

ABSTRACT

Global warming is an increasingly urgent environmental issue caused by the rise in the Earth's average temperature due to the accumulation of greenhouse gases such as CO₂, CH₄, and N₂O. One of its main contributors is deforestation, which reduces the ability of forests to absorb carbon dioxide and exacerbates climate change. Therefore, forest management and conservation are critical strategies in climate change mitigation, as emphasized in the 2015 Paris Agreement. Indonesia, as one of the countries with the largest tropical forests, plays a vital role in carbon storage. To support this effort, an Android-based application called Carbonstock was developed, which adopts the carbon stock calculation method in accordance with SNI 7724:2019. This application is designed to simplify biomass data input and automatically calculate forest carbon stocks, particularly for field officers in remote areas. In addition to enabling data synchronization and monitoring dashboards, Carbonstock also supports biodiversity identification and CO₂ absorption evaluation. Usability testing results indicate that the application is user-friendly, responsive, and meets user needs. From a total of 330 responses collected from 30 respondents, 72.7% gave positive assessments (Agree and Strongly Agree), reflecting a high level of satisfaction with the application's interface, functionality, and reliability. Therefore, Carbonstock is considered feasible for wider implementation as a digital solution to support forest carbon monitoring and sustainable environmental preservation.

Keywords:; Android ,Carbon Stock, Climate change, Global warming , SNI 7724 : 2019