

Geographical Variations of Commercial Consumption and Supply of Woodfuel and its Alternatives in Northeastern Bangladesh

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Bangladesh currently uses 15-18 million t/yr of woodfuel for household and commercial cooking, part of which is likely to be supplied illegally from natural forests. Restaurants, tea stalls, bakeries and other food manufactures are major woodfuel consumers, but no previous studies have assessed the patterns of woodfuel consumption by these commercial operations. In this thesis, I assessed the scale and patterns of woodfuel supply and consumption by commercial cooking sectors in rural, semi-urban, and urban areas within 30 km of Lawachara National Park (LNP) and Khadimnagar National Park (KNP) in northeastern Bangladesh for the first time. I examined several market attributes, including NDVI, elevation, urbanisation, population, road access, travel distance, and shop characteristics that potentially affect commercial woodfuel consumption at shop and market levels. Annual woodfuel consumption within the LNP subregion had a significant positive correlation with elevation and NDVI, and a negative correlation with travel distance (Chapter 2), but not in the KNP subregion (Chapter 3). Woodfuel demands were met directly and indirectly (via sawmills) by supplies from tea estates, homestead trees and roadside plantations, which helped to reduce woodfuel consumption from natural forests (Chapters 2-4). Rice husk briquettes (RHBs) have a potential to save 26,645 t/yr woodfuel, and its adoption was increasing especially in the KNP subregion where rice husks were abundantly available and forest resources were dwindling. RHBs are helping to fill gaps between energy demands and woodfuel supply especially in semi-urban communities. Promotion of RHBs is hence important, even though it did not show reduction of woodfuel on per-shop basis (Chapter 5). Based on these findings, I conclude that sustainable management of homestead trees and roadside plantations is critically important for sustainable supply of woodfuel especially in rural areas.