

ABSTRACT

Pollution of inland waters is a pressing environmental problem caused by human activities, such as industrial, domestic and agricultural waste. In Bogor Regency, out of 101 identified lakes, 23 are impaired, indicating that water conditions are deteriorating. To address this, an effective monitoring system is needed, one of which is through crowdsourcing technology that involves community participation. Crowdsourcing-based Android applications can be an innovative solution in real-time water quality monitoring. With location-based reporting, image recognition, and artificial intelligence features, the app allows users to identify pollution more accurately. The collected data will be visualized in an interactive map to assist policy makers in designing appropriate solutions. By increasing public awareness and participation, it is hoped that this app can contribute to the preservation of water resources and the environment.

The Wasta application was developed using Android Studio with Kotlin Compose programming language and utilizing Supabase as the backend. The main features offered include the ability for users to create water pollution reports equipped with GPS-based location information, as well as an interactive map display that shows reports that have been made by other users in the form of markers. In addition, this application also implements a gamification system to increase user engagement in water pollution reporting. Users who have not logged in cannot create reports, but can still view the data that has been collected. Once a report is created, a marker will appear on the map according to the user's location. The test results show that all main features run as designed, the application is easy to use, and it received positive responses from the respondents, making Wasta feasible to be used as a community-based pollution reporting tool.

Keywords: inland waters, water pollution, crowdsourcing, android application