

VTT introduces deforestation monitoring method for tropical regions

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Halting deforestation in tropical regions requires verification of forest conditions. VTT has developed a new satellite image based method for accurate assessment of tropical forest cover. Part of the EU's seventh framework programme, the ReCover project has involved using satellite imaging to map forest cover in sites in Mexico, Guyana, Columbia, Congo and the Fiji Islands over a period of up to 20 years.

The REDD programme is the United Nations' collaborative initiative designed to combat deforestation in the tropical region and to reduce greenhouse gas emissions. The objective is to include REDD in the 2015 international climate agreement. Further concrete steps on REDD were already agreed in the United Nations Climate Change Conference that was held in Warsaw in November.. Through the REDD initiative, industrialised countries pay compensation for the conservation and sustainable management of forests in the [tropical region](#), where deforestation is progressing rapidly. The purpose of this is to increase carbon sequestration in forests. The compensation system requires accurate verification, by satellite, of the condition of forests.

In this three-year project, VTT developed a new method of monitoring tropical [forest cover](#) using numerical satellite images. The method permits forest mapping using satellite images with a resolution of ten to thirty metres. The accuracy of the maps is assessed by taking a statistical sample from satellite images with a resolution of better than one metre. Sampling is intended to ensure that the mapping method does not over- or underestimate the forested area.

In the ReCover project, nine research partners mapped forest cover in Mexico, Guyana, Columbia, the Democratic Republic of the Congo and the Fiji Islands. This was accomplished in cooperation with local authorities and other local players in each country during a period lasting from the early 1990s to present day.

"In late 2014, the Sentinel satellites launched as part of the European Copernicus programme will begin to deliver [satellite image](#) data that is highly suitable for forest monitoring," says Tuomas Häme, Research Professor at VTT. On the other hand, a fee will be charged for ultra-high resolution satellite images.

The total cost of the EU ReCover project coordinated by VTT was approximately EUR 3.3 million. Negotiations on further projects are currently under way with representatives of the target countries. Besides VTT, Arbonaut Oy represented Finland in the project.

The final meeting of the project was held during the UN Climate Change Conference in Warsaw in November.

Tuomas Häme will discuss [satellite](#) imaging applications in environmental measurement in his article in the *VTT Impulse* magazine in December 2013.

Provided by VTT Technical Research Centre of Finland

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