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学位論文題目	Forest change detection using remote sensing data and conservation through community development in Bangladesh （バングラデシュにおけるリモートセンシングデータを使用した森林変化抽出と地域住民の生活環境向上を通した森林保全）
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論 文 内 容 の 要 旨

Abstract of paper

Bangladesh is a poor, partially forested nation located in South Asia. The forests cover an estimated 17.5% of the land surface area of the nation. Rapid human population expansion has increased wood consumption and resource overexploitation, leading to the degradation of forest reserves. Bangladesh has lost most of its forests during the last 40 years. We mapped and analyzed forest cover change for the period 1972–2014 using Landsat satellite images of the Madhupur Sal forest captured in 1972, 1991, 2010, and 2014. This forest is a tropical deciduous stand within the Bangladeshi Tangail Forest Division. Forest cover changes were identified and approximately delineated on remotely sensed images. We applied a supervised classification approach to the satellite images using ERDAS IMAGINE ver.10 software. The mapping and analyses of five land-use classes were performed with ArcGIS ver.10 software. Thus, we precisely analyzed the trends in forest cover changes over 42 years. The area under natural forest cover was progressively reduced by 7079.4 ha through anthropogenic activities during the period 1972–2010. However, the natural forest area increased by

202.4 ha between 2010 and 2014 due to the implementation of a revegetation program to conserve the forest by improving the livelihoods of people dependent on forest. The maps are very relevant to forest conservation initiatives and will enable a long-term, integrated approach to forest revegetation operated by the forest department in association with local communities. Therefore, we focus on the changing trends in forest conservation and livelihoods in and around forested areas. Community involvement in forest management, a relatively new practice in Bangladesh, was initiated with the dual purpose of limiting forest degradation and enhancing community development. In Bangladesh, many forestry projects have been introduced to manage forest resources involving local communities, although a few of them became sustain. We conducted a household survey in the forestry project, surveying 200 community forest workers (CFWs). The CFWs were randomly selected and interviewed, and we analyzed human, physical, financial, natural, and social livelihood capitals. The forest conservation program improved the livelihoods of the local community. The perceptions of the community about the general conditions of the forests, and attitudes of the local population about forest conservation, were improved. Dependence on the forests has also noticeably declined during the last few years. An additional outcome of the management program was empowerment and increased dignity of female participants. Such improvements would likely lead to improvements in livelihoods, as well as more sustainable forest management and conservation.