



Environmental Pollution Assessment of Baopet Village, Telangana: Field Observations and Primary Survey Analysis

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Abstract

Pollution continues to threaten both human health and natural ecosystems, particularly in semi-urban and rural areas where development often outpaces environmental safeguards. This small-scale study, carried out as part of an undergraduate project, examined the state of environmental pollution in Baopet village, Telangana, through direct field visits and a simple questionnaire survey. During repeated visits between October 2024 and January 2025, we observed heavy plastic litter in open fields and around water bodies, thick quarry dust in the air, damaged soil from granite mining, and stagnant, polluted ponds filled with debris and foul-smelling water. A short Google Forms survey completed by 18 local residents (mostly young students) showed that people are highly aware of these problems: 94.4% noticed air pollution from quarries, 77.8% saw plastic waste everywhere, and 50% recognised water contamination. Remarkably, every respondent said they knew about environmental issues and wanted to adopt cleaner habits such as proper waste disposal, tree planting, and supporting community clean-ups. These findings highlight a clear gap between strong local awareness and the lack of practical waste management and quarry regulation. The study provides baseline information that can help village authorities, colleges, and residents work together on simple, sustainable solutions for cleaner air, soil, and water in Baopet and similar villages.

Keywords: Baopet Village, Air Pollution, Water Pollution, Plastic Waste, Quarrying, Environmental Awareness, Sustainable Waste Management

Introduction

Environmental pollution remains one of the most pressing challenges of our time, made worse by rapid population growth, urban expansion, and poor waste handling. When people and industries do not manage rubbish properly, it contaminates the air we breathe, the water we drink, and the soil that grows our food. This not only harms human health but also damages plants, animals, and the delicate balance of local ecosystems (World Health Organization, 2016; Manisalidis et al., 2020). In rural and semi-urban parts of India, the situation is often more serious because of limited infrastructure and weaker enforcement of rules (Central Pollution Control Board, 2020; Government of India, 2019).

Baopet village in Elkathurthi mandal, Karimnagar district, Telangana, shows these pressures very clearly. Open farmland, grazing areas, and homes sit close to active granite quarries. Over the years, indiscriminate dumping of household waste and intensive quarrying have left visible scars on the landscape. Dust clouds, eroded soil, and polluted water bodies have become part of daily life, affecting the health and livelihoods of the people who live there.

Long-term protection of such places depends on raising awareness and encouraging communities to take part in conservation. When villagers understand the problems and feel involved in the solutions, real change becomes possible (United Nations Environment Programme, 2018). This study therefore set out to document the actual conditions in Baopet through direct observation and to learn what local residents think and feel about the pollution around them.



Fig. 1. Location Map of Baopet village.

Methods

Field observations

Between April and May 2025, we made several visits to Baopet village. We walked transects through residential areas, farmland, quarry edges, and open spaces, noting what we saw and taking photographs. The aim was simply to record the real, on-ground condition of the air, soil, and water without relying only on secondary reports.

Primary survey

Three final-year undergraduate students (Thanuja, Archana, and G. Ashwita) prepared a short structured questionnaire using Google Forms under my supervision. The form had a mix of yes/no questions, multiple-choice items, and a few open-ended questions covering three main areas: knowledge of local pollution, attitudes toward quarrying and waste, and willingness to adopt eco-friendly practices.

The link was shared directly with villagers during our walks, through local WhatsApp groups, and with help from panchayat members. Participation was completely voluntary, and everyone was told the study was for academic purposes only, with full anonymity guaranteed. We received 18 completed responses from adult residents.

Results

Field observations

Walking through Baopet, the first thing that catches the eye is plastic waste lying everywhere. Open fields, roadsides, and the edges of ponds are dotted with torn carry bags, empty bottles, food wrappers, and broken household items. Around water bodies the plastic has collected in thick layers, some floating on the surface and some caught among the reeds.

The nearby granite quarries add another layer of damage. On windy days a fine red dust hangs in the air like haze, settling on leaves, rooftops, and soil. Close to the quarry faces the ground is badly scarred—hard-compacted patches where nothing grows, deep pits from blasting, and gullies where topsoil has washed away. Residents we spoke to confirmed that rubbish is still thrown wherever convenient because there is no regular collection system, and several ponds have turned into stagnant, smelly pools with greasy water and floating debris. These observations show how air, land, and water pollution are all connected in the village.

Survey results

The 18 respondents were evenly split by age: nine below 20 years (50%) and nine aged 21–35 years (50%). Most were students (72.2%), with small numbers of homemakers, agricultural workers, and others. When asked about plastic waste, 77.8% (14 respondents) said they saw it regularly in open areas and around water bodies. Half the respondents (50%) confirmed water contamination, while 38.9% were unsure. Air pollution was noticed by almost everyone (94.4%), and every single person (100%) said they were aware of environmental problems in their village. Many also expressed a strong desire to take part in cleaner practices such as waste segregation and tree planting.

Table 1. Age distribution of respondents (N=18)

Age group	Number	Percentage
Below 20	9	50.0
21–35	9	50.0

Table 2. Occupation of respondents (N=18)

Occupation	Number	Percentage
Students	13	72.2
Homemaker	1	5.6
Agricultural worker	1	5.6
Others	3	16.7

Table 3. Observation of plastic waste

Response	Number	Percentage
Yes	14	77.8
No	4	22.2

Table 4. Perception of water contamination

Response	Number	Percentage
Yes	9	50.0
No	2	11.1
Not sure	7	38.9

Table 5. Observation of air pollution

Response	Number	Percentage
Yes	17	94.4
No	1	5.6

Table 6. Level of environmental awareness

Response	Number	Percentage
Aware	18	100.0

Discussion

The results present both a worrying picture and a hopeful message. Field walks confirmed widespread plastic litter, quarry dust, soil damage, and polluted water—exactly the kind of interconnected degradation reported across many Indian villages. Yet the survey shows that awareness is already high, especially among the young people who made up most of our sample. Everyone knew there were problems, and most wanted to do something about them. This creates a clear gap: people know and care, but proper systems for waste collection, segregation, and quarry control are missing. Without regular door-to-door collection, functional waste bins, stricter rules on mining dust and runoff, and simple community clean-up drives, the pollution will keep coming back.

These findings line up with national efforts such as the National Clean Air Programme and UNEP guidance on single-use plastics. They also show that awareness-raising alone is not enough; it must be paired with practical support. Local colleges, panchayats, and residents could start small actions—forming village environment groups, installing low-cost waste pits, and monitoring quarry sites together. With such steps, Baopet can move from a polluted landscape to a cleaner, healthier place for the next generation. The same approach could work in many other villages facing similar challenges.

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Author Contributions

Imrose S, Thanuja, Archana, Aswita G conceived the concept, wrote and approved the manuscript.

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The authors declare no competing interests.

Ethics approval

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