

## **INFORMATION SYSTEM FOR DETECTION AND MONITORING OF VEGETATION FIRES AND RELATED METEOROLOGICAL SERVICES**

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Vegetation fire is an increasingly important security problem, especially for the drought prone areas in Southern Europe. The problem has social, economic, and environmental impacts, which depend on climate and short- to medium-term weather influences. This calls for adequate meteorological products to support the activities for prevention and management of vegetation fire situations. Concerning with this, an Information System for assessment of vegetated land surface status on the bases of meteorological modeling and satellite data has been developed at the National Institute of Meteorology and Hydrology /NIMH/ of Bulgaria. The system has been working in operational mode since February 2010 and provides the following services:

- Assessment of moisture availability in the soil-vegetation continuum by daily run of a Bulgarian SVAT model /'SVAT\_bg'/ and, on this basis, daily calculation of a Soil Moisture Deficit Index of Fire Danger (SMDIFD);
- Thermal anomalies detection and monitoring by MPEF FIR product derived by data from the Geostationary Meteorological Satellites MSG at 5-minutes and 15 minutes basis in real time (for use as fire early warning information);
- Thermal anomalies detection and monitoring by using MODIS Thermal Anomalies Product (TAP) product with a higher spatial resolution (for use as fire reference information).

The operational products are available for the Executive Forest Agency and the Ministry of Interior of Bulgaria according to Cooperation agreements between NIMH and the National Institutions. A web technology is used for providing near-real time access to these products in combination with weather forecast products of NIMH. In fire emergency situations, NIMH is responsible for providing National Institutions with specialized forecasts based on the use of additional satellite information and processing facilities as follows:

- MPEF Multispectral Precipitation Estimates (MPE) product from MSG satellite data.
- Interactive satellite data processing with SYNERGIE Forecasting System in support to Land Surface Applications that may serve as a decision-making tool for Forecasting and Early Warnings, including fire development.

The Information System enables the application of an integrated approach to evaluate vegetation fire problems and has potential to provide advanced notice of severe and trans-boundary fire episodes.