

A concept for the monitoring of tropical forest

Tuomas Häme, Jorma Kilpi, Heikki Ahola, Laura Sirro, Yrjö Rauste

VTT

PO Box 1000, FIN-02044 VTT, Finland, Tuomas.Hame@vtt.fi

A concept for the monitoring of tropical forest cover and biomass is presented with preliminary test results. The system combines wall-to-wall medium resolution satellite data, a sample of Very High Resolution (VHR) data, and ground plot data.

The target forest characteristics, land cover and biomass variables, are first estimated from the VHR images with the help of reference data. The maps produced are further used as reference to compute the estimates for wall-to-wall imagery.

The statistical sample of the VHR imagery together with *in-situ* measurements and the wall-to-wall estimates are finally used to compute the accuracy statistics for the inventory and possibly calibrate the wall-to-wall maps. In the model training stage the statistical representativeness does not have to be considered.

First results of the inventory concept are presented over province Savannakhet of 2.1 million ha in Lao PDR. The data applied are QuickBird and Kompsat-2 VHR imagery, AVNIR medium resolution optical imagery (10 m), and ALOS PalSAR imagery to augment wall-to-wall optical data in cloudy regions.

The study is conducted for the Ministry of Foreign Affairs of Finland and Indufor Oy as part of the ongoing project SUFORD (Sustainable Forestry for Rural Development). It will be completed by the end of October, 2009. Its predecessor activities are the GMES project Forest Monitoring in French Guiana and a proposal on a VHR resolution satellite to collect images on statistical sampling basis [1], [2].

References

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