Remote Sensing Techniques for Land Use Classification of Madhupur Deciduous Forest Area in Bangladesh Using Quick Bird Image

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Abstract: In Bangladesh, a densely populated country, the land use has been changing rapidly, every day new developments like urban, industrial, commercial, housing, agricultural and so on are emerging to fulfill people's demand. The forest area is affected always for different land usage even though Bangladesh is low forested country in the world. The purpose of this work is to develop the land use of Madhupur forest area a part of deciduous Sal forest in Bangladesh that is an important natural resource in relatively drier central part of Bangladesh which is decreasing day by day but, about 40000 local and ethnic community people of 57 villages surrounding and inside the forest are dependent on it. Remote sensing techniques can be used to assess forest cover and also for land use classifications, because high resolution satellite imagery can provide significant new tools and information to support natural resource management. Although the increased resolution also introduces challenges in typical classification, the fine resolution data itself reveals features that are desirable. The possibility of visual interpretation of these new data makes some types of classification simpler. For this work the ERDAS Imagine V8.6 will be used to develop a land use supervised classification using Quickbird imagery with a resolution of 0.6m panchromatic and 2.4m multisprectral and ArcGIS 9.3.1 can be used to utilize GIS data of field survey of several unit plots in the forest as auxiliary information to improve remote sensing classification. Various classification approaches including different band combinations, alternatives for defining training fields, and different classification methods will be compared in terms of classification accuracy and the error matrix and Kappa statistic for the approaches will be calculated to evaluate the accuracy of the classified image.