

# **A Study of Climate Change and Environmental Damage Impacts of Muara Bangkahulu River Subwatershed to the Local Citizen in Bengkulu City**

Lindung Zalbuin Mase, Ph.D.

Department of Civil Engineering, Faculty of Engineering, University of Bengkulu, Bengkulu, Indonesia. Email: [lmase@unib.ac.id](mailto:lmase@unib.ac.id)

Bengkulu is known as a province in Indonesia having the high vulnerability to natural disasters. The climate changes has been identified to be the main factor trigger the massive damage in Bengkulu within the last five years. The increase of rainfall intensity had triggered the landslides in the mountainous area in Bengkulu and the huge flooding frequently occurring in Bengkulu City during wet season. Therefore, there is a necessary to study the impact of climate change and environmental damage to the Bengkulu Province. This study is focused on one of the Muara Bangkahulu River sub-watersheds i.e. Bengkulu Hilir sub-watershed. In general, this study is composed by two main parts. The first one is the analysis of sedimentation and erosion of the sub-watershed due to the climate change effect, i.e. the increase of rainfall intensity. The second one is focused on slope stability analysis along the sub-watershed, which frequently failure within the raining season in Bengkulu City. The expected results are the zonation maps for erosion, sedimentation, flooding plain area, regional slope stability. Furthermore, the results of the analysis are referred to perform the policy analysis in conservation development for Bengkulu Hilir sub-watershed using SWOT (Strength, Weakness, Oppurtunity, and Theart) method.

**Keyword:** climate changes; environmental damages; sedimentation; erosion; slope stablity