



FINAL CONFERENCE
Freiburg, 25-26 February 2010

Fire Use Practices and Policies in Europe

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Use of fire as a tool for rural activities



Ribera del Ebro (Rasquera, Tarragona)

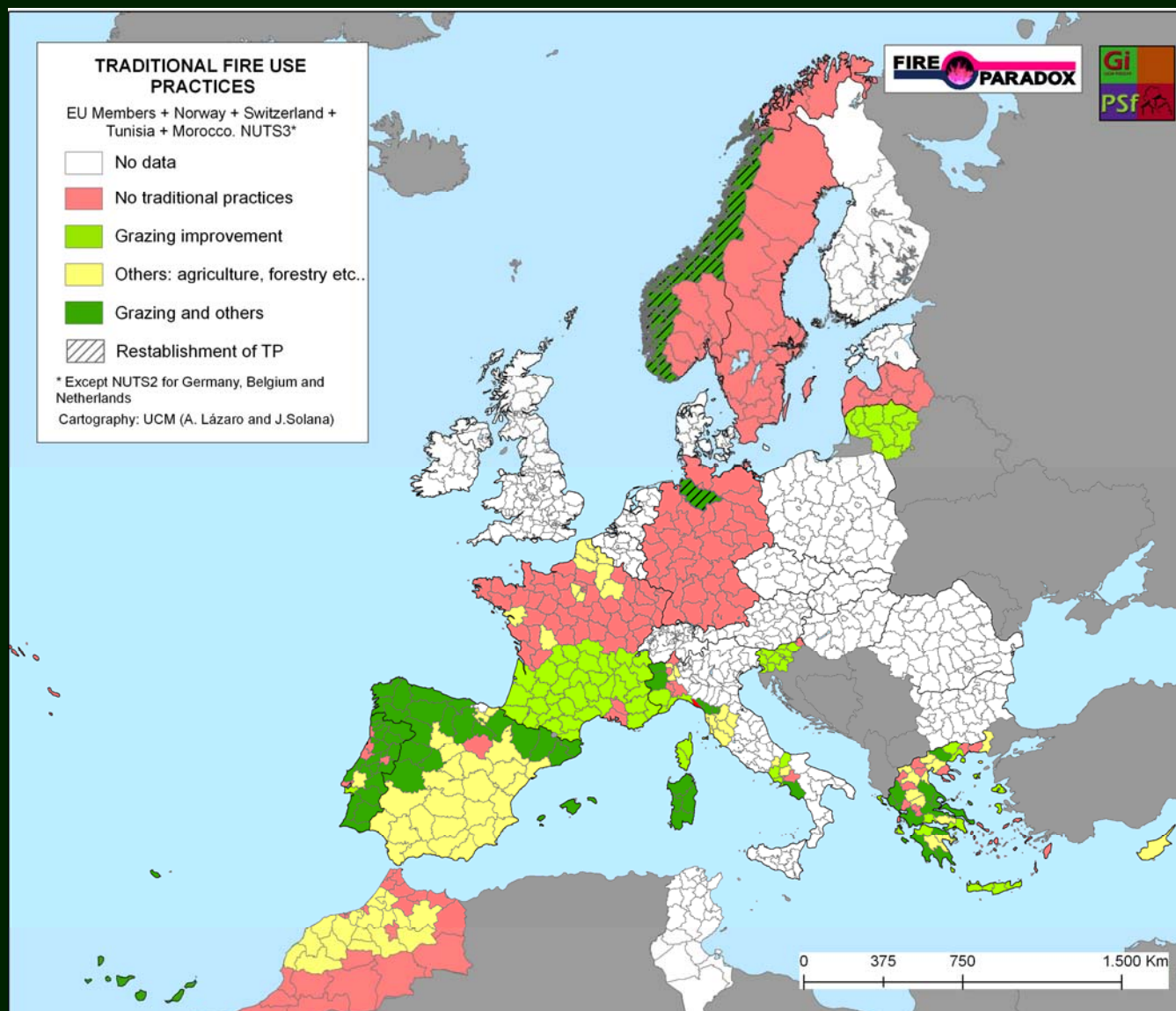


Agricultural burning (Benisa, Alicante, December 2007)



Pastoral burning (Portugal)

Uses of fire in Europe





Fire problem in Europe

Catastrophic Wildfires



Recent territorial trends & Global change

New fire scenarios



Maintained rural landscape

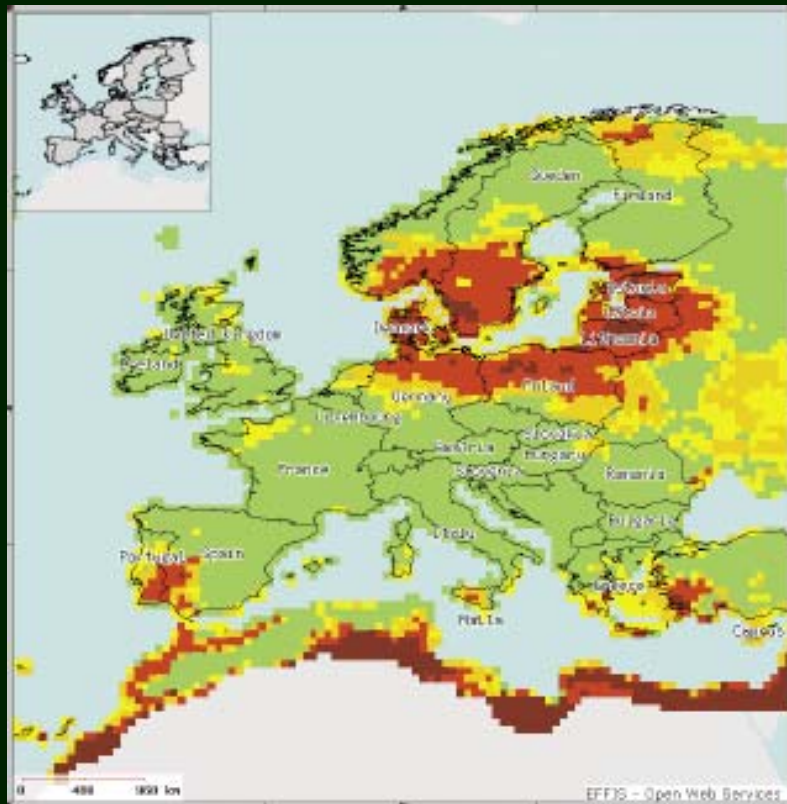


Large and continuous areas with fuel models of high risk



Wildland-urban interfaces

Recent territorial trends & Global change



Extreme weather situation, June 9, 2008



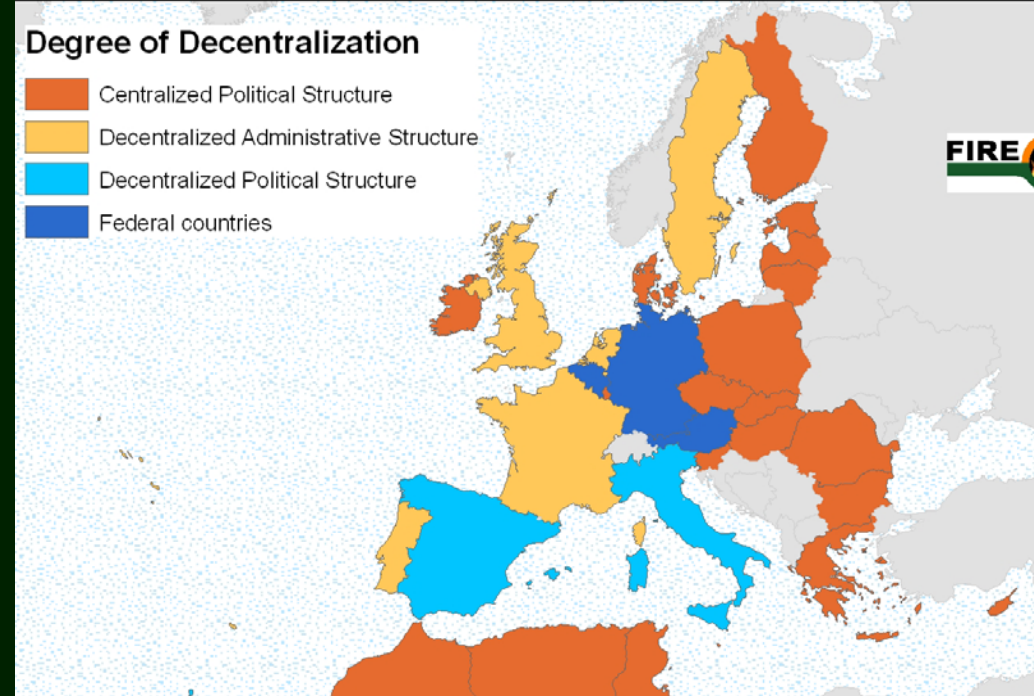
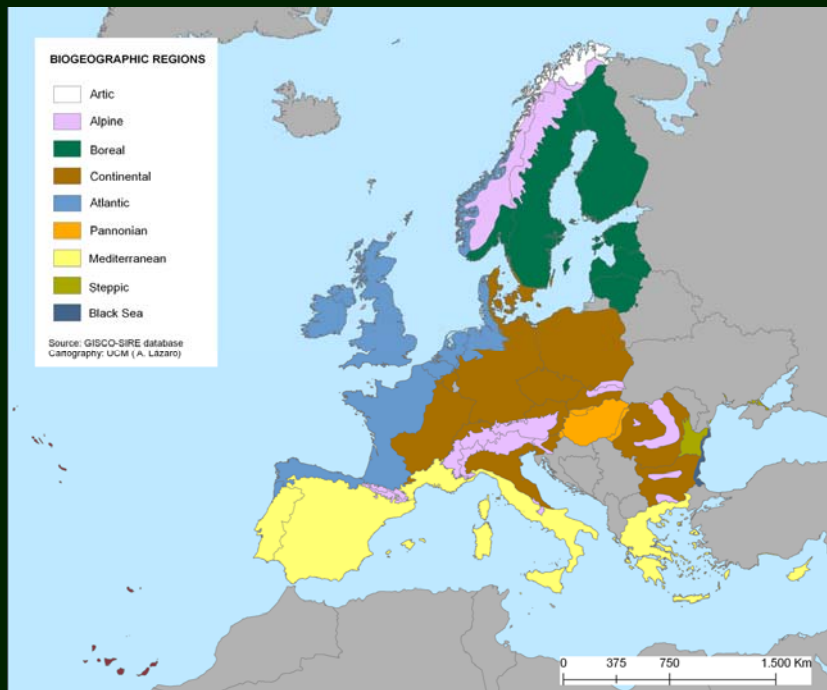
Increase of the ignition risk



Increase of the propagation risk

➤ Influencing factors:

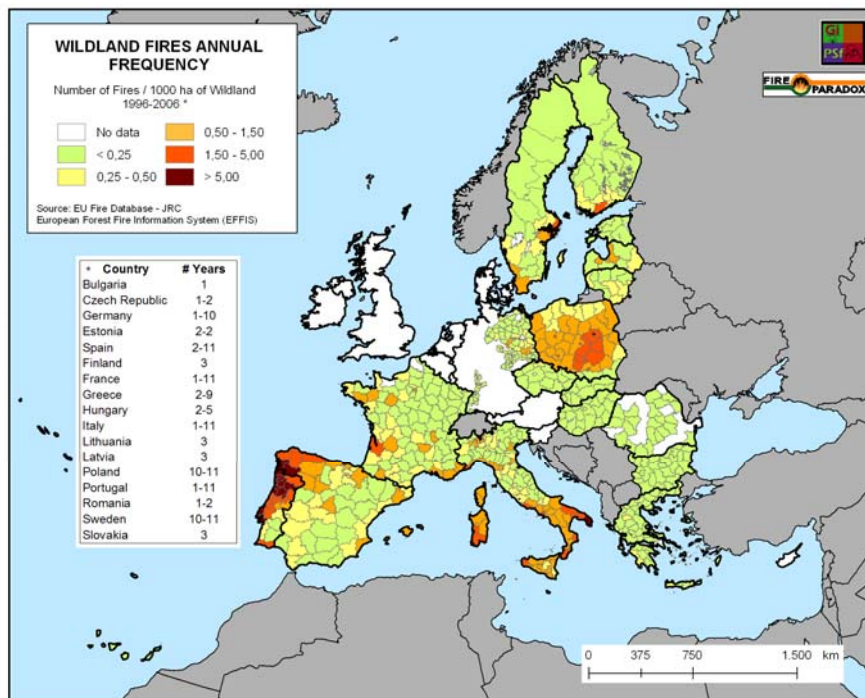
- The different rhythms and evolving stages of the **forest policies**
- **Spatial and socio-ecological** factors
- The **multilevel governance structure** (political and administrative systems) in wildland fire policy planning and implementation



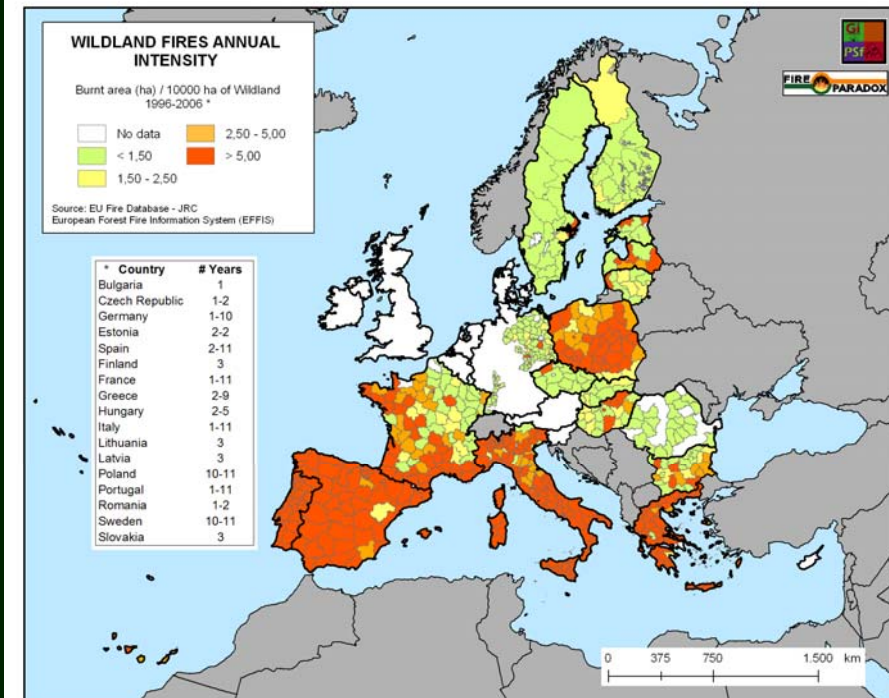
➤ Influencing factors:

- The risk severity of wildfires in the national and regional contexts
- Perceived level of wildfire risk

27-EU Fire Database



27-EU Fire Database



➤ Wildland fire issues are mainly dealt within **national forest policies** and **protection civil policies**

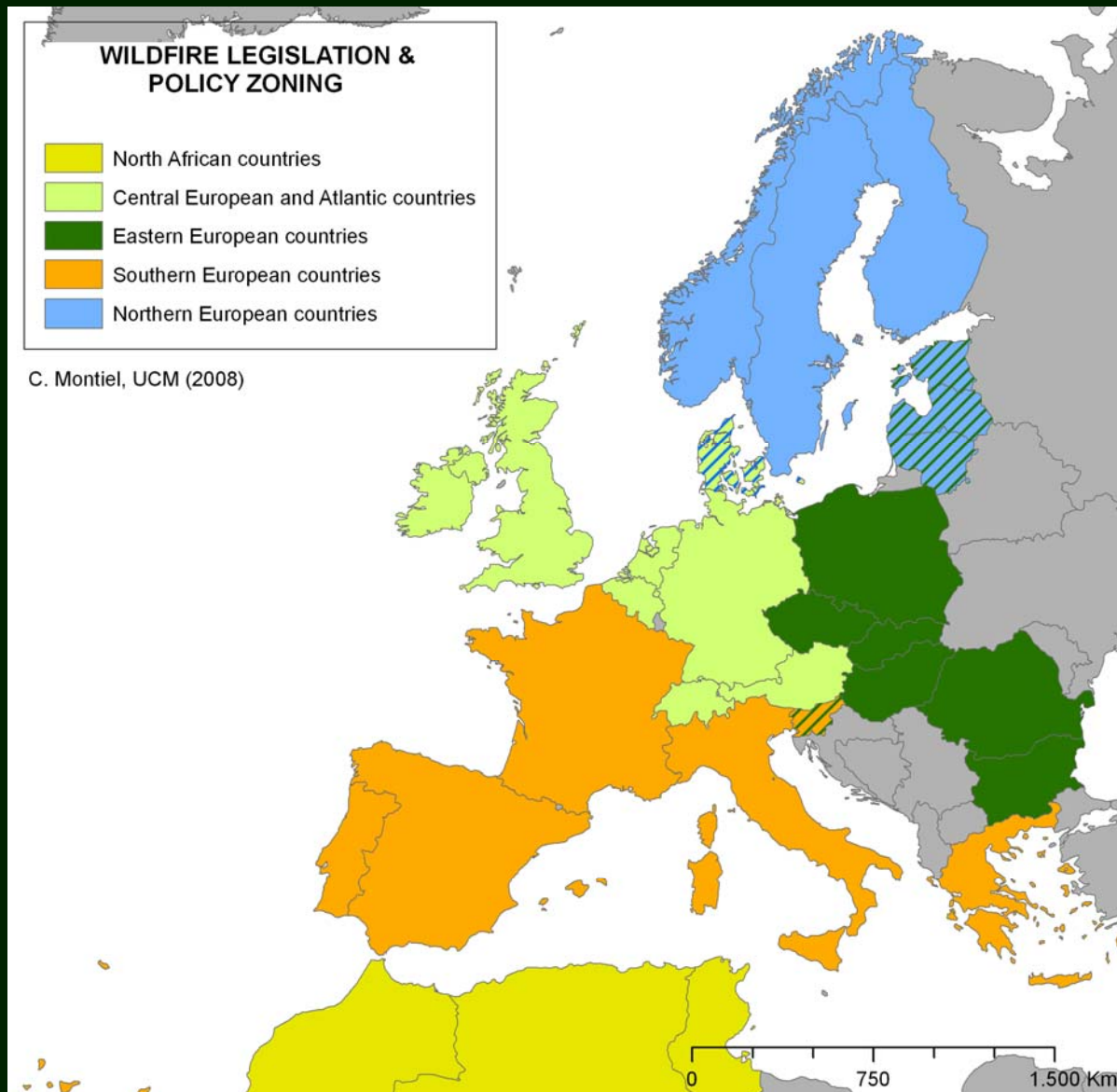
➤ **Policy instruments:**

- National Forest Plans
- Wildfire Defence and Protection Plans

➤ **Policy measures:**

- Detection & suppression systems
- Fuel management & preventive silviculture tasks
- Enhancement and conditioning of preventive and defensive infrastructures
- Public awareness & information campaigns

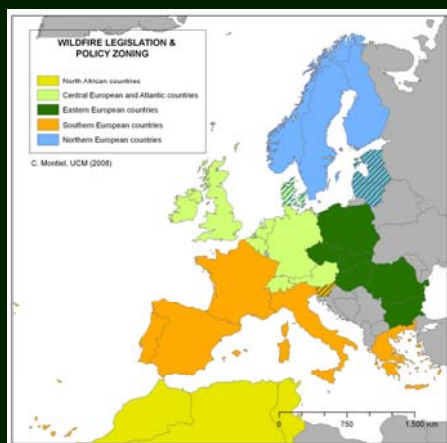
Wildfire legislation and policy zoning



	STRENGTHS & OPPORTUNITIES	WEAKNESSES & THREATS
FIRE POLICIES	<ul style="list-style-type: none"> • All the countries have specific policies for wildland fires • Development of information systems • Political will on coordination • Improvement of the extinction efficiency 	<ul style="list-style-type: none"> • Suppression-oriented actions at the expense of prevention • Need to enhanced community-based cooperation • Traditional burning practices were made illegal without prior educational programmes • Lack of a cross-sectoral approach
FIRE USE PRACTICES	<ul style="list-style-type: none"> • Experience in PB research • Development of fire management professional structures • Increasing interest for PB nature conservation management objectives. • Fire use regulation initiatives that can serve as an example for the rest of Europe 	<ul style="list-style-type: none"> • Persistence of fire use in rural activities linked with the high percentage of human-caused wildfires. • Reluctance of forest services to re-introduce fire as a tool for management due to efforts to end up with fire culture and safety concerns • Negative social perception



	STRENGTHS & OPPORTUNITIES	WEAKNESSES & THREATS
FIRE POLICIES	<ul style="list-style-type: none"> • Consensual tradition in policy processes, formulation and implementation • Stakeholder's participation • Transparency of the political processes. 	<ul style="list-style-type: none"> • Lack of awareness for forest fire risk in the region • Difficulties in political leadership. • Intersectoral coordination problems
FIRE USE PRACTICES	<ul style="list-style-type: none"> • Recognition of the natural role of fire in boreal and hemi-boreal ecosystems. • Absence of a restrictive framework and negative public perception. • Use of PB in forest certification 	<ul style="list-style-type: none"> • Predominance of the environmental and timber production functions • Except for Sweden, lack of expertise in planning and operational implementation

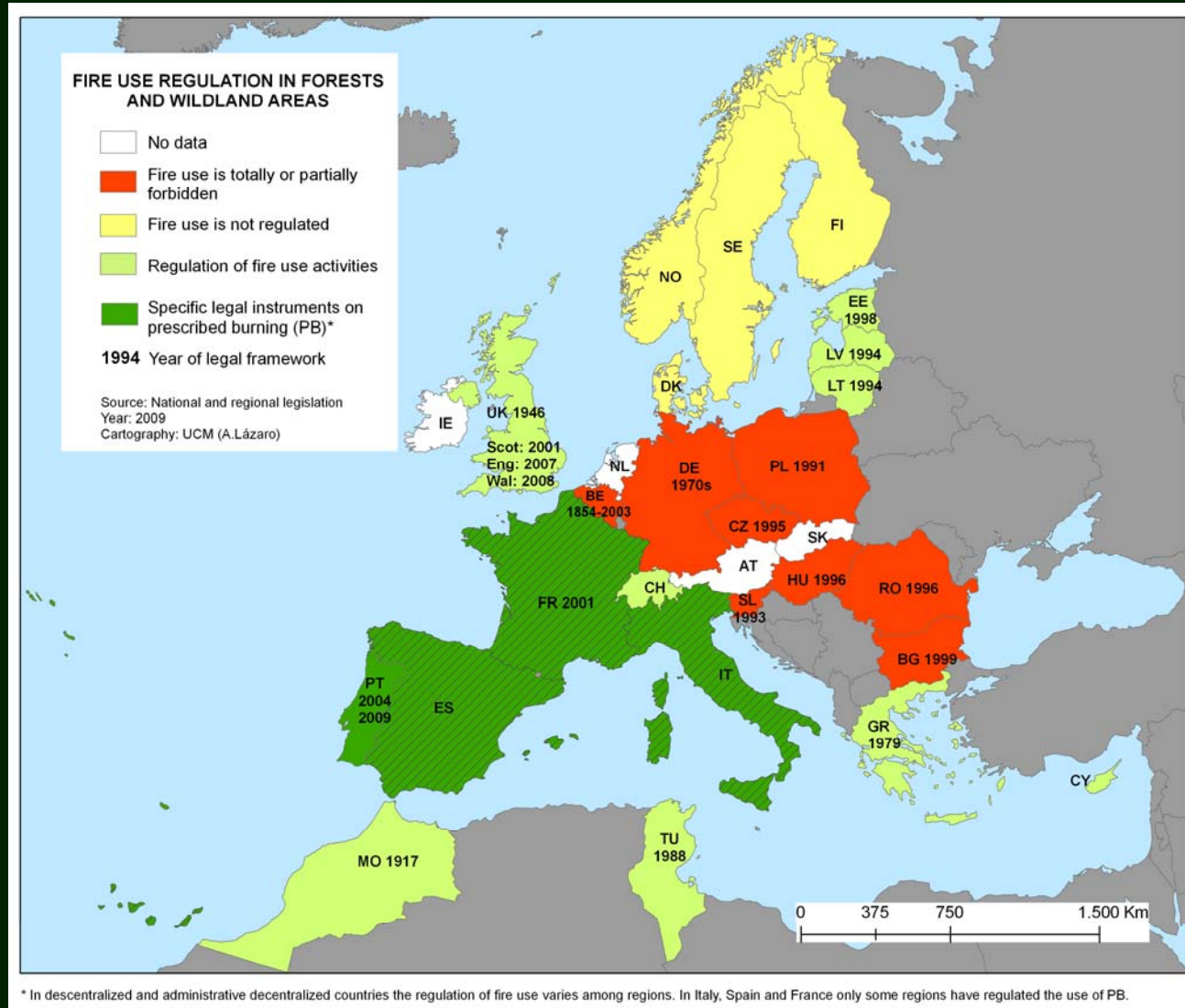


PREScribed BURNING ACCORDING TO FOREST CERTIFICATION STANDARDS IN STATE FOREST LANDS (SOUTHERN, SWEDEN)



Fire policies in Europe

- During the past twenty years the awareness of policy-makers towards fires has derived from catastrophic incidents
- European wildfire policies have generally been fire exclusion policies.
- Restrictive or inexistent legislation on fire use.



Need for new policy approaches

Fast and ad hoc reaction to a catastrophic situation



Proactive mitigation measures

Suppression-oriented policies



Preventive and integrative policies

Short-term policies



Long-term policies

Fire exclusion from the ecosystems



Integrated fire management

Need of a cross-sectoral approach

TERRITORIAL POLICIES

STRUCTURAL CAUSES:

- Rural abandonment
- Climate change
- New policy paradigms (e.g. conservationists, productivists, sustainable development)
- New urban demands (e.g. WUI)

RISK CONDITIONS

- Fuel accumulation
- Extreme weather conditions
- Land-use dynamics

SECTORAL POLICIES (FOREST AND CIVIL PROTECTION)

WILDFIRE



EFFECTS

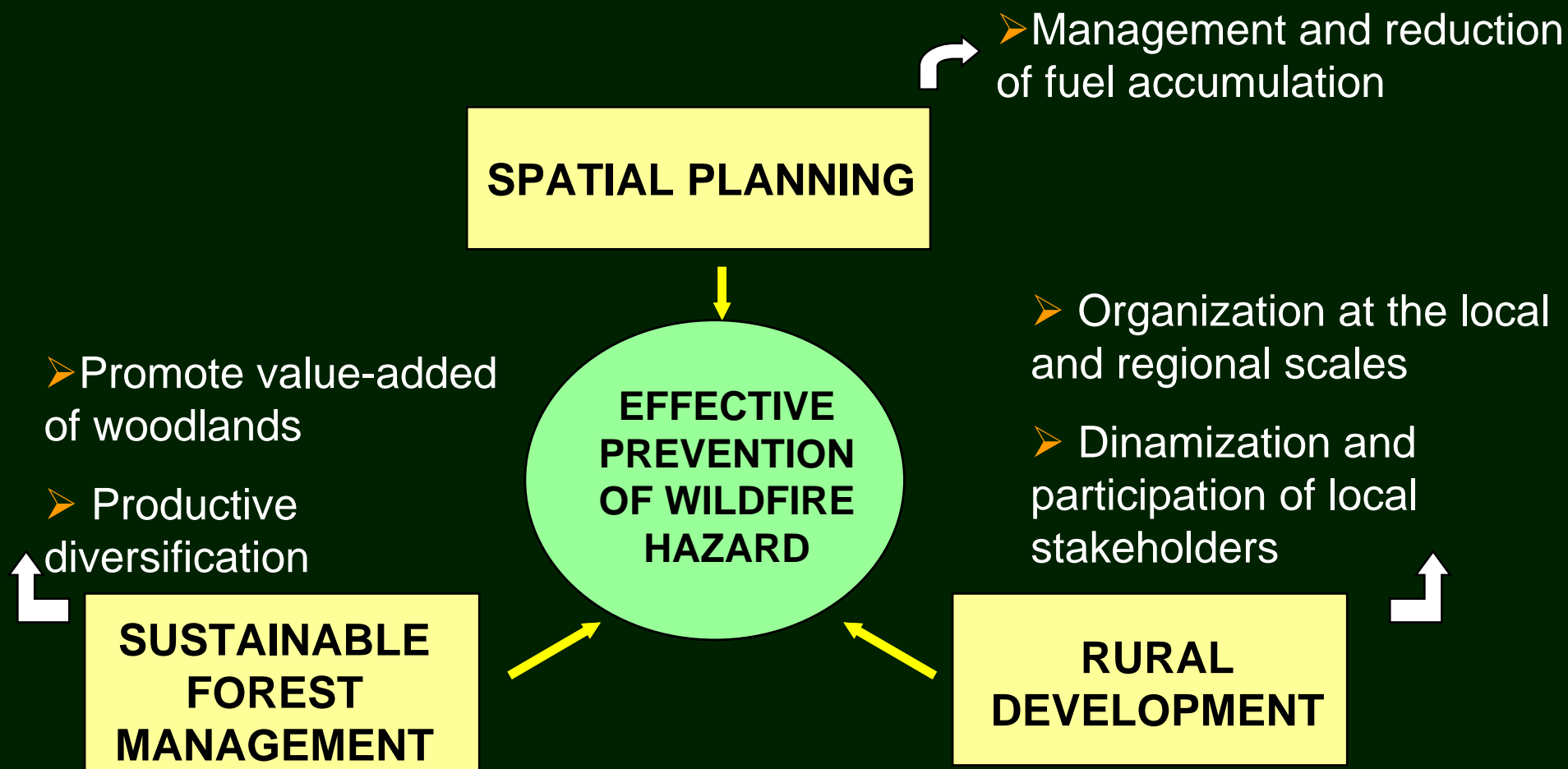
Social
Economic
Ecological

CROSS-SECTORAL APPROACH

- Spatial Planning Policy (Landscape management policy included)
- Rural Development Policy / Common Agricultural Policy
- Civil Defence Policy
- Energy Policy (alternative energy sources, biomass)
- Environmental Policy (Nature conservation policy included)
- Other Policies (i.e. Tourism/ Recreational Policies)

WISE WILDFIRE MANAGEMENT

Need of a global and territorial approach



Prohibition of fire use



- ☐ **Clandestinity** (local suppression fires)
- ☐ **Lost of fire control** (non regulated pastoral and agricultural burning)



Increase of fire risk and occurrence due to social conflicts

Demands of fire use

PASTORAL BURNING IN THE MANAGEMENT OF VEGETATION FOR LIVESTOCK (MARGHINE-MONTIFERRU, SARDINIA, ITALY)



Author: © N. Ribet, 2006

PB FOR NATURE CONSERVATION IN ATLANTIC CALLUNA HEATHLAND (LÜTJENHOLM SCHLESWIG-HOLSTEIN, GERMANY)



Author: J.G. Goldammer, 2006

PB FOR SELF PROTECTION OF A COASTAL PINUS STAND (BAGES FOREST, VAUDE, FRANCE)



Author: E. Rigolot

EXPERIMENTAL PB FOR TRAINING (MARÃO MOUNTAINS, PORTUGAL)




Author: M. Rainha, 2003

Punitive regime vs. Regulation of fire use practices



SALAMANCA



**Junta de
Castilla y León**
Delegación Territorial
Servicio Territorial del Medio Ambiente

SOLICITUD DE PERMISO DE QUEMA DE MATORRAL O PASTOS

D. _____ D.N.I. _____ Residente en _____
T.º M. _____ Calle _____ C. Postal _____

NOTIFICA: Que es su deseo utilizar el fuego como operación cultural necesaria para el mejor aprovechamiento de la finca de su propiedad que se describe a continuación:

NOMBRE: _____ **SITUACIÓN:** T.º Municipal: _____

Objeto de la quema: _____
Matorral _____ Altura _____ Superficie a quemar _____

Dedicada al cultivo de: _____

<u>Distancias</u>	<u>Características de los linderos respecto a la quema</u>
A _____ mts. de masa arbolada.	N _____
A _____ mts. de carretera.	S _____
A _____ mts. de vivienda.	E _____
	O _____


Y SE COMPROMETE: A realizar la quema, en caso de ser autorizada, de acuerdo con las condiciones que se establezcan.

Fecha y firma _____

Condiciones de la Autorización

- 1.º La quema se realizará: _____
- 2.º Tendrá que notificar al menos con 24 horas de antelación al Agente Forestal de la zona y a la Guardia Civil, señalando fecha exacta y hora de comienzo.
- 3.º Debe realizarse antes de iniciar la quema de cortafuegos de _____ mts. de ancho.
- 4.º Dadas las características de la quema deberán permanecer presentes un mínimo de _____ personas y _____ tractores, con la siguiente herramienta: _____
- 5.º _____

Fecha y firma _____



Fire exclusion vs. Professional and technical use of fire



Wildfire caused by livestock farmers (Avila, Spain)



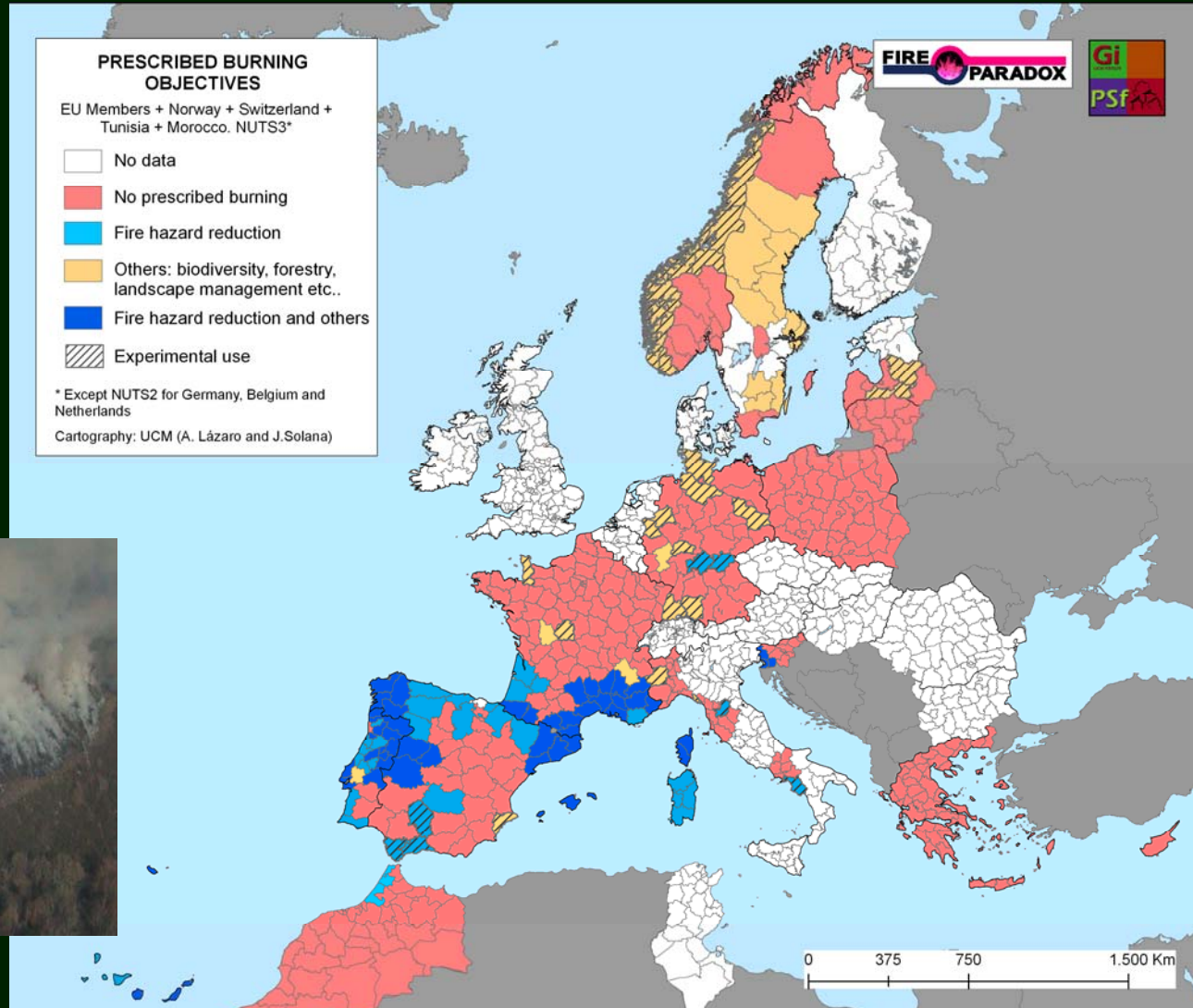
PRESCRIBED BURNING



SUPPRESSION FIRE

Need for new policy approaches

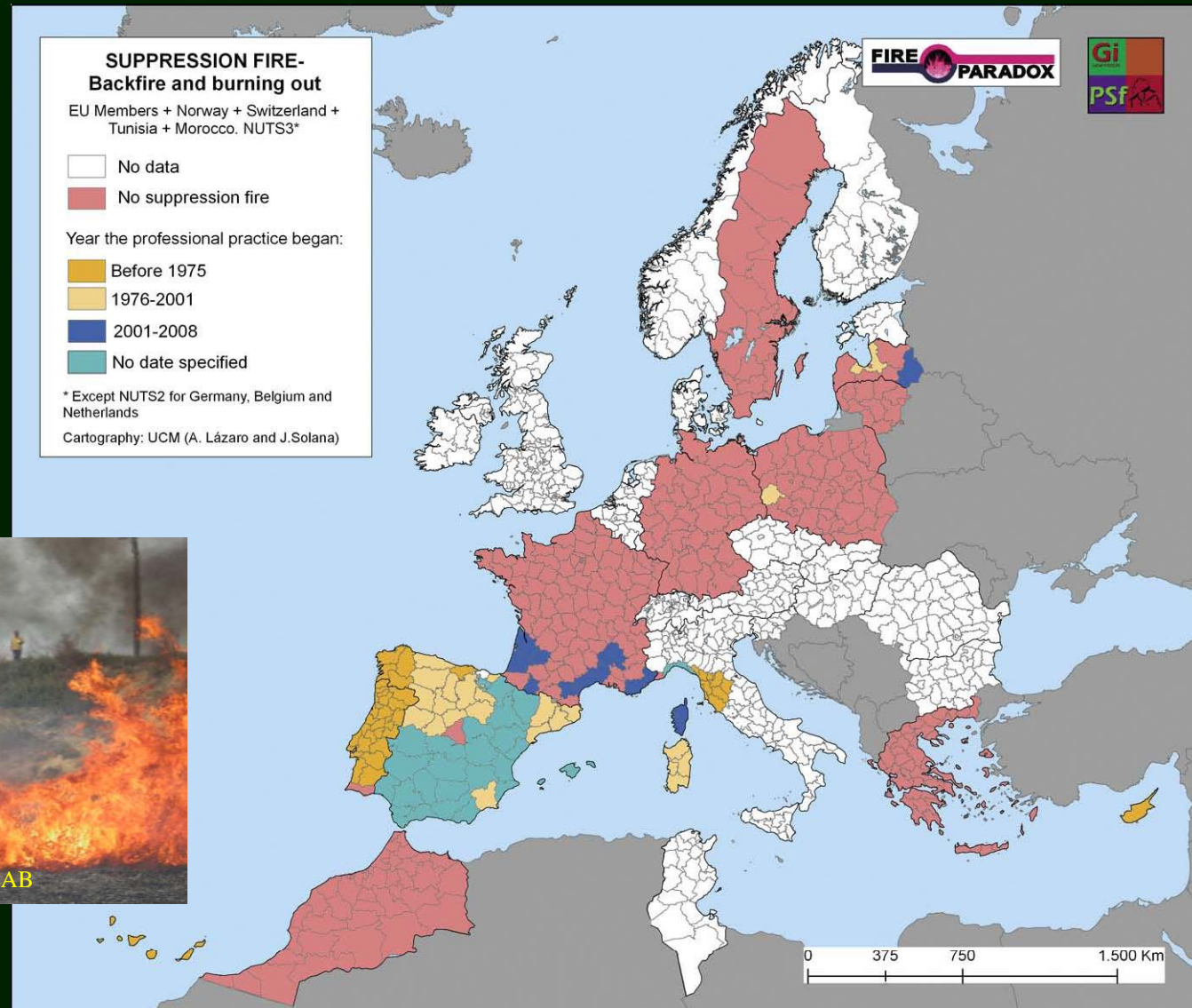
- Introduced in Portugal in the 80' by José Moreira da Silva
- Opportunities: Increase of wildfire risk and new demands for nature conservation and other management objectives



Autor: Ignacio Juárez

Need for new policy approaches

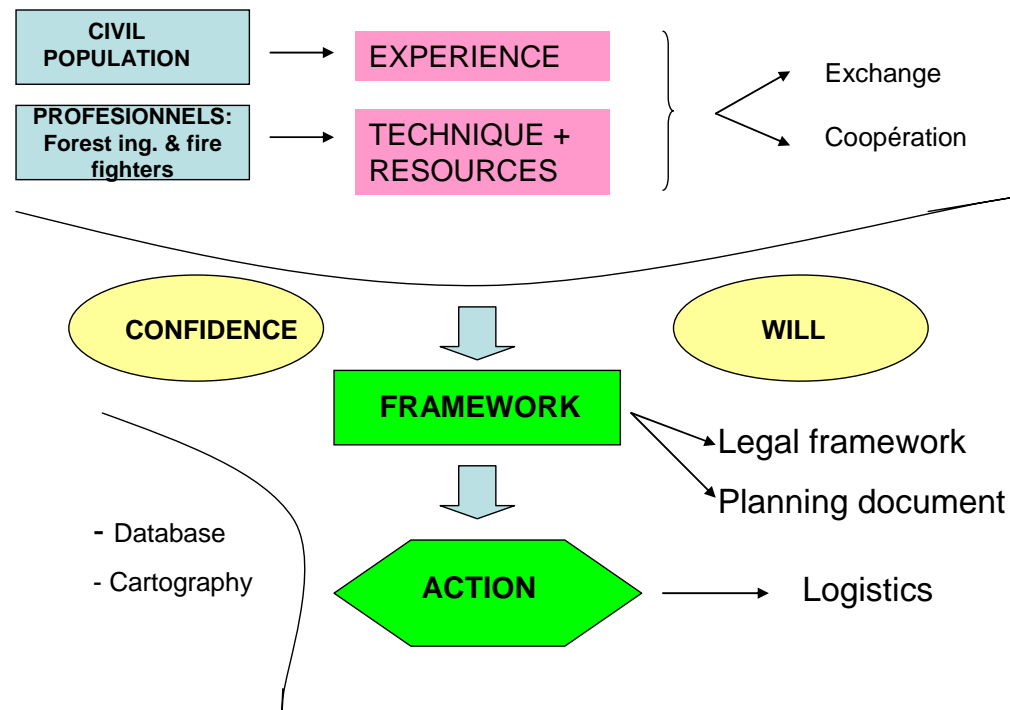
- ❑ The first wildfire fighting tool.
- ❑ Main constraints: safety and civil responsibility
- ❑ Additional constraints: perception of urban societies.
- ❑ Powerful and very efficient technique.





- ❑ Participation & public awareness strategy: **SOCIAL PREVENTION**
- ❑ Professional training

Scheme of an innovative and participative governance mechanism for the use of suppression fire



CHALLENGES:

- Management of **social conflicts** (prevention of fire occurrence)
- **Cooperation** to reduce fire risk and occurrence: interagency and multilevel **coordination**; empowerment, involvement and **collaboration** with different stakeholders (governance).
- Development of **learning processes**.
- Need to improve **decision support tools**
- To guarantee **human safety** (fire-fighters, inhabitants)

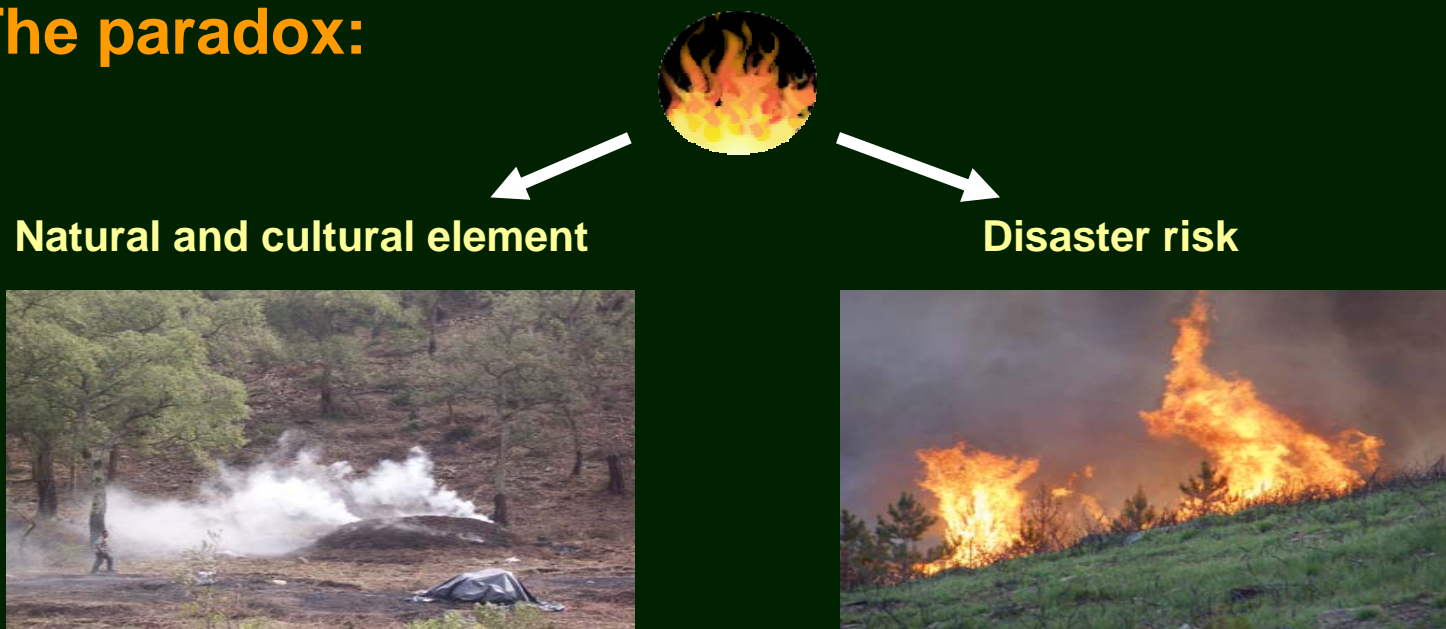
NEW DEMANDS:

- New **wildfire-prone areas**
- New **territories of risk** (WUI)
- **CO2 emissions** mitigation

RECOMMENDATIONS:

- National policies should consider **all aspects of fire management as a whole and with a long term view.**
- **Prevention actions** must be cross-sectoral and participative
- To regulate **traditional fire use practices**
- To enhance **prescribed burning and suppression fire techniques.**
- To promote professional training through a **European Qualification Framework**, to improve the operational systems efficiency
- Special attention should be given to the new prone areas and territories of risk, such as the **wildland-urban interfaces**

The paradox:



The FIRE PARADOX solution:

- Promotion of **best practices of fire use**
- A **Fire Framework Directive**

This publication aims to provide policy makers, policy implementers, as well as the general public, with background information and analysis into the successful implementation of prescribed burning and suppression fire practices in European countries.

By analysing successful case-studies, it seeks to understand the factors that influence the success of prescribed burning and suppression fire and to facilitate application in other countries.



FIRE USE PRACTICES FOR HABITAT AND WILDLIFE MANAGEMENT IN SCOTLAND AND THE UK WITH A CASE STUDY FROM GLEN TANAR ESTATE

(M. Bruce, C. Legg, A. Lázaro, D. Kraus)

The traditional use of fire as a land management practice is called 'Muirburn' in Scotland.

The techniques of muirburn were adapted for habitat management for red grouse (*Lagopus lagopus scoticus*), an upland game bird that lives in heather (*Calluna vulgaris*). Muirburn is also used extensively to manage red deer (*Cervus elaphus*) in upland areas.

Best practice management guidelines are laid out in the Muirburn Code and its supplement (2001)



A management burn on heather-dominated grouse-moor on Glen Tanar Estate.

PRESCRIBED BURNING FOR NATURE CONSERVATION IN VÄSTERNORRLAND, SWEDEN (T. Rydkvist & D. Kraus)

LESSONS LEARNED:

It takes a lot of convincing effort before a fire programme can be started, and once it is started it demands a constant arguing for continuation.

Information exchange is an essential part in prescribed fire and there is a need to improve that bit in multiple ways.

Developing the structural hierarchy based on the concept of High Reliability Organizing is not an easy task, but an essential one.



Prescribed burning was introduced into Stormyran-Lommyran Nature Reserve in 2004 as a restoration tool. Photo: M. Rönqvist.

Need of a common framework:

- Wildfire risk is a major problem for European territories and societies.
- Heterogeneity and dispersion of fire legal and policy instruments.
- Absence or inadaptation of fire use regulations.

Conditions of the new legal framework:

- Response to the current demands and challenges.
- Regional diversity recognition.
- Based on science contribution and practical experiences (Fire Paradox project)



Need of a flexible legal framework for updating and harmonising the existing legal and policy instruments.

The new legal instrument should favorise and improve the efficiency of fire policy measures adopted at the national and regional level

Selection of the Directive legal form:

Directives are frequent in environmental matters.

Regulations require uniform regulation and direct application, while Directives provide flexibility and margin of action.

The aim of a Framework Directive is to attain a basic approach or minimum legal harmonisation of Member States legislation.



Legal basis:

European Commission initiative

Co-decision Parliament and Council

Legally binding instrument

The Fire Framework Directive will be the basis for the policy shift in Member States, in order to achieve an integrated fire management system, adapted to the European context



FIRE PARADOX PROPOSAL FOR A FRAMEWORK DIRECTIVE ON WILDLAND FIRE MANAGEMENT:

CHAPTER I. General stipulations

CHAPTER II. Integrated wildland fire management

CHAPTER III: Regulation of fire use

CHAPTER IV. Social awareness, transfer of knowledge and professional training

CHAPTER V. Final stipulations

CHAPTER I. General stipulations

Article 1. Objectives

The objective of this Directive is to establish a framework for wildland fire management, fire use regulation, and wildland fire suppression in order to limit the negative consequences of wildfires on the safeguarding of goods and people, the environment, cultural landscapes and economic activities.

This Directive establishes measures to manage both wildland fires occurring due to natural causes, and those that are human-induced. These measures also contemplate mitigation of the effects of wildland fires and restoration of degraded land under a comprehensive perspective.

(.../...)

CHAPTER II. Integrated wildland fire management

Article 4. Information systems

The Commission will promote the obtaining, exchange, harmonisation and coordination of information wildland fire management at regional and national level. For such purpose, by the date mentioned in section 1 of article 25, the Commission will create a platform to share information between the Member States and other interested parties, coordinated by the European Forest Fire Information System (EFFIS). The platform will include information related to the methodologies of evaluation of fire risk, identification of hazard zones, the elaboration of Fire Management Plans and hazard and vulnerability maps.

Article 7. Fire management plans

1. The Member States shall approve *Fire Management Plans at the national or regional level for assuring the integrated wildland fire management*. These policy instruments will be integrative and comprehensive and will take into account aspects related to land regulations and land management, preventive forest management, nature conservation, as well as civil protection.

(.../...)

Article 8. Rural development programmes

1. In accordance with paragraph 2 of article 7, in those areas where instruments for planning integrated wildland fire management were approved, the competent authorities must elaborate, together with the *plans, programmes aimed at promoting continued and diversified economic activities in the rural areas that contribute to reduce the fire risk*.

(.../...)

Article 9. Wildland-urban interfaces

In accordance with paragraph 3(c) of article 7, the Member States shall establish measures aimed at fulfilling the following objectives in *wildland-urban interfaces as new risk scenarios*:

- a) Stop their spreading by preventing new urbanisation processes in fire prone areas.
- b) Reduce potential damage caused by wildfires by means of preventive forest management.



Article 11. European action regarding civil protection

1. In accordance with the Council Decision 2007/779/EC, Euratom, of 8 November 2007 establishing a Community Civil Protection Mechanism, *the Monitoring and Information Centre (MIC) will be the operations centre for European intervention regarding civil protection and, specifically, fight against wildland fires (....)*

CHAPTER III. Regulation of fire use

Article 14. Traditional burning management

1. In those areas where the traditional fire use know-how has been maintained, *the competent authorities will allow and promote the appropriate management and responsible use of fire* for sustainable silviculture, agriculture, livestock and watershed management and biodiversity conservation, while balancing these with the need to protect civilians, communities, organizations and governments from the unwanted and harmful effects of fire (...)

3. Traditional burning practices will be managed from *participatory approaches*, by recognizing and using the knowledge, leadership and expertise of landowners, local citizens and community groups (...)

4. The Member states will define *Best Practice Guidelines for Fire Use*, appropriate for different national and regional circumstances and aiming to guaranteeing the environmental and economic benefit of fire use practices.

Article 15. Prescribed burning for fire hazard reduction and for land and resources management

1. The *use of prescribed fire in Europe can apply for different management objectives*, such as:
- a) Fuel management for wildfire hazard reduction.
 - b) Nature conservation.
 - c) Land-use and landscape management.
 - d) Forest management. (.../...)

Article 16. Tactical fire for wildfire suppression

1. The *Member States shall regulate the use of fire in wildfire suppression actions*, with the possibility of regulating the various suppression firing techniques including burning out, backfiring, line firing, counter firing and strip burning (.../...).

Article 17. Social awareness and transfer and sharing of knowledge

2. ... the Member States shall encourage the *transfer and sharing of knowledge and experiences* to promote the best practices of fire use.

Article 18. Training of technical personnel

The Member States shall take appropriate measures to provide technical training to fire-fighters in all the integrated wildland fire management aspects, *including technical fire use*. This training will be delivered following these guidelines:

- a) The *European Qualification Framework* will be used for reference to compare the various qualification levels of the different qualification systems.

A Framework Directive on Fire would be an appropriate policy instrument to avoid uniformity in legal treatment of the fire problem across EU territory whilst, at the same time, **establishing a basic minimum harmonising legislation with sufficient flexibility** so as to avoid unwanted homogenisation.

It would be **a common reference for implementing the integrated fire management concepts at the national and regional level**, allowing for efficient operational systems in European territories.

Things are changing...
let's adapt and act!

- Uneffective policies
- Fire problem is not limited to the Mediterranean region
- Some years ago, it had not been possible to talk about fire as a management tool in Europe ...
- New approaches on fire management are required to improve the strategies of wildfire prevention and suppression
- The need of a European Framework Directive on Fire

Fire is an unavoidable natural and cultural element,
but it is not an unavoidable catastrophe

Thank you!