

## PROVISION OF POTABLE WATER AND EARLY WARNING FOR FLOODING AND POLLUTION IN MAKOKO EEGUN COMMUNITY OF LAGOS, NIGERIA

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### Introduction

Makoko Eegun, community, Lagos, Nigeria, relies on groundwater for drinking and livelihoods but faces pollution from industrial activities, waste, and runoff, causing contamination and health risks. The community is vulnerable to flooding from heavy rains and sea-level rise (Martins and Mafimisebi, 2024). The project aims to improve water quality through testing, treatment, and infrastructure development, as well as community training and early flood warnings. These efforts seek to ensure access to safe water, enhance sanitation, and build resilience against environmental hazards, supporting sustainable growth and public health in this low-lying coastal community.

### Objectives

- Improve water quality supply in Makoko-Eegun community.
- Enhance environmental management practices, and develop mitigation and adaptation strategies for water pollution and flooding risks.
- Increase public awareness and education on waterborne diseases and sanitation.
- Drill monitoring wells and potable boreholes, and Perform pre-treatment water quality assessments.
- Install water treatment plants and analyze post-treatment water quality, and establish reliable sources of clean water

### Methodology

The community and stakeholders were sensitized on the goal and objectives of the project and training before drilling one 165-foot potable borehole and three 132-foot monitoring boreholes based on geophysical investigations. Water samples from these boreholes were analyzed for physicochemical, microbiological, heavy metals, and organic pollutants to assess water quality. Additionally, early flood monitoring was implemented using water level indicators and alert beepers to enhance early warning capabilities and ensure community safety during flooding.

### Results and Discussions

The project has had a remarkable environmental protection and restoration result of access to potable water with over 50% of the community now has safe drinking water due to new boreholes and advanced water treatment system

The installation of a comprehensive water treatment plant with Reverse Osmosis system (1,500 LPH). Flood Resilience in the community through youth training on early flood warnings using automatic water level cables. Improvement in Public Health through Awareness workshops leading to better hygiene and reduced pollution and introduction of circular economy practices especially for plastic waste.

The setup of WHO standard water factory and delivery van as provision source of alternate livelihood through the sales of water

### Conclusion and Future Work

Makoko community have a potable water without microbiological contaminants that pose health risks to the pre-treated groundwater in the environment. The vulnerable community have hope of a better environmental protection and climate resilience. However, there is need for continues monitoring of the boreholes, education and training to sustainable this noble project.

### References

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**Fig. 1: Provision of potable borehole, Water level indicator, and alert beeper for flooding monitoring, sensitisation , water treatment plant to the community with renewable energy**