Water Quality TEST

Technology **E**nabled **S**ensing and **T**reatment of water

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Grant: NE/R003106/1

Project partners

UK

India

Project funders

- Part of an Indo-UK £4.2 million initiative
- 8 projects
- UK government (RCUK: NERC and EPSRC)
- Indian government (DST)
- Newton-Bhabha Fund

Project Overview:
Solutions for problems

UK lead

To **implement sensors for biological contamination** in freshwater sources.

To **implement 'off-grid' treatment technology** for production of drinking water in freshwater catchments.

India lead

To **develop sensors for chemical water pollutants (EDCs)** in urban and rural aquatic environments.

To **develop bioreactor-based processes for the remediation of EDCs** in wastewaters and/or industrial effluents to reduce chemical burden in freshwater systems.

UK led project scope

Trial novel water quality sensors within India waters for the detection of biological contamination events

Develop, trial and optimise small-scale off-grid WTS with novel biocide to provide biologically clean drinking water

Engage with end users via outreach programmes

Indo-UK collaboration

This project will **develop and implement robust technology platforms capable of delivering improved water quality**, through real-world application.

Co-creation of solutions to tackle existing and emerging water quality problems by bringing together interdisciplinary expertise.

Knowledge and skill transfer between Indian and UK researchers, via international exchange **secondments**, and **industrial partnerships**.

Work together with **NGOs and communities** to assess the real world **application and IMPACT** of the technologies.

Key research successes to date

- Development of novel water quality sensors for deployment in Kolkata, West Bengal.

Key research successes to date

- Sensor deployment along the length of the Indian Ganga, from Devprayag (Uttarakhand) to Noorpur (West Bengal), as part of a wider water quality monitoring program in collaboration with other Indo-UK projects: CHANSE; FAR-GANGA & 100 plastic rivers.







Key research successes to date

- Successful UK trial of community-scale drinking water treatment platform, which has so far produced over 2 million litres of UK standard drinking water from a heavily contaminated surface water.

Research successes to date

- Development of prototype water treatment technology designed for use in stored waters, such as rain water harvesting tanks. This household/village-scale technology is being tested in the UK and optimised for deployment in India.

Research successes to date

- Identification of suitable locations for drinking water treatment technologies, in partnership with Frank Water and their Indian NGO partner Bala Vikasa.

Future project plans

- Deploy a network of water quality sensors in the UK, and develop a portable sensor network for further UK and India deployments.
- Ship household/village-scale treatment technology to India for installation in Warangal district, Telengana. Design a monitoring program to assess the technology with Bala Vikasa and Frank Water.
- Continue to test, optimise and refine the community-scale treatment platform in the UK, ready for deployment in India.

Project coverage

- https://www.bbc.co.uk/programmes/p07vktmg
- https://info.uwe.ac.uk/news/uwenews/news.aspx?id=3995
- https://environmentjournal.online/articles/water-filtration-system-could-provide-clean-water-to-over-a-billion-people/
- https://www.thewaterreport.co.uk/post/2019/12/07/the-potable-in-portable
- https://www.gwf-wasser.de/en/up-to-date/products-solutions/08-01-2020-drinking-water-production-in-a-compact-and-fast-portable-system/
- https://www.theepochtimes.com/uk-scientists-develop-machine-to-purify-dirty-water-into-drinking-water-in-minutes_3186021.html