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The western Russian wildfires of 2010

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Heat wave and wildfires in Western Russia in 2010: A warning signal of multiple changes

In 2010 Western Russia experienced the hottest summer since the beginning of systematic weather data recording 130 years ago. Lack of precipitation in early 2010 and temperatures during the month of July, which exceeded the long-term average by 7.8°C, resulted in drying out of agricultural lands, forests and peat lands and thus a high wildfire risk. Satellite data reveal that the majority of fires started in agricultural lands and around villages. Some dry lightning storms, however, contributed to severe forest and peatland fires. The most significant effects of the fires, which affected around 800,000 hectares in Western Russia between July and September 2010, was the long lasting near-ground air pollution. Moscow city and its surrounding towns and settlements with more than 15 million inhabitants were covered by smoke for many weeks. People with cardiovascular and respiratory diseases, elderly and very young people were particularly affected when inhaling by the combustion products of burned organic matter, such as particulates, polynuclear aromatic hydrocarbons, carbon monoxide (CO), aldehydes, organic acids, semi-volatile and volatile organic compounds (VOC), nitrogen- and sulphur-based compounds. In 2010 the mortality rate in Russia increased by 18%. In August alone 41,300 more people died as compared to August 2009. While this excess mortality could be attributed to both the extreme heat and the effects of smoke pollution, the medium- to long-term effects of smoke pollution on morbidity and premature mortality cannot be predicted at this stage. The direct losses by fires in Western Russia included more than 50 civilians and firefighters killed, 2000 houses including more than 30 villages completely destroyed, large tracts of grain fields destroyed and more than 60,000 flights cancelled or delayed.

Most important factors that have influenced the fire hazard of the region are the recent socio-economic changes in rural Western Russia. Similarly to many regions in Western Europe intensive traditional agriculture and pastoralism is being successively abandoned. Young people are urbanizing, the remaining populations are over-aged, and many former peasant villages are already completely abandoned. In the vicinity of cities and towns those villages are becoming now weekend or summerhouse resorts, with urban people living there temporarily in vacations, without having dependence on and responsibility for careful and sustainable management of lands that are surrounding these resorts. Barbecue fires running out of control, as well as abundant uncontrolled garbage pollution in forests and along rivers, are phenomena that had been noted increasingly over the last years – but society and authorities did not respond.

Additional problems arose in the wake of efforts to decentralize responsibilities in forest management and forest protection. The formerly centralized national responsibility for forestry in East Europe and the former Soviet Union exerted strong national control over forest resources. Decentralization and the private business sector entering the forest management and exploitation system are raising questions about responsibility beyond the utilization of forests, e.g. the role of the forest sector as custodian of biodiversity, terrestrial carbon stocks and their importance for protecting the global atmosphere and climate. The Western Eurasian summer of 2010 revealed that populations in urban agglomerations are becoming increasingly vulnerable to fire-generated air pollution at the wildland-urban interface and even over greater distances.



