



## **Wildfire Prevention and Suppression plans enhancing: a first overview on strength and weakness in Italian stakeholders experiences and perception.**

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Fires and wildfires represent an element of vulnerability for forests, considering that have now reached a level beyond which further burning would seriously endanger the ecosystem services and their sustainable management. It is fundamental to support fire-fighting Centres by giving them tools, useful to faces future trends; in this sense the first step is to examine technical and operative procedures to evaluate their strong and weak aspects, in collaboration with personnel responsible of risk management, suppression coordination and patrol responsible of direct attack. The aims this work is to identify present elements of strength ad problematic aspects to tuning the wildfire suppression actions to future changes; this is a crucial challenge both for policy and territory planners and managers.

Historical investigation lines on forest fire covered the basilar and fundamental dynamics which understanding was necessary to confine and fight the wildfire phenomenon. At the present all the competences, knowledge and connections acquired are translating and including in the Plans, sharing innovative strategies -with the “direct involved actors”- trying to decrease the fire trend.

Stakeholders underlined that collaboration between research and territorial Institutions are producing positive results, showing the conceptual rightness and the well-run of the in-progress implementations.

The Italian framework of wildfire prevention plans is very peculiar because the Plans related to prevention and active intervention procedure are coincident. Normative, procedural, economic and logistic aspects are considered and handled in the same general document; each year the local structures, designed by the Regions, have in charge the draft of the operative plan, defining and managing the means and patrols distribution and turnover.

In the present work 3 Italian Regions (Tuscany, Puglia and Sardinia, with different territorial and vegetation characteristics and affected by different fire regimes and incidence) have been selected to investigate, by questionnaire and meetings, stakeholders perception on present strength and weakness in the adopted plans.

The results of the answers analysis show some main deficit aspects covering prevalently cartographic and procedural implementations:

- Plans shall include a risk and vulnerability map; dangerous seasons are to be determined and have to be updated with current weather conditions.
- Standardization of terminology and classifications in the plans.
- Plans shall include a specific section for firefighting in RUI, socially being the most important areas to protect and where most complications during firefighting are found.
- Protocols shall be adapted to the real on site situation. A single control center in the event of fire should be identified. This is particularly important if third-party resources are involved in the operations.
- Use of new technologies, i.e. fire simulators, LIDAR, for fuel amount and availability determination, wind simulation, CO<sub>2</sub> emissions, vegetation structure.

In the same time some active proposals are supplied by the operators, directly derived and linked with the wekness above mentioned:

- Use of new technological tools for analysis (simulators, etc.) and for driving the operative aspects during the suppression.
- Standardization of communication protocols in the plans and during the field operations.
- Increase use of fire for landscape management in certain areas.
- Investments shall be made in land resources rather than in air means, generally already sufficient.

This analysis represents a first effort to collect and schematize the effective applicability level of the indications included in the Plans. It is the base for possible tuning of the research and policy lines and also to tuning the present documents; the indications supplied prove that the efforts done in research are been acquired by the operative sectors and that the active involvement of stakeholder is the future challenge to enhance the plans efficacy.