



ages, which in medium to long term will not need fuel management);

Land cover characterization and special areas (land cover, forest areas, protected areas, natura 2000, forest planning instruments and equipment for forest recreation, hunting and fishing areas), is essential to know what exist in the territory for a better planning;

Historic analysis and causality of forest fires (burnt area and number of occurrences - distribution: annual, monthly, weekly, daily and hourly; burnt area in forest; burnt area and number of occurrences per classes; starting points and causes; warning sources; big fires (area ≥ 100 hectares) - distribution: annual, monthly, weekly and hourly), with the knowledge of historic analysis and causality of forest fires it is possible to direct our interventions according the needs. With the knowledge of the burnt area and number of occurrences, that are two structural variables, it is possible to define the objectives, priorities and interventions to develop in the action plan.

Action plan

The definition of the action plan should be supported on the specific characteristics of the territory. The action plan contains two phases:

- Evaluation of actions undertaken in recent years (existing resources and risk behaviors),
- Planning activities that support the strategy of municipal level for defense of forest against fires (setting targets, indicators, responsible and budget estimate).

In the action plan is defined a parameter with the fuels models, risk mapping and priorities of defense of forest against fires. This information allows the use of simulation models of fire behavior, especially useful for defining the location of

infrastructure for defense of forest against fires, particularly for fuel management. On the other hand, the information can serve as a tool for decision support regarding the definition of priority areas for fuel management.

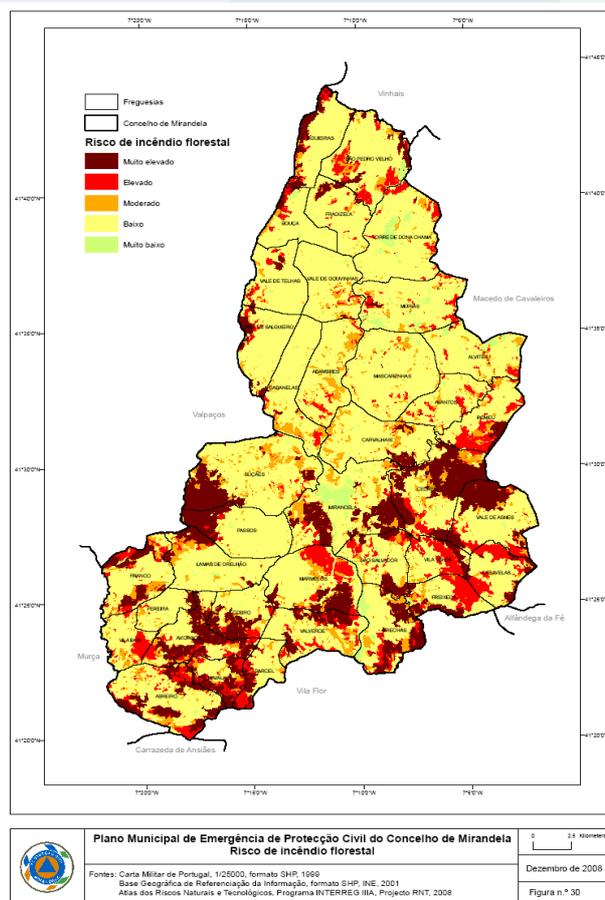
The model of forest fire risk includes two maps:

1. Hazard map of forest fire

(is the result from the combination of probability with susceptibility, presenting the potential of a territory for the occurrence of the phenomenon.

Allows to answer the question "where have bigger potential for the phenomenon occurs and acquires bigger magnitude?".

This map is particularly indicated for prevention activities)



Risk map of forest fires - Mirandela



2. Risk map of forest fire

(is a combination of components of the hazard map with the components of the potential damage (vulnerability and value) to indicate the potential for loss in the face of the phenomenon. When the phenomenon left the hypothesis and pass to reality, the risk map give information about the potential loss in every place mapped, answering the question "where I can afford to lose more?".

This map is particularly indicated for preventive action when read together with the hazard map, and for planning action for suppression.

The defense priorities map has the purpose of identifying the elements that interest to protect.

The evaluation of the potential for fire occurrence, the potential loss and the identification of defense priorities are, with the diagnostic, a knowledge base that guides and justifies the choices made in the planning of actions.

The strategy of the PMDFCI

1. Increasing the resilience of the area to forest fires;
2. Reduction in the incidence of fires;
3. Improving the effectiveness of the attack and the management of fire;
4. Recover and rehabilitate ecosystems;
5. Adaptation of a functional and effective organizational structure.

Necessary steps of a successfully process for implementation of PMDFCI

1. Knowledge about the local reality; (what we have and what we need for)
2. Involvement of all entities that will use the plan;

(is important that the involvement start in the very beginning of the elaboration of the plan)

3. Diffusion of the plan.

(an informed population it is a way to prevent risk behaviours)

Lessons learnt

From the knowledge of the risk it is possible to establish priorities;

A mitigation plan is not only for one entity and the cooperation between the different entities involved in the process is very important and relevant;

The diffusion of the mitigation plan to the population is one way to get an informed population; The mitigation plan enable better preparation phase to an occurrence.

Legal framework

Decree-law nº 124/2006, 28 of June with the changes introduced by the decree-law nº 17/2009, 14 of January;

National Plan of Defense of Forest Against Fires (Resolution of the Council of Ministers nº 65/2006, 26 of May);

Regional Plans of Forest Management (PROF); District Plan of Defense of Forest Against Fires (PDDFCI);

National Strategy for Forest (Resolution of the Council of Ministers nº 114/2006, 15 of September);

Strategic Guidelines for the Recovery of Burnt Areas in 2003 and 2004 (Resolution of the Council of Ministers nº 5/2006, 18 of January);

Plans of Forest Management;

National Plan of Rural Development.



The MiSRaR project

The MiSRaR project is about Mitigation of Spatial Relevant Risks in European Regions and Towns.

The project is a cooperation between seven partners in six EU member states:

- *the Safety Region South-Holland South, The Netherlands (lead partner)*
- *the city of Tallinn, Estonia*
- *the region of Epirus, Greece*
- *the province of Forlì-Cesena, Italy*
- *the municipality of Aveiro, Portugal*
- *the municipality of Mirandela, Portugal*
- *the Euro Perspectives Foundation (EPF), Bulgaria.*

The goal of the project is to exchange knowledge and experiences on risk mitigation in spatial policies. The project will result in a handbook in which the lessons on the mitigation process are described and the good practices from the partners are presented. The Risk Assessment and Mapping Guidelines for Disaster Management of the European Commission will be implemented in the handbook.

The MiSRaR project is cofinanced by the European Regional Development Fund and made possible by the INTERREG IVC programme.

www.misrar.eu

Contact information

Nico van Os, general project manager MiSRaR, Safety Region South-Holland South, The Netherlands

n.van.os@vrzhhz.nl

Sónia Gonçalves, Forest Engineer and project manager MiSRaR,

Municipality of Mirandela, Portugal

misrar@cm-mirandela.pt

Sources

Methodological guide for elaboration of the Municipal Plan of Defense of Forest Against Fires, National Forest Authority (AFN)