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APPLICATION OF COCONUT COIR MATTING AND VEGETATION FOR RIVERBANK EROSION PROTECTION

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[Azmi, Naqib Azfar](#) ; [Ibrahim, Saerahany Legori](#) ; [Ibrahim, Izihan](#) ; [Masbah, Dani Irwan](#) ; [Saad, Siti Asmahani](#)

Kulliyyah of Engineering, UNIVERSITI ISLAM ANTARABANGSA, Malaysia

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Abstract

In this paper, a sustainable and non-structural solution is identified to solve the problem of riverbank erosion by using the case study of Pusu River in the district of Gombak, Selangor, Malaysia. Several types of non-structural and sustainable materials were used as riverbank protection in the study area with the application of coconut coir mat and vetiver grass and their effectiveness were evaluated. The coconut coir was fabricated in the laboratory as per ASTM D6525 and it was applied in four plots at the riverbank that consist of different configurations namely bare soil, coconut coir mat with natural vegetation, coconut coir mat with vetiver grass, and vetiver grass on its own. To analyse the effectiveness of the configurations, two tests such as visual inspection test and riverbank erosion assessment using erosion


pins were conducted. This study concludes that coconut coir helps vetiver grass roots to grow more expansively as compared to the growth of the vetiver grass without coconut coir. The application of vetiver grass is proven to be 90.5 % effective which is higher than other types of configurations with a 0.05 cm/day mean erosion rate observed. © 2023 Malaysian Institute Of Planners. All rights reserved.

Author keywords

coconut coir; erosion pin; riverbank erosion; vetiver grass

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Corresponding authors

| | |
|----------------------|---|
| Corresponding author | S.L. Ibrahim |
| Affiliation | Kulliyyah of Engineering, UNIVERSITI ISLAM ANTARABANGSA, Malaysia |
| Email address | saerahany@iium.edu.my |