**ABSTRACT**

At present, the process of socialization and education regarding various kinds of natural disasters is greatly facilitated through communication and information technology. With sophistication that continues to develop over time, natural disasters including floods can be predicted before they occur and communicated to the surrounding community.

Even before a potential flood occurs, the community can easily access and learn what to do if the increase in river water discharge gets higher. To overcome this problem, a mobile application-based river water level detection application can be made that can provide appropriate recommendations for residents around the river. So by using a mobile application, the public can find out early if there is a risk of flooding through warnings from mobile phone notifications. This application is expected to help in knowing the water level so that people around the river can be more alert. Of course, it is supported by the awareness of local residents not to make garbage in the river.

This research produces an android application interface for monitoring river water levels. Front-end applications are built using Flutter. The research method used is Waterfall. Application testing stages to be carried out are alpha and beta testing. In alpha testing, it shows that all features are successfully executed. Beta testing uses a validity test which shows that all items are valid. All items are very reliable after testing the user respondents with an r11 of 0.876. 2.In testing the location map and weather forecast, the application displays the appropriate data match, with the location map showing the test location and the weather forecast showing the weather climate data correctly. There is also a data match test, the data displayed is accurate as received by firebase. latency testing, obtained latency between 34ms – 159ms, the average obtained during the 7-day test is 84.42ms.

**Keywords:** *river water rise, mobile application, flood disaster, waterfall testing*