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Preventing forest fires

Report
Committee on the Environment, Agriculture and Local and Regional Affairs
Rapporteur: Mr Iñaki Txueka, Spain, Alliance of Liberals and Democrats for Europe (ALDE)

Summary

Every year forest fires deplete our natural heritage and biodiversity, particularly in southern Europe. There is tragic destruction of property and, of course, loss of human life on top of which there are also the considerable costs entailed for forest owners and public authorities.

Even though fire-fighting resources have increased and improved, the number of forest fires continues to rise each year. We must therefore make progress in predicting and above all preventing fires, and in taking appropriate action and review the current focus of expenditure and efforts.

Natural factors, such as droughts, winds, the relief and difficulties of access play a decisive part in the scale and spread of the fires, but it must be emphasised that the vast majority of fires are caused as a result of human activity. There has been a huge rural exodus in recent decades resulting in the abandoning of traditional agricultural, stockbreeding and forestry activities leading to an increase in the phytomass which can catch fire and a deterioration of the rural and forest infrastructures (forest tracks, water supply points).

Consequently, preventing the terrible devastation that forest fires wreak every summer must become a priority for the governments of Council of Europe member states, especially in southern Europe.

A. Draft recommendation

1. Forest fires are one of the most negative aspects of the degradation of our environment. Every year fires in woodland and mountain areas deplete our continent's natural heritage, destroying large masses of woodland and undermining biodiversity.

2. They also cause emissions into the atmosphere, destruction of property and loss of human life, both among the populations affected and among the fire-fighting teams. Added to this is the gradual destruction of groundwater storage capacity which exacerbates imbalances in the water system and makes water shortages more common.

3. Forest fires are a reality affecting all the Council of Europe countries, especially the Mediterranean ones, which are the worst hit in terms of the number of fires and surface areas burnt. In the coming years, owing to climate change, drought will increase in southern Europe, with consequences including more frequent forest fires.

4. One of the factors conducive to fires is the rural exodus which has caused a number of agricultural practices that helped prevent forest fires to be abandoned in recent decades.

5. The Assembly unreservedly supports European Parliament Resolution P6_TA(2005)0334 on natural disasters (fires and floods), which refers to the fires in Europe in 2005.

6. The Parliamentary Assembly therefore recommends that the Committee of Ministers invite the member states to:

6.1 promote the development of activities encouraging the use of woodlands in a spirit of respect for the principles of sustainable development and, as far as possible, provide financial and fiscal support for these activities;

6.2 promote policies based on the principle that the best means of combating forest fires is prevention;

6.3 encourage the adoption of fire prevention measures involving forestry techniques such as firebreaks and the intelligent use of controlled burning;

6.4 develop preventive socio-economic strategies enabling farmers, breeders and foresters – the rural population in general – to continue with their usual activities in areas affected by fires;

6.5 promote scientific research on the potential of raw materials of forest origin, as an important factor for valorising forest exploitation and increasing its profitability;

6.6 organise information campaigns aimed directly at farmers, breeders and foresters on the need and obligation to put an end to practices (whether traditional or otherwise) which entail a fire risk, especially at certain times of the year;

6.7 adopt strategies for collecting and recycling residual forest biomass and for woodland diversification, planting and regeneration using more fire-resistant species in areas affected by fires, while bearing in mind local bioclimatic and environmental characteristics;

6.8 prevent material benefits or advantages being procured from the use of burnt surface areas or the sale of burnt wood;

6.9 prohibit changes in the use of fire-damaged mountain areas or woodland which prevent the regeneration of plant cover, and extend bans on urban development and construction in burnt areas to a minimum of 30 years;

6.10 provide by law for minimum distances to be observed between housing and forest areas for all new buildings in areas at risk;

6.11 prohibit the lighting of fires in forests in the regions and during the seasons at risk and envisage severe sanctions against offenders;

6.12 step up campaigns to raise awareness of this problem in schools and particularly among communities exploiting and engaging in mountain and woodland leisure activities;

6.13 increase criminal penalties for criminal acts which cause a substantial proportion of forest fires;

6.14 take the measures needed to reinforce the training of fire-fighting departments and teams and provide them with adequate resources;

6.15 set up a pan-European network for specialised further education, focusing on techniques for preventing and fighting forest fires which are more and more necessary to control the size and spread of forest fires;

6.16 set up detection systems and appropriate infrastructure facilities to ensure effective intervention as swiftly as possible, in order to prevent fires from going beyond the control level;

6.17 promote the adoption of co-ordinated intervention protocols and assign responsibility for forest fire management to local and regional authorities;

6.18 strengthen and finance co-ordination and intervention facilities, particularly airborne resources, with transfrontier scope;

6.19 accede, unless they have already done so, to the EUR-OPA Major Hazards Agreement.

7. The Assembly also recommends that the Committee of Ministers:

7.1 invite the European Conference of Ministers responsible for Regional Planning (CEMAT) to reinforce the application of the Guiding principles for sustainable spatial development of the European continent, particularly the measures for preventing disasters such as forest fires, by appropriate planning of forest areas, and to include this issue in its work programme.

7.2 instruct the EUR-OPA Major Hazards Partial Agreement to develop its activities on forest fires, especially in the Mediterranean region, in co-operation with the other partners working in this area such as the European Commission, the United Nations Food and Agriculture Organisation (FAO) and the Global Wildland Fire Network of the United Nations International Strategy for Disaster Reduction (UN-ISDR).

8. The Assembly emphasises that local and regional authorities have a major role and substantial responsibilities in combating forest fires and recommends that the Congress of Local and Regional Authorities of the Council of Europe look into this issue with a view to devising concerted strategies to be carried out by local and regional authorities at pan-European level.

B. Explanatory memorandum by Mr Iñaki Txueka, Rapporteur

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I. Introduction

1. Although fire is a natural element in terrestrial ecosystems and often serves as means of managing the plant cover of woodland areas, continuing and recurrent forest fires are one of the most negative aspects of the degradation of our environment. At present, fires probably represent the greatest threat posed to woodland.

2. The environmental impact of fires on forests, the soil and surrounding landscape is enormous. Forests managed in a sustainable way provide a natural and constant supply of resources, services and income. Every year fires in woodland and mountain areas deplete our natural heritage, destroying large masses of woodland, vegetation and biodiversity in their wake.

3. Constantly recurring fires destroy the surface plant cover. The number of invertebrates decreases along with bacterial activity and the development of fungi; in turn the possibilities for surface layer renewal are reduced, and subsequent natural regeneration is therefore made very difficult. As a result of the consequent break in the food chain, there are imbalances in the forest ecosystem in which certain plant species play a dominant role.

4. There is, however, one aspect of this issue that should be highlighted in terms of its consequences, as it has a direct impact on the most serious problems affecting southern Europe, namely drought, erosion and lack of water. The forests and soil absorb the rainwater which is then slowly released. They are therefore an excellent means of regulating water. However, fires make the soil more impermeable and prevent the rains from seeping through. In addition to the loss of land and landslips caused by the erosion of burnt soil, there is the gradual destruction of ground water storage capacity, which exacerbates imbalances in the water system and makes water shortages more common. With well-known studies establishing that every hectare of woodland with 100 tonnes of plant cover is equivalent to aquifer retention of 50,000 litres per year, we can easily calculate the major repercussions within the aquifers in the damaged zones. Moreover, the quality of the water is often affected. It becomes murkier and more contaminated as the vast majority of the rains become torrential surface water streams which can no longer be drained and filtered as they should if the soil were well-structured.

5. As a result of the combined effects of the fires and rains, the normally fine and delicately structured mountain soil deteriorates, becoming infertile as its organic matter and nutrients are swept away downhill. Plant recovery then becomes increasingly more difficult and less successful.

6. Account must also be taken of CO_2 emissions, compounds of nitrogen and various hydrocarbons deriving from incomplete combustion and the smoke entering the atmosphere.

7. Every year, there is tragic destruction of property and, of course, losses of human life among the populations concerned and the fire-fighting teams attempting to control and put out the fires.

8. On top of this there are the considerable costs entailed for forest owners and public authorities of all the reforestation policies, forest care and management and fire prevention efforts, as well as the feeling that these disasters strike every year, despite an increase and improvement in the technical and human resources available to combat them.

II. Geographical incidence

9. Although forest fires are a reality affecting all the countries of the Council of Europe, it must also be pointed out that southern Europe - Mediterranean Europe - is worst hit in terms of the number of fires and surface areas burnt. The countries most recurrently and seriously affected are Spain and Portugal, which, between them, account for over 75% of the hectares burnt over the last 25 years (1991-2004). According to the last EFFIS[1] report, 12,000,000 hectares went up in flames in southern Europe in that period. Of those, 4.7 million hectares were in Spain, 2.7 million in Portugal and 4.6 million in the rest of Mediterranean Europe. The figures for 2005 point to an upward trend in forest fires, following a pattern visible since the decade 1960-1970.

2004	Surface areas burnt (ha)
Turkey	4,876
Romania	187
Slovenia	303
Slovakia	157
Bulgaria	10,800
Poland	36,087
Latvia	428
Czech Republic	335
Cyprus	1,218
Sweden	2,200
Finland	735
Greece	10,263
Italy	60,176
France	12,500
Spain	134,171
Portugal	129,652

[1] EFFIS, European Forest Fire Information System

Number of fires	Portugal	Spain	France	Italy	Greece	Total
2004	21,891	21,394	2,028(*)	6,428	1,748	53,489
% of the total in 2004	40,9	40	3,8	12	3,3	100
Average 1980-1989	6,778	9,514	4,910	11,571	1,264	34,036
Average 1990-1999	22,250	18,151	5,537	11,352	1,748	59,039
Average 2000-2004	26,059	20,779	4,207	7,696	1,891	60,633
Average 1980-2004	16,823	15,222	5,020	10,709	1,583	49,357
TOTAL 1980-2004	**420,573**	**380,551**	**125,503**	**267,718**	**39,570**	**1,233,915**
Surface area burnt (ha)	129,652	134,171	12,500	60,176	10,267	346,766
% of the total in 2004	37,3	38,7	3,6	17,4	3	100
Average 1980-1989	74,486	244,788	39,157	148,485	52,417	559,331
Average 1990-1999	102,203	1,611,323	22,695	108,890	44,108	439,219
Average 2000-2004	189,532	129,106	32,078	76,764	36,610	464,090
Average 1980-2004	108,582	188,265	31,156	118,303	45,932	492,238
TOTAL 1980-2004	**2,714,547**	**4,706,633**	**778,900**	**2,957,572**	**1,148,298**	**12,305,950**

(EFFIS.2004)

III. Consequences

10. It is clear that, even though fire-fighting resources have increased and improved, the number of fires continues to rise each year. Major efforts are being made as regards technology, training, fine-tuning modern risk assessment methods, digitised maps of forest areas, modelling and simulating fires (cf the European Union's Megafires, Mefisto and Minerve projects). These are all instruments that are being used more and more, but it is nonetheless true that we have not managed to bring about a reduction in the total surface area affected by forest fires, reverse the trends seen in recent decades or lower the number of fires as we would like.

11. We must also look at this from the social angle. In society as a whole and particularly among the populations affected, the continuing and recurrent incidence of forest fires every year is producing a feeling of despair, fatalism and social passivism, whereby forest fires in the areas at risk are deemed to be normal or natural. However, the effects of the fires and the human tragedies that come in their wake are a constant reminder that such situations cannot be accepted as normal. The debate on whether funding should be provided for the regeneration and renewal of the affected woodland is very present in political and forestry circles in southern Europe. The efforts required and the costs involved are considerable and better results than those made to date need to be achieved. We must therefore make progress in predicting and above all preventing fires, and in taking appropriate action despite the difficulties.

12. There is a need to review the current focus of expenditure and efforts. Most money is allocated to ways of putting out fires and dealing with the consequences. The main effort should be focused on preventive measures and on fostering appropriate attitudes and education among the people living in the areas at risk and among society in general.

IV. Main causes

13. Having analysed the causes of forest fires and why they occur with such intensity and regularity in Mediterranean Europe, it can be said that the main causes are as follows:

i. Natural causes

14. Natural factors, such as droughts, winds, the relief and difficulties of access play a decisive part in the scale and spread of the fires. The effects of climate in the most sensitive zones are very important.

The lack of water and high temperatures cause an escalation in the risk of forest fires. Major fires usually coincide with continuous periods of drought. For several years rainfall in southern Europe has been abnormally low and the effects of the drought have been constantly apparent in general, but particularly so in woodland areas with its alarming potential for catching fire.

ii. Causes of human origin

15. All the same, it must be emphasised that the vast majority of fires are caused as a result of human activity. Although statistics show considerable variations depending on the area, period or year, analysis has shown that at most 10% of fires result from natural causes (lightning, heat), whereas the remaining 90% are caused by human acts. Of these, 30% are of a criminal nature, or in pursuit of various interests such as urban development, game management, timber production and livestock farming. 50% are due to negligence, age-old rural practices such as burning the stubble and regenerating annual pastureland for livestock, day-trippers, recreational activities etc, while the causes of the remainder are unclear. The percentage of unknown or unclear causes has fallen in recent decades, a result primarily of more thorough investigations.

16. There is no doubt that acts of negligence combined with intentional practices are the main causes and we should try to explain why these instances persist.

17. There has been a huge rural exodus in recent decades, with many young people moving to towns and urban centres, resulting in the abandoning of agricultural, stockbreeding and forestry activities in these rural areas. The lack of profitability of farming activities and the small size of numerous concerns in the farming and forestry sectors (small-holdings) continue to be factors in the rapid break-down of rural areas and in particular of preventive practices and forestry as the labour force falls into short supply and silvicultural activities historically pursued by rural communities are lost. There is also the risk of losing know-how and proper mountain and woodland management skills developed over generations of coexistence with nature.

18. In short, the forests bringing the greatest benefits to rural communities - those which are exploited on a sustainable basis - are in fact the forests which hardly ever catch fire and never do so on a frequent basis.

19. The consequence of abandoning these traditional practices in large forest areas is an increase in the phytomass which can catch fire. The burning capacity of the vegetation is considerably higher, which in turn greatly increases the risks of fires as well as their intensity. Flames spread with such speed and force that it is often impossible to act in time and quickly extinguish the blazes.

20. As these areas are abandoned, the infrastructure of forest tracks and water supply points deteriorate, often making fast access impossible to the sites of fires, which, even if detected in time, are themselves factors in preventing swift and effective action to extinguish outbreaks in the early stages.

21. Certain errors in coordination of resources for detecting, giving warning of and fighting fires sometimes result in action not being swiftly enough to prevent small fires taking on substantial proportions.

22. The fire prevention and fire-fighting services do not have the necessary staff, resources or proper training to take well-coordinated, efficient action.

23. There has often been emphasis on short-term profitability, and large-scale reforestation programmes have favoured single rapid-growth tree varieties, rather than native species and mixed forests which are more resistant to fire. This has also made forests more vulnerable to fires.

V. Conclusions

24. Preventing the terrible devastation that forest fires wreak every summer must become a priority for the governments of Council of Europe member states, especially in southern Europe. To do so, it is recommended that the following measures be quickly implemented in these countries:

- Promote policies based on the fact that the best means of combating fires is prevention and the best form of prevention is better care of mountains and forests;

- Give priority to and focus on the areas vulnerable to fires, as well as preventive strategies at the socio-economic level enabling farmers, breeders and foresters, and the rural population in general, to continue with their activities;

- Promote and fund silvicultural prevention activities fostering sustainable use of forests;

- Encourage the reduction of combustible matter and scrub growth through brushwood clearance and encourage their use in suitable areas for the production of biomass and bio-fuel;

- Promote the adoption of technical and silvicultural prevention measures such as firebreaks and the intelligent use of controlled burning techniques and fire prevention measures;

- Foster campaigns aimed directly at owners of farm-holdings and woodlands on the need and obligation to put an end to practices, even traditional ones, which entail a fire risk, especially at certain times of the year;

- Envisage strategies of woodland diversification, planting and regeneration using endemic more fire-resistant species in sensitive areas;

- Foster the adoption of measures to prevent clear benefits or advantages being procured from the sale of burnt wood;

- Prohibit changes in the use of fire-damaged mountain areas or woodland which prevent the regeneration of plant cover, and extend bans on urban development or construction in burnt areas to a minimum of 30 years;

- Foster the adoption of policies aimed at preventing risk to areas where housing and other buildings are scattered in mountain terrain, laying down minimum distances from adjoining forest areas;

- Step up campaigns to raise awareness of this problem in schools and particularly in communities exploiting and engaging in mountain leisure activities;

- Implement the systems needed to reinforce the training of fire-fighting departments and teams and provide them with adequate resources;

- Set up detection systems for the fastest possible intervention with a view to preventing fires from going beyond the basic control level (fire outbreak < 1 hectare);

- Foster the setting up of the minimum infrastructures required for action that is as swift as possible and effective from the outset, as speed of reaction is crucial;

- Foster the adoption of coordinated intervention protocols and the taking of responsibility at regional and national level;

- Strengthen and provide funding for means of coordination and intervention, particularly airborne resources, with transfrontier scope.

Reporting committee: Committee on the Environment, Agriculture and Local and Regional Affairs

Reference to committee: Doc. 9993, Reference no. 2902 of 25 November 2003, extended on 25 November 2005

Draft recommendation adopted unanimously by the committee on 9 June 2006

Members of the Committee: Mr Walter **Schmied** (Chairman), Mr Alan **Meale** (1e Vice-Chairman), Mr Renzo **Gubert** (2e Vice-Chairman), Ms Elsa **Papadimitriou** (3e Vice-Chairperson), Mrs Marisa Abbondanzieri, Mr Ruhi Açikgöz, Mr Toomas Alatalu, Mr Gerolf Annemans, Mr Ivo Banac, Mr Rony Bargetze, Mr Jean-Marie Bockel, Mrs Pikria Chikhradze, Mr Valeriu Cosarciuc, Mr Osman Coşkunoğlu, Mr Alain Cousin, Mr Miklós Csapody, , Mr Taulant Dedja, Mr Hubert **Deittert**, Mr Tomasz **Dudziński**, Mr Adri Duivesteijn, Mr Bill **Etherington**, Mrs Catherine Fautrier, Mr Adolfo Fernández Aguilar (alternate Mr Julio **Padilla**), Mr Christopher Fraser (alternate: Mr Nigel **Evans**), Mr György Frunda (alternate Mr Sandor **Tàmas**), Ms Eva Garcia Pastor, Mr Fausto **Giovanelli**, Mrs Maja Gojković, Mr Peter Götz, Mr Vladimir Grachev, Ms Aynur Guliyeva, Mr Kristiin Gunnarsson, Mr Poul Henrik Hedeboe, Mr Mykhailo Hladiy, Mr Anders G. Högmark, Mr Rafael **Huseynov**, Mr Stanislaw **Huskowski**, Mr Jean **Huss**, Mr Ilie **Ilaşcu**, Mr Mustafa Ilicali, Mrs Fatme Ilyaz, Mr Ivan Ivanov, Mr Bjørn Jacobsen, Mr Jaroslav Jaduš, Mr Gediminas **Jakavonis**, Mrs Danuta Jazłowiecka, Mr Ivan Kalezić, Mrs Liana Kanelli, Mr Karen Karapetyan, Mr Orest Klympush, Mr Victor Kolesnikov (alternate Mr Dmitry **Skarga**), Mr Zoran Krstevski, Mr Miloš Kužvart, Mr Ewald Lindinger, Mr Jaroslav Lobkowicz, Mr François Loncle, Mr.Theo Maissen (alternate: Mr John **Dupraz**), Mr Giovanni Mauro (alternate: Mr Pasquale **Nessa**), Mrs Maria Manuela de Melo, Mr José Mendes Bota, Mr Gilbert Meyer (alternate: Mr Daniel **Goulet**), Mr Goran Milojević, Mr Vladimir Mokry, Mrs Carina Ohlsson, Mr Pieter Omtzigt, Mr Cezar Florin Preda (alternate Mr Laurentiu **Mironescu**), Mr Jakob Presečnik, Mr Lluís Maria de Puig (alternate Mr Gabino **Puche**), Mr Jeffrey Pullicino Orlando, Mr Maurizio Rattini, Mr Hermann Scheer, Mr Marinos Sizopoulos, Mr Rainder **Steenblock**, Mr Gàbor Szalay, Mr Nikolay Tulaev, Mr Iñaki **Txueka**, Mr Vagif Vakilov, Mr Geert Versnick, Mr Rudolf **Vis**, Mr Klaus Wittauer, Mr G.V. Wright, Mr Kostyantyn Zhevago

N.B. The names of those members present at the meeting are printed in bold.

Secretariat to the Committee: Mr Alfred Sixto, Mr Bogdan Torcătoriu and Ms Marine Trévisan