The 36th International Symposium on Remote Sensing of Environment,
11 – 15 May 2015, Berlin, Germany, ISRSE36-276

Towards a Global Wildfire Information System (GWIS)

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KEY WORDS: Wildfire, information system, global scale, scientific network.

ABSTRACT:

Wildfires are a global concern as they affect several ecosystems across the world and cause large environmental and economic damages. In the last decades, remote sensing data was quite effective in providing spatial and temporal information on wildfires at regional and global scales from geostationary and polar sensors. Despite the potential of remote sensing in fire research, information on fire occurrence and impact at the global scale is still fragmented. The development of a Global Wildfire Information System (GWIS) builds on the work of international programs and initiatives such as the Global Observation of Forest Cover – Global Observation of Land Dynamics Fire Implementation Team (GOFC GOLD Fire IT) and the Group on Earth Observation (GEO). The European Commission within its Copernicus program, aiming at the development of early warning systems for disaster management, supports the GWIS initiative. Conceptually, the GWIS intends to provide synergies among already existing regional and national programs and aims to develop fully harmonized global wildfire products for the scientific and user community. One of its main goals is to provide a platform to aggregate existing information on wildfires at the global scale covering the full cycle of the wildfire management from wildfire prevention through wildfire damage assessment to the restoration of burned areas. Through GOFC-GOLD Fire IT and GEO, the development of the GWIS involves space agencies and organizations (e.g. NOAA, NASA, ESA), research centers and universities (e.g. CNR, CSIR, Joint Research Centre, Univ. Maryland, U. Amsterdam, U. Alcala, U. C. Darwin, U. Dundee) including operational, regional and national networks of wildfire managers (e.g. GOFC GOLD Fire IT networks, EFFIS network). A first prototype of the GWIS is currently available with limited functionalities providing information on wildfire danger, active fires and burned areas at a global scale. Further work will include the synergies with national and regional wildfire information systems (e.g. AFIS, RedLatTIF) and calibration and validation of GWIS global products.

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