

GMES-products for Nordic countries: a case of geoland2 / SATChMo

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The goal of EU-funded geoland2 project is to prepare, validate and demonstrate pre-operational service chains and products, and to propose and demonstrate a concrete functional organization of the GMES Land Monitoring Core Service (LMCS). SYKE has been participating on the development and demonstration of some of these products.

Geoland2-project consists of three Core Mapping Services (CMS) and seven Core Information Services (CIS). The CMS produce 'basic' land cover, land cover change, and land state products which are of broad generic use and can be directly used for deriving more elaborated products. The CIS start from CMS products and other data sources to produce 'elaborated' information products addressing specific European policies. SYKE has been participating SATChMo CMS which delivers a VHR/HR Area Frame Sampling over permanent samples, and medium resolution seasonal and annual vegetation parameters.

VHR Area Frame Sampling in Europe is based on mapping of VHR-images on sampling scheme with 114 sample sites all over Europe. Aim is to provide detailed mapping of selected and statistically representative sites to support a broad range of users and application types. Used VHR-images are Kompsat-2 or Formosat-2 images. Classification system has 10 general land cover classes. Classification is based on image segmentation and decision tree classifier. So far, SYKE has made interpretations for 4 sites in Finland and 9 in Sweden.

SYKE's version of SM-13 Vegetation Phenological Trends-product is based on NDVI time series computed from daily MODIS-images. It provides important dates of vegetation growing season, namely two different growing season start dates, maximum, end of growing season, two growing season lengths and quality indicators for different administrative areas and land cover types. Land cover types are agricultural areas, coniferous forest, deciduous forest, mixed forest and open bogs. Hydrological drainage basins (Kokemäen-, Kemi- and Paatsjoki) have been used as administrative units. The processing area will be later increased to Baltic Sea drainage basin.

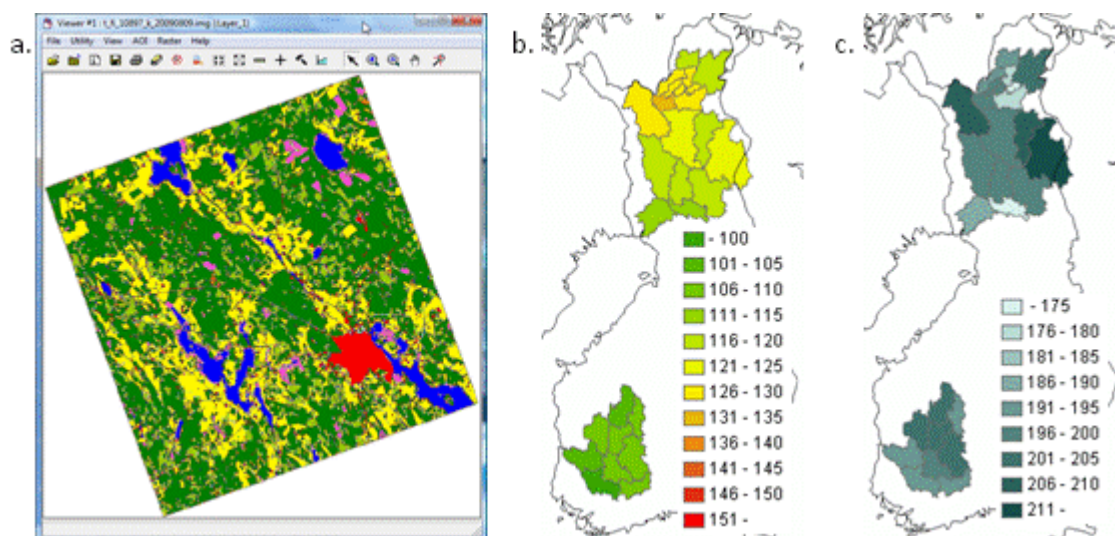


Figure. An example of products: a. AFS-classification from Kiuruvesi, b. start of growing season A and c. the day of maximum NDVI.