

Common template for risk assessment and management operational tools and best practices identification (Action B1)

Title: Operational Tools and Best Practices for Risk Assessment and Management

The identification of tools and best practices on risk assessment and management helps providing an idea of the state of the art in the field. By completing this form, the best practice will be included in the knowledge repository platforms and available for the practitioner community to use. We encourage the user to complete as many fields as possible from the template in order to provide the most relevant information needed to apply the best practice to other practitioners.

Instructions:

- Blue boxes are mandatory fields
- More than one item can be selected in multiple choice boxes

Document classification

Title	Forest fire weather danger forecast and real time fire weather danger monitoring
Description	MétéoFrance support for assessing forest fire risk level
Country, location	France
Date	2017
Contact e-mail	
Institution	Valabre
Net Risk Work Partner	EPLFM
Document type	Best practice
Language	<input type="checkbox"/> Catalan <input type="checkbox"/> English <input checked="" type="checkbox"/> French <input type="checkbox"/> German <input type="checkbox"/> Italian <input type="checkbox"/> Spanish <input type="checkbox"/> Other
Source/origin	<input checked="" type="checkbox"/> Partner's expertise <input type="checkbox"/> Expertise from the network <input type="checkbox"/> Other (internet)

Topic

Area	<input type="checkbox"/> Risk assessment	<input type="checkbox"/> Risk Planning	<input checked="" type="checkbox"/> Risk Management
Risk	<input checked="" type="checkbox"/> Wildfires	<input type="checkbox"/> Fire behaviour patterns and typologies <input type="checkbox"/> Fire ignition and spread models <input type="checkbox"/> Wildland urban interface	<input type="checkbox"/> Fuel management <input type="checkbox"/> Fire service needs <input type="checkbox"/> Prescribed burning <input type="checkbox"/> Other <i>[Introduce which ones]</i>
	<input type="checkbox"/> Storms	<input type="checkbox"/> First measures after storm <input type="checkbox"/> Work safety during salvage logging <input type="checkbox"/> Timber storage and cost containment <input type="checkbox"/> Forest protection and pest control	<input type="checkbox"/> Regeneration and afforestation <input type="checkbox"/> Preventive silvicultural measures <input type="checkbox"/> Other <i>[Introduce which ones]</i>
	<input type="checkbox"/> Avalanches	<input type="checkbox"/> Technical protective measures <input type="checkbox"/> Maintenance of protection forests	<input type="checkbox"/> Other <i>[Introduce which ones]</i>
	<input type="checkbox"/> Floods	<input type="checkbox"/> Prevention through land use management <input type="checkbox"/> Technical protective measures	<input type="checkbox"/> Other <i>[Introduce which ones]</i>
	<input type="checkbox"/> Other		<i>[Introduce which ones]</i>
Cross-sectoral topics	<input checked="" type="checkbox"/> Risk and vulnerability assessment and mitigation	<input checked="" type="checkbox"/> Risk planning, governance and policy framework	

	<input type="checkbox"/> Cost-effectiveness assessment <input checked="" type="checkbox"/> Civil protection, emergency and post-disaster management	<input type="checkbox"/> Community involvement and risk communication <input type="checkbox"/> Other: [Introduce which ones]
Level	<input checked="" type="checkbox"/> Local <input checked="" type="checkbox"/> Regional <input type="checkbox"/> National <input type="checkbox"/> Cross-border <input type="checkbox"/> EU <input type="checkbox"/> Global	
DRM cycle phase	<input checked="" type="checkbox"/> Prevention <input checked="" type="checkbox"/> Preparedness <input checked="" type="checkbox"/> Response <input type="checkbox"/> Recovery	
DRM domain	<input type="checkbox"/> Policy making <input checked="" type="checkbox"/> Early warning system <input checked="" type="checkbox"/> Disaster response	
Sendai priorities	<input type="checkbox"/> Priority 1: Understanding disaster risk <input checked="" type="checkbox"/> Priority 2: Strengthening disaster risk governance to manage disaster risk <input type="checkbox"/> Priority 3: Investing in disaster risk reduction for resilience <input checked="" type="checkbox"/> Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction	
Contribution to Sendai Targets	<input type="checkbox"/> Reduce global disaster mortality <input checked="" type="checkbox"/> Reduce the number of affected people <input type="checkbox"/> Reduce the direct disaster economic loss <input type="checkbox"/> Reduce disaster damage to critical infrastructure <input type="checkbox"/> Increase the number of national and local disaster risk reduction strategies <input type="checkbox"/> Enhance international cooperation to developing countries <input checked="" type="checkbox"/> Increase availability of and access to multi-hazard early warning systems and disaster risk information and assessment	

Description and analysis

<p>Summary: quick presentation of the Good Practice [<i>Objective: summarize in a few lines the key elements of the good practice</i>]</p>
<p><u>Place in national/regional policy</u></p> <p>Operational oriented meteorological support for forest fires in the Mediterranean area started more than 45 years ago and has constantly evolved over time to reach its actual state. It was formalized with the setup of a Météo-France branch within the South Defence EMIZ (south defence zone headquarters), where specialized forecaster engineers from the Aix en Provence inter-regional weather service intervene.</p>
<p><u>Goals and achievements</u></p> <p>This measure serves to purposes:</p> <ul style="list-style-type: none"> - Anticipate: limit access to specific parts of the territory, pre-position fire-fighting needs, organize the loaded (<i>i.e.</i> with retardant products) aerial monitoring - Support the suppression operations providing real time monitoring to support incident commander decision making
<p><u>Actors involved</u></p> <p>The forecast is prepared by MétéoFrance. They are then provided to the Civil Protection services (Zone headquarters, Operational Fire and rescue centres, ...) and other State services (Prefectures, Departmental Agriculture and Forests Services, National Forest Service...) through a specific Internet website with a secured access.</p>
<p><u>Implementation stage</u></p> <p>Fully operational, activated every year throughout the fire season.</p>
<p><u>State of technical knowledge</u></p> <p>The forest fire weather danger is evaluated for the departments of the South defence zone. Each department is divided into 6 to 9 areas of 400 to 800 km². These areas are classified into 4 categories: Mediterranean, strong slope Mediterranean, non-Mediterranean and strong slope non-Mediterranean. In order to carry out this mission, forecasters use a forecast database elaborated by « upstream forecasters » who process parameters provided by numerical models and by a network of more than 250 automatic real time weather stations.</p>

Context

Climate Change and repeated heat-waves are expected to increase the forest fire weather danger, making it even more crucial to have accurate and updated forecast to anticipate and respond.

Detailed Characteristics [*Objective: detail the implementation conditions of the Good Practice*]

Description of the implementation steps

Forest fire weather danger forecast is established twice a day during the summer season. A first forecast is done in the afternoon and broadcasted at 17:00 to forest fire prevention stakeholders. Forecasts are for the afternoon of the following day.

The second forecast is done in the morning and is broadcasted at 9:30. It is for the afternoon of the same day. If the situation is consistent with what had been forecasted the previous day, the determined danger level remains the same.

Forecasts are elaborated in four phases followed by a broadcast phase. For each area, the following must be successively done:

- Drought condition expertise based on index calculations (Canadian indexes IH, IS, ICL and local reserve index) in order to simulate vegetation water content. South-East drought is calculated using an IH/IS cross tabulation. The calculations are carried out all year long with data provided by the measurement network.
- Assessed forecasts of « forest fire oriented » weather parameters: wind, temperature, air humidity, clouds, rain.
- Based on these parameter forecasts, a numerical simulation of the danger is done along with danger index calculations, taking into account drought condition and weather forecasts.
- The final danger expertise is done by the « forest fire » forecaster at the EMIZ. The forecaster allocates to each area, after a detailed condition study, a danger level for days D and D+1 on a 6-level scale: F (weak), L (light), M (moderate), S (severe), T (very severe) or E (exceptional).

For this expertise, the forecaster uses a double-method:

- Use of the FWI (Fire Weather Index) with adapted thresholds depending if the areas are Mediterranean or not, plains or strong slopes, moderate or weak vegetation drought,
- Ignition-propagation index (Drouet formula) when drought is high or very high.

Real time fire weather danger monitoring

It is carried out by the forecaster at the EMIZ Meteo-France branch all throughout the day using weather parameters (wind, temperature, humidity...) and specific forest fire indexes: FWI, propagation indexes and Drouet ignition thresholds. This enables to update forecasted dangers (upgrade but also sometimes downgrade them which can save up aerial surveillance means) and meet immediate forecast needs during a fire.

Governance

The Zone Headquarter (interministerial body) is coordinating the mechanism and ensuring that all the necessary stakeholders are involved and alerted.

Necessary means to implement the Good Practice in efficient conditions

- Availability of weather forecasters
- Presence of weather forecaster at the operational centre
- Regular (weekly) meetings between the involved stakeholders

Challenges encountered during implementation and solutions incurred

NA

Priorities identified for successful implementation of the Good Practice

Understanding and explaining the added value of having a weather forecast cell as a full part of the civil protection zonal headquarters.

Impact of the Good Practice [*Objective: evaluate the impact of the Good Practice*].

It is difficult to accurately measure the impact of this initiative. However, all actors seem satisfied,

and it is reactivated every year. It is even expanded to new stakeholders. The impact is therefore globally positive.

Future developments *[Objective: understand the follow-up perspectives]*

Inclusion of more actors in the mechanism, for instance critical infrastructure operators which are invited to the weekly meetings (test in 2017 for RTE, the electricity transport network)

External resources *[Objective: provide further information]*

Attached materials	<i>[include format (document, photo, video...) and name of the file]</i>
Web links	http://www.meteofrance.fr/nous-connaître/missions-institutionnelles/securite-des-personnes-et-des-biens/evaluation-du-risque-de-feux-de-forets
Contacts	

[Additional information - optional]

Lessons learnt *[Objective: compare the results obtained to the objectives set at the start of the Good Practice]*

Evaluation process, if exists (internal or external)

[free text – 5 lines max]

Assessment of results (quantitative and qualitative) and comparison with main goals

[free text – 5 lines max]

Negative aspects identified

[free text – 5 lines max]

Unexpected consequences (short / mid / long term) and corrective measures implemented

[free text – 5 lines max]

Durability and transferability *[Objective: evaluate the integration of the Good Practice and its sustainability, give recommendations for transferability]*

Is this information: **Replicable** **Measurable**

Regulatory Framework

[free text – 5 lines max]

Stability of the human environment *[Stability of partnership, structures, population enabling successful implementation and positive impact in the long term]*

[free text – 5 lines max]

Financial requirements *[business model]*

[free text – 5 lines max]

Success factors *[political, technical, human, financial...]*

[free text – 5 lines max]

Risk factors *[legal, financial, safety...]*

[free text – 5 lines max]

Additional and non-formal experiences contributing to the implementation of Good Practice

[free text – 5 lines max]



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