ABSTRACT

Mangrove are a coastal ecosystems that play a vital role in protecting the coast, providing habitats for marine organisms, and maintaining environmental balance. However, in Lhokseumawe City, mangrove ecosystems have been degraded due to human activities and natural factors, making rehabilitasion efforts highly necessary. Previous reforestation programs have often been unsuccsessful because the planted species were not well adapted to local environtmental conditions. Therefore, land suitability analysis is essential to identify appropriate sites that can support successful mangrove rehabilitation this study aims to analyze land suitability for mangrove rehabilitation in lhokseumawe city. Primary data were collected through surveys at three purposively selected stations, covering land slope, mangrove species, substrat type, salinity, water themperature, and pH. Suitability analysis was conducted using a scoring and weighting system for each parameter. The result show that land slope is favorable for mangrove growth, ranging from 1.21°-13.21°. Six mangrove spesies werw identified, namely *A. alba, A.marina, S. alba, S. caseolaris, R. mucronata, and R. apiculata*. The substrate is dominated by silt-clay to medium-coarse sand, with a salinity of 30.33‰-30.67‰, themperature of 32.22°C-34.00°C and pH of 08.13- 08.21. Based on the analysis, Station 1 is classified as Suitable (S2) with a value of 65%, Station 2 is suitable (S2) with a value of 61%, and Station 3 is suitable (S2) with a value of 68%. These results indicate that the study site has good potential to support mangrove rehabilitation in lhokseumawe city.

Keywords: Aceh, Lhokseumawe, mangrove, reforestation, damage.