An innovative and sustainable technology for river bank protection using eco-friendly cocologs

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Abstract

A field trial was conducted in Thiruvalla, Southern Kerala, India for riverbank protection using a coir product namely cocolog as a spur. Being a hard natural fibre, the major reported advantage of all coir products are their biodegradable nature. Cocolog can be classified under geotextiles. Cocolog has the ability to reduce water velocity by acting as a semi-pervious media when water passes through this product. It also encourages the sedimentation of soil in the flood water by reducing the velocity of flowing water. These properties of cocolog had prompted in using it for checking stream bank erosion as a temporary control material. Spurs were constructed with cocologs at an interval of 20 meters at an angle of 45 along the direction of flow of water. Coconut logs were piled into the river bed. The cocologs were placed horizontally in between the coconut logs piled to the riverbed. The number of cocologs varied from spurs to spurs depending on the condition and depth of riverbed, and the height of the spurs were maintained uniformly from the water level. The spurs were placed in such a way that flood water current will never come directly in contact with river bank. Considerable reduction in velocity was noted when it passed through the spur constructed with the cocologs and facilitated sedimentation of soil in the rear side of spur due to reduction in velocity of flow

Key Words: Coir geotextile, Cocolog (cylindrical shaped coir mat stuffed with coir fibre) spurs, coconut logs (trunk of the coconut trees), vegetation