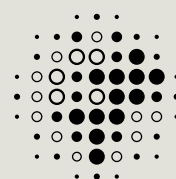


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MAX PLANCK INSTITUTE
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GLOBAL VEGETATION FIRES AND DEVELOPMENT OF PUBLIC POLICIES: PROGRESS IN BUILDING THE SCIENCE-POLICY INTERFACE (SPI)

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Figure 1: Science-based outreach work such as by the Central Asian Center has already resulted in the application of science-based principles in fire management, for example, the move from fire exclusion to integrated fire management by application of prescribed fire (Credit: FMRC-CAR).

INTRODUCTION

Since the late 1970s, the Fire Ecology Research Group, which was established at Freiburg University in 1979 and moved to the Biogeochemistry Department in 1990, has investigated the role and impacts of fire on natural, cultural, and industrial landscapes and societies in all vegetation zones. During the 1980s and 1990s, the research group observed that many fire regimes (i.e., frequency, intensity, size, season, pattern, and severity of fires) were changing rapidly as a consequence of changes in land-use and climate (Goldammer, 2013). In 1998, the Global Fire Monitoring Center (GFMC) was established within the Fire Ecology Research Group to assist in the development of science-based fire management policies and practices. At this science-policy interface (SPI), the GFMC addresses the human health and security problems resulting from the fire-caused alterations in global biogeochemical cycles and atmospheric composition (Goldammer 2013, Koutsias et al. 2015).

RESULTS

In 2001, the GFMC established scientific fire research units and networks in various regions of the world and formed interdisciplinary research groups to address specific regional phenomena and problems of fire ecology and fire management. The publication of transdisciplinary syntheses for different regions and vegetation zones, including analyses of the multifaceted role vegetation fires play in the global system, received increasing interest by the community of practitioners and decision makers (Goldammer, 2013). In recent years, the request for science-based decision and management support by countries and international organizations overwhelmed the capacities of the GFMC. In order to decentralize and to specify the SPI work of the MPIC/GFMC at regional levels, the first four Regional Centers of Excellence were set up with the financial support of the Council of Europe through its Major Hazards Agreement, the Organization for Security and Cooperation in Europe (OSCE), and the German Government (through the

Federal Ministry for Agriculture and Food). All centers were established at academic institutions:

- The Regional Fire Monitoring Center (RFMC) for Southeast Europe / South Caucasus Region (including some countries of the Middle East), based at the Faculty for Forestry in Skopje, the former Yugoslav Republic of Macedonia (2010)
- The Regional Eastern European Fire Monitoring Center (REEFMC), based at the National University of Life and Environmental Sciences in Kiev, Ukraine (2013)
- The Fire Management Resource Center – Central Asia Region (FMRC-CAR), based at the National University of Mongolia in Ulaanbaatar, Mongolia (2015)
- The Regional Fire Management Resource Center – South East Asia (RFMRC-SEA), based at the Faculty of Forestry of Bogor Agricultural University, Indonesia (2017)



“The mandate of the Global Fire Monitoring Center is to serve the science-policy interface by assisting in the development of science-based fire management policies and practices.”

The work of the GFMC and these four centers has already significantly influenced the development of national fire management policies (Goldammer 2016; Figure 1) and spurred regional cooperation in vegetation fire early warning, preparedness, and response, for example, in reducing the extent and the consequences of vegetation fire emissions on the environment and public health and security in Southeast Asia (Goldammer et al. 2017; Figure 2).

Furthermore, the Regional Fire Centers initiated a proposal to the signatory States of the Paris Climate Agreement and its implementation agenda to

systematically apply the principles of Integrated Fire Management (IFM) (Anonymous, 2015).

OUTLOOK

Additional Fire Monitoring and Fire Management Resource Centers are planned to open in late 2017 and 2018 in the Russian Federation and in Brazil and Chile in South America. With a total of six regional centers, the outreach work of the MPIC/GFMC will cover most of the regions of the world where science-based fire management policies and practices need to be developed and implemented.

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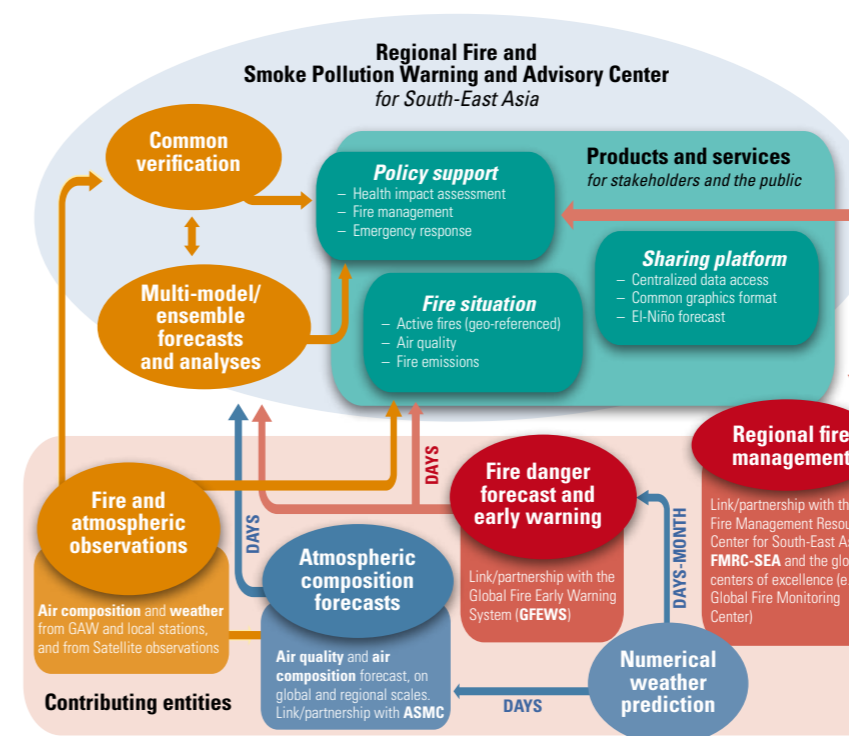


Figure 2: Envisaged workflow between the proposed Regional Fire and Smoke Pollution Warning and Advisory Center for South East Asia and the Regional Fire Management Resource Center – South East Asia (FMRC-SEA), (Credit: Goldammer et al., 2017).