

# A Qualitative Analysis on Environmental Protection and Its Feasibility with Special Reference to a Selected Locality

Dr. A. Govindarajan, Assistant Professor and Dr. N. Kumar, Assistant Professor  
School of Management studies,  
Sathyabama Institute of science and technology, Chennai-63  
agrajan1972@gmail.com

## Article Info

Volume 82

Page Number: 7887 - 7891

Publication Issue:

January-February 2020

## Article History

Article Received: 18 May 2019

Revised: 14 July 2019

Accepted: 22 December 2019

Publication: 05 February 2020

## Abstract

It is our prime importance to protect our environment in which we live. Our ancestors left with good environment and now pollution comes in with air, water, noise, soil and so on. The paper suggests a possible way to protect our society especially for the people of Chennai from air, water and radiation by protecting the environment. If same is followed in other cities it can save many, it is only a small means of a bigger initiative of saving our people.

**Keyword:** Air pollution, Water pollution, Plastics, cancer, respiratory problem, recycling, green environment

## Introduction

Environment includes totality of all extrinsic, physical and biotic factors effecting the life and behavior of all living things. Therefore, it is important that the environment of which land, water, air, human beings, animals and plants are the components be preserved and protected from degradation to maintain the eco system as well to have a long survival of mankind.

## Various types of environment

According to Kurt Lewin environment which influence the personality of an individuals are under:

1. Physical Environment,
2. Social and cultural Environment, and
3. Psychological environment.

These may be explained as under:

**Physical Environment:** The environment which refers to geographical climate and weather or physical conditions wherein and individual lives is physical environment.

**Social environment:** Social Environment includes an individual's interaction with the

society as in social, economic and political condition wherein we lives. We Individual work create our own social groups . Thus, the social environment is formed which leads to form economic environment and gain over other through political environment. The above which makes man superior to all the organisms.

**Psychological Environment:** It is one own thinking about how to handle ones owns barrier and emotional imbalance. If a person is unable to overcome the barriers, he can either get frustrated or completed to change his goal for a new psychological environment. On following this mechanism, the individual himself is helped to adjustment with the environment but when he could not due to the modernization and sophistication in life he slips from the basic culture of mankind and started polluting the environment.

The above environment factors on disturbance leads to polluting the environment Seta siding the other environmental factors, this paper focus on problems created and faced by human related to natural environment which he

adjust with the environment. The problems like pollution in air, water, noise, soil and so on. A feasible solution is traced to solve a minor % of the problems

**Objective of the Study**

- To provide an alternative way of power production apart from thermal plant,
- To suggest an alternate method of reducing Air pollution caused by Plastics, and
- To implement an eco friendly model for the betterment of people living in the locality through waste water management.

**Research Methodology**

Present study fully depends on secondary sources for the necessary data. The required data for the study are such as power production, composition of material in plastic, etc. The above data have been collected from the reports published either in print or electronic form.

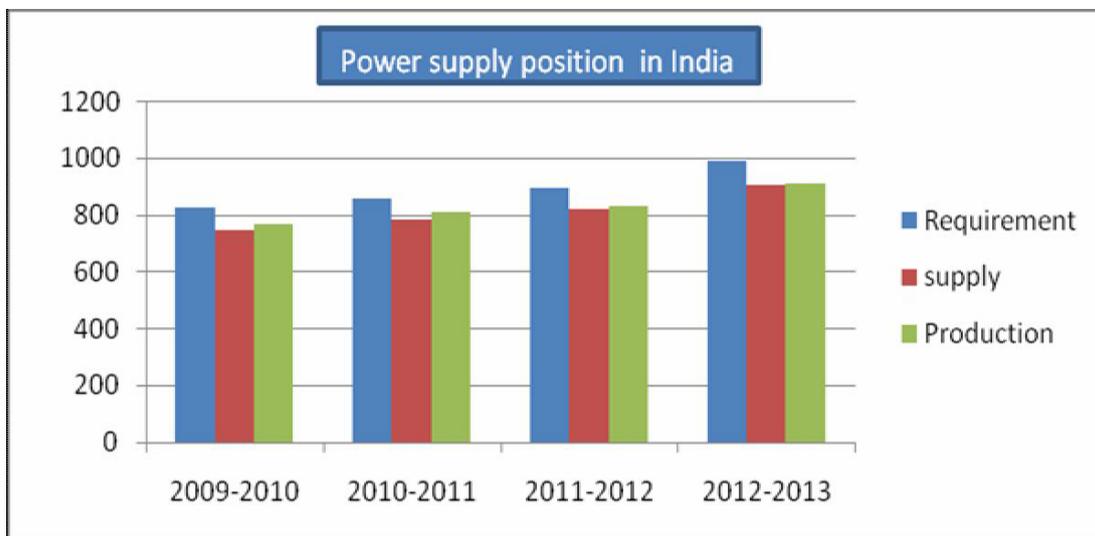
**Source of Data and Analytical Tools**

Required data have been collected from the sources like, Annual Report of NLC LTD, Tamil Nadu Pollution Control Board and so on. The study has used suitable statistical tools to analyze the data collected from the different sources. Some of them are simple averages, percentages, graphical and diagrammatical illustrations have been used.

**Power production and its impact on environment**

Power is the main source of economic development of every country. We now discuss about requirement, sources of power (Electricity) and its impact on environment.

**Power Supply Position in India:** The total requirement, supply and production is represented in Fig 1 .It is observed that the requirement is more compared to production as on 2013.. There is a continuous deficit in power supply when compared to requirement. This continues with increase in population and advancement of technology till 2019.



**Fig 1. Power Supply Position in India**

**Basis of power production by India:** The basis of power production of India is through Fossil fuel, Hydro, Nuclear and other renewable sources like solar, wind etc. The Fig 2 gives the details of % of power production through various basis. We

find that here is a considerable increase in production of power through Fossil fuel from 40.1% in 1971 to 63.7% in the year 2019. Fossil fuel includes coal, oil and gas <sup>13</sup>

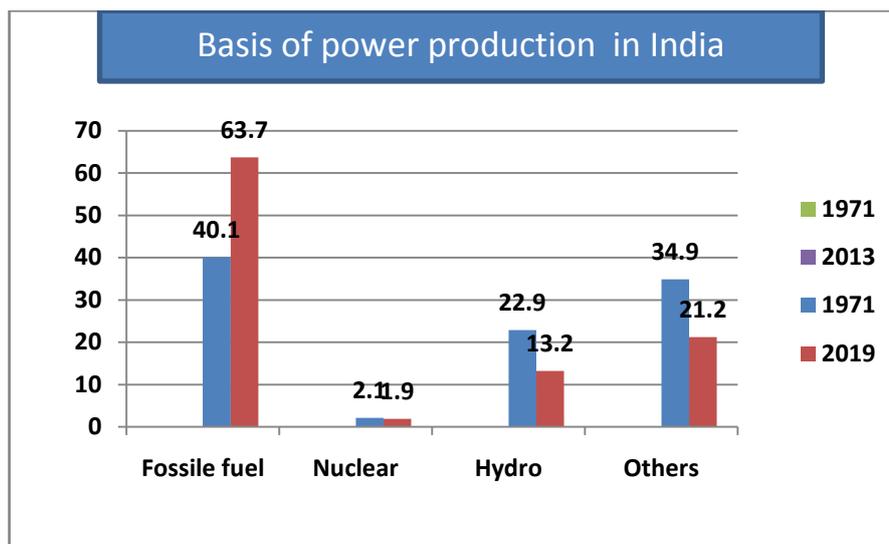


Fig 2. Basis of power production in India

**Classification of coal:**

Fossil fuel plays a greater role in power production for India. The Fossil fuel represents Lignite, Flame coal, Gas flame coal, Gas coal, Fat coal, Forge coal, Non-baking coal, Anthracite.<sup>4</sup> The various composition and heat generating

capacity is analysed and classified as follows in the Table no 1.

More than 68 % of the power produced is by government or public sector under taking and only 31.5% of the total power production is by private sector.

Table no 1. Classification of coals and their specifications.

English Designation	Volatiles %	C Carbon %	H Hydrogen %	O Oxygen %	S Sulfur %	Heat content kJ/kg
Lignite (brown coal)	45-65	60-75	6.0-5.8	34-17	0.5-3	<28,470
Flame coal	40-45	75-82	6.0-5.8	>9.8	~1	<32,870
Gas flame coal	35-40	82-85	5.8-5.6	9.8-7.3	~1	<33,910
Gas coal	28-35	85-87.5	5.6-5.0	7.3-4.5	~1	<34,960
Fat coal	19-28	87.5-89.5	5.0-4.5	4.5-3.2	~1	<35,380
Forge coal	14-19	89.5-90.5	4.5-4.0	3.2-2.8	~1	<35,380
Non baking coal	10-14	90.5-91.5	4.0-3.75	2.8-3.5	~1	35,380
Anthracite	7-12	>91.5	<3.75	<2.5	~1	<35,300

**Harmful effect of power production through lignite.**

Effect on environment because approximately 75 Tg/S per year of sulfur dioxide (SO<sub>2</sub>) is released from burning coal. After release, the sulfur dioxide is oxidized to gaseous H<sub>2</sub>SO<sub>4</sub> which scatters solar radiation; hence its increase in the atmosphere exerts a cooling effect on climate that masks some of the warming caused by increased greenhouse gases. Release of SO<sub>2</sub> also contributes to the widespread acidification of ecosystems. Effect on human being like causing

lung cancer because of air pollution by the fumes exhaled from the tunnels of power stations and other side effect of radiation. Destruction of houses during evacuation of lignite.

**Remedy May be Considered for Power Production.**

In Tamil Nadu electricity is produced by Atomic reactor and thermal reactor both are very dangerous and emits radiation which is hazardous to health. Government should take up enough initiative to promote Solar panel to produce

electricity the electricity can also be generated by other conventional method like fixing a dynamo on the road and generate electricity. Chennai which has more number of inter connected highways where in the road a free flow fan with dynamo can be set up as when the vehicle moves over it current will be generated if more such devices with powerful dynamo are placed more current could be generated which can reduce to certain percentage of production of electricity through harmful methods.

**Electricity production through Bio mass**

Food wastage in hotels Restaurant , schools & hostels can be collected and with the decomposition process we can generate electricity at large.

**Environmental protection from Plastic product.**

To dispose plastics people and the other organization burns it the effect are as follows, the chemical compounds found in plastics when burned are harming and causing biological effects in both humans as well as animals. Two broad classes of plastic-related chemicals are of critical concern for human health-bisphenol-A or BPA, and phthalates ,Human exposure occurs primarily through ingestion: diet, sucking/mouthing plastics, and skin contact. There have also been studies that showed bisphenal A increases the occurrence of

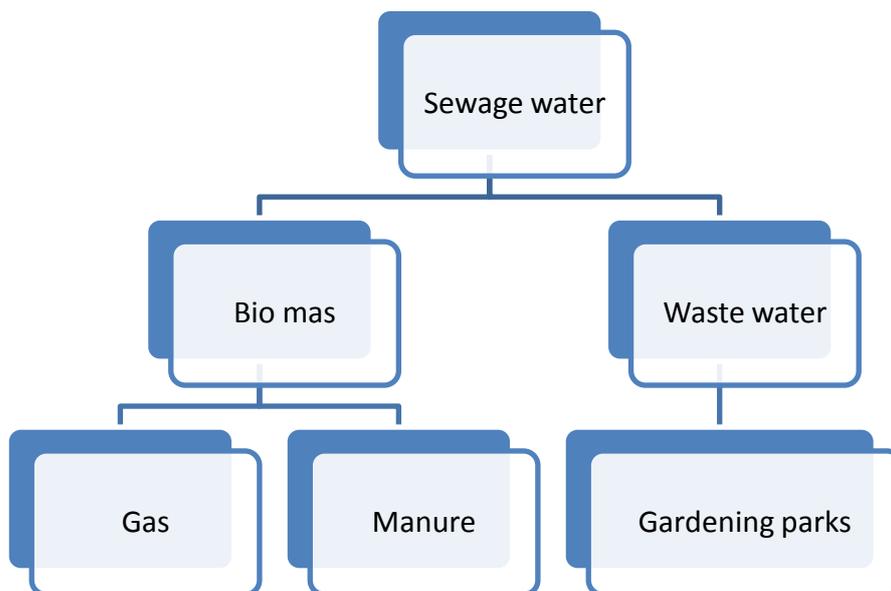
diabetes, heart disease, birth defects, early puberty, low sperm count, hyperactivity, aggressiveness and high levels of certain liver enzymes. Women who have everyday contact with this chemical can have an increase in miscarriages, polycystic ovarian syndrome which is known to cause infertility, baldness in women, prostate cancer, breast cancer and ovarian cysts.<sup>12</sup>

**Remedy for Usage of plastics may be considered**

We haveto appreciate the government of Tamil Nadu for banning some plastic items<sup>14</sup>and its co product which made huge difference with in a week in Chennai. Previously we could see every where carry bags fluttering here and there but now we can see rarely here and there. If this continuous with the support of people of Chennai the environment can be saved to a greater extent.

**Remedy to Water pollution in Chennai.**

The government of Tamil Nadu may set up one recycling plant in each locality. By collecting sewage water, the human waste so collected can be used to produce bio- gas and the gas can be supplied to people at lower cost. The waste can be used as manure after due processing and the recycled water can be used for parks which can make a green environment and can control water pollution to protect our environment.



**Fig3. Flowchart of approaches for effective usage of sewage water**

## Conclusion

From the above discussion the paper clearly explains the cause and its effect and remedy to the spoilage. No wonder we can see a new environment altogether around the world not only in one locality. For the prosperity of the nation and to the family we all should work together, to fight against pollution. We live in this environment with consist of human being who play a greater role in polluting the environment. In this Ecological system not only individual, the family, people of the locality, the region and the government attitude need to be changed they should join hand to eradicate pollution in water and air. If we fail to lead a right path then the we are the person going to ruin the next generation and the nation in a wider sense.

## Reference

1. Ahsan, A., Alamgir, M., El-Sergany, M. M., Shams, S., Rowshon, M. K., & Daud, N. (2014). Assessment of Municipal Solid Waste Management System in a Developing Country. *Chinese Journal of Engineering*, 2014, 1-11
2. Arul, P., Lawrence, J. F., & Gowtham, B. (2012). A study on status of ground water quality in and around coastal town of Cuddalore, Cuddalore DT-TN, India, 8(3), 365-372.
3. Balashanmugam, P., Ramanathan, A. R., Nehrukumar, V., & Elango, E. (2012). Ambient air quality studies on Cuddalore, 2(3), 1302-1313.
4. Bhalla, B., Saini, M. S., & Jha, M. K. (2012). Characterization of Leachate from Municipal Solid Waste (MSW) Landfilling Sites of Ludhiana, India: A Comparative Study, 2(6), 732-745.
5. Brian h. Bowen, Marty. W. Irwin., Coal characteristics, The Energy center at Discovery park Oct 2008.
6. Das, S., and S. Harikumar (2000). The Impact of Environmental Pollution on Health - A Study of Mavoor Valley in Kerala, *Nagarlok* Vol 32, No: 1.
7. Foday Pinka, S., Xiangbin, Y., & Tran Quang, Y. (2013). Environmental and Health Impact of Solid Waste Disposal in Developing Cities: A Case Study of Granville Brook Dumpsite, Freetown, Sierra Leone. *Journal of Environmental Protection*, 2013.
8. Govindarajan . (2015) A. Qualitative and quantitative analysis on lignite- a source of power production . *International journal of chem tech research* Volume .7, No.5, pp 2306-2309,
9. Hoornweg., D, Tata, P.B., and Kennedy, C., (2013). Environment: Waste production must peak this century. *Nature* 502, 615-617
10. Kucukondar A, and. Lma H (2003),., Quantitative analysis and qualitative analysis of lignite coal and its ash sample taken from Soma-Darkale region (Turkey), *Journal of Qualitative spectroscopy and radiation transfer.*, 77, 329-333.
11. Leone, S., Sankoh, F. P., Yan, X., & Tran, Q. (2013). Environmental and Health Impact of Solid Waste Disposal in Developing Cities: A Case Study of Granville Brook, 2013 (July), 665-670.
12. Moh, Y. C., & Manaf, L. A. (2014). Overview of household solid waste recycling policy status and challenges in Malaysia. *Resources, Conservation and Recycling*, 82, 50-61.
13. Padmini Devi G, Chaitanya Kumari. M.S., Bindu Madhavi (2014) . Adverse effect of Plastic on Environment and Human beings. *Journal of Chemical and Pharmaceutical Science*, Issue 3 56-58
14. Velan M.. Environmental sustainability and cleaner perspectives (2013) - A challenging experience from lignite mining industry in India, *International Journal of Engineering and Advanced Technology (IJEAT)*, Volume 2, 288 .
15. [www.indexmundi.com](http://www.indexmundi.com)
16. [www.tnpcb.gov.in/pdf\\_2018/G.O\\_84\\_Ban\\_Plastic3718.pdf](http://www.tnpcb.gov.in/pdf_2018/G.O_84_Ban_Plastic3718.pdf)