



The " **JIV** (Joint International Venture) for Microbial Analysis of Water Samples with Geo-Mapping" is a collaborative research project initiated by the Shivaji Science Innovation and Incubation Centre. This innovative project brings together institutions from multiple countries, including India, Congo, Zimbabwe, Uganda, Kenya, and Nigeria. The primary objective of this project is to assess and analyze the microbial quality of water from various sources, taking into account the geographical locations of these sources. The project leverages cutting-edge technology, including a specialized mobile phone application, to collect, analyze, and map the results for the benefit of local communities and environmental management.

Team

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3. **Prof Martha Kiarie** of Daystar University Nairobi, Kenya.
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6. **Prof. Joseph Hawumba** ,Biochemistry, Makerere University Uganda.

Project Objectives:

1. Microbial Analysis: The project aims to conduct a comprehensive microbial analysis of water samples collected from diverse sources in the participating countries. This analysis will help in identifying potential waterborne contaminants and assessing the overall water quality.

2. Geo-Mapping: Geo-mapping is a critical component of the project. The goal is to accurately map the geographical location of each water source. Geo-mapping will provide crucial insights into the spatial distribution of water quality and allow for more effective resource management.

3. Collaboration: Fostering international collaboration among institutions is a significant objective. This project will encourage knowledge sharing, expertise exchange, and the development of a global network of experts in the field of water quality analysis.

4. Community Impact: Ultimately, the project intends to use the collected data to benefit the communities surrounding these water sources. The mapped results will serve as a valuable resource for decision-makers and local communities to make informed choices regarding water usage and safety.

5. Advanced Microbial Analysis Kit – Development of an advanced microbial analysis kit for the analysis of water samples for various stakeholders. As a Consultancy project.

6. Collaborative Programs - Arrangement of various virtual events for UG and PG students like MCQ, online lectures.

Methodology:

1. Sample Collection: Students and researchers from participating institutions will collect water samples from various sources based on their geographical location. These sources could include rivers, lakes, wells, and community water supply systems.

2. Microbial Analysis: The collected water samples will undergo thorough microbial analysis in state-of-the-art laboratories. Advanced testing techniques will be employed to identify and quantify microorganisms in the water.

3. Geo-Mapping: Geographic coordinates of the sample collection sites will be recorded using GPS technology. This information will be used to create a comprehensive geo-mapping database.

4. Mobile Application: A custom mobile application will be developed for data collection and real-time input of analysis results. This application will enable the seamless integration of the microbial analysis data into a centralized platform.

5. Data Integration: The analysis results will be integrated into Google Maps, providing a user-friendly interface for accessing and visualizing the data. Users, including community members and decision-makers, will be able to access this information easily.

Expected Outcomes:

1. A comprehensive database of water quality analysis results.
2. Geo-mapping of water sources across multiple countries.
3. Enhanced collaboration among international institutions.
4. Empowerment of local communities with access to water quality information.
5. Informed decision-making for water resource management.

Conclusion:

The " JIV (Joint International Venture) for Microbial Analysis of Water Samples with Geo-Mapping" is a groundbreaking project that exemplifies international cooperation in the pursuit of safe and clean water resources. By leveraging advanced technology, the project aims to address water quality challenges in multiple countries, ultimately improving the quality of life for countless individuals. Through this collaboration, we

aspire to set a precedent for future endeavors that bridge borders and knowledge gaps for the betterment of our global community.