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Monitoring Riparian Biomass Using Envisat ASAR

Indonesia has experienced major land conversion in last three decades. Two major patterns of land conversion are due to urbanization and deforestation. Severe land use conversions are occurred in scattered places. These are not only limited to urbanized area, but also in rural area. Problems arise with limited control from the government through land use planning.

One of the threatened regions is the conservation forest. Due to failure of managing the existing regulation, hundreds of thousand hectares had been lost. Therefore, monitoring the conservation area is one of strategic task to be done in regular manner. Recent data being used relies on multispectral images such as Landsat TM and/or SPOT. However, due to severe cloud coverage, many areas are failed to have better base information. Envisat ASAR is one of promising data to overcome the limitation.

Since The Government of Indonesia has signed The Kyoto Protocol, a national communication of biomass product has to be released. Therefore first task should be done is to develop biomass estimates in conservation area. This information is important for assessing Indonesia's capability to sink the released carbon.

The paper reports comparative works on estimating biomass (total volume) based on Landsat ETM and Envisat ASAR. In our first test, Envisat ASAR achieved better results than Landsat ETM.