# TRADE-OFFS BETWEEN FOREST ECOSYSTEM SERVICES AND FUELWOOD CONSUMPTION OF THE BRICK MAKING INDUSTRY IN BANGLADESH

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Brick manufacturing industry (BMI) is a small-scale and disorganized industry, concentrated in the rural and peri-urban areas of Bangladesh that makes bricks by burning locally available clay using mostly coal and fuelwood. The estimated number of BMIs in Bangladesh is around 5000. Most of them use traditional fixed-chimney kilns (FCK), and are blamed as the largest stationary source of the GHGs emission of the country. Moreover, since the country's BMI is based on traditional FCK that use fuelwood, this may result in potential deforestation and loss of carbon sequestration services.

The objective of this study is to assess the trade-offs between forest carbon sequestration ecosystem services, and fuelwood consumption of the BMI in Bangladesh. Quantify the deforestation and GHG emissions from BMI in Bangladesh, and compare it with carbon sequestration ecosystem services in an equivalent deforested area. Fuelwood consumption data is collected using interviews, and compared with national statistics. Harvested biomass ($m^3$) is computed using country specific wood density values from annual fuelwood consumption data (tDM/yr). IPCC methodological approach is used for annual GHGs estimations from BMI industry. Total GHGs emission from the BMI of Bangladesh is compared with the loss of carbon sequestration services of equivalent forest areas in the major forest ecosystem types of Bangladesh, *viz.*, mangroves, Sal forests, hill forests and homestead forests.

This study highlights that the carbon sequestration services lost is notable in the different forest ecosystems. It is particularly relevant to support the sustainable management of tree and forest resources in Bangladesh.