Inspira- Journal of Modern Management & Entrepreneurship (JMME)
ISSN : 2231–167X, General Impact Factor : 2.3982, Volume 08, No. 01, January, 2018, pp. 307-313

# MAJOR ENVIRONMENTAL PROBLEMS CAUSED BY THE TEXTILE INDUSTRIES IN SURAT: A STUDY

Nisha Subhash Khurana*

**ABSTRACT**

*Environment means the conditions or surroundings in which we all live or operate. Now days due to rapid industrialization environment is being affected adversely. Increase in global warming affects the environment and thus in order to limit global warming and avoid the worst effects of climate change, the world needs to invest in environment. We all know that we need to protect the environment by conserving it. Businesses are regulated to prevent pollution and to keep their own carbon emissions low. There are incentives to installing renewable power sources in our homes and businesses. Environmental protection is one of the pillar of sustainability and the primary concern of the future of humanity. It defines how we should protect eco systems, air quality, integrity and sustainability of our resources and focusing on the elements that place stress on the environment. This research paper studies in detail the impact of pollution caused by textile dyeing mills on environment and how this pollution could be curtailed down? What are the provisions related to environment sustainability and pollution control which should be maintained by textile dyeing mills? The compliance of various laws instituted for pollution control and their adherence by textile dyeing mills are also studied.*

***KEYWORDS:*** *Environment, Environmental Pollution, Surat Textile Industry, Industrial pollution, Environmental Pollution Control, Gujarat Pollution Control Board.*

## Introduction

### Meaning of Environment and its Problems

The word 'environment' is used to talk about many things. People in different fields of knowledge use the word differently. The environment affects the growth and development of the person. It affects the person's behaviour. It affects the person's body, mind and heart. It basically includes our surrounding in which we all live. So it is very much important for all of us to protect it. But now days with rapid industrialization it has been observe that environment is affected adversely. People are facing an environment which is polluted. Industrialization had polluted our environment in various ways. There are different kinds of environmental pollution:

- Air Pollution
- Land Pollution
- Noise Pollution
- Water Pollution

* Assistant Professor, Shri Shambhubhai V. Patel College of Computer Science and Business Management, V.N.S.G.U., Surat, Gujarat, India.

**Literature Review**

**R. Sathya (2009)** researcher conducted a study to evaluate the impact of industries on Tirupur environment with the objective to find out the extent of water pollution around Tirupur, quality of air in Tirupur, extent of noise pollution and social economic impact in Tirupur. Researcher also suggested remedial measures for the pollution control. Researcher has done water analysis, soil analysis by collecting samples, air analysis and socio-economic study for the study and after research, researcher come to the conclusion that discharge of effluent and dyes affect the water quality of river Noyau, urban environment and industries of Torpor does not have any adverse impact on air quality, nutrients in soil is not a major problem in Torpor but water available for agriculture is unfit, noise pollution does not exceed in industrial zone and employment opportunity attract people migrating from other places.

**B.J.V.Ramana (2011)** researcher aimed to study all legal aspect in regard to water pollution. For research researcher has done detailed study of all water resources, sources of water pollution and legislation to control pollution. After study researcher conclude that water which is most important part of our life and existence is taken for granted by people and is being polluted to a greater extent and so in future it will not be available in abundance. So researcher suggested strong and strict rules to be made by government and municipal corporations to control environmental pollution. Researcher further suggested to aware people about pollution problems and its effects so that people start save it.

**Rita Kant (2012)** in this paper researcher study water and air pollution caused by textile dyeing industry and concluded that the chemicals, dyeing, colour etc used by textile dyeing industries are responsible for pollution in water and air. In study researcher also made a study regarding effluent treatment method to purify water and even suggested to use air dyeing technology which allow companies to create garment with different colour and designs without polluting water. In last researcher concluded that due to urbanisation pollution is bound to be increase unless some positive steps taken by government. So according to researcher some research needs to step up and gives us value environment.

**Prassana Joseph (1996)** researcher made an attempt to study industrial pollution. In study researcher studied all sources and effects of pollution due to industrialisation, industrial policy and planning, judicial control of industrial pollution, subsidies and charges levied for pollution etc. researcher concluded study by informing that industrialisation is very much important for development of country no country could grow without industrial development but environmental pollution is also an serious issue to be tackle carefully. Researcher suggests it is necessary to have legal control of industrial pollution. Pollution control board at state and central level alone cannot achieve the objective. Planning decisions at rural level should necessarily to incorporate. Recycling is necessarily to be promoted. Chamber of commerce with in country should get involved in environmental matters at national and state level.

**Purpose of the Study**

This study has been undertaken to know about the factors affecting environment of Surat due to development of Surat Textile Industry. Now days because of industrialisation environment is been affected adversely. This study has been conducted to get knowledge about the adverse effect of textile industrial development on environment in Surat, norms given by Gujarat Pollution Control Board (GPCB) to protect environment and how all industries follow them.

**Objective of the Study**

- To study and understand the meaning of environment and environmental pollution.
- To study how development in textile industries in Surat affects environment.
- To study all the rules related to pollution control which textile dyeing mills and processing houses have to follow prescribed by GPCB.
- To study all the actions taken by textile industries of Surat to protect environment in Surat.

**Development of Textile Industry in Surat**

Surat, an emerging city in the state of Gujarat, is known as the textile city of Gujarat. The textile industry is one of the oldest and the most widespread industries in Surat. A major part of the city's population is associated with the textile industry. Surat Textile Industries are manly involved in the manufacturing and trading of synthetic textile products. About 30 million meters of raw fabric and 25 million metres of processed fabric are produced in Surat daily. The industrialists here have strong entrepreneurial skills. Second most important force behind Surat Textile market's growth is cheap labour.

Thousands of peoples from Bihar, UP, Jharkhand, Andhra Pradesh works here hardly for Rs. 3000 per month about 12 hours per day. And there are several business background entrepreneurs who have expertise in the Textile market.

Textile industry in Surat has been growing steadily over the years due to its huge demand. It has also suffered a few setbacks. Various natural calamities like floods have caused the textile industries to suffer great losses but the industry has recovered quickly. Power cuts and labour problems are other setbacks that the textile industries face. The embroidery industry especially is suffering due to shortage of skilled labour. Most of the labourers working in the textile industry are from various states like Orissa, Bihar, Uttar Pradesh and Maharashtra and these workers leave for their home towns during April to June causing labour shortage. In spite of certain drawbacks, the city occupies a major position in the production of manmade fabrics. Around 65% of India's manmade fabric production is done in Surat. The city expects a growth rate of 15-20% in manmade fabric demand in the near future. Hence, the future of the Surat textile industry does look bright.

**Environmental Hazards Due to Development of Textile Industries in Surat**

From above discussion it is clear that textile industry of Surat occupies an important position in Indian economy in terms of its contribution to industrial production, employment and exports. Apart of this textile industry has been condemned as being one of the world's worst offenders in terms of pollution in Surat.

**Water Pollution**

Textile Industry is one of the most polluting industries in the country. It consumes water for various processes like scouring, sizing, and bleaching, dying and other associated processes. Water pollution is done by each and every process in the whole manufacturing of textiles. Large quantities of water are required for textile processing, dyeing and printing. The daily water consumption of an average sized textile mill having a production of about 8000 kg of fabric per day is about 1.6 million litres.

**Air Pollution**

Air pollution is the introduction of chemicals, particulate, or biological material that cause harm or discomfort to humans or other living organisms, or damages the natural environment. Most processes performed in textile mills produce atmospheric emissions. Gaseous emissions have been identified as the second greatest pollution problem for the textile industry. Speculation concerning the amount and type of air pollutants emitted from textile operations has been widespread but generally air emission data for textile manufacturing operations are not readily available. Air emissions include dust, oil mists, acid vapours, odours and boiler exhausts.

**Solid Waste Pollution**

Textile manufacturing operations create large amounts of toxic and non toxic solid waste. Fibres, yarn and fabrics are solid waste that are created directly from production lines. The cones, looms and cardboard reels used to hold fibres and textiles during manufacturing add to a factory's solid-waste pollution. Common toxic-solid waste pollutants include the storage drums and plastic containers used to hold hazardous chemicals and solvents.

**Norms Made by Gujarat Pollution Control Board to Control Pollution from Textile Industries in Surat.**

GPCB has made various Acts to protect pollution caused by these industries. All the conditions under act are compulsory to follow in order to get licence to establish an industry. GPCB has constructed three main acts to regulate pollution.

- Water prevention and control act - 1974
- Air prevention and control act - 1981
- Hazardous waste act - 1989.

**Water Prevention and Control Act, 1974**

Water is an important element that constitutes life on earth after air and food. All living beings are dependants of water. The life on earth is not possible without water. India is blessed with numerous water sources from small water holes to streams, rivers, lakes etc. Majority of our country's water sources are pure water sources without any pollutants. But now because of modernization and urbanization the contamination or pollution of our pure water sources increased to an uncontrollable level. For controlling

this water pollution an act was introduced by the central board of pollution control called as water prevention and control of pollution act 1974. The main objective of the act is to prevent pollution of water to restore the wholesomeness of water for consuming without the threat of contamination.

**The Following are the Important Provisions of the Water Prevention and Control Pollution Act**

- **Under Section 21:** The samples can be collected for analysing the presence of pollutants or contaminating element in the water.
- **Under Section 24:** Prohibits any usage of streams or wells for disposal of sewage or contaminating elements to the streams ore wells. Any person who is aggrieved by the act of Board can prefer appeal against concerned higher authority of the Board.
- **Under Section 32:** If any pollution occurs due to an uncontrollable event, emergency measures can be taken for preventing the pollution.
- **Under Section 51:** A central water laboratory is constituted for the analyzing and reports the elements or trade effluents that cause water pollution.

The Water Prevention and Control of Pollution Act 1974 is having a wide scope and impact in effective control in water pollution that is too high in urban and high density populated areas.

**Objectives of the Act**

- To prevent and control water pollution
- To maintain wholesomeness of water
- To establish control on State Boards for prevention and control of pollution
- To empower the Boards for prevention/control of pollution
- To provide penalties for contravention of the provisions of the Act
- To establish control on state water testing laboratories.

**Air Prevention and Control Act 1981**

Air pollutant means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

**Air Prevention and Control of Pollution Act (1981) is** a comprehensive legislation with more than fifty sections. According to this Act, no person can operate certain types of industries without consent of the State Board. This Act is created to take appropriate steps for the preservation of the natural resources of the Earth which among other things includes the preservation of high quality air and ensures controlling the level of air pollution.

**The main objectives of the Act are as follows:**

- To provide for the prevention, control and abatement of air pollution.
- To provide for the establishment of central and State Boards with a view to implement the Act.
- To confer on the Boards the powers to implement the provisions of the Act and assign to the Boards functions relating to pollution.

**The following are the important provisions of the Air (Prevention & Control of Pollution) Act:**

**Under Section 21(1)**

Persons establish or operate any industrial unit in National Capital Territory of Delhi with obtaining prior consent of the state pollution control board.

The consent application will be disposed off within 4 months of receipt of the consent application. However, state pollution control board may either grant consent or reject the application within 4 months for reasons to be recorded in writing. It may also revoke previous, consent to the industry before expiry of the same after giving a reasonable opportunity of being heard.

Any consent requires the compliance with the following conditions:

- Control equipment of such specification as the State Board may approve.
- Control equipment referred above shall be kept at all times in good running condition.

- Chimney, wherever necessary, of such specifications as state boards may approve.
- Any other such conditions as the state board may specify.

**Under Section 22**

No person operating any industrial plant, in any air pollution control area shall discharge or cause or permit to be discharged the emission of any air pollution in excess of the standards laid down by the state board.

**Under Section 22(A)**

State Board can also approach the court to stop any person from doing air pollution.

**Under Section 24(i), 26(i)**

Pollution control board officers have powers to inspect any premises in performance of their duties, take samples, examine records, documents etc. or performing any other duty entrusted to him by the board. Every person operating any equipment is bound to provide all assistance to the person who is inspecting. When samples taken, officials can collect the samples after informing the person of the industry. Any analysis of the samples done in the air lab can be produced as evidence in a court.

**Under Section 31**

Any person aggrieved by an order made by the state board under this act may, within 30 days from the date on which order is communication to him, prefer an appeal to the authorised authority.

**Under Section 31(A)**

The state board can give directions to any person or office or authority in writing and such person or officer or authority is bound to comply with such directions which include:

- The closure, prohibition or regulation of any industry, operation or process or
- Stoppage or regulation of electricity, water or any other services.

**Under Section 37**

Any person failing to comply with the provisions of Section 21 or Section 22 or directions issued under Section 31(A) can be imprisoned for a term which shall not be less than one year and six months but which may extend to six years with a fine up to Rs.5000/- per day. If violation continues beyond one year after the date of conviction, the offender shall be punishable with imprisonment with a term which shall not be less than two years but which may extend to seven years and with fine.

**Under Section 39**

Whoever contravenes any of the provisions of this Act or any order or directions issued there under, for which no penalty has been elsewhere provided in this act, shall be punishable with imprisonment for a term which may extend to three months or with fine which may extend to ten thousand rupees or with both, and in case of continuing contravention with an additional fine which may extend to Rs.5000/- for every day during which such contravention continues after conviction for the first such contravention.

**Actions Taken by Textile Industry of Surat to Control Environmental Pollution in Surat**

Textile industry of Surat includes textile dyeing and printing mills, processing houses etc. There are about 1040 Dyeing and Printing Units located in and around Surat in various clusters - Pandesara, Sachin, Kadodara and Palsana. All the industries of Surat are working on environment control according to the guidelines given by Gujarat pollution control board. All the industries are required to get consent and license from GPCB before starting there work. The licence has to be renewed in every 5 years. Water pollution, air pollution and solid hazardous waste pollution are the major pollutions happen due to these industries.

**Water Pollution Act**

All the activities of textile industries create water pollutions. In Surat it is strictly prohibited to discharge polluted water in Tapi River. Following are the conditions which all the industries have to follow under water act.

- All Industries has installed individual Effluent treatment plant (ETP). Common Effluent treatment plant (CETPs) are established for industrial cluster to facilitate centralise facility for effluent treatment. Industries have to discharge waste water in CETP through proper drainage lines.

Standards of waste water are given by Gujarat Pollution Control Board. All the industry should make sure pollutant present in water should be according to standards prescribed by the board.

- Polluted water of industries conveyed to CETP through under ground drainage systems and in no case effluent shall discharge into environment by any means.
- In case where there is no CETP then industrial unit have to discharge polluted water into SMC drain. Standards of water to be discharge into SMC drain are different.
- An industrial unit should stop its production activities if effluent is not adequately treated by the CETP.
- Industrial unit should be responsible for the conveyance of entire treated effluent to CETP and Due care should be taken to avoid leakage of effluent during conveyance through drain.
- Magnetic flow metres shall be installed at the inlet and outlet of effluent collection tanks to measure the quantity of effluent discharging in to underground drainage system.
- Storm water should not be mixed with industrial effluent.
- In case of shut down of plant for more than three days for any reason should be intimated to GPCB well in advance for the better operation and management of CETP.

**Air Pollution Act**

After water pollution other most important pollution caused by textile mills and processing houses is air pollution. Pollution control board has passed an air pollution control act 1976 which is compulsory to be followed by all the industries in order to get its license. Conditions under air act.

- Air act has mentioned the type of fuel to be used by industries and its limits in qty.
- It is necessary that all the industrial units should install and operate comprehensive adequate air pollution control system in order to achieve required standards given by GPCB.
- Various air pollution control system are installed according to the capacity of boiler or D.G. set. Bag filter. Multi cyclone separator and water scrubber are the various air pollution control system which has to be installed to boiler or D.G.set.
- There shall be no emission from manufacturing process or any other ancillary processes.
- The concentration of particulate matter, oxides of sulphur, oxides of nitrogen etc in the ambient air within the premises of the industry and a distance of 10 metres from the sources other than vent shall not exceed the permissible limits.
- An industry should provide portholes; ladder, platform etc at chimney for monitoring the air emissions and the same shall be open for inspection.
- All chimney vents attached to various sources of emissions shall be designed by numbers or painted to facilitate identification.
- Industry should also take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75 db during day time and 70 db during night time. Day time is reckoned between 6.am to 10 p.m. and night time is reckoned between 10 p.m. to 6 a.m.

**Hazardous Waste Act**

All the industries have to get authorization from the state pollution control board for the management and handling of hazardous wastes. Under this act the authorization is granted to the industry to operate a facility for collection, storage, transportation and ultimate disposal of hazardous waste at GPCB approved site. This act prescribed the standards regarding the type of waste, its quantity and facility of collection, storage, transportation. For textile industries GPCB has given standards for 3 types of waste ETP, used oil and discarded containers. The authorization is subject to conditions mention under act and such other condition as may be specified in the rules from time to time under environment protection act 1986 and hazardous waste management and handling rules 2008.

**Conclusion**

Textile industry has a very strong impact on water and air pollution. Although many steps under water act and air act are taken by Gujarat pollution control board to save water and air but still there is a lot of scope under this concern. In Surat it is prohibited by GPCB to discharge polluted water in river Tapi

which is a good step to save drinkable water still action should be initiated to recycle waste water so that it can be reused by industries and wastage of water can be reduced to some extent. Even there should be more technological development in regard to air pollution control system and steps regarding public awareness should be taken to reduce water, air and waste pollution because to get reduction in pollution common public participation is must. No objectives can be achieved without the participation from common public. For these campaigning should be done to make people aware about the drawbacks of pollution and steps which they can take to curtail it.

**References**


- http://www.moef.gov.in/sites/default/files/Final%20HWM%20Rules%202016%20(English).pdf
- http://www.oecotextiles.com/PDF/textile_industry_hazards.pdf
- http://www.fibre2fashion.com/industry-article/2150/the-textile-industry-of-surat?page=2
- http://smallbusiness.chron.com/kinds-pollution-textile-factories-give-off-77282.html
- https://surattextile.wordpress.com/
- https://en.wikipedia.org/wiki/Textile_industry_in_India
- http://lexicon.ft.com/Term?term=environmental-sustainability
- https://simple.wikipedia.org/wiki/Environment
- http://www.sustainablebabysteps.com/kinds-of-environmental-pollution.html
- http://hdl.handle.net/10603/117299
- http://hdl.handle.net/10603/8107
- http://file.scirp.org/pdf/NS20120100003_72866800.pdf.


☯☯☯