

Geomorphological Index in Small Island

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Aside from being known as the most preferred tourist destination, Small Island is a unique geomorphological unit due to its isolation and limited natural resources. Gili Ketapang is the only island in regency of Probolinggo, East Java and one of the main destination in the region. The objectives of this research are to assess the geomorphological susceptibility and geomorphological resilience as the initial assessment of Geomorphological Vulnerability Index in Gili Ketapang to support the sustainability tourism in the island. This research was carried out in two coasts in the island which are the western and eastern coast whose different kind of activities. Scoring method was used to determine the value to each variables which were scored from 0 to 4. The result showed that the geomorphological susceptibility index of western and eastern coast were high with the index of respectively 0.781 and 0.831. The geomorphological resilience index was quite low in the western coast with the index of 0.125 whereas the western coast possessed high resilience with index of 0.875. It indicates that even in the small islands, the consideration of geomorphological conditions for sustainable development and environmental protection were necessary. Further research related to geomorphological exposure to complete the geomorphological vulnerability is expected to carry out in the future.

Island is a territory with water surrounded Indonesia is the largest archipelago in the globe which consists of more than 17,000 islands. Small islands in Indonesia possess various tourist reserves including beaches, sunshine, fresh air, and lull. Many issues of small islands perchance be referred to unsustainable services and unregulated

development of resources. The same issues exist in Indonesia. A geomorphological assessment is necessary to preserve the landform stabilization. Many studies on geomorphological vulnerability have been carried out as a principle step towards coastal and small islands management. The coastal morphology plays a relevant role in determining the coastal reaction to sea level rise, as the comparative erodibility of the various landforms reflects their degree of resistance.

Small islands have been facing some threats by climate change, sea level rise, and natural disaster. It possess high geomorphological dynamics causing them particularly susceptible to natural disturbances. One of the evidence of geomorphological dynamics in small islands that could be seen obviously is shoreline changes. Many researches and studies with different methods have been using to define the changes of shoreline to find the proper coastal management Impact of sea level rise to coastal ecology: a case study on the northern part of Java island, Indonesia. Geomorphology is an important consideration in observing the potential of natural resources of a region. The studies on geomorphological resilience are important as initial step to determine the development planning, not least on the small islands.

The objective of this research is to calculate the geomorphological susceptibility and geomorphological resilience in small island with case of Gili Ketapang. The island is located in the regency of Probolinggo, East Java. It is the only island and one of the main tourist attractions in the region. The result would define the susceptibility and resilience of geomorphological aspect in the island in upholding tourism development.

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