



International Congress Forest Fire and Climate Change: Challenges for Fire Management in Natural and Cultural Landscapes of Eurasia

IEC Novosibirsk Expo Center, Russia, Novosibirsk
11-12 November 2013

Rationale

Recent wildfire episodes in temperate-boreal Eurasia have resulted in severe environmental damages, high economic losses and considerable humanitarian problems. Several key issues affecting wildland fire in the cultural landscapes of temperate-boreal Eurasia have been identified:

- Increasing rural exodus and urbanization of rural populations, resulting in:
 - abandonment of traditional land cultivation (agriculture, pastoralism, forestry);
 - subsequent encroachment of weeds, shrubs and forest – resulting in increasing wildfire hazard;
 - reduction of the rural work force, including availability of rural firefighters
- Limited fire management capabilities in some countries due to the historic division of responsibilities of public services and land owners;
- Lack of regulations and responsibilities in fire management on agricultural lands and at the interface between wildlands and residential areas;
- Re-privatization of formerly nationalized forests resulting in vacuums of forest and fire management in smallholder forest estates;
- Weakened capacity over forestry and decreased fire management capabilities in many Eastern European and Central Asian countries as a consequence of the transition of national economies, often associated with the uncontrolled or illegal forest use and increase of related wildfires;
- Increasing occurrence of wildfires affecting the perimeters of metropolitan areas, settlements and developments dispersed throughout rural landscapes;
- Secondary problems associated with wildfires, e.g. those burning on territories contaminated by radioactivity and remnants from armed conflicts (e.g., unexploded ordnance, land mines, uranium-depleted ammunition); or wildfires affecting agricultural lands treated with pesticides; landfills, other industrial waste and structures containing hazardous materials, especially at the urban / residential perimeters;
- Impacts of smoke pollution on human health and security;
- Transboundary consequences of emissions from wildfires and excessive burning in agricultural lands on the atmosphere and terrestrial systems, notably the transport and deposition of black carbon to the Arctic environment;
- Consequences of climate change resulting in extended periods of extreme drought and heat, with a consequent increase of the risk of occurrence of large, intense and severe wildfires;
- Increasing ecosystem vulnerability to wildfires, e.g. consequences of climate change will result in the transformation of former fire-free or fire-protected natural ecosystems, such as peat bogs and high-altitude mountain ecosystems, to ecosystems becoming vulnerable to wildfire and increasingly become affected by wildfires.

The assessment of changing fire regimes and the increasing vulnerability of society as well as the responses required by public policies and action by local administrations were discussed at the International Congress "Forest Fire and Climate Change: Challenges for Fire Management in Natural and Cultural Landscapes of Eurasia", which was organized as a cooperative endeavor of the

- State Duma Committee on Natural Resources, Environment and Ecology
- Ministry of Emergency Situations (EMERCOM)
- Federal Forest Agency *Rosleskhoz*, Siberian Federal District

- Government of Novosibirsk Oblast
- Global Fire Monitoring Center (GFMC)

under the auspices of the United Nations International Strategy for Disaster Reduction (UNISDR), the Global Wildland Fire Network and the UNECE/FAO Team of Specialists on Forest Fire.

Climate Change
Forest Fire
Protection **Siberia 2013**

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противопожарной
защиты
Экология. Климат - 2013

11 - 13 ноября

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ОРГАНИЗАТОРЫ:

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www.siberiaexpo.ru www.lm-international.com

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ОФИЦИАЛЬНАЯ ПОДДЕРЖКА:

The Congress was held in conjunction with the International Exhibition for Forest Fire Fighting and Protection, organized by Siberia Expo and Leipziger Messe International (Germany), with participation of leading Russian and foreign producers of special equipment and technologies for fighting and monitoring of forest fires. The Ministry of Emergency presented new designs of specialized firefighting equipment, and the Aerial Fire Protection Services from Khanty-Mansi Autonomous Okrug and Novosibirsk Oblast displayed their services.

Both the exhibition and the congress brought together four major groups to exchange views and sectoral contributions towards preparing the Eurasian region to the changing climate and environment:

- Scientists from Russian universities and the Academy of Sciences and their partners from scientific institutions abroad transmitted their messages to the representatives of decision-making authorities.
- Representatives from non-government organizations provided the views and contributions of civil society to define future solutions to fire problems.
- Decision-making authorities from Siberian Federal District (regional forest services, institutions belonging to the ministries of emergency situations, aerial firefighting services) reported on the changes occurring in fire regimes and the necessity of establishing transparent monitoring and reporting mechanisms as well as the need to broaden the scope of fire management from the current focus on forests only to a broader, landscape-level approach.
- The Russian and international industries displayed and demonstrated advanced tools for fire management.

The Congress themes included high-level contributions by scientists and representatives of non-government organizations from the Russian Federation and from neighbouring countries of Eurasia and from North America, including Canada, Germany, Kazakhstan, FYR of Macedonia, Mongolia, South Korea, Turkey, Ukraine and the United States of America, who addressed

- Regional climate change in Eurasia and North America: Observed trends and modeling of the future
- Impacts of climate change on Eurasian landscapes (forests, wetlands and peatlands, steppes and grasslands)
- Challenges and new approaches for forest management and fire management under changing socio-economic and environmental conditions
- Fire management in agricultural lands
- Participation of civil society in fire management (fire prevention, defense of villages and rural assets against wildfires, volunteers)
- Public policies and strategic planning in fire management

The scientific-technical presentations and discussions confirmed the above-mentioned key problems which were the reason for organizing the congress. The participants addressed the following high-priority problems:

- Climate change is reality and already resulting in an increase of wildfire occurrence and area burned. The future of climate change will result in extremely dangerous fire situations in Russia and neighbouring countries of Eurasia, as well as to North American forests and other lands.
- The protection of some forest ecosystems against destructive fires, however, should not continue to focus on complete fire exclusion only. The traditional approach of prevention and suppression all fires needs to be replaced by fire management systems, in which natural fires and prescribed burning will be integrated if such fires have a positive influence on forest stability and the economic and social functions of forests.
- On the other hand, current excessive and unnecessary agricultural burning practices are recognized as one of the main sources of wildfires which ignite forests and other lands (especially peatlands) and result in severe environmental damages, including air pollution.
- Obligatory federal plan on implementation of prophylactic burns has to be excluded from the list of normatives for forest fire management plans as it was pointed out in the "Krasnoyarsk 10-point programme on the future of fire management in Russia" accepted at the First International Fire Management Week held in Krasnoyarsk in 2012. Decisions on the possibility to use prescribed burns, their types and volumes, should be made only by forest district managers. They should take into consideration the necessity to burn, current weather conditions, level of preparedness of people, finances and equipment needed. Otherwise the planned volume of prescribed burns wouldn't be implemented with proper quality, and works can frequently lead to spontaneous uncontrolled burning.
- Smoke pollution generated by agricultural burnings and by wildfires in peat lands and forests nearby settlements and urban centers constitutes a high threat to human health and security.
- There are transboundary, global effects of fire emissions, such as the transport of particle emissions to the Arctic environment where the deposition of black carbon accelerates the melting of snow and ice.
- Rural exodus and abandonment of agricultural lands contributes to increasing wildfire hazard and negatively impacts sustainable land and forest management, and the defense of rural assets, including villages, against destruction by wildfires.
- Despite the existing legal prohibition of agricultural burning, the reality is that there is limited law enforcement and hence little or no true control over agricultural burnings due to lack of clear institutional responsibilities.
- Solutions for alternatives to burning of agricultural residues are practiced internationally. However, throughout East Europe and Russia they are either unknown or cannot be implemented due to the weak economic conditions of agricultural enterprises. As a result, burning seems to be the only economically feasible way to dispose of agricultural residues. Existing subsidies for agricultural producers is very small compared to those that are available in the European Union. Agricultural extension and capacity building services in applying alternatives to burning do not exist.
- Only now has it been recognized by State authorities that the true number of wildfires and the areas of all ecosystems affected by fire are much higher than previously reported by official sources. A new, transparent monitoring and reporting system using satellite assets needs to be developed.
- There is no adequate training of personnel responsible for new approaches of fire management in forests, agricultural lands and village defense.
- Governments need to prepare their nations at local to regional levels to cope with the current and the future threats, which are likely to increase. Large, targeted investments are required now to be prepared for a future that will be characterized by climate extremes and extreme wildfires.

The vivid discussions held among the scientists and officials resulted in the following recommendations, which shall be forwarded to; the authorities of the Russian Federation (notably to the State Duma Committee on Natural Resources, Environment and Ecology; the Ministry for Emergency Situations; the Ministry for Natural Resources and Ecology and its subordinate Federal Forest Agency, and to the regional bodies within the Siberia Okrug); the neighboring countries of Eurasia (particularly to those attending the congress); and to the United Nations Economic

Commission for Europe (UNECE) in preparation of the “UNECE/FAO Regional Forum on Cross-boundary Fire Management” (United Nations, Geneva, 28-29 November 2013).

The congress participants endorsed the validity of the recommendations of the First and Second International Fire Management Weeks held in Krasnoyarsk in 2012¹ and 2013².

Recommendations

The Novosibirsk 10-Point Recommendations for Fire Management in Russia

The participants recommend the following to the decision making bodies in Russia and suggest neighboring countries of Eastern Europe and Central-Eastern Eurasia also review these recommendations and consider their application:

1. The governments of Russia and the neighbouring countries are alerted and warned by the scientific and the professional fire management community that the threat from wildfires in the region will become increasingly dangerous in the coming years as a consequence of climate change and socio-economic and demographic changes;
2. The development and application of advanced technologies of satellite remote sensing systems must be supported to obtain precise and reliable information about the number, size and impacts of fires in all ecosystems (forests, wetlands, agricultural lands, pastures and other vegetation) as well as their secondary consequences such as fire emissions affecting the quality of atmosphere and human health; and provide these data and information to the authorities and the public in a transparent way;
3. In order to reduce the negative effects on environment and human health and in complying with the Gothenburg Protocol to the UNECE Convention on Long-Range Transboundary Air Pollution (LRTAP) the extent of unnecessary burning of agricultural, pasture and steppe ecosystems must be reduced by
4. Review and further development of the legislation, law enforcement and management responsibilities of authorities concerning the use of fire on agricultural and pasture lands, as well as on abandoned agricultural lands;
5. Review and promotion of alternatives to agricultural burning by rural extension services;
6. Introduction of subsidies for supporting the agricultural sector to apply alternative technologies, following the examples of subsidies in the European Union.
7. Rural communities must be supported in the self-defense of rural assets (farms, villages, recreational sites, infrastructures) against wildfires by the;
8. Establishment of structures for homeland defense against wildfires;
9. Provision of appropriate training, equipment and insurance of volunteers active in rural wildfire defense
10. Fire management plans for protected areas, which consider the vulnerability of some ecosystems, and the fire tolerance or fire dependence of other ecosystems, must be developed;
11. Special attention must be given to develop capacities to manage wildfires occurring on vegetated lands that are contaminated by radioactivity, chemical and other industrial deposits or threatened by military assets including unexploded ordnance stemming from armed conflicts or military training;
12. Urban and rural areas must be prepared to protect populations against the adverse effects of wildfire smoke pollution; and publish transparent and open data about people affected by smoke pollution (hospital admissions, premature deaths);
13. A dialogue must be established at regional level between relevant agencies that encourages participatory approaches by inviting representatives of civil society to define fire management solutions at landscape levels (including forests, agricultural lands, abandoned agricultural lands, other lands);
14. Fire Management Resource Centers must be established at regional level which will train professionals and volunteers in fire management, disseminate information to the public on early warning and real-time information on ongoing wildfires, and facilitate mutual support between neighbouring regions in wildfire emergency situations.

1 <http://www.fire.uni-freiburg.de/intro/Krasnoyarsk-Fire-Management-Round-Table-Recommendations.pdf>

2 <http://www.fire.uni-freiburg.de/intro/2013-Fire-Mgmt-Week-Krasnoyarsk-Recommendations.pdf>

15. The authorities of the Russian Federation shall acknowledge the recommendations of the International Fire Management Weeks organized in Krasnoyarsk Krai in 2012 and 2013, which addressed the need to reform the approaches in the management of forest fires and suggested, among other recommendations, to
16. Change the doctrine or policy in forest fire management by gradual refusal of the policy of extinguishing all fires and recognizing the positive role of surface fires in some temperate-boreal forests ecosystems to reduce the threat of damaging wildfires and stimulate natural regeneration.
17. Complement legal and other normative documents that are regulating forest management and forest fire protection concerning the use of prescribed fires and prophylactic burning under forest canopy;
18. Develop methodological guidelines at Federal level for prescribed burning under forest canopy.
19. Create the occupation categories "Forest Fire Fighter" and "Fire Crew Leader" in the tariff-classification reference book;
20. Develop and approve at Federal level educational programs for the training of forest firefighters and fire management specialists at different educational levels;
21. The Order of the Federal Forestry Agency #174 of 27 April 2012 "Approval of the normative for forest fire management plans" need to be changed in the section on planning the prophylactic burnings at forest district unit level and to determine the normatives for fire prevention operation plans in the 1-km zone around settlements.

The participants of the Congress and the Exhibition endorsed these recommendations and called upon the authorities to initiate pragmatic steps of implementation. Furthermore, the participants thanked the organizers, hosts and supporters for the initiative to prepare the Congress and Exhibition and thanked the speakers of the Congress for their constructive contributions.

The participants underscored the regional and transboundary significance of the themes addressed by the Congress and the recommendations made by the participants of the Congress. They therefore suggested that these recommendations be forwarded for consideration in the deliberations at the UNECE/FAO Regional Forum on Cross-boundary Fire Management (United Nations, Geneva, 28-29 November 2013).

Photo Gallery



Welcome address by Alexander M. Gura, Head of the Forestry Department, Siberian Federal District



Welcome address by Anatoliy V. Kuznetsov, Head of EMERCOM of Russia, Novosibirsk Oblast



Welcome address by Roman V. Kotelnikov, Ministry of Natural Resources and Ecology



Opening address by Johann G. Goldammer, Director, Global Fire Monitoring Center (GFMC)



The exposition of fire management equipment included light aircraft for aerial fire monitoring



Tracked firefighting vehicles constructed for the use in extremely remote off-road conditions



Mr. Igor Tschernych, Director New Business, Novosibirsk Expo Centre, at the closing session



Alexander M. Gura, at the discussion of the Novosibirsk Recommendations for Fire Management in Russia