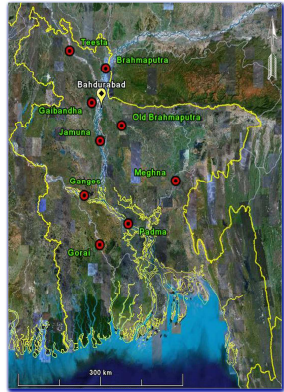


BANK PROTECTION FOR JAMUNA RIVER IN BANGLADESH

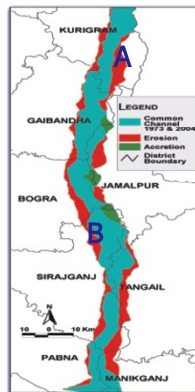
The major rivers in Bangladesh are highly erodible. Jamuna riverbank erosion rate exceeds 1 km/ year in extreme cases.



River System in Bangladesh



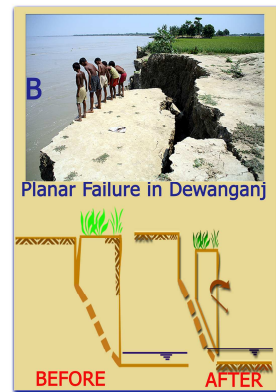
Jamuna River



Erosion and accretion in Jamuna



Beam Failure in Chilmari

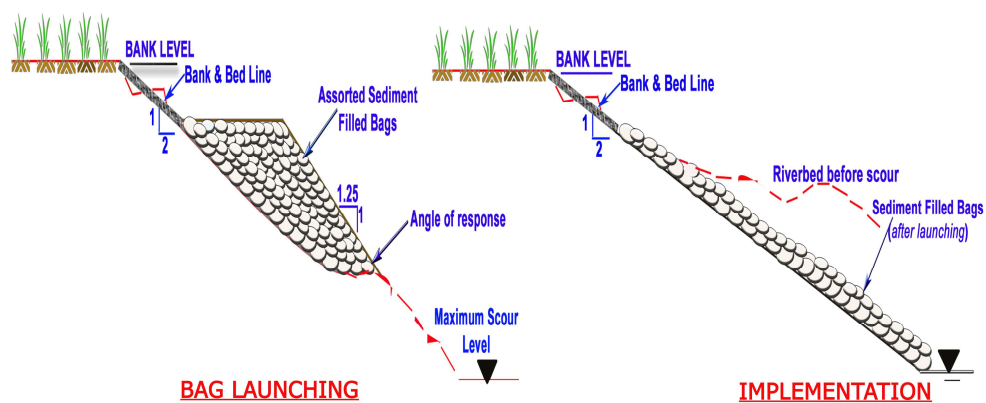


Planar Failure in Dewanganj

One commonly applied method of bank protection is the placement of sediment filled bags that slip under the action of river flow and bed erosion to form stable erosion resistant river banks.



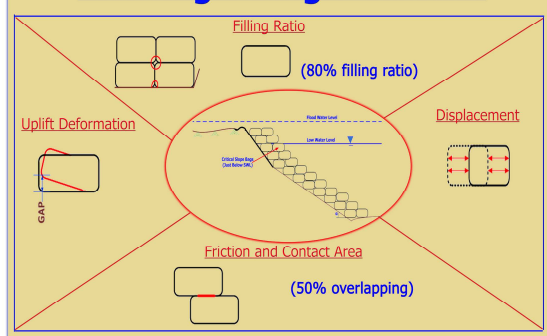
Successful method of bag placement



BAG LAUNCHING

IMPLEMENTATION

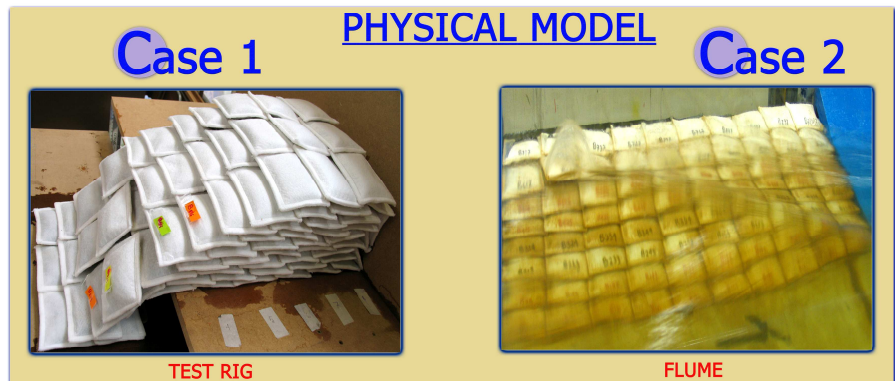
Existing Design Criteria



AIM OF THE STUDY

The aim of the study is to develop design guidance for river bank protection using sediment filled bags. This will be achieved by the completion of the following objectives:

1. A physical model study on bag movement;
2. An assessment of the suitability of an existing EDEM numerical model; and
3. A summary report providing practical design guidelines.



Case 1

PHYSICAL MODEL

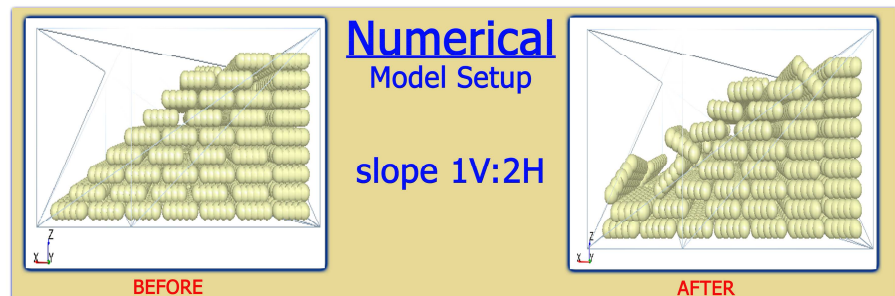
Case 2



TEST RIG



FLUME



Numerical Model Setup

slope 1V:2H

Prepared by:
Aysha Akter, PhD Student, School of the Built Environment, Heriot Watt University.

Supervised by:
1. Professor Gareth Pender, School of the Built Environment, Heriot Watt University;
2. Dr Grant Wright, School of the Built Environment, Heriot Watt University;
3. Dr Martin Crapper, The University of Edinburgh.