**FOREST DRAGON 2: Advances of European Partners during the Third Project Year**

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The research activities of the European Partners of the FOREST DRAGON 2 project focused on a pilot study over Northeast China concerning the inter-comparison of the growing stock volume (GSV) maps from ERS-1/2 tandem data for the period 1995-1998 and from Envisat ASAR Global Monitoring (GM) Mode data for the period 2007-2008. The investigations are paving the way for the larger scale assessment of forest cover changes for the period 1995-2005-2010 over Northeast and South China with ERS and Envisat ASAR datasets. The assessment will take place during the last project year.

At first, the 50 m ERS data were resampled to 1 km, i.e., the pixel size of the Envisat ASAR GM images. The DRAGON algorithm (Cartus et al., Rem. Sens. Env., 2011) was then applied to provide a 1-km version of the GSV map for the period 1995-1998. The Envisat ASAR data were processed with the BIOMASAR algorithm (Santoro et al., Rem. Sens. Env., 2011). For the inter-comparison, the map with continuous GSV values obtained with the BIOMASAR algorithm was re-coded to match with the four GSV classes produced by the DRAGON algorithm. The inter-comparison showed that it is possible to quantify long term changes of forest GSV both in terms of reforestation and deforestation. Depending on the level of thematic and spatial resolution, this information can support carbon modeling and sustainable forest management.

The synergistic usage of different global land use / land cover data and the produced forest GSV maps from ERS and Envisat revealed positive potential improvements of the two types of data. An in depth analysis has been carried out in terms of spatial and thematic accuracy including the quantification of method-based uncertainties. An improvement of the thematic accuracy of the GSV maps has been achieved using GLCC and MODIS 2005 land cover products, respectively. Nevertheless, a high thematic uncertainty remains due to the insufficient availability of reference data.

In this respect, an approach to integrate and synthesize in situ data (e.g. based on literature information about forest inventory plots) has been started to provide a reference database of available forest GSV for China to be used in the assessment of the products obtained by the European and Chinese partners.

During the last project year, the Earth Observation group at the University of Jena hosted two research scientists from the Chinese Academy of Forestry for two months to discuss on processing and classification techniques.