

**EROSION PROTECTION WORKS ALONG BANKS OF
BRAHMAPUTRA RIVER
ROHMORIA, ASSAM, INDIA**

Longitudinal Protection

Problem

Brahmaputra River is one of the major and highly aggressive rivers in Asia. It flows through China, India and Bangladesh. In India, it enters North East state of Arunachal Pradesh and then widens as high as 10km in the state of Assam. Over the past 20 years, the river has destroyed many paddy fields, homes, schools and plantations in the village of Rohmoria.

Brahmaputra's channel belt is highly dynamic due to the incessant structural changes in the basin part and the basin margin areas as well as the sediment load dumping patterns.

Rohmoria located in the upper reaches of the Brahmaputra River in Assam, is an area most severely affected by river erosion. The area has witnessed erosion for the last sixty years and more than 25 villages have been wiped out by erosion.

To mitigate this problem, Water Resource Department of Assam proposed bank protection works. The anti-erosion works were to be implemented in a nine kilometer stretch along the Brahmaputra River from Bogoritolia to Kasuoni which was identified as highly affected zone.

Solution

Water Resource Department suggested the use of MacBag® for the bank protection, which is one of the most practical and viable solutions. Maccaferri's MacBag® is a geotextile bag filled with sand and commonly adopted for hydraulic protection works. These geotextile bags are produced from either woven or non-woven polypropylene geotextile or non-woven polyester geotextile.

The height of slope was approximately 5.5m. The bank and bed protection were carried with MacBag® placed on a geotextile filter layer.

Peripheral strips of steel gabion and PP rope gabions filled with layers of geotextile bags were placed at regular intervals to impart further stability to the scour protection measure.

In June 2012, major floods occurred in Assam and the anti-erosion work was totally submerged under water and in some parts flood water passed over the protection work. The erosion protection measures constructed with MacBag® survived the flood and protected the banks. After flood, considerable amount of silt deposits was noted which is an indication of success of anti-erosion works along the river banks.

Client: Water Resources Department, Assam

Contractor: Maccaferri Environmental Solutions Pvt Ltd

Products used (Qty.)

- MacBag	8,00,000 nos
- Gabion	3,300 nos
- MacTex N	64,300 sqm
- Jumbo Gabion	2,600 nos (Polypropylene rope gabion)

Date of construction: 10/2011 - 04/2012



Photo 1: Scouring of the banks of Brahmaputra river



Photo 2: Dressing of slope during construction



Photo 3: Placement of MacBag® on the river bank



Photo 4: Condition of MacBag® and river bank during flood



Photo 5: Condition of MacBag® and river bank after flood



Photo 6: Condition of MacBag® after 2 years