# Citizen Dashboard on Bangalore's Lakes

Ashoka Trust for Research in Ecology and the Environment, Bengaluru, India

## About the Project

The Citizen Lakes Dashboard Project is a joint project undertaken by ATREE, Yuktix Technologies and Biome Environmental Solutions. The objective is to create an open source platform on lake data that can inform citizens groups on how much water is actually entering and leaving lakes and real-time information on lake water quality.

## Context on Urban Lakes

Bengaluru city is growing at an unprecedented rate and has experienced rapid urbanization. Consequently, our lakes have filled up with sewage, which poses a public health hazard. Rejuvenation of lakes has been promoted as an effective idea, as lakes can become receptacles of stormwater and treated wastewater. Thus urban lakes can potentially act as decentralized supply, storage and recharge structures, a useful alternative to expensive water supply schemes that bring water from great distances such as from the Cauvery.

Historically, lakes were used as drinking water (and irrigation) sources but now they have been severely degraded due to a multitude of reasons; inflow of untreated domestic wastewater, industrial effluents, idol immersion etc. The results are a deterioration of water quality, increased sedimentation, decreased aquatic biodiversity, and a loss of aesthetic value and urban appeal from a tourism point of view. There are currently strong citizen movements around lakes on Bangalore and citizen groups have been appointed trustees of many lakes.

## Diagnosis of the problem

There is no single source of useful, verified information on Bangalore's lakes and several agencies are involved in their protection and management. For decisions makers as well as citizens such fragmentation is a hindrance towards lake management. In the past, lakes were seen purely from a aesthetic lens. Now, citizen groups are well aware of threats to water supply sustainability, increasing groundwater depletion and health hazards posed by polluted lakes. Formally, 'lake watchdog' committees have been constituted by government agencies to solicit citizen involvement. This transition in lakes role and management often does not have reliable scientific data and collated information to base decisions upon.
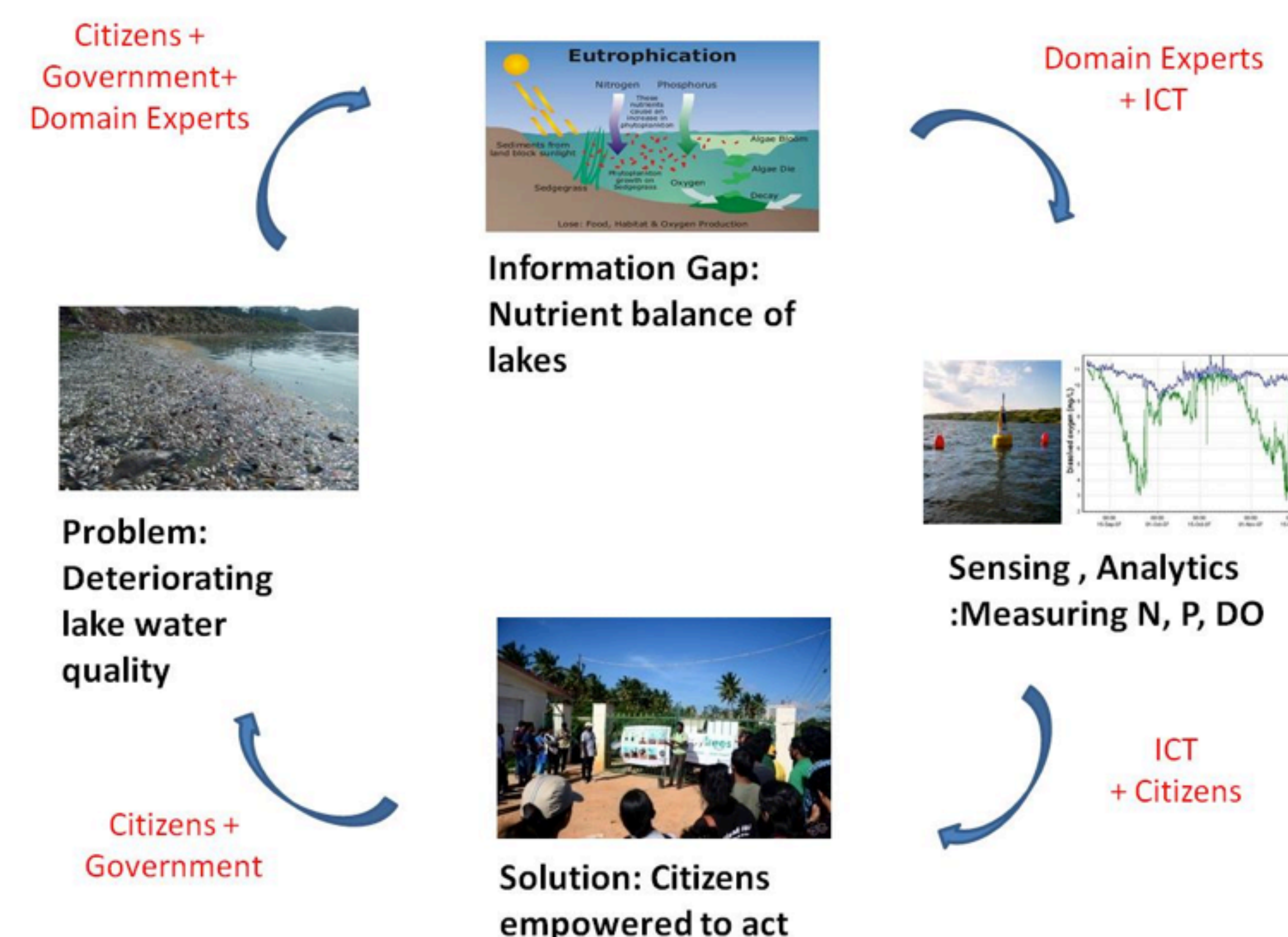


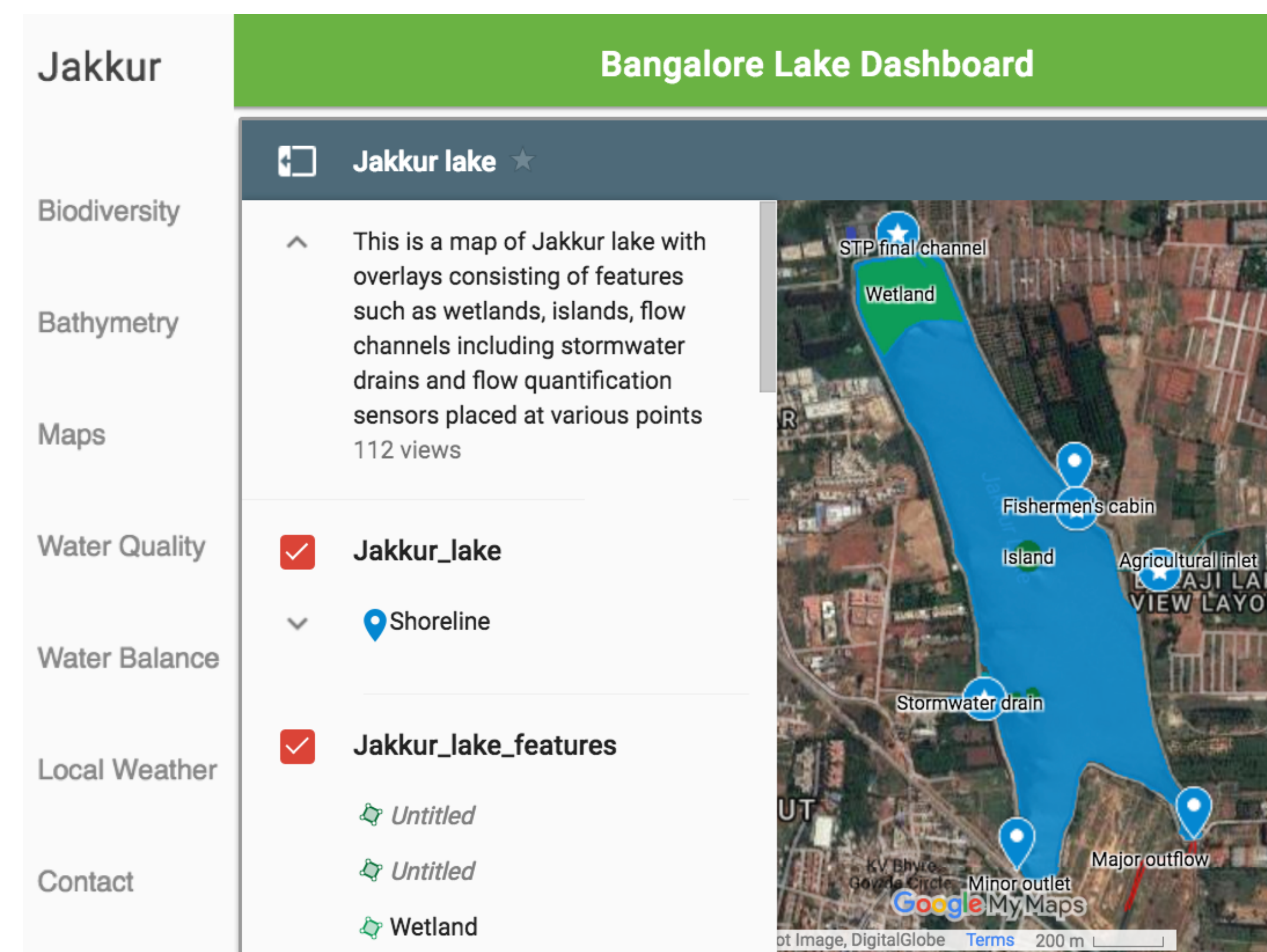Figure 1: Schematic illustrating role of dashboard



Figure 2: Sample view of Citizen Dashboard

## Why a Citizen Dashboard?

Relative proportions of stormwater and sewage entering lakes, which has a bearing on the quantum of Oxygen and thereby, the health of aquatic life in the lake are unknown. Fish kills are frequent, their cause is not often clear, and it is not known to what degree nutrient inflows are mitigated by constructed wetlands. These information gaps on lakes necessitate continuous monitoring.

Manual water sampling exercises reveal significant diurnal variation in lake dissolved oxygen levels as low as 0-5 mg/l in the early hours of the morning and as high as 25 mg/l during the day (when algae in the lake photosynthesize). Low-cost monitoring kits can be used in citizen monitoring initiatives for Nitrogen and Phosphorous. Information on all these parameters collected by various groups once presented in an open data dashboard format can allow citizens to use scientific data and validated information on lakes to support different interventions and specific cases for lake management.

## How can citizens engage?

- Be a citizen scientist!
- Connect with your lake group!

## ACKNOWLEDGEMENTS

Members involved in Citizen Dashboard

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