	-	2145	301
2006-07	415	1	2021	117
2007-08	369	1	1915	92
2008-09	353	1	2101	96
2009-10	456	-	3200	106
2010-11	496	0	3558	41

APCD: Air Pollution Control Devices ETP = Effluent Treatment Plant.

Air Polluting Industries in the State of Punjab
Water Polluting Industries in the State of Punjab

Source :- Punjab

Pollution Control Board

The Punjab Pollution control board enforcing the industries to improve their environmental performance. They have taken very strict action against the industries who have not fulfill the environmental regulations. According to latest report of Punjab Pollution control board the number of industries use air pollution control

devices and effluent treatment plant is increased. Very few industries have not installed pollution control devices.

Approve More Laboratories: Pollution Control Board will approve more reputed laboratories in addition to the three private laboratories already approved, in order to provide more avenues for testing of samples by the industry. The CPCB has started a programme for determining areas where particular industries can and cannot be established. The effluent standards are set for industries. Theoretically units can be fined if continuous non-compliance is detected.

Water cess: This is partly a regulatory instrument (units are only allowed to use a specific amount of water, as mentioned in the environmental consent). SPCBs have the power to discontinue enterprises operating (through suspending power and water supplies) in the case where non-compliance continues after a warning has been issued.

Outsourcing of Inspections: State Government will outsource the inspection / verification in addition to the self certification / outsourced inspections, already done under the labour laws etc under the following Acts to qualified Chartered Engineers / Environment Engineers in order to provide option to the industry for such inspections/ verifications from parallel authorities in addition to the departmental agencies:-

- (i) Inspection of Boilers under Indian Boilers Act, 1923.
- (ii) Inspection under Standards of Weights & Measures (Enforcement) Act, 1985.
- (iii) Inspection / testing of electric installations under Indian Electricity Act, 1910 & Indian Electricity Rules, 1956.
- (iv) Inspection / verification under the Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981.

Disposal of hazardous waste: Presently the hazardous waste generated by industries in the state is being stored in the premises of the industries in an environmentally sound manner. However, a

common Treatment Storage and Disposal Facility (TSD) is being developed in the state at Village Nimbuan, Tehsil Dera Bassi, District Mohali. The PPCB has leased land measuring 20.64 acres for TSD on a nominal lease amount. The major generators in the state have formed a company namely M/s Nimbuan Greenfield Punjab Ltd. (NGPL) for development of the facility through M/s Ramky Enviro Engineers Ltd., Hyderabad on DBO (design, build and operate) basis. The construction of the facility has already started and it is likely to be commissioned by June, 2007. The expected life of this facility is about 15 years.

Industrial technologies used for refining/recycling hazardous waste: Waste oil is an important hazardous waste in Punjab. As per Rule 19 and 20 of the Hazardous Waste (Management and Handling) Rules, 1989, as amended in 2003, every person desirous of recycling or refining used waste oil shall register with Central Pollution Control Board. Till date six units with a total recycling/refining capacity of 13,600 kl/annum of waste oil have obtained authorization from CPCB and PPCB. These units use vacuum distillation technology. Some efforts are also being made to develop and demonstrate low waste and no-waste technologies in the state by Punjab State Council for Science and Technology.

The Punjab Pollution Control Board is encouraging industries to replace outdated or inefficient technologies with latest technologies to decrease hazardous waste generation and consequent pollution. Rule 21 of the Hazardous Waste (Management and Handling) Rules, 1989, as amended in 2003, provides for the technology and standards for re-refining/recycling of used oil/waste in an environmentally sound manner.

Awareness and training programs: The Punjab Pollution Control Board and Consultancy Cell of PSCST are organizing awareness programs from time to time.

Conclusion

The Small, Medium and Large scale enterprises have strong influence on economic and social development of country. The economic development of a region is generally determined by the level of industrial development. The Punjab, which has known for agriculture, is also on its way towards industrialization through development of Small, Medium and Large scale industries. At state level, the government has played a major role in ensuring growth by establishing various institutes to support this sector, In spite of this, industrial activity also directly transforms the environment through production of industrial wastes, soil and air pollution. The industries generate air pollution, water pollution, hazardous waste that turn adversely affects the population health and harm the climate of country. To ensure that this level of impact remains within acceptable limits, there is a need to implement Environmental Legislation. In India, states do not pursue independent environmental policy of their own but adopt the policies formulated at the national level subject to such variations as may be necessary to suit to the local conditions. The central government has also been issuing guidelines to the states on various environmental matters. The sectoral policies and programmes pursued by the states are usually formulated within the framework of the national policies and guidelines. The policies and programmes under

environment policy are usually implemented by Central Pollution Control Board (CPCB) through State Pollution Control Boards (SPCBs) in the states. The Punjab Pollution Control Board takes so many initiatives for reducing environmental impact. They Give approval to more laboratories, Water cess, provide space for disposal of hazardous waste in Nimbua and provide awareness programmes for society as well as for industries. The regulation instrument is used for forcing companies to comply standards and helps to improve environmental performance.

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