

WILDFIRE RISK MANAGEMENT & LAND-USE PLANNING



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 TECHNOLOGICAL FOREST CENTER OF CATALONIA

The own fire hazard (Photo: X.MATEU)

Proactive Human Response to Wildfires Outbreak: Measure and Prepare for it (PRoMpt)

Partners

Greece

- **Region of Western Greece (Lead Partner)**
- Research Academic Computer Technology Institute
- Industrial Systems Institute

Italy

- Province of Macerata
- Mountain Union of Laga - M Zone

Poland

- Bielsko-Biala District

Portugal

- Camara Municipal de Baiao

Bulgaria

- Regional Forestry Directorate of Kardzhali

Spain

- Forest Sciences Center of Catalonia

Which objectives?

The **main objective** of the project is the improvement of the regional policies for confrontation of wildfires in very sensitive areas, such as forests, through a scheme for exchange of experiences and good practices.

Other objectives of the project are:

- Dissemination of information on the wildfires fighting
- Increase the capacity in preventing and reacting to wildfires.
- Preparation of citizens to confront the wildfires
- Increase the social awareness on forest fires

PRoMpt **INTERREG IVC**

Where to focus the attention:

WILDFIRE RISK MANAGEMENT

Integration socioeconomical and ecological driving forces affecting positively or negatively fire risk from vulnerability approach

SOCIAL DEMANDS & PERCEPTIONS

LAND-USE PATTERN

Forestry
Agricultural land and grazing
Settlements

FIRE PREVENTION

Prevention plans
Prescribed burning
Investigation of causes
Social awareness

SUPPRESSION & CIVIL DEFENSE

INTEGRATION OF FIRE RISK IN LAND USE PLANNING AND FOREST MANAGEMENT TOOLS IN CATALONIA (NW SPAIN)
Mr. EDUARD PLANA, HEAD OF WILDFIRE AND LAND USE DEPARTMENT /CTFC

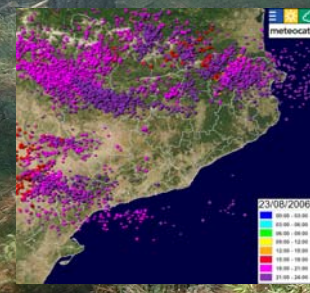
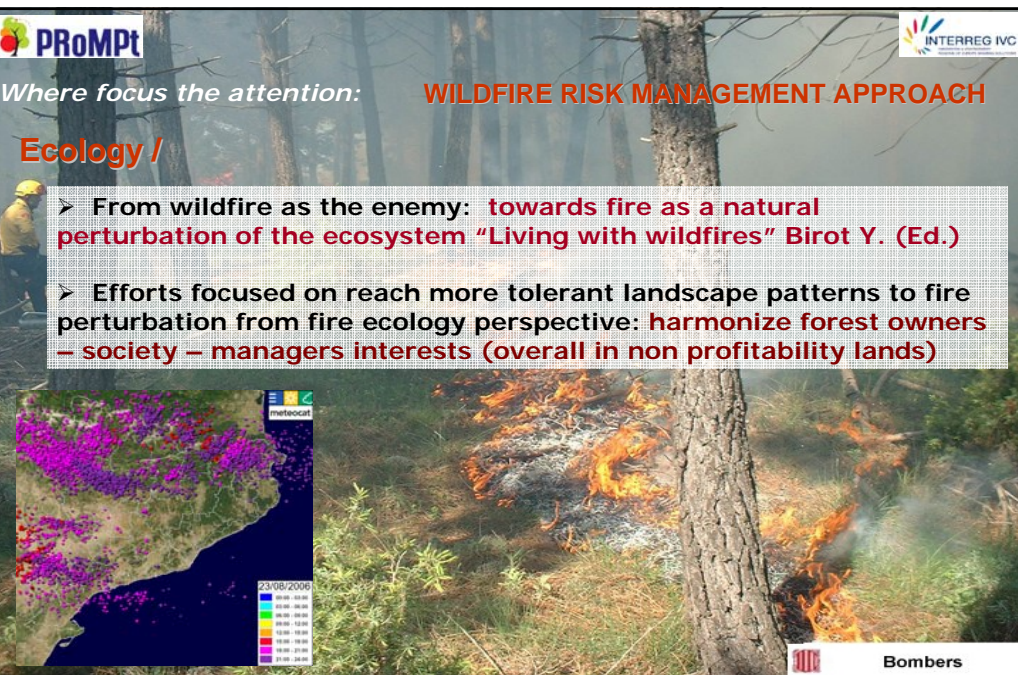
CENTRE TECNOLÒGIC FORESTAL DE CATALONIA

PRoMpt **INTERREG IVC**

Where focus the attention: **WILDFIRE RISK MANAGEMENT APPROACH**

Ecology /

- From wildfire as the enemy: **towards fire as a natural perturbation of the ecosystem** "Living with wildfires" Birot Y. (Ed.)
- Efforts focused on reach more tolerant landscape patterns to fire perturbation from fire ecology perspective: **harmonize forest owners – society – managers interests (overall in non profitability lands)**

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Bombers
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Where focus the attention: **WILDFIRE RISK MANAGEMENT APPROACH**

Social /

- Improve society understanding of the role of fire in the ecosystem : **Previous step to promote a strategy based in fuel management for tolerant landscapes patterns & low intensity fire management**
- Improve society understanding of the exposition to risk : **To promote self-protection attitudes and the own responsibility on ignition control**
- The influence of mass media and opinion leaders in social perception: **"Facts are facts but perception is the reality"**



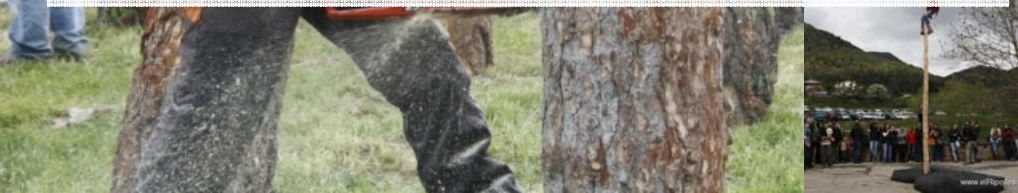
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Where focus the attention: **WILDFIRE RISK MANAGEMENT APPROACH**

Economy /

- Integrate the positive and negative externalities of all human-made activities related with the increase or decrease (prevention) of fire risk : **In order to improve cost-effectiveness of wildfire risk management**
- Supporting forestry & grazing & croops: **as fuel control activities**
- (as example) Including prevention cost in the price of housing in wildland urban interface (WUI) : **Protection houses from forest, or forest from houses?**



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Where focus the attention: **WILDFIRE RISK MANAGEMENT APPROACH**

Economy /

Budget in prevention is needed but high suppression budget in the current vulnerable context it is also needed up to vulnerability doesn't change

- Supporting forestry & grazing & crops: **as fuel control activities**
- Including prevention cost in the price of housing in wildland urban

Which are the benefits of rural development related with: **?**

1st) wildfire severity reducing (prevention + suppression + restoration costs reducing)

2nd) rural development itself, keeping landscape identity (strong related to welfare of local communities and tourism incomes), biodiversity environmental services conservation, ... Social demands!

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where focus the attention:

Spatial planning & wildfire risk management

LAND USE – SUPPRESSION – PREVENTION - RESTORATION



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Some lessons learnt related with wildfire risk management at land-use planning level:

- ✓ *Fuel accumulation is the main driving force of wildfires (more relevant than ignition causes - ignition risk zero doesn't exist)*
- ✓ *Suppression capacity has a limit*
- ✓ *Emergency management has a limit (simultaneously and WUI)*
- ✓ *Our efficiency in low-intensity fires does us more vulnerable to the high-intensity fires in extreme conditions ("fire paradox")*
- ✓ *Fire has a behavior pattern*
- ✓ *Wildfire risk management need a cross-sectoral approach, strong institutional coordination, and social participation*

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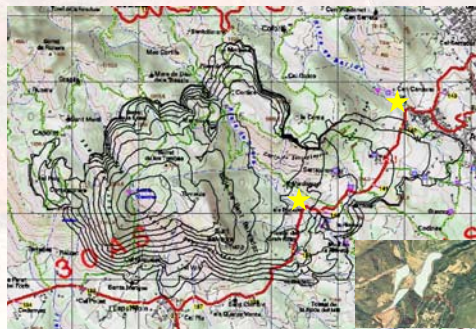
Some lessons learnt related with wildfire risk management at land-use planning level:

- ✓ *Fire has a behavior pattern*

Knowledge of wildfire propagation patterns or fire typology



Provide guidelines for a **cost-efficiency** fuel management plan

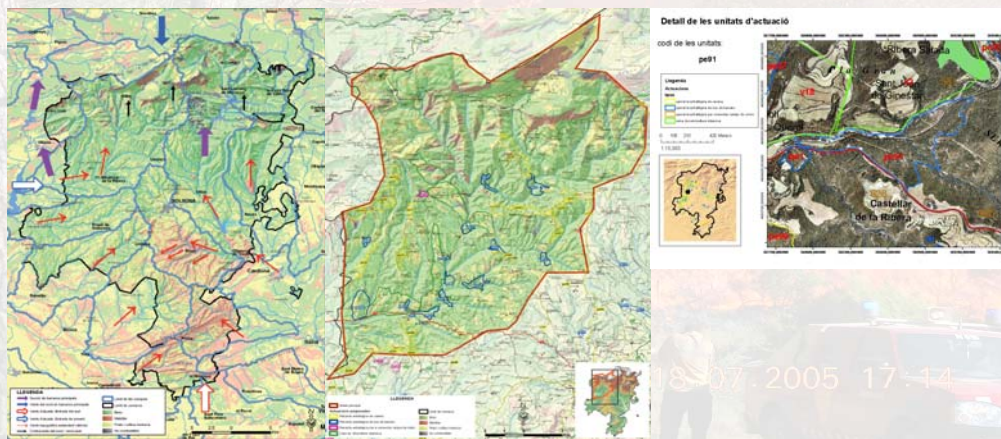


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✓ Fire has a behavior pattern

Knowledge of wildfire propagation patterns or fire typology



Provide guidelines for a **cost-efficiency** fuel management plan



SUPPRESSION SYSTEM: Improve efficiency through a pro-active approach to be prepared by future extreme fire behaviour (pre-suppression actions)

FOREST MANAGEMENT : fire ecology species adaptations / productive and or prevention objectives / prescribed burning / incentives!

LAND USE PLANNING: Integration of grazing and agrarian mosaic as prevention infrastructure

SPATIAL PLANNING: To reduce wildland urban interface vulnerability & to increase self-protection capacity

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Some lessons learnt related with wildfire risk management at land-use planning level:

✓ **1st step) suppression and prevention planning goes together**

✓ **2nd step) Integrate wildfire risk management into forest and spatial planning in order to reduce landscape vulnerability**



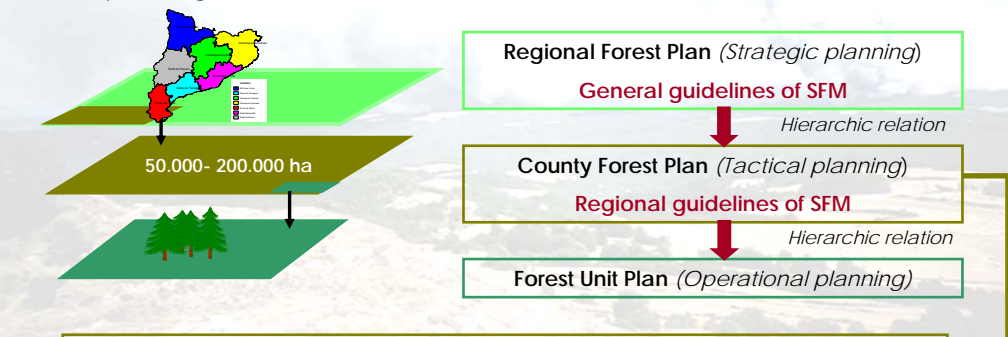
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✓ **2nd step) Integrate wildfire risk management into forest and spatial planning in order to reduce landscape vulnerability**

1.- Including fire behaviour specialist knowledge in the multi-scale hierarchic forest planning model



➤ **Determination of vocation and preference of forest land use and establishing guidelines for forest planning into de region (including fire risk management)**

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✓ *2nd step) Integrate wildfire risk management into forest and spatial planning in order to reduce landscape vulnerability*

2.- Legal frame and support for that areas where prevention or pro-active fuel management is a priority

Spaces of special forest interest (8 categories):

Strategic forest land for fire risk prevention

In that forest land defined by the PORF (*tactical planning*), because of its strategic role in spread control of fire or prevention of fire effects, that activities which suppose an additional risk of fire will be forbidden and active measures of forest management to decrease the vulnerability of the forest land will be promoted.

Article 17th Normative of Forest Policy Plan of Catalonia (still not approved)

✓ *2nd step) Integrate wildfire risk management into forest and spatial planning in order to reduce landscape vulnerability*

3.- Enhancing Forest Plan normative rank in order to strength the linkage between spatial planning and forest one

(in Catalan spatial planning legislation, NFP is recognized as a specific plan with prevalence over low scale spatial and urban planning figures)

➤Regional Forest Plan, delegates into the inferior planning figure, the delimitation of ***Strategic forest land for fire risk prevention*** in order to become assimilated by spatial and urban planning (infrastructures, settlements, ..). So that it will be easier its posterior transposition into the urban planning figures according to the own hierarchic position within spatial planning.

In conclusion...

Without changing spread capacity (fuel accumulation process),
current prevention & suppression capacity represents the level of
risk that society has to assume

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Thanks for your attention