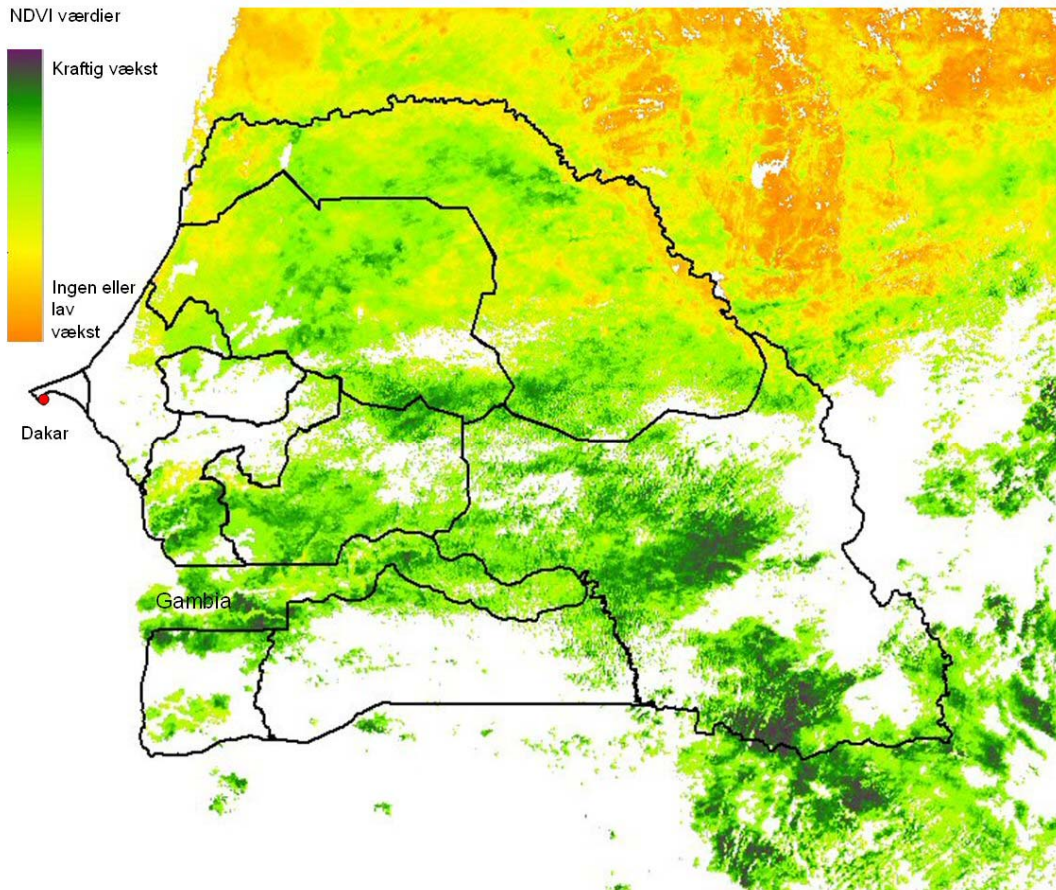


Weekly image: Week 40, 2006

How does the grass grow south of Sahara this year?



Vegetation index for Senegal recorded 1. september 2006.

The map is produced from a MERIS satellite image that covers most of West-Africa. Here only Senegal and small parts of the neighboring countries that are included. The black lines in the map show the different regions within Senegal. Senegal is four times larger than Denmark – around 500 km from north to south and around 700 km from east to west.

The white areas in the map are either clouds or water (in the west). It is seen in the map that the vegetation is in good growth in most of the country, only in the northerly provinces some areas have poor growth. In the north the Senegal River is the border between Senegal to the south and Mauritania to the north. The river valley typically is flooded in the beginning of September, after which it is possible to grow crops in the humid soils when the river slowly retreats. However, on September 1st, the valley is still dry as seen in the image. In the rest of Senegal it appears that the growth is good.



In a country like Senegal where the primary employment is agriculture, it is very important for the entire society that both the savannah vegetation is in growth as it provides fodder for the cattle and that the agricultural crops give a good yield. Poor growth means that cattle die and an insufficient amount of food is produced.

Technical information

The image is recorded 1. September 2006 by the instrument MERIS onboard ESA's environmental satellite Envisat.

The colours in the map show how active plants are on the ground, the greener, the better growth. The orange colour means very little or no growth. It is possible from the MERIS image to calculate a vegetation index that briefly described determines the difference between the reflected sunlight that the plants cannot use for their photosynthesis, and the radiation that the plants use for photosynthesis; with other words, the near-infrared minus the red radiation.

The vegetation index in the map is the NDVI, i.e. the normalised difference vegetation index.

Read more about vegetation mapping at Satellite Eye for Galathea 3.

<http://www.satelliteeye.dk/>

<http://galathea3.emu.dk/satelliteeye/index.html>

At the EDUSPACE homepage for earth observation for schools you can get the image processing software LEOWorks that has a module for the calculation of NDVI.

<http://www.eduspace.esa.int/>

The image of the week is produced by Institute of Geography, University of Copenhagen, and it is part of the project Satellite Eye for Galathea 3. Since 1987 the Institute of Geography has worked closely with the Center for Ecology Surveying (Centre de Suivi Ecologique) in Dakar, Senegal on surveying the vegetation growth by use of satellite data. During the 1980ties the conditions gradually worsened. In 1984 a hunger catastrophe appeared but from the mid-90ties the conditions have gone back to more normal. There are, however, large variations from one year to the next.

Read more at:

www.geogr.ku.dk/projects/lucc

www.geogr.ku.dk/projects/inteo