

Review Article

AN EMPIRICAL STUDY ON THE ADVERSE EFFECTS OF INDUSTRIAL GROWTH ON THE ENVIRONMENT IN RANIPET REGION OF TAMIL NADU

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Abstract

The environment is under serious threat today and it is no surprise that world rulers are putting their heads together at global forums to devise methods of preserving biodiversity and mitigating environmental degradation. This study uses an ecocritical approach to identify the environmental concerns facing the residents of Ranipet in Tamil Nadu as a result of industrial development in the area. It is an empirical study that suggests measures to minimise the problem using a survey method. Information for the study was gathered from 50 residents each from Puliyanakannu and Karai regions of Ranipet by employing the convenient sampling technique. To find the outcome, the information was subjected to an easy percentage assessment. The paper also defines vulnerable regions and communities, and proposes fresh policy actions to reduce the effects and after effects of environmental catastrophes.

Keywords: Environment, Threat, Biodiversity, Degradation, Ecocritical, Ranipet, Industrial Development, Catastrophes.

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INTRODUCTION

In recent years, studies on the link between literature and environment have become a specific field of research known as Ecocriticism. Ecology has become an important subject of discussion as the world is struggling to curb the harmful effects of pollution. William Rueckert framed the word 'Ecocriticism' in 1978 in his essay, *Literature and Ecology: An Experiment in Ecocriticism*. As the term suggests, it involves literature scholars, authors, researchers, and poets interpreting texts, highlighting environmental risks and trying out different ways in which literature connects with the subject matter of nature. Experts in this area emphasise on the multidisciplinary nature of investigation that encompasses other academic fields such as history, environmental science, ethics, political science and gender studies (Garrard, 2004). The global environmental crisis is one of the main reasons why Ecocriticism has advanced as a discipline.

From a wider view, ecocriticism guides us to examine the world around us and criticise society's mannerisms in natural therapy. The theory enables individuals to analyse any issue with an eye on the depiction of nature. Since the nation has its literature, it has also influenced our knowledge of nature. Ecologists have tried to motivate individuals to be respectful of nature. This theory has motivated authors to encourage individuals to prevent the planet's life support system from being damaged by human actions (Barry, 2002). This experience has within us a desire to contribute to the conservation of the world not only as a passion but also as a representative of literature. Ecocritics encourage everyone else to take into consideration the ethical and aesthetic dilemmas presented by the environmental catastrophe and how ideals with fundamental economic implications are expressed by literature and speech. This study on Ecocriticism desires to show how the work of writers concerned about the future of our environment can play a role in solving specific ecological issues.

Ranipet, also known as Ranipettai (Queen's Colony), is a suburban town and industrial hub, which is part of the metropolitan area of Vellore in Tamil Nadu, India. It is a medium-sized community that resides about 20 km from Vellore Fort and roughly 100 km from

Chennai, India's fourth largest urban area (Bhatnagar, 2015). It is a significant industrial town on the highway between Chennai and Bangalore. For decades, industrial growth here has affected the environment and this need to be studied for further action.

REVIEW OF LITERATURE

India is one of fastest growing economies in the world. Modernisation has resulted in lifestyle changes and the basic needs are no longer just food, clothing and shelter. Industrialisation has resulted not only in the growth of fields such as agriculture, manufacturing, coal, timber, bottling plants, cars, gas and chemicals, but also in the degradation of flora and fauna, and depletion of natural resources. Industrialisation has led to deforestation and discharge of harmful effluents into water, soil and air (Bhandari et.al, 2015). Water reserves are no longer pure, global warming has triggered the depletion of the ozone layer and use of chemicals has caused lethal illnesses (M., Serena, 2017). The big question is do we want this to continue or make a change in the future.

Every day, the environmental problems in India are becoming more serious, but it is hardly shocking with a significant lack of education, many of whom are in dire poverty. There is, in fact, no shortage of public environmental legislation, but it is sadly not enforced due to flagrant abuse of authority, corruption and lack of funds (Pandve, 2008). Environmental pollution is an increasing danger to our nation and has become a prevalent phenomenon in cities and villages. The widespread migration from villages to metros has led to towns being overcrowded. Rapid industrialisation and urbanisation have resulted in increased pollution in metropolitan towns.

Industrial activity is one of the main air, water and soil pollution sources in India. It is calculated by the World Health Organization that outdoor air pollution accounts for about 2% of all heart and respiratory diseases, 5% of all lung tumours, and about 1% of all chest infections worldwide. For many developing economies such as India, this is an evolutionary era, so there is a powerful call for equilibrium to be struck between industrial development and physical environment to decrease pollution (Bhandari et.al, 2015). While India modernised its industries in a variety of fields, including agriculture, manufacturing, iron ore, coal, wood, bottling

plants, cars, gas and chemicals, what went unnoticed was the degradation of the atmosphere and the long-term threat to people's life span and the flora and fauna in the industrialised belt. Bio-system destruction, accelerated extinction of rare animal species, fast depletion of natural resources, and deforestation are numerous evils accompanying the so-called 'Noble Industrialization'. Industries are thriving across India mainly because of easy land accessibility and absence of awareness among local residents due to lenient or non-environmental legislation in the region (Singh, 1989). With this burgeoning proliferation of industries, there is an array of multiple, complicated and varied threats to the environment and living beings (Jimmy, 2015). This issue requires distinctive and tailor-made antidotes to prevent further deterioration of natural resources, ecosystem and human life.

RESEARCH GAP

Based on the literature review, it is noted that there were only a few studies in India and even fewer in Tamil Nadu, but no studies in Ranipet region, namely Puliyanakannu and Karai, where research was undertaken for this study. Identifying this gap, the investigator chose to identify and address the problems caused by industrial growth and development in Puliyanakannu and Karai regions of Ranipet.

STATEMENT OF THE PROBLEM

Environment is a natural world in which people, animals and plants live. Nature has been kind to mankind. But there are limits to nature's response. In its retrieval powers, it is very fragile and finite. It cannot withstand thoughtless depredations, and humankind must learn to respect the laws of nature and live within its limits. This study uses an ecocritical approach to identify the environmental concerns facing the residents of Ranipet in Tamil Nadu as a result of industrial development in the area.

RESEARCH OBJECTIVES

1. To study the respondents' population profile in the Ranipet area, primarily in the region of Puliyanakannu and Karai of Vellore district in Tamil Nadu.
2. Identify the effects and problems the community faces due to industrial growth and development and find remedies.
3. Suggest new policy initiatives that can help reduce the adverse effects of industrialisation.

RESEARCH METHODOLOGY

This is an empirical study in which survey method is adopted. The primary data was acquired from books, publications, articles, newspapers and websites from the structured questionnaire and secondary data. For this research, convenient sampling method was used and the focus was more on the effects, issues and remedies that could be considered for further research. The approximate sample size is 50. The questionnaire consisted of five questions with two questions consisting of 'yes or no' responses and the other three questions requiring further assessment of the grade scale. The analytical instrument used for this research is percentage method alone.

ANALYSIS AND INTERPRETATION

This table is an analysis of the collected responses from Ranipet region of Puliyanakannu and Karai, Tamil Nadu, India. It is presented in a grade scale (strongly agree, agree, neutral, disagree, and strongly disagree) with respective percentages.

The above table shows that most participants strongly agree that the presence of industries will harm the environment in their respective areas of residence. Nearly 40% believe Ranipet will eventually be destroyed, while 34% agree degradation of environment by industries cause disharmony in the world. However, 16% of respondents took a neutral stand as industries give them employment even though the work affects their health. A total of 10% of participants disagreed with the claim that industries do not harm the environment in any manner. The high living standards in their area were

brought about by the manufacturing boom in Ranipet according to 60% of the respondents. About 20% of participants agree that industrial growth led to an improvement in the standard of living. However, 5% of participants took a neutral stand on the matter and another 5% disagreed with the view, which suggests that they are really concerned about the adverse impact of industries on the environment.

Bird migration is another issue of this particular region. Close to 50% of participants firmly agree that birds migrate from Ranipet because of the presence of industries. The study has observed that bird migration started after industrial development began, putting an end to bird watching in the region. About 40% agree that birds are disappearing because of pollutants in the air, while 10% took a neutral stand and said there are still some birds in the region, but have reduced in number over the past few years. Another significant problem that was raised was that about 70% participants firmly agree that the number of trees have come down in Ranipet and 30% agree industrial development destroys the entire ecosystem. Approximately 64% of participants observed that animals are slowly disappearing and spread of chemicals is leading to the death of cats, dogs, pigs, cows, chicks, and ducks. About 20% agree that animal cruelty is also common in the industrial area, while 16% took a neutral stand. The main problem for the people was lack of pure drinking water. Nearly, 90% strongly agree that they don't have sufficient drinking water. Contaminated water is used for basic needs, creating a health hazard. Coloured water is found in bore wells and 10% agree that drinking water will not be accessible as industries pollute lakes, wells, and rivers. The growth of industries led to enormous loss in agricultural production and 80% of respondents strongly agree with the impact. It led to drying up of crop lands and farmers stopping the cultivation of crops. About 12% agree that people are moving away from farming and searching for other avenues of work to take care of their families. However, 8% of the participants took the neutral stand that work in industries provided more money than farming.

Health is the main issue faced or thought about by the individuals in the region every day. About 94% respondents strongly agree that the growth of industries has led to a health crisis, while 6% agree that there are significant health issues in the region. Most of the health risks are occupational hazards owing to work in the industries. About 64% highly agree that soil fertility has reduced and 24% agree that soil pollution has increased in Ranipet. However, 12% took a neutral stand on the issue.

Some remedies to these issues need to be taken into account. About 60% of participants highly agree that the government needs to address the issue of pollution in Ranipet and implement schemes for people's welfare. Nearly 30% agree that the state must take up with the industries the effects of ecological degradation on the environment to prevent disasters in the area. About 10% of participants took a neutral stance that governments will come and go and action will be taken only in times of crisis. Different NGOs (international or national) could take a significant step in creating awareness. Around 50% firmly agree that such NGOs need to take steps to address their problems. About 40% agree that such organisations must communicate the message to the public and make it a matter of concern so that such economic disasters can be halted in future. However, 10% participants took a neutral stand that NGOs just try to resolve the problem to a point and don't really address it. The common people must certainly rise up to this scenario. Approximately 70% of participants firmly agree that residents of the region should raise the issue with authorities, while 30% agree that the community must unite and bring the environmental problem to the world's notice.

RECOMMENDATIONS

Strategic thinking is needed to address the environmental impacts of industrial development. Eco-industrial network design offers feasible alternatives for moving towards a sustainable environment. However, a supporting infrastructure base will be needed to provide an environment for Industrial Symbiosis (IS) to flourish (Patnaik, 2015). Industry would need a ideal mix of incentives, regulations, mechanisms of control, information and other facilities for infrastructure. Industrial diversity, continuous waste manufacturing, current job environment motivation, government readiness, industry-friendly incentives/subsidies, enormous industrial sector investment, excellent transportation access, proximity to industrial members, local education / expertise offers opportunities to apply IE principles effectively. These all develop a supportive environment in this region based on the exchange of products and by-products to generate eco-industrial parks.

CONCLUSION

Rampant industrialisation and urbanisation put pressure on natural resources and trigger environmental degradation to varying degrees. Initiatives are needed to guarantee industrialisation is viable, both in terms of taking action to avoid environmental harm and encouraging more eco-friendly sectors (Abbasi, et.al, 2002). As a vibrant attitude to preserving the region's natural resources, a transformation of the sectors into an eco-industrial network should arise. Crucial lessons learnt from Ranipet can serve as a useful basis for developing strategic action in fields with comparable environmental issues. A thorough evaluation of local environmental conditions and strategies can solve problems by modifying or introducing adequate approaches and completing the missing components of related policies to strengthen feasible industrialisation.

REFERENCES

1. Abbasi, S.A., Ramesh, N., & Chari, K.B. 2002. Studies on Environmental Management of Pondicherry: The Water and Air Resources. Journal of the Institution of Public Health Engineers, pp.320-24.
2. Agrawal, Arun. 2005. "Environmentality". Current Anthropology, 46, No. 2: 161-190.
3. Banerjee, S.B. 1998. Corporate Environmentalism: Perspectives from Organizational Learning Management Learning, pp.147-64.
4. Bhatnagar, Rakesh. 2015, March. Ranipet Among World's Top Ten Polluted Cities. DNA Newspaper, Retrieved from <https://www.dnaindia.com/india/report-ranipet-among-world-s-top-ten-polluted-cities-1087070>.
5. Buljan, J., Ludvik, J., & Reich, G. 2000. Mass Balance in Leather Processing. United Nation Industrial Development Organization, Industrial sectors and Environment, pp. 24-27.
6. Chandan, Roy. 2012. A Study on Environmental Compliance of Indian Leather Industry & Its Far-Reaching Impact on Leather Exports. Munich Personal, RePEc Archive: XLVII, pp. 3-36.
7. Chertow, M. 2000. Industrial symbiosis: literature and taxonomy Annual Review of Energy and Environment, pp. 313-37.
8. Chiu, ASF. & Yong, G. 2004. On the Industrial Ecology Potential in Asian Developing Countries. Journal of Cleaner Production, pp. 1037-45
9. Garrard, Greg. 2012. Ecocriticism. The New Critical Idiom, Routledge Publication, 2nd Edition, London.
10. GSI. (ed). 2000. Geology and Mineral Resources of Tamil Nadu. GSI Miscellaneous Publication, no.30, part VII, 2nd revised, pp. 91.
11. Gupta, P.K. 1988. Pesticides in the Indian Environment. Interprint Publishers, New Delhi.
12. Jimmy, N.B. 2015. Ecocritical Approach to Literary Text Interpretation. International Journal of Innovation and Scientific Research, ISSN 2351-8014 Vol. 18, No. 2 Oct, pp. 369-378.
13. Kelly, M.H. 1990. Global Warming. In: Leggett. J. (Ed.). Global Warming, the Green Peace Report. Oxford University Press, London, pp. 83-112.
14. M., Serena Josephine. 2017, February. The Groundwater Beneath their Feet. The Hindu Newspaper, Retrieved from <https://www.thehindu.com/news/national/the-groundwater-beneath-their-feet/article17321183.ece>.
15. Mall, R. K., Attri, S. D., & Kumar, Santhosh. 2011. Extreme Weather Events and Climate Change Policy in India. Journal of South Asia Disaster Studies, Volume 4, No.2, December.
16. Pandve, H.T. 2008. "Environmental Sanitation: An Ignored Issue in India". Indian Journal of Occupational & Environment Medicine, 12, No.1: 40.
17. Patel, M.K. 1994. In: Environmental Pollution: Impact of Technology on Quality of Life. Malabika Ray (ed.). Today and Tomorrow's Printers & Publishers, New Delhi.
18. Patnaik, R. & Poyyamoli, G. 2015. Developing an Eco-Industrial Park in Puducherry Region India – a SWOT analysis. Journal of Environmental Planning and Management, pp. 976-96.
19. Singh, K.M. 1989. Problem and Prospects of Environmental Pollution in India. Mittal Publications, New Delhi, pp. 12-31.
20. Singh, Poonam K., & Dhiman, Ramesh C. 2012. Climate Change and Human Health: Indian context. J Vector Borne, pp. 55-60.
21. Sivakumar, R. 2019, April. Chromium Effluents Cause of Concern to People of Arakkonam Constituency. The New Indian Express, Retrieved from <http://www.newindianexpress.com/states/tamilnadu/2019/apr/06/chromium-effluents-a-cause-of-concern-to-people-of-arakkonam-constituency-1960704.html>.
22. Somanathan E., & Somanathan, Rohini. 2009. Climate Change: Challenges Facing India's Poor. Economic & Political Weekly EPW, Vol XLiv, No. 31.
23. Tamil Nadu Pollution Control Board. 2010. Revised Action Plan for Critically Polluted Area, Ranipet, TNPCB, pp. 14-30.

Sl. No	Categories		Grade Scale with Percentage (%)				
			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Effects	Environment	40	34	16	10	0
		Sustainability	60	20	10	10	0
2	Problems	Bird Migration	50	40	10	0	0
		Shortage of Trees	70	30	0	0	0
		Animal Cruelty	64	20	16	0	0
		Drinking Water	90	10	0	0	0
		Agricultural Loss	80	12	8	0	0
		Health Issues	94	6	0	0	0
		Soil Pollution	64	24	12	0	0
3	Remedies	Government	60	30	10	0	0
		NGOs	50	40	10	0	0
		Common People	70	30	0	0	0

Table 1: Grade Scale with Percentages of the response