



Food Security & Crop Monitoring



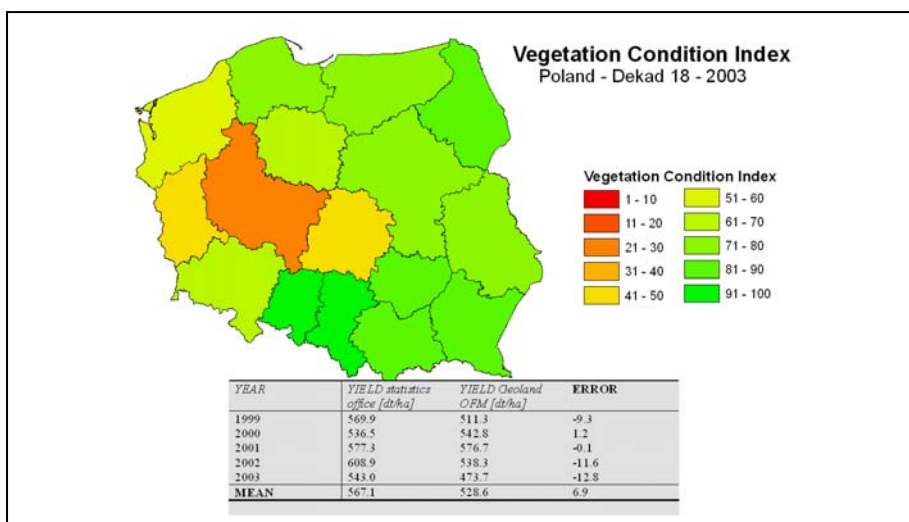
geoland OFM Provides Accurate and Timely Information on Crop Yield and Crop Area

The geoland observatory on Food Security and crop monitoring focuses on developing a global crop yield and crop area forecasting service. Its political motivation stems from the wish to eradicate hunger and malnutrition from the world, through raising agricultural productivity and, as a last resort, to provide timely food aid. Policy-making in agriculture and organizing food aid require information on where and when shortages and surpluses occur. This makes Food Security one of the key public goods which require continuous attention world-wide for its monitoring, with the possibility to zoom in to the level of countries, provinces and districts.

In a broader perspective, information on the outlook on yield and production of crops over large regions is essential for government services dealing with import and export of food crops, for agencies with a role in food relief, for international organizations with a mandate in monitoring the world food production and trade, and for commodity traders.

Ambition

The ambition of geoland OFM is to strengthen European capacity in analyzing the global food security situation, starting from the various existing approaches, which differ in principal data source, data type, spatial and temporal resolution, data processing, and requirements of ancillary data. Geoland OFM is in particular addressing the information needs of the international public sector, notably the Food and Agriculture Organization of the United Nations (FAO) and the European Commission.



In the second project phase more potential end users will be approached at the level of national governments. The regions of interest include all crop producing areas, with special attention to famine-prone regions. The assessment methods of geoland OFM are universally applicable but are limited to biophysical aspects of production. This means that the analysis of socio-economic and political factors that also impact food security is not part of geoland and is the responsibility of the end user.

Methods

From a methodological point of view, geoland OFM aims at identifying the optimum mix of methods for early assessment of production of the world's main food crops for world-wide application at the level of countries and provinces. These methods include the ones in use in the MARS-Crop Yield Forecasting System (CGMS (Alterra), and various vegetation indicators derived from Low Resolution VGT Images (VITO)), NOAA-AVHRR based methods in use in Poland by IGiK, MeteoSAT based yield forecasting with

EWBMS used by EARS and ERS-Scatterometer based Crop Performance Index developed by TPF and NEO.

The resulting information products should be understood and trusted by the end users and form useful input in their analytical work. The methods include the monitoring of the status of annual field crops during the growing season, resulting in a prediction of crop yield, and the estimation of the cultivated acreage. The combination of crop yield and cultivated areas leads to an estimate of regional crop production. Up-to-date information on the outlook for crop production is required especially on regions with high climatic risk of crop failures and on the major production regions.

For achieving its goals geoland OFM has selected test sites with high data availability where the various methods will be applied, followed by comparison of their performance. In the first phase (2004 & 2005) the methods are tested for cereals in Poland, Belgium and Spain. In the second phase the new test region will be the Northern China Plain.

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The basic assumptions in all methods is that the conditions of crops, and interannual differences in crop conditions are at least partly determined by variation in weather conditions. Therefore information on the crop status can be derived either directly from observations on crop conditions using remote sensing, or indirectly from observations on environmental conditions influencing crop growth (mainly weather) using a crop simulation model.

GeoNetwork

In order to bring the crop yield indicators and yield estimates to the end user, geoland OFM will make use of the GeoNetwork infrastructure that has been developed by FAO and others. By integrating the geoland OFM service with the infrastructure that is provided by the main end user itself, the service can be easily integrated in the users workflow and administrative processes. One of the key tools in this GeoNetwork framework is the ARTEMIS Charting tool which will be used to visualize and analyze time-series of yield indicators.

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