

C-01 Maha Oya Bank protection study at Waikkala

K S Jeyabalamoorthy
Irrigation Dept, Colombo 7

150m stretch of Maha Oya right bank was severely damaged about 1 km down stream of Kochchikade railway bridge at Waikkala. It is located 42 km North-West of Colombo at Wennappuwa electorate in Puttalam district and its co-ordinate is 230.75 E, 98.75 N.

The purpose of this study is an evolution of an effective solution to prevent further damage of the right bank from direct current, and wave action created by navigation activities in the vicinity.

Considering the scope of the studies and hydraulic parameters under investigation, a model to a scale of 1/30 was constructed. It representing 450m of u/s and 150m of d/s river section of damaged area. The appropriate components of the model have been dimensioned so that the boundary conditions essential for the model to be representative of the prototype are met. All tests carried out in this model are in accordance with Froude Law similarity. Different proposals such as gabion and concrete wall, along the bank, repelling and attracting type of groynes and combination of above were tried out in this model, and details are submitted in the report. Combination of repelling and attracting types of groynes is recommended.

Damage to the right bank has been caused due to high velocity current and because of the bend in the river.

With construction of the proposed groynes, there will be a change of river configuration, facilitating the stability of the right bank. Monitoring the behaviour of river reach after implementation of the proposals should be made, to take additional measures if any.