



Republic of Albania – Fire Report 2007

1. Introduction

Albania, with a small territory of 28,750 km², is one of the European countries with rich vegetation, which originated during the Tertiary era. Today's vegetation of Albania is composed of endemic relic vegetation and of species that have invaded from neighboring regions through migration, having phylogenetic similarities with floristic elements of neighboring countries. Albania is a mountainous country with higher topographic and climatic variety than the other European countries: 52% of its surface is on elevation between 600 and 700 m above sea level with prevailing steep slopes (ca.30%). Thus, ca.90 % of its surface is subject to severe erosion. The northern, north-eastern, south-eastern and central areas are characterized by hilly-mountainous terrain; whereas the north-southern/coastal area along the Adriatic and Ionian coast is lowland.

Climate extremes range from extreme cold winters in the northern, north-eastern and south-eastern areas to very hot and dry summer along the coast. Rainfall regimes vary from north to south and from coast to inland. There are fewer rainy days in the south than in the north, but months without rainfall can occur at any time of the year, as it is typical for the Mediterranean climate. Local precipitation differences lead to diverse vegetation patterns. Forests occupy 1.025 million ha, with a standing volume of about 82 million m³ and an average annual growth of 1.4 m³ per ha (this is very low compared with many countries of Central Europe). The management regime of the forest areas is as follows:

- 460,950 ha are high forest (46% of the total forest area) consisting of 171,850 ha coniferous and 289,370 ha broadleaved species
- 332,250 ha coppice forests (29% – mainly oaks)
- 257,850 ha shrub lands (25%)

Taking into account the functions of the forest areas, 193,000 ha perform a protective function while the rest (836,650 ha) are productive forests.

The reforms in the forest sector have been very rapid and with big changes regarding the ownership of the forests and pasture lands. During the transition period, 60 % of the forests area and more than 70 % of the pasture areas have been transferred to the property of local governments and local communities. This rapid change has caused a lot of problems that have to do with the lack of capacity and resources of the local governments in fire management. Furthermore, the lack of experience in forest fire suppression is noted during the fire season.

Fire Impacts

The negative fire impacts are very large in the conifer forests and less in coppice and shrubs. The main negative impacts are the erosion after the fire occurrence in the area burned, the destruction of the regeneration cover, the influence in land structure and water regime circle. Farther more there are impacts on diminution of the forest productivity. With all the characteristics mentioned above the forest ecosystems in Albania are very sensitive from the fire. Only in the coastal forest protection belt, surface fires in pine stands have the role of maintenance and as a measure of controlling the fire propagation. In the sites affected by fire especially in the natural pine forests in the North of the country in the districts of Puke, Kukesi, Mirdita we can see that the vegetation cover after the fire is very different from the pre-fire vegetation.

In the southern part of the country, traditionally for centuries, the fire is used as a tool of cleaning and regeneration of pastures. In these sites the long use of fire has resulted in significant changes of the ecosystems. One of the main impacts is the favoring of the establishment of annual grasses and the disappearance of biennial and perennial plants.

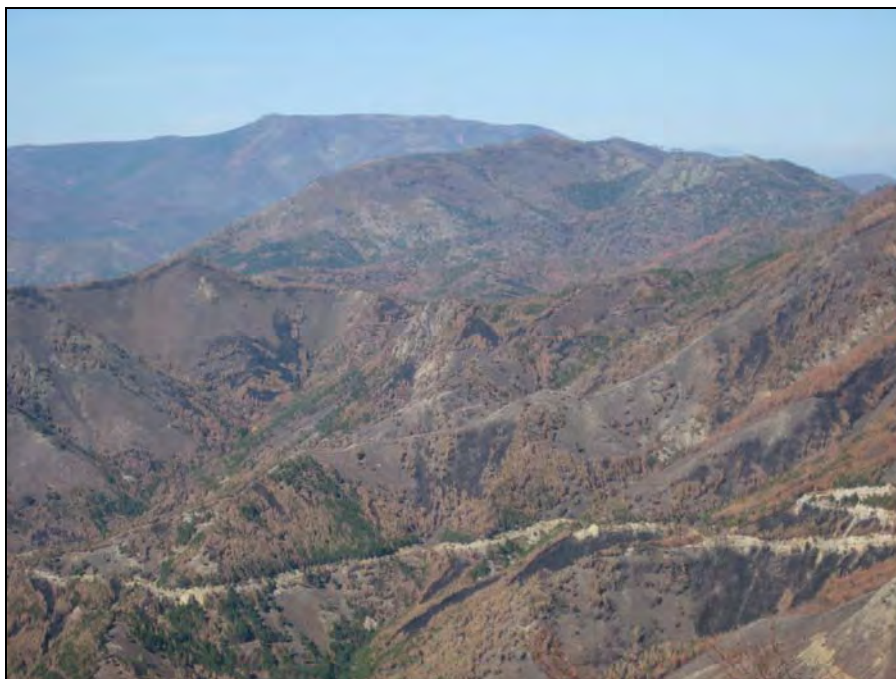


Figure 1. A fire near Tuç, Puka District, severely burned natural pine forest (*Pinus nigra*) The fires started on 19 July 2007 and was suppressed 5 days later on 24 July 2007 after burning area 27 ha (Photo: G. Hoxhaj).



Figures 2 and 3. During the extremely dry summer of 2007 wildfires affected all types of forests, e.g. the pine (*Pinus nigra*) forest Qafa e Barit, Puka District, or the beech (*Fagus sylvatica*) forest in Malesi e Madhe District (Photos: G. Hoxhaj).

It was noted that the regeneration of the shrubs is very fast after the fires, depending of the severity and the intensity of the fires in these sites. One of the main problems arising from severe fires in these sites is the erosion and the water regime in the first years.

Considerable damages were observed in the fauna, and change of behavior of animals and birds. Altogether it is underlined that the fire impacts in the Albanian forest are predominantly negative in all ecosystems and land-use systems.

2. Assessment of Fire Situation in the Country

Extent: Number, area and types of forests and other vegetation affected by fire

The year 2007 has been the most severe year regarding the number of fires and area affected by forest fires in Albania. A national emergency situation was declared and the government created an inter-ministerial committee "Central Unit for Civil Emergencies" (CUCE), led by the vice-prime minister. The committee brought together all the state agencies that are responsible for the disaster management including forest fires. A national coordination centre was established at the operational centre of General Staff of the Armed Forces. This centre coordinated all the human and logistic resources all over the country.

During this very difficult period firefighting resources from the Ministry of Defense, Ministry of Interior, Ministry of Environment, Forest and Water Administration (Forest Service), Prefectures, and Local Government were coordinated. To be ready for a rapid intervention, more than 200 soldiers from the Army were dispatched to four regions, nearby the most important forest areas, two in the north two in the south. This has helped a lot during the days of severe fires.

The firefighting operations were mainly lead by forest service specialists. Effective use of the resources was noted in many cases. However, there were also cases of lack of coordination and control of the situation. Local governments and local communities in general have been very passive.

The Ministry of Interior, responsible for the management of civil emergencies, requested assistance through the Monitoring and Information Center (MIC) of the European Commission and other international organizations (e.g., NATO) for aerial support and other means.

Some brief evaluation of the resources received from other countries:

- Ukraine supported Albania with a fixed-wing firefighter aircraft type Antonov 32 (AN-32). Evaluation: very expensive and inefficient due to performance characteristics.
- Aerial support from Italy with 2 Canadair water bombers provided professional and very successful operations. This aerial support from Italy was received under a bilateral government agreement on civil emergencies cooperation.
- The German government, following a request of the Albanian Government, provided two light helicopters. Their helibucket capacity was 500 l of water. The helicopters operated in the northern part of the country in firefighting operation near the Drini River and in the area surrounding Tirana. To facilitate their flights the crew was accompanied by an Albanian pilot from the Albanian Air Force. According to our evaluation the operations were not very effective due to the need to refuel in the centralized fuel depot in Tirana as well as the low carrying capacity of water.

Table 1. Wildfire statistics for Albania 1997-2007

Year	Total No. of Fires on Forest, Other Wooded Land, & Other Land	Total Area Burned on forest, Other Wooded Land, & Other Land (ha)	Area of Forest Burned (ha)	Thereof area of "Forest 1" (ha)	Thereof area of "Forest 2" (ha)	Thereof area of Open Steppe / Grassland and Pastures (ha)	Thereof area of "Peat Swamp / Wetlands" (ha)	Human Causes (% of No.)	Natural Causes (% of No.)	Unknown Causes (% of No.)
1997	735	1847								
1998	601	680								
1999	628	689								
2000	915	3675								
2001	327	1434	941		941	493	100			55
2002	140	690	650		650	40	99	1		63
2003	771	6359	4419		4419	1948	95	5		57
2004	143	1473	491		491	982	100	0		40
2005	174	3241	300		300	1740	100			61
2006	176	1081	108		108	303	98	2		60
2007	1190	12120	5857		5857	6263	97	3		71
Average	580	3329	1824		1824	1681	98.5			53.7

Causes of wildfires, reasons or underlying causes of human-ignited fires

The year 2007 was the most problematic and severe year so far concerning the occurrence of an extremely large number and area affected by forest and pasture fires in Albania. The total surface affected by fires according to the forest police data is around 40,000 ha. The causes of fires in 2007, recorded by the forest police, were:

- Intentionally set fires: 218
- Fires caused by negligence: 128
- Unknown causes: 843

In 180 cases, the forest service has sent a request for penal responsibility to the prosecution office. Around 40 persons have been accused for intentional damage of property by fire. Until now no one is detained in prison.

Description of selected extreme fires in 2007

During the 2007 fire season every day in all over the country we have had around 40-50 cases of wildfires. Some of the fires were put out after 3 or 5 days. The most affected areas were in the regions of Puke, Mirdita, Dibra and Kukes. In the Dibra district the most affected area was the National Park of Lura. The fires in this region lasted at least 15 days. There have been severe fires due to the composition of the forest, topography, high temperatures, long draught, and lack of human resources to intervene by fire extinction. In this region the most important problem was the consequence of the rural exodus – the lack of human resources because the area is abandoned by people. The causes of fires in these regions were also exclusively by humans, some intentionally set fires, some caused by negligence. Due to the characteristics of the area it was very difficult to find the violators.

Fire damages in 2007

The most important factor that has created the fire emergency situation during 2007 was the long drought period, accompanied by a large number of ignitions. The other reason that had had a strong impact on the situation was the above-mentioned abandonment of the rural areas from the population. This trend of rural depopulation is resulting in:

- Lack of human resources to be involved on fire suppression operations
- Accumulation of vegetation (succession; fuel accumulation) in the forests and pastures as a result of abandoning the traditional, intensive use of territory.

Another problem was the use of fire as traditional tool for land management like burning of agricultural wastes after harvesting the crops and the burning of winter pastures. Although it is recognized that fire is an essential tool for agriculture and pastoralism it is observed nowadays that the lack of skill and awareness of fire danger during droughts, as well as insufficient people to collaborate in safe burning are resulting in escaped, uncontrolled fires.

In some areas where the level of poverty is high we noted that fires had been set by purpose in order to be employed in fire suppression operations. In some areas fires have been set as a result of conflict of ownership or over the use of the territory. In the region of Puka some fires have been set as a reaction to the decision of the Forest Administration to sell the timber to private companies. The bigger damages have been caused by wildfires in 30 years-old pine afforestations.

During 2007 the political situation has been calm. The local government and the local community have played a very important role during this situation. There have been causes of good and bad examples – but unfortunately more bad examples, e.g. because of negligent performance of the head of the commune and the indifferent attitude of the local people to help in fire operation. It has also been noted that the operations of voluntary units in communes and villages failed due to the low motivation, insufficient organization and unclear responsibility of the structures. The fire observation and information system of the Forest Service has been weakened as a consequence of low availability of observers and lack of communication equipment.

There is an overall lack of infrastructures, logistics and capacities for fire management. There are few trained people only, and they are insufficiently equipped. The coordination between the state agencies, which had failed at the beginning of the season, was improved very much during the functioning of the Central Unit for Civil Emergencies.

Fire prevention measures in 2007

To prevent the forest wildfire the Ministry of Environment, Forest and Water Administration (MEFWA) and its dependent structures from top down have performed the below listed actions:

- Since the beginning of the year 2007 the MEFWA has developed the yearly National Plan for Forest and Pasture Fire Management (NPFPM). A coordination unit has been established at MEFWA.
- On 2 June 2007 a national workshop was organized in Shkodra city with representatives of all stakeholders of state agencies and non-government organizations to discuss the improvement of the coordination of the actions to prevent and suppress forest fires.
- Based on its legal mandate MEFWA issued an edict, which places obligation on all state agencies at regional level and all local government units to take prevention measures for prevention and suppression of forest fires.
- Following the rules set by the NPFPM all Forest Service Directorates (FSD) in districts developed own fire management plans at local level.
- Voluntary units for forest fire suppression operations in every village have been organized by the Forest Service.
- In the National Forest Parks and Protected Areas a supplementary observation system was established during weekends.
- A TV advertisement spot was broadcasted to inform the public about the damages caused by forest fires. The spot was transmitted in several national and local TV channels. Some leaflets and information mails were distributed to local communities.
- The MEFWA invited local population to be very cautious using fire during the day and to actively participate in fire suppression operations.
- The mobile telephone companies were encouraged to distribute attention messages to their entire clients concerning the fire danger.

Response to fires in 2007: Fire suppression

During the fire season all the personnel of the forest police – on average about 1000 staff every day – and all logistic capacities have been involved in prevention and suppression of forest fires. Around 60 transportation trucks and six light trucks have been involved in fire operations. In some districts caterpillars and water tenders were hired to suppress fires.

3. National Cooperation in Responding to the 2007 Fires

Role / action of agencies at national and provincial level

The roles of government agencies that are involved in the forest fire management are:

National level:

- The Ministry of Environment, Forest and Water Administration (MEFWA): Prevention, suppression and post-fire rehabilitation. MEFWA played the lead role on the management of the forest fire situation in 2007. Following the initiative and request of MEFWA the Central Unit for Civil Emergencies was set up. The ministry has managed the human and material resources of the Forest Service to meet the needs and limitations of the fire situations.
- Ministry of Interior: Prevention and suppression. The Directorate of Civil Emergency and the General Directorate of Fire Protection and Rescue have been very important actors in the coordination of resources on the large fires.
- Ministry of Defense: Suppression. The ministry served as a facility centre for the Central Unit for Civil Emergencies and as a resource for human forces ready to intervene on forest service request.

- Ministry of Agriculture: Prevention.

Regional level:

- Prefectures of the regions: Coordination of all state agencies resources on regional level.
- Forest Service Directorate (FSD): Prevention, suppression and rehabilitation. The FSD has managed the human and material resources of the Forest Service according to the needs and limitations of the situation.
- Fire Fighting Units (FFU): Suppression. The FFU has helped the forest service to suppress forest fires in the cases where the access to the fire theatre by fire trucks was possible.
- Army units: Suppression. The Army forces have helped with human support on the most dangerous and critical situations.
- Local Government (LG): Prevention, suppression and rehabilitation. LG helped the Forest Service to organize the local community to support fire suppression.

Role / action of local communities

The Local Communities (LC) have a very important role on the fire management. Based on the fact that all forest fires have been caused by humans, the involvement of LC was considered as a key issue for the success of fire suppression operations. Several LC provided valuable support in the fire suppression operations, especially in the southern part of the country where their involvement prevented the spread of the fires. In most of the cases, however, the LC have been very passive and they have asked for financial support to be involved on fire suppression operations. The experience in the 2007 fire season revealed that there are fundamental limitations regarding the LC involvement in fire management. There is a lack of responsibility for LC for fire prevention, lack of experience, and logistic support. There is no coordination with other structures / agencies. An aggravating factor was that even private forest / land owners had been very passive during the fire season, even on their own property.

4. International Cooperation – Receiving and Providing Assistance

During the 2007 fire season Albania cooperated with several countries through direct agreements or through international organizations. The Directorate of Civil Emergencies (DCE) in the Ministry of Interior is responsible for this cooperation and coordination.

During the critical fire situations DCE has asked for help from Greece, Italy and the Monitoring and Information Center (MIC) of the European Commission and the North Atlantic Treaty Organization (NATO).

The first aerial support was provided by Ukraine, with an AN-32. This operation was rather expensive and inefficient. The payment for the operations was covered by the Albanian Government and the embassy of the United States of America to Albania.

Aerial support was provided by Italy with two Canadair airplanes. These airplanes have been very successful in fire suppression operations. The aerial support from Italy was a result of a bilateral government agreement on civil emergencies cooperation. The request for assistance was made from the Directorate of Civil Emergencies to the Italian counterpart. The response of the Italians was based on their domestic emergencies and available resources for out-of-area missions. The Albanian part secured the full accommodation of the cabin crews of the planes and refueling of the aircraft during the operations and for the return to Italy.



Figure 4. In August 2007 two CL-415 from Italy supported the firefighters in Puka District. The aerial photo shows a waterbomber operating over a pine forest near Kryezi village, Puke district (Photo: G. Hoxhaj)

Following a request of the Albanian Government Germany provided two light helicopters. Their helibucket capacity was 500 l of water. The helicopters operated in the northern part of the country in firefighting operation near the Drini River and in the area surrounding Tirana. To facilitate their flights the crew was accompanied by an Albanian pilot from the Albanian Air Force. According to our evaluation the operations were not very effective due to the need to refuel in the centralised fuel depot in Tirana as well as the low carrying capacity of water.

Support from Poland and the Czech Republic by hand tools for fire fighters was very welcome!

Along the border region with Greece there was good cooperation in exchanging information, and in a few cases aerial support.

The assistance provided to our neighbors consisted information exchange for the fire situation in the border area and on the availability of our water resources to the aerial operators inside Albania.

5. Analysis and Recommendations

In 2007 all forest fires have been caused by humans. Negligent performance of the Local Communities and lack of responsibility by Local Government structures was noted. After more than 55% of the forests have been transferred to the property of the Local Communities there is still much to be done to raise their attention to and responsibility for fire prevention and suppression:

- During the year 2007 forest fires have caused the highest damages ever recorded in the country, with severe negative impacts on the social, economic and natural environment;
- Fire prevention measures have not been effective;
- Due to the low level and performance of observation and information systems the response to fires has been weak and has resulted in aggravated situations;
- Lack of logistic support and efficient coordination of fire suppression operations in the field, lack of stringent command and control;
- National cooperation in responding to the 2007 fires (inter-agency, involvement of civil society) became effective at the moment of establishment and functioning of the Central Unit for Civil Emergencies.

Problems identified

- Lack of support and interest from the local communities to prevent and suppress forest fires;
- Lack of human resources in rural areas;
- Low efficiency of human and material resources. There are resources, including helicopters, that cannot be dispatched and used due to lack of coordination, experience and some low-cost investments;
- Lack of logistic support and difficulties of effective use of these resources for the state agencies and local community;
- Lack of knowledge on effective and efficient use of aerial support and coordination of aerial and land interventions;
- Steep and fragmented topography and difficulties to access the forest areas;
- Vacuum of ownership and responsibilities between central and local government;
- Lack of responsibility for fire prevention and suppression in private forests;
- Traditional use of fire as a tool for forest and pasture management resulting in escaped wildfires;
- Missing adequate legal framework regarding the land management after fire;
- Lack of community involvement in forest fire management;
- Lack of effective fire management plans based on the real condition of every region, district or community;
- Need for the establishment of initial attack units, to be located in the most fire-endangered forest areas;
- Lack of an effective fire detection and observation systems;
- Need to improve the effective use of tools and equipments that are used by the Forest Service;
- Improvement of strong collaboration between local government, NGOs, forest owners and international agencies is required;
- Need to rise of public awareness regarding the forest fires;
- Need to improve the legal framework;
- Need to regulate the legal use of fire as a land management tool, based on the traditional use of fire, advanced ecological and environmental considerations and a clear regulatory concept;
- Need to enhance international exchange of experience, information and strong collaboration in the region;
- Need to systematically investigate fire causes in order to develop adequate strategies in fire prevention;
- Implementation of the action plan of the national strategy for forest fire management. Develop visions and a strategy to meet the challenges of fire management in Albania in the future, a country in which demographic and climate changes will increasingly affect natural ecosystems and land-use systems resulting in increased vulnerability to wildfires.

IFFN contribution by

Genci Hoxhaj
Specialist in the Sector of Coordination of Control for Forest Police
Ministry of Environment, Forest and Water Administration
Rruga "Durrësit", Nr. 27
Tirane
Albania