



## **4<sup>th</sup> International Wildland Fire Conference Recommendations of Session C**

### **Europe, Southeast Europe, Mediterranean North Africa and Caucasus**

#### **Regional Fire Assessment and Conclusions and Recommendations**

##### **I. Self-assessment of the fire situation and fire management capabilities**

###### **1. Introduction**

Fires in the Mediterranean Basin are more than just a consequence of long periods of drought; they can also be considered an indicator of the socio-economic differences between the different areas comprising the Mediterranean Basin and their respective levels of development. The highest number of fires and the most extensive areas are reported in the Mediterranean countries in the North of the Basin (Europe). This tendency appears to be extending from the Northwest to the East.

Socio-economic change in recent decades influences the risk of fires, given that it increases the flammability of the ecosystems. The changes with the greatest repercussions are:

- a) Rural depopulation, which leads to neglected areas of land. These areas are then invaded by natural and spontaneous vegetation that burns with a greater flammability. In addition, the aging population staying behind also increases the risk, given that traditionally farmers and shepherds burn the land themselves to control vegetation.
- b) Concentration of the population in urban areas, which widens the wildland/urban interface. The growing vegetation in the surrounding areas can eventually increase the risk to new residences (first or second homes).
- c) Shifts in priorities in forestry policy, which formerly were centred on the production of wood and other raw materials, are currently focused on nature conservation, landscape conservation and recreation. The decrease in timber removal and logging in some areas have led to increased amounts of biomass in woodlands, and hence increased flammability.

The reduced frequency of fires in the south and east of the Basin, where these changes have not occurred, contrasts noticeably with the high risk present at the Western European countries of the Basin.

To counter such a risk, during the last two decades the countries of the "fire club" (Portugal, Spain, France, Italy, Greece), have greatly improved their fire suppression resources at a high economic cost, with apparently acceptable results. Nevertheless, the possibilities of continuing to make large investments to combat the continued worsening of the problem seem almost expended. Thus, new approaches to forest fire defence are required to improve the strategies of prevention and suppression.

###### **2. Determining factors**

###### **2.1 Ecological factors**

Weather conditions and the way in which weather has been modified by the climate change do not seem to be leading to any lessening of the long periods of drought (3 – 6 months) in which vegetation becomes readily burnable. In addition, an increase in dry storms in those periods has been observed. As this coincides with extensive accumulation of fine fuels in the fields due to rural desertion, it could lead to highly intense fires in many zones at the same time.

## 2.2 Economic factors

The economic value of forest areas in the Mediterranean climate is lower than in any other sector, due to the slow growth of the species present and the scarce demand for the products that can be obtained from the land, except for cork. The low direct economic value discourages investments that could improve the productivity of the land.

The risk of forest fires is an additional negative factor for the economy. Until now it has not been possible to establish—not to mention consolidate—a fire insurance system that facilitates the process of obtaining credits and, as a result, investments. Unfortunately, the environmental values in the forest areas are not able to attract capital investments geared toward high profitability.

## 2.3 Demographic factors

The Mediterranean Basin is a region with a growing population. From 1950 to 2000, the population grew from 225 million people to 450 million. Projections indicate that by 2050 it could reach 600 million. However, this population is concentrated in the coastal areas and in some built-up urban areas inland. Specifically, the urban population for the entire Basin constituted 60 percent of the total population in 1970 and reached 70 percent in 2000.

In the countries in the north of the Basin, the proportion is already at 90 percent. That is, rural areas are emptying and the mountainous woodlands, in particular, can already be considered deserted. The current elevated migratory movements do nothing to alter this situation, given that immigrants settle mainly in urban areas and in highly-productive agricultural zones (that is, areas with the most employment opportunities). In the short term, the desertion of rural areas leads to neglected land where natural regeneration takes over. During many years this land will present a high flammability. In addition, a low population also means lack of labour for carrying out forestry work in general and fire protection work in particular.

## 2.4 Political factors

The situation described in the above points is naturally not attractive enough to interest politicians in woodland protection. However, the urban population's demand (through voting) for environmental protection has contributed to the establishment of permanent protection programs as one more of the services offered by the welfare state. Nevertheless, these services suffer the usual defects of such an approach: firstly, priority is given to the most urgent matters (fire suppression), which barely leaves resources available for the most important matters (prevention).

Secondly, government intervention generates passiveness among the population on one hand, and, on the other hand, a demand for impossible results in extreme danger conditions not clearly understood by the public.

## **3. Results of suppression work**

As stated above, the majority of resources are centred on fire suppression, with the general criteria that all fires must be put out. The policy of allowing fires to burn in some areas (natural prescribed burning) is not considered a possibility under any circumstances.

The large amount of property and goods to be protected in urban areas, as well as the development of fire services in those areas, has in many cases led to responsibility for fire suppression being transferred to those services, disassociating it from forestry activities.

As this shift in responsibility has not been accompanied by a specialization in forestry techniques, it has led to rather long periods of lack of coordination and inadequate results. Gradually, however, the concepts of forest fire behaviour and the specific techniques of fire-fighting have become more widespread and there is a greater coordination among fire services and forest management services.

The principle of total fire extinguishment and, fortunately, the availability of economic resources has led to important improvements in the training and equipping of personnel, as well as the spread of use of aerial resources. Each summer more than 400 aircrafts aid in suppressing forest fires in the European Mediterranean countries.

But that principle means that all available resources are concentrated to fight a fire with the sole objective of minimizing damages at any cost, even if the cost is greater than the potential damages.

#### **4. Budgets allocated for forest fire protection**

There is no database charting the investments made to protect against forest fires. Nevertheless, it can be estimated that the five E.U. Mediterranean countries invest more than 2.5 billion euros per year in prevention and suppression. 60 percent of this figure is earmarked for suppression equipment, personnel and operations, and the rest is allocated for preventative works.

#### **5. New and old problems**

The forest fire databases show that forest fires are a permanent seasonally-based problem in the Mediterranean region. Despite rural depopulation, the majority of fires continue to be caused by the traditional practices of burning for agricultural and farming purposes (burning of agricultural waste, burning of dry pastures). Winter fires in mountainous areas (the Cantabrian Mountains, the Pyrenees, the Alps) at times spread over a great area. Accordingly, fire services, which usually focus on the summer months, are forced to modify their strategies to include resources that are readily mobilized in winter as well.

The accumulation of fuel in large expanses of abandoned land sets the right conditions for large fires. In addition, lightning, which until a few decades ago was a less common cause, can increase the incidence of large fires in these large expanses of land. The tragic seasons of 1994 in Spain and 2003 in Portugal and France were caused mainly by the combination of lightning and extensive accumulation of fuels in the woodlands. As is foreseeable, intense erosive effects appear after large fires. It is an example of a chronic problem aggravated in recent times.

A new problem, which is becoming increasingly visible each new summer season, is the risk of fire in the wildland/urban interface. This problem, which was considered specific to other areas of the world such as California and Australia, is becoming more worrisome as building is occurring in forest areas, namely of first or second residences either on the coast or in the mountains near large cities. Disasters that destroy houses and take the lives of the residents are becoming more and more common. Fire services are therefore forced to concentrate on protecting homes and no longer focus on protecting the vegetation. Preventative legislation for this problem is either nonexistent or insufficient. Consequently, it is foreseeable that this problem could reach catastrophic importance.

#### **6. International Coordination**

Constitutionally, the European Union lacks a forestry policy, as such a policy was not contemplated in the Treaty of Rome. Nevertheless, in the last decade some movements have filled this gap, such as the European Parliament's approval of a Forestry Strategy and the approval of a Reforestation Program for poorer agricultural areas. In addition, a series of Regulations for Prevention of Forest Fires was in place from 1985 to 2001. These Regulations were supported by very small funds. These Regulations are only a token support for certain preventive actions and have led only to the creation of a European forest fire database (EFFIS)

In 2003 the new Regulation (Forest Focus 2003) was approved, for the forest monitoring network, the forest fire database, and other preventative measures. This Regulation ended by 2006.

It is necessary to note that no Community contribution is provided for suppression operations. Rather, there is strong solidarity between neighbouring countries through bilateral and mutual assistance agreements. In recent years, the availability of aerial resources has made such operations more frequent. Accordingly, it is necessary to regulate their use through revising and renewing agreements and endeavouring to establish homogenous coordination regulations, i.e., a regional Emergency Management System (EMS). The FAO/Silva Mediterranea Committee is promoting the elaboration of these regulations.

## 7. Prospects

The problems identified and the determining factors are not caused by conditions of the forest itself. Rather, the forest simply suffers from these problems and factors, and reflects them in the form of forest fires.

Although global development for the forest sector has many advantages, it also has a serious drawback: greater frequency of devastating fires. Europe has a powerful fire suppression infrastructure and an acceptable database, but significant improvements are needed in some countries. Likewise, although a small group of researchers of forest fires does exist, their findings have only limited repercussion on the operating services in the sector.

Preventative silviculture is clearly insufficient, as are both the environmental education programs aimed at urban population and those aimed at rural populations. New problems in the wildland/urban interface may motivate society to demand that greater attention be paid to prevention, in the form of effective actions, and not only rhetorical declarations. The saturation of suppression resources and their ever-growing cost can influence this as well. During the 1990s, aerial resources were developed by taking advantage of the low cost of restricted aircrafts of military origin, both from the U.S. and from Eastern countries.

The new regulations regarding aircraft safety are making it necessary to introduce technological improvements for both security and efficiency, which leads to significant supplementary costs. This will limit the possibility of further expansion of the aerial resources currently used.

The most obvious possibilities for improving the system can only be found in a conjunction of preventative actions reducing the frequency of fires and limiting their intensity through silvicultural treatments reducing biomass accumulations.

In these conditions, the improvement of the quality of fire suppression services, with well-equipped, well-trained and well-organized personnel applying specific forest fire fighting techniques, will make it possible to maintain and improve the results discussed. In order to make this improvement of services a reality, it is crucial to maintain a high level of personal security through a wide-reaching system of personnel certification and recognition. Such a system would also facilitate operations of multilateral assistance among countries. Given the current environment of globalisation, such operations are likely to be more and more frequent.

## II. Conclusions and Recommendations

1. The protection of the environment in Europe, the Mediterranean Basin and the Caucasus region cannot be effective without a Regional Strategy for Fire Management designed according to the distribution and intensity of the danger and developed in cooperation with the public and private stakeholders of the Forest Sector.
2. Rural abandonment and decline of the forest economy in the Mediterranean Basin is a major concern as climate change may aggravate the natural conditions of fire risk.
3. Special attention must be given to fires burning on radioactively contaminated lands, by fires on areas with unresolved conflicts and on territories with post-war hazards such as land mines and unexploded ordnance, as they affect human security and peace in the region
4. Priority is to be given to the prevention of fires caused as a consequence of the socio-economic changes in rural areas, and the promotion of the participation of the local population.
5. Some issues to be included in this Regional Strategy are:
  - Maintenance, improvement and enlarging of the European Forest Fire Information System (EFFIS) with standardized procedures for data collection and use of remote sensing for quick appraisal of large fires impacts, as a tool to identify the high risk zones.
  - EFFIS to set a danger prediction network covering all Europe, the Mediterranean Basin and the Caucasus.

- Definition of forest fire risk areas taking into account the fire incidents, fuels, value of forests, protected areas, forest-urban interfaces and forest ownership.
  - Analysis of forest fire emissions and impacts on human health
  - Studies on the silvicultural condition of woodland areas, including forest fuel and biomass maps in coordination with the National Forest Inventories.
  - Analysis of socio-economic impacts of fires
  - Studies on fire causes, including the use of fire at the rural areas and possible preventive actions in cooperation with the local population.
  - Scientific research programmes addressing the consequences of changes of climate, land use and land cover and socioeconomic changes on fire regimes, environment and society.
  - Creation and distribution of awareness materials in several languages.
  - Programmes of preventive infrastructures: preventive silviculture, roads, lookouts, water reservoirs.
  - Joint actions on border areas, where appropriate, such as observation and monitoring networks with compatible communication systems (considering languages).
  - Promotion of bilateral and multilateral agreements for cooperation in suppression activities, including standardized procedures of integration of resources.
  - International training courses
  - Programmes for burned areas restoration, giving priority to the surfaces destroyed by large, intense fires, where the environmental impact is the greatest.
6. These Recommendations for a Regional Strategy are to be included in the Conference Conclusions and presented to the international bodies competent in the Region, like a contribution to the build up of a Regional Strategy of Cooperation in Fire Management.
  7. Agencies and groups are encouraged to participate in the Fire Management Actions Alliance in support of their adoption of the Voluntary Guidelines for Fire Management.
  8. It is also recommended that a Regional Consultation on Global Change and Wildland Fire will be convened within the next 2 years to progress to the 5<sup>th</sup> International Wildland Fire Conference.