CALocalHAS - An integrated analysis system for the effective fire conservancy of forests [1]

Fire is the most significant natural threat to forests and wooded areas of the Mediterranean basin. The average annual number of forest fires in the Mediterranean basin, particularly in southern Europe, is close to 50,000 - twice as many as during the 1970s. The natural plant ecosystem of the Mediterranean basin is rich in shrubs and coniferous forests and, thus, particularly susceptible to fire. Meanwhile, summer periods are now warmer, drier and longer and projected changes in the climate suggest increases in the frequency and severity of forest fires. A disaster risk arises when a hazard meets vulnerability. A key factor increasing vulnerability is the inadequacy of disaster-management planning. Recent forest fire catastrophes have revealed serious gaps in co-ordination, chain of command problems, and inadequate resource management and allocation. Often, information was not updated or was inadequate, leading to inefficient decision making.

Case Study Description

Challenges:

An important step in disaster management is the preparedness stage, which is directly connected with the reduction of risks. Evaluation of hazards, good planning, proper management strategies and co-operation are vital elements and were the main focus of the CALocalHAS project resulting in an integrated analysis system for the effective fire conservancy of forests.

Objectives:

In two pilots areas (Troodos, Cyprus; Grammos, Greece), the project aimed to:

- Improve the knowledge and skills of civil protection professionals and services on effective temporal and spatial planning of resources;
- Improve the knowledge and skills of decision-makers on evacuation planning;
- Increase the effectiveness and readiness of fire brigades, civil protection, local communities and any other stakeholders to deal with forest fire threats.

Solutions:

The CALocalHAS project developed and established an integrated forest fire analysis system (IFFAS) for the effective fire conservancy of forests. It uses a forest-fire simulation tool that is capable of estimating the evolution of a wild forest fire. The tool does this by using as inputs data on ignition risk, real-time meteorological data, the vegetation of the area and spatial information (iso-contours and ground elevation).

Meteorological stations are installed in the areas of the two pilot sites (Troodos - Cyprus and Grammos - Greece) more subjected to fire risk and structural characteristics on vegetation provide detailed information useful to know when environmental conditions are favourable for fire development. The fire simulator tool is then used to predict fire development and to help in managing it.

Importance and relevance of the adaptation:

Case mainly developed and implemented because of other policy objectives, but with significant consideration of CCA aspects.

Additional Details

Stakeholder engagement:

Local authorities such as fire services, civil protection, local communities as well as private citizens were

involved in the dissemination of the project results in order to deal with forest fire threats.

Success and limiting factors:

The system allows for the landscape characterization to manage the fire risk. The use of meteorological stations and morphological information provides detailed information on the environmental characteristics on the two pilot areas. It also involves local stakeholders such as fire services, civil protection and local communities so the information obtained with the application of the system were disseminated in order to discuss further strategies to cope with fire risk.

One of the limits of the system could be the ability of local authorities (civil protection, fire brigades, and decision makers) to apply the simulator and to manage the information obtained from it. To deal with this potential limit CALocalHAS project included the organisation of 5 (3 for Cyprus and 2 for Greece) training sessions on the use of the software. Furthermore the authorized users of the simulation platform were advised to contact the project's team at any time, for any further information and help.

Budget, funding and additional benefits:

The Integrated Forest Fire Analysis System (IFFAS) is a useful tool for the responsible authorities:

- At scenario level: (i) for personnel training purposes, (ii) for planning of the necessary fire conservancy infrastructures (fire monitoring stations, firebreak zones, water tanks, etc.).
- At operational level: for decision making and coordination during forest fire incidents.

The only cost estimation available at the moment is related to the whole CALocalHAS project (2,337,114.00 €, EU contribution accounted for 1,158,803.00 €), that besides cost of IFFAS development included other costs, as those related to project management, dissemination, travelling, etc.

Legal aspects:

None

Implementation time:

1 March 2010 - 31 August 2013.

Reference Information

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http://www.calchas.gr/english/index.html#/HOME-01-00/ [3]

Sources:

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