

## **Cement industry pollution and impact on public health in Nalgonda district of Telangana state**

**Lakshminarayana Komati<sup>1</sup>**

**Abstract:** *The cement industry is an energy intensive and significant contributor to climate change. The major environment health and safety issues associated with cement production are emissions to air and energy use. Cement manufacturing requires huge amount of non renewable resources like raw material and fossil fuels. From this point of view, human health takes an important role in cement production studies since many of the cement industry has direct and indirect effects on human health, especially in industrial cities. Producing the enormous amount of respiratory organics and inorganics pollutant during the overall cement lifecycle. The present study focus on air pollution linked diseases among the people of sampling sites. Result determines the maximum incidence of respiratory problems. This study has highlighted the problem of environmental pollution and health risks of residents living near Penna and Deccan Cements factory, and its effect on the environment and the residents of the area.*

**Keywords:** Cement Industry, Pollution, Human health risks,

### **Introduction**

Health is a state of complete physical, mental and social well-being and not merely the absence of diseases or infirmity. Health is a state of being free from any disease; Health is a state of perfect harmony between all the organs and systems of the body. The first definition of health has a basic fault in it – it tries to define a primary state through a secondary state. Health is a primary state. It cannot be fully defined through a secondary phenomenon, disease. And then there is a larger question. Does being free from any disease which can be given a name, make one healthy. There are many people who have no known disease and yet they are not healthy.

Health is an indefinable word. Most people who consider themselves healthy are not. And many people who are suffering from some known disease may be relatively healthy. Health is a concept which does not merely relate to the absence of disease, of healthy working of organs, or having good thoughts. Health is a holistic concept. It relates to a person as a whole. not just the person you see, but also the person you feel. Various aspects concerning protection and promotion of healthy human environment including water, air, food, shelter and working areas are known as public health aspects. For promotion of public health, varied information inputs from a variety of fields like ecology, microbiology, pathology, entomology, epidemiology, human physiology and engineering are required. Public health basically deals with water supply, sewerage and sewage disposal, drainage system, refuse sanitation, ventilation, air conditioning, and air pollution abatement and prevention of outbreak of diseases like malaria, dengue,

---

<sup>1</sup> Lecturer in Economics, University Arts & Science College, Subedari, Warangal.

**Corresponding author:** Lakshminarayana Komati can be contacted at: lakshminarayanaku@gmail.com.  
Any remaining errors or omissions rest solely with the author(s) of this paper.

Cement industry pollution and impact on public health in Nalgonda district of Telangana state encephalitis etc. The engineers of public health department apply engineering principles for sanitation of the environment.

### **Review of Literature**

Although, the labour in the cement industry occupies prominent positions in the national economy, the literature on this subject as one feels is scanty. Even through, the state and central governments have conducted some studies especially to investigate in to the economic aspects like health and pollution in the industry and supply situation of the products of like of the cement industry labours either at national level or at the state levels.

Gopinadh Pradhan (1992) attempts in his study to examine the products concentration and assess the change in the trend of concentration in the cement industry after the introduction of partial – de control policy in 1982. He also tries to evaluate changes in the competitive features of the industry. Another study conducted by Sharma and Appa Rao provides the information about the regional variations in the growth of industrial pollution in cement industry and in the selected states.

Bhanu (2007) said that liberalization and the relaxing of licensing and other controls will significantly contribute to improvements in industrial pollution or not his research examines the cement industry during the various phase of control and decontrol empirically evaluating its pollution. Pradesh Nath and PR Bose (2007) said that there is a limit to leveraging liberalization. Developing – country companies cannot match the clout of MNCs is controlling the global market.

Vijaya Banu (2007) said that to survive and excel in the new economy, the HRD climate is of crucial importance to the Indian public sector organizations. The human resource of an organization must be best managed for it is development and success. The economic development of a country can be achieved through exploration of natural resources, availability of physical and financial resources and international aid. However, some of these factors are more significant them the efficient and committed men power of the country. The study ascertains the relative importance of HRD health for the success of the public sector undertakings.

However majority of the studies conducted so far have been mainly confirmed to economic, health and pollution aspects of the industry and based mostly on secondary data. Hence, the present study of Penna cements, and Deccan cements in Dameracherla, Telangana State has been under taken with a view to give clear picture about the socio-economic conditions of the labour working in it. The study is significant as it tried to fill up the gaps existing in the studies conducted so far. It covers the socio-economic aspects of live of labour and health, pollution in the cement industry.

### **Methodology**

The present study was carried out in two different areas of Damaracherla in Nalgonda district. The areas, i.e., Penna Cements L.td and Deccan Cements L.td. have different socio economic backgrounds as well as different ecological environment.

### **Objectives**

1. To find out the impact of industrial pollution on health; and
2. To find out the impact of industrial pollution on environment

### Hypothesis

1. There positive impact of industrial pollution on human health; and
2. There is a positive impact of industrial pollution on environment.

### Sample Design

This study was interested in the impact of industrial pollution on the health of residents living near Penna and Deccan Cements factory. To achieve this, data were collected using structured questionnaire which were administered on Damaracherla mandal basis in the study area. The study area has a total number of 600 buildings. For this study 10 per cent of the estimated total buildings of the study area which is total 60 respondents were sampled.

### Methods

In order to derive the findings that emerge from this study, the data are analyzed in terms of simple percentages.

### Data Collection

The present study was based on primary and secondary sources of data, the primary data collected from each household, relating to various parameters of health status and environment, through well designed and structured questionnaire and interviews. The secondary sources of data collected from the District Pollution Board, MDO offices and management of industries.

### Data Analysis

The questionnaire was administered on household heads in the study area. The questionnaire addresses income of respondents, distance of buildings from cement factory, effects of environmental pollution on the residents and the various health challenges among others. The questionnaires were administered by trained field assistants.

### Data Analysis

The results of the administered questionnaire under presented below:

**Table 1: Age of Respondents**

Age	No. of Respondents	Per cent
Below 20	16	26.67
20-25	12	20.00
25-30	10	16.66
30-35	12	20.00
Above 35	10	16.67
<b>Total</b>	<b>60</b>	<b>100.00</b>

**Source:** Field Study

Table 1 shows that the age of respondents is classified into five groups. These are between below 20year, 20 – 25years, 25 – 30 years, 30 - 35 years and above 35 years respectively. These are the active age groups in the society and companies of higher education students, the working class (informal and formal) as well as entrepreneurial and managerial class. The last two groups consist of those between 30-35 years and above 35 years of age and is predominantly made up of retires (formal and informal) and the aged. The results shows that the predominant age groups falls between the age below 20 years and 20 - 25 years which accounts

Cement industry pollution and impact on public health in Nalgonda district of Telangana state for 26.67 per cent and 20.00 per cent respectively, followed by those in the age group of 30 - 35 years and above 35 years which represent 16.67 each, this reveals that the younger ones is predominant among the residents residing around the factory area.

**Table 2: Educational Levels**

Age	No. of Respondents	Per cent
SSC	10	16.67
Intermediate	13	21.67
Graduation	15	25.00
Technical	12	20.00
PG/ Others	10	16.66
<b>Total</b>	<b>60</b>	<b>100.00</b>

**Source:** Field Study

Table 2 shows that most of the respondents can read and write, it can be seen in the table where 16.67 per cent completed SSC education, 25.00 per cent graduation and 20.00 of the respondents are into the Technical education. This implies that all the respondents understand the issue of industrial pollution.

**Table 3: Occupation of Respondents**

Age	No. of Respondents	Per cent
Agricultural	20	33.34
Industry Labour	25	41.67
Daily Labour	10	16.66
Students	03	5.00
Artisans	02	33.33
<b>Total</b>	<b>60</b>	<b>100.00</b>

**Source:** Field Study

Table 3 shows that the occupational status of the respondents. 41.67 per cent of the respondents are industry labour, 33.34 per cent are agricultural workers 16.66 are daily labour, and only 5.00 per cent are students and Apprentice while other people involved in other occupations are 33.33 per cent. From this analysis it is therefore safe to say that most of the respondents have a source of livelihood while the remaining others either students or unemployed.

**Table 4: Types of Pollution**

Age	No. of Respondents	Per cent
Air	18	30.00
Water	14	23.34
Land	08	13.34
Dust	20	33.32
<b>Total</b>	<b>60</b>	<b>100.00</b>

**Source:** Field Study

Table 4 shows that the respondents representing 30.00 of the total respondents experience air pollution, 23.34 per cent of respondents experience water pollution, 20 of the respondents

representing 33.32 of the total respondents experience both dust pollution. From this analysis it is quite obvious that air pollution is the major environmental problem experienced in Penna and Deccan Cements industry.

**Table 5: Resident's Opinion on the Effect of Pollution**

Age	No. of Respondents	Per cent
Live with it	15	25.00
Migrate to New area	13	21.66
Complaint to Health Authority	12	20.00
Protests	10	16.66
<b>Total</b>	<b>60</b>	<b>100.00</b>

**Source:** Field Study

Table 5 shows that 61.7 per cent live with pollution, 21.66 per cent total respondents to migrate to another area, while 20.00 per cent of respondents complain to health authorities and 16.66 per cent of respondents take to protest. The implication of this is that most of the respondents would prefer to live with the pollution due to economic reasons and psychological attachment to the area in spite of pollution.

**Table 6: Various Health Problems due to Pollution**

Health Problems	No. of Respondents	Per cent
Asthma	14	23.34
Cough	16	26.66
Heart Dieses	08	13.34
Skin Dieses	14	23.34
<b>Total</b>	<b>60</b>	<b>100.00</b>

**Source:** Field Study

From the table 6 shows that most of the workers are protected; the residents in the community are exposed to the dust during production process. The table also denotes that, 23.34 reported prevalence of Asthma, 26.66 per cent of the major respondents of cough/catarrh, 13.34 per cent of the total respondent reported the issue of Heart diseases and 23.34 per cent of respondents are reported the prevalence of Skin cancer.

### Conclusion

This study has highlighted the problem of environmental pollution and health risks of residents living near Penna and Deccan Cements factory, Penna and Deccan Cements and its effect on the environment and the residents of the area. Air pollution being 45% is the major type of pollution generated in the study area, it was discovered that majority of all that are residing within jurisdiction of less than 1km from Penna and Deccan Cements cement factory vulnerable to different types of pollution such as Chemical, Noise and Toxic waste pollution while those that resides between 1km to 5km from the Factory are only prone to air pollution. This study has aligned itself with the school of thought that emphasized that the nearest residential building from a Cement Factory should range from 1km and above, In spite of this, 43.3% of respondent agreed they are not comfortable living in the study area and emphatically said with a percentage of 61.7% of the respondents that they are left with no choice than to live with the pollution.

Cement industry pollution and impact on public health in Nalgonda district of Telangana state

Despite being uncomfortable only 17.5% of the Total respondent are very ready to accept movement if the government decides to set up another location for the residents.

### Suggestions

- The study has tried to evaluate the negative consequences of Penna and Deccan Cements industry on the environment. The study reveals that though there have been efforts on the part of the management of the industry to reduce their noxious impact, more still needs to be done especially in the area of environmental monitoring so that for example the emissions of air dust enumerated earlier could be brought under control.
- From the point of view of an environment management practitioner, the need to significantly and painlessly reduce the volume of carbon dioxide emissions resulting from Penna and Deccan Cements factory cannot be over-emphasized considering the importance of carbon dioxide in the green house gas effects in global warming. Considering the quantity of carbon dioxide produced per ton of cement, the use of mineral admixtures, which would otherwise, be land filled is a must for the environment and for the cement industries.
- Effort geared toward reclaiming the quarry site should be extended further by actually transforming quarry site into parks and garden for recreational purpose via such projects like forestation, Scarification and final conversion into animal zoos and garden where people can visit and pay a token that will be used in maintaining such projects.
- Moreover there is the need for the government to intensify effort in the implementation of Environmental impact assessment of cement industries now and in the future considering the nature of its impact on all the facets of human life.

Lastly, the government should look into the pollution control policy and put into consideration on no occasion should any residential building be allowed for approval within 1km to any cement factory in order to reduce the rate of inhalation harmful substances by the people.

### References

- Pariyar Suman (2013), "Indian Cement Industry – A Regional Analysis", *Indian Journal of Regional Science*, Vol. 22 No.6, p.p. 33-36
- Mehraj, Bhat, Balkhi. H.M. (2013), "Cement Industry in India A Socio-Economic Analysis", *The Indian Economic Journal*, Vol.8, Issue. 2, p.25.
- Bhatia (2010), "A Study on HRD Climate with special reference to Public Sector Cement Corporation, *The Indian Journal of Management Research*, Vol.6, No.10, pp.23-24
- Gopinath Pradhan (1992), "Concentration in Cement Industry under New Policy Regime" *Economic and Political weekly*, Vol. 23, Issue.22, pp. 31-38.
- Banu (2007), "Post – Deregulation performance of the Cement Industry", *The Indian Journal of Management Research*, Vol. VI, No.7, P.25.
- Pradesh Nath, Bose (2007), "Leveraging Liberalization the case of Indian Cement Industry, *Economic Political Weekly*, Vol.12, Issue.3, pp.36-37.
- Vijaya Banu (2007), "Indian Cement Industry – A Regional Analysis," *Indian Journal of Regional Science*, Vol. 21, No.2, p.33.