



Indira Priyadarshini Govt. Degree College for Women (A)

Nampally, Hyderabad

(Reaccredited with 'A' Grade by NAAC)

**Certificate**

This is to certify that Ms. **KUNTIGORLA KAVYA**, B.Sc. III Year has successfully completed the study project titled **WASTE WATER TREATMENT AND REUSE IN URBAN AGRICULTURE EXPLORING THE FOOD, WATER, AND AND HEALTH IN HYDERABAD, INDIA** under my guidance for the academic year 2022-23.

Mrs. Geethanjali Asst. professor of Biotechnology Indira Priyadarshini govt. degree college, Nampally, Hyderabad	Mrs. K. Shanthi Asst. professor of Biotechnology Indira Priyadarshini govt. degree college, Nampally, Hyderabad	Principal Indira Priyadarshini govt. degree college, Nampally, Hyderabad <b>PRINCIPAL</b> Indira Priyadarshini Govt. Degree College for Women Nampally, Hyderabad
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# WASTE WATER TREATMENT AND REUSE IN URBAN AGRICULTURE

## EXPLORING THE FOOD, ENERGY, WATER, AND HEALTH IN HYDERABAD, INDIA

### ABSTRACT

Nutrients and water found in domestic treated wastewater are valuable and can be reutilized in Urban agriculture as a potential strategy to provide communities with access to fresh produce. In This paper, this proposition is examined by conducting a field study in the rapidly developing city Of Hyderabad, India. Urban agriculture trade-offs in water use, energy use and GHG emissions, Nutrient uptake, and crop pathogen quality are evaluated, and irrigation waters of varying Qualities (treated wastewater, versus untreated water and groundwater) are compared. The results Are counter-intuitive, and illustrate potential synergies and key constraints relating to the Food–energy–water–health (FEW–health) nexus in developing cities. First, when the impact of GHG emissions from untreated wastewater diluted in surface streams is compared with the life Cycle assessment of wastewater treatment with reuse in agriculture, the treatment-plus-reuse case Yields a 33% reduction in life cycle system-wide GHG emissions. Second, despite water cycling Benefits in urban agriculture, only <1% of the nutrients are able to be captured in urban Agriculture, limited by the small proportion of effluent divertible to urban agriculture due to land Constraints. Thus, water treatment plus reuse in urban farms can enhance GHG mitigation and also directly save groundwater; however, very large amounts of land are needed to extract Nutrients from dilute effluents. Third, although energy use for wastewater treatment results in Pathogen indicator organism concentrations in irrigation water to be reduced by 99.9%



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### Certificate

This is to certify that Ms. RANI PURI, B.Sc III Year has successfully completed the study project titled *To assess the different means of Soil pollution and mitigation measures*

under my guidance for the academic year 2022-23.

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# ***TO ASSESS THE DIFFERENT MEANS OF SOIL POLLUTION AND MITIGATION MEASURES***

## **Abstract:**

Soil pollution is a significant environmental issue that can have negative impacts on human health, ecosystems, and biodiversity. This literature review examines the causes and sources of soil pollution, the health and environmental risks associated with soil pollution, and the various management and remediation strategies that can be employed to address this issue. The review highlights the need for effective regulations and management practices to prevent or mitigate soil pollution, and for more interdisciplinary and cross-sectoral approaches to addressing this complex and multifaceted environmental issue. Education and public awareness-raising campaigns are also identified as important for promoting sustainable soil use and management, and for engaging communities in efforts to prevent and mitigate soil pollution.

## **Introduction to soil pollution:**

Soil pollution is the presence of toxic substances in the soil that have a negative impact on the environment and human health. Soil pollution can be caused by a variety of human activities, including industrial activities, agricultural practices, waste disposal, and mining.

Toxic substances that can contaminate the soil include heavy metals, pesticides, herbicides, fertilizers, and industrial chemicals. These substances can seep into the soil and become concentrated over time, leading to long-term environmental damage and health risks. Soil pollution can have a range of negative effects, including reduced soil fertility, decreased plant growth, contamination of groundwater, and negative impacts on wildlife. It can also pose a significant risk to human health, as toxic substances in the soil can enter the food chain and be consumed by people.

Preventing soil pollution is important for protecting the environment and public health. This can be achieved through responsible waste management, sustainable agricultural practices, and the





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*This is to certify that Ms. B.NANDHINI, B.Sc III Year has successfully completed the study project*

*titled : Bio Remediation of Environmental Pollutants*

*under my*

*guidance for the academic year 2022-23.*

  
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## *Bio Remediation of Environmental Pollutants*

### **ABSTRACT**

*This chapter describes how pollutants are increasing in the environment due to the rapid industrialization all over the world. The environment has been contaminated with large number of organic and inorganic pollutants. The organic pollutants are largely anthropogenic and are introduced to the environment in many ways. Soil contamination with toxic metals, such as Cd, Pb, Cr, Zn, Ni, etc., as a result of worldwide industrialization has increased noticeably within the past few years. Bioremediation is a process for reclaiming the environment which has been polluted with the help of living forms. It is an option that offers the possibility to destroy various contaminants using natural biological activity and to degrade the environmental contaminants into less toxic forms. It is also applicable for the heavy metal hazards. It has proven to be cheap and efficient than other techniques. This chapter focuses on the possible trends in the remediation of environment pollutants with the help of plants as well as microbes.*

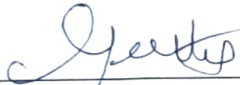

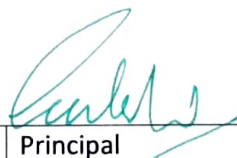
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**Certificate**

This is to certify that Ms.PITLA ASHWITHA , B.Sc. III Year has successfully completed the study project titled

**HEALTH ISSUES CAUSED DUE TO POLLUTION HYDERABAD,INDIA**

under my guidance for the academic year 2022-23.

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# HEALTH ISSUES THAT ARE CAUSED DUE TO POLLUTION

## ABSTRACT

Pollution is the introduction of contaminants into the natural environment that cause adverse change.[1] Pollution can take the form of any substance (solid, liquid, or gas) or energy (such as radioactivity, heat, sound, or light). Pollutants, the components of pollution, can be either foreign substances/energies or naturally occurring contaminants.

### Litter on the coast of Guyana

Although environmental pollution can be caused by natural events, the word pollution generally implies that the contaminants have an anthropogenic source – that is, a source created by human activities, such as manufacturing, extractive industries, poor waste management, transportation or agriculture. Pollution is often classed as point source (coming from a highly concentrated specific site, such as a factory or mine) or nonpoint source pollution (coming from a widespread distributed sources, such as microplastics or agricultural runoff).

Many sources of pollution were unregulated parts of industrialization during the 19th and 20th centuries until the emergence of environmental regulation and pollution policy in the later half of the 20th century. Sites where historically polluting industries released persistent pollutants may have legacy pollution long after the source of the pollution is stopped. Major forms of pollution include air pollution, light pollution, litter, noise pollution, plastic pollution, soil