

Introduction to the Landscape Fire Management concept

Prof. Nikola Nikolov
RFMC - Coordinator and regional senior LFM expert



2017

Croatia
Montenegro
Macedonia
Albania
Serbia
Bosnia and Herzegovina



- Bosnia and Herzegovina 2020 -



- Montenegro 2022 -



- Macedonia 2021 -



- Serbia 2021-



- Albania 2021-



- Croatia 2021-



Landscape Fire Management concept

Landscape fire: Overarching term for fires burning in the vegetation of natural, cultural and urban-industrial landscapes (especially the peri-urban and rural residential areas)

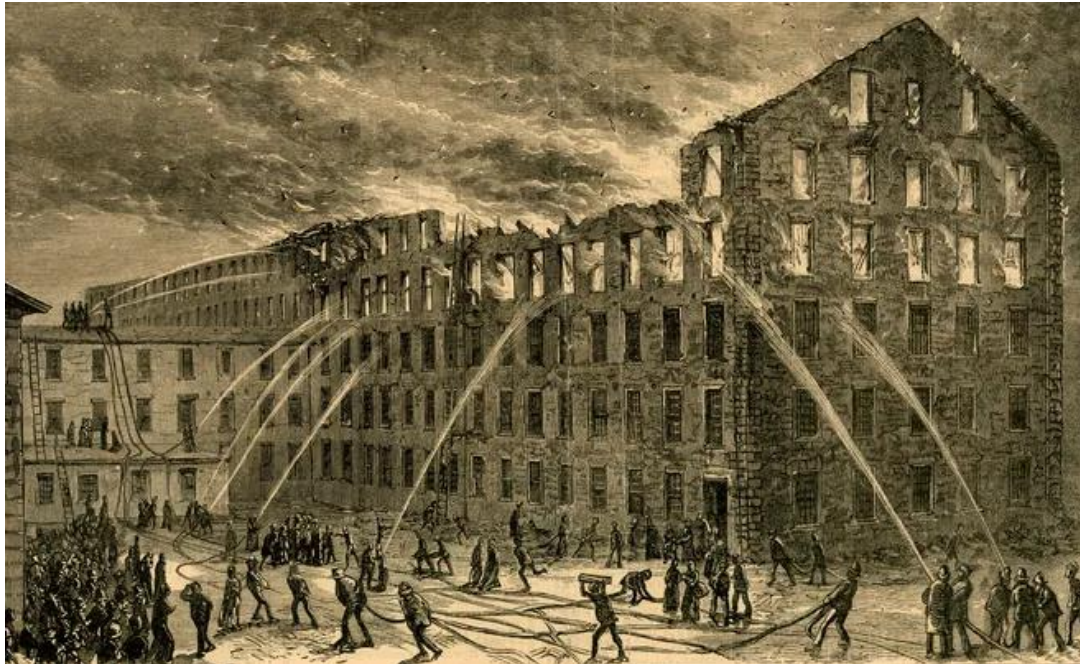
THE CONCEPT OF FIRE PROTECTION

In general

FIRE SUPPRESSION ORIENTED

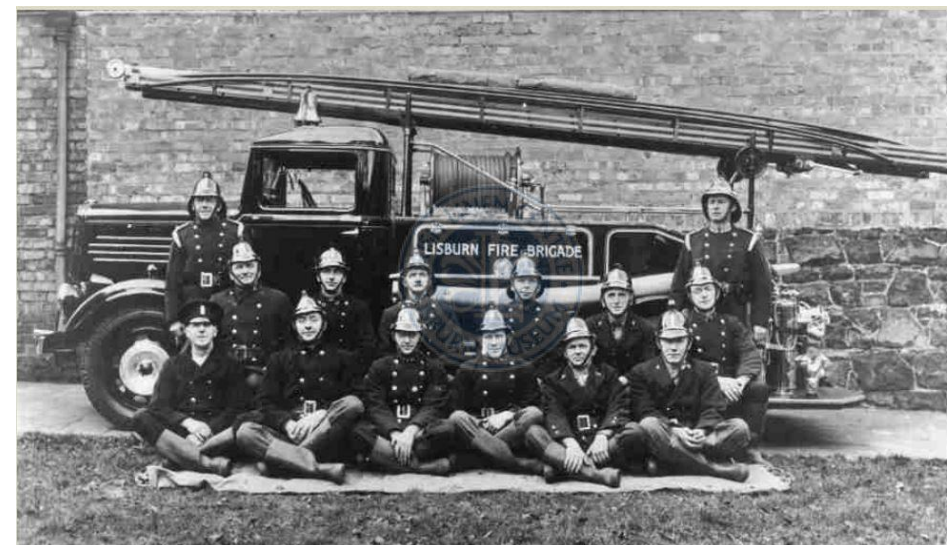
The end of eighteenth century - industrial revolution

The nineteenth century - industrial development and growth of the cities



Between 1805 and 1911, the proportion of the French population living in cities increased from 25% to 44%; in Germany during the same period, urban population increased from 30% to 60%







Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



LANDSCAPE FIRE
MANAGEMENT
IN THE WESTERN BALKANS



www.lfmwb.net



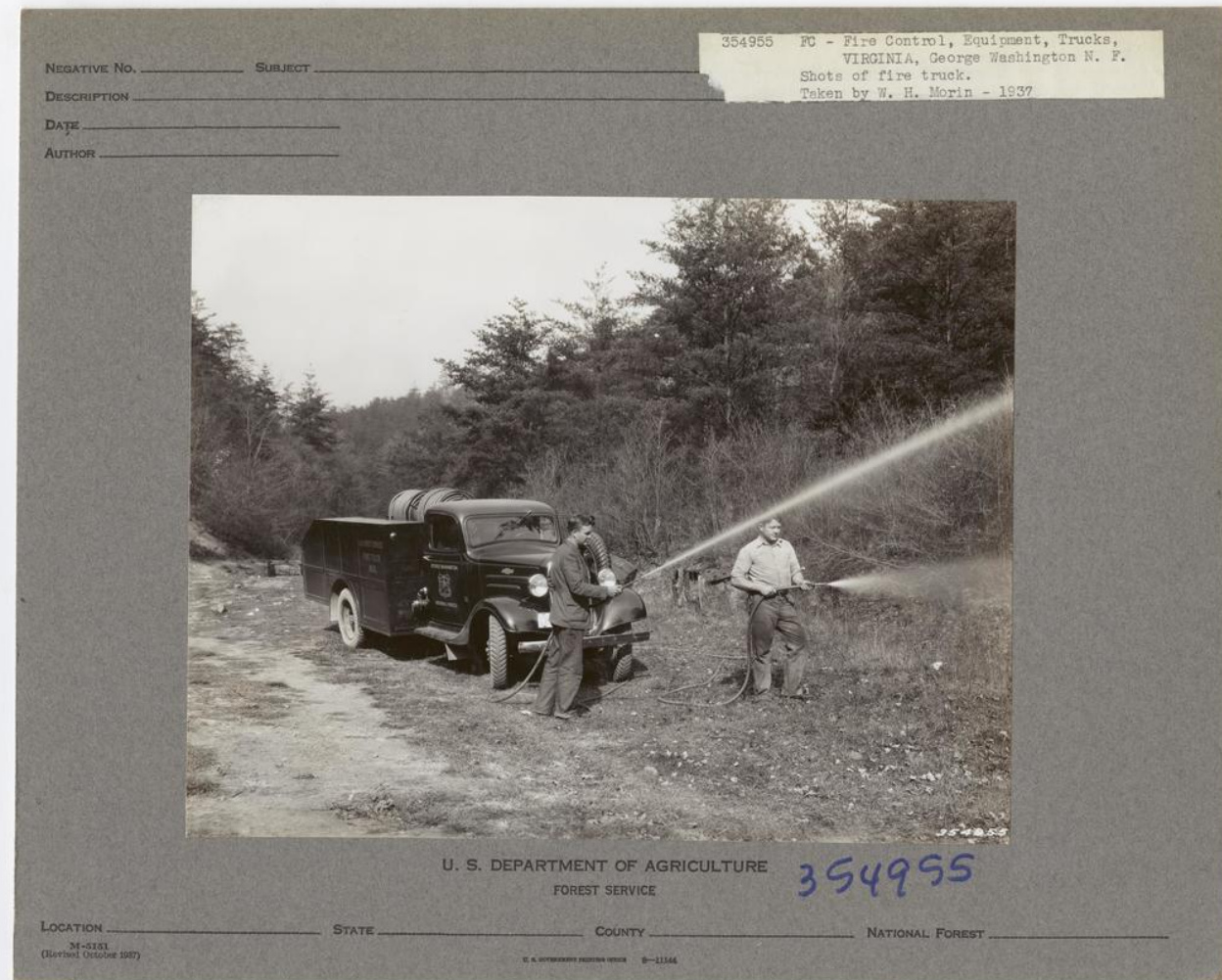


Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC



LANDSCAPE FIRE
MANAGEMENT
IN THE WESTERN BALKANS

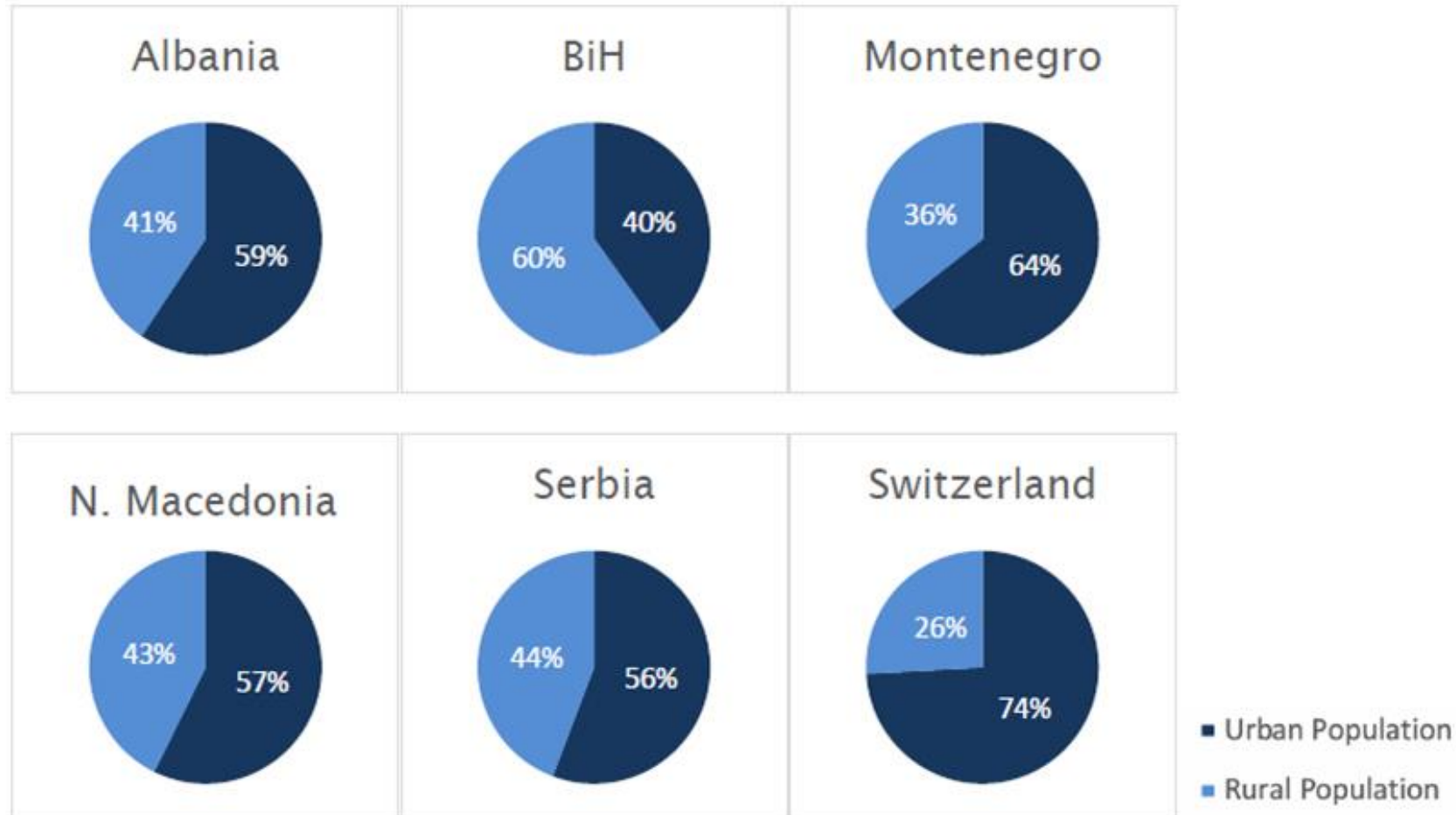


Natural and Cultural landscape - Nowadays

STILL FIRE SUPPRESSION ORIENTED SYSTEMS

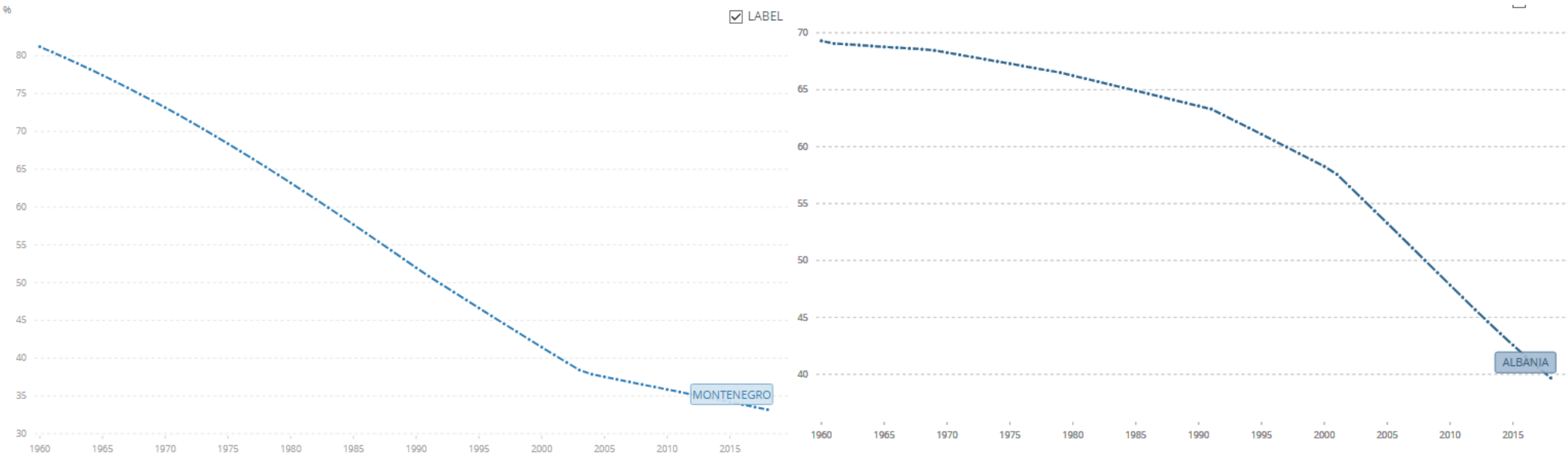
Migration process of the rural population and abandonment of the agricultural lands and pastures

Ratio of urban and rural population



Migration process of the rural population and abandonment of the agricultural lands and pastures

Ratio of urban and rural population



Forest and forest land:	1949	2020
Serbia	21%	30%
Croatia	34%	35%
Slovenia	45%	60%
Bosnia and Herzegovina	48%	63%
Macedonia	26%	42%
Montenegro	37%	61%



➤ **Causes:**

- Agricultural and pasture burning
 - Arson
 - Negligence (waste burning etc.)
- } **Caused by human**

➤ **Large territory of abandoned agricultural land and pastures as well as villages:**

- Fuel accumulation
 - No fuel management activities
 - Social-economic changes
 - Demographic changes
- } **Landscape changes**



“extremely fire prone landscape”









California





Australia



A **megafire** is an extraordinary fire that devastates a large area. They are characterized by their intensity, size, duration, and uncontrollable dimension. There is no precise scientific definition.





Athens 2009



Greece

Mati 2018

103 fatalities



66 fatalities

Portugal 2017



- Bosnia and Herzegovina 2020 -



- Montenegro 2017 -



- Macedonia 2021 -



- Serbia 2017-



- Albania 2021-



- Croatia 2017-



➤ **Causes:**

- Agricultural and pasture burning
 - Arson
 - Negligence (waste burning etc.)
- } **Caused by human**

➤ **Large territory of abandoned agricultural land and pastures as well as villages:**

- Fuel accumulation
 - No fuel management activities
 - Social-economic changes
 - Demographic changes
- } **Landscape changes**



“extremely fire prone landscape”



➤ **Climate change !?**

Climate change in the WB Region

Projected change in temperature (July) and change in annual precipitation in the WB countries until 2040-2059 according to RCP4.5 and RCP8.5 in comparison to the reference period 1986 - 2005

Change until 2040-2059	Change in temperature in July		Change in annual precipitation	
	RCP4.5	RCP8.5	RCP4.5	RCP8.5
Albania	+2°C	+3°C	-41.3 mm	-52 mm
BiH	+1.9°C	+2.9°C	-20.9 mm	-19.7 mm
Montenegro	+2°C	+3°C	-24.8 mm	-27 mm
N. Macedonia	+2.3°C	3.5°C	-36 mm	-49 mm
Serbia	+2.2°C	+3.5°C	-14 mm	-22.9 mm

► *forestry:*

- » high risk of widespread forest degradation related to the increased fire frequency and spreading, flash floods and mortality because of the faster climate change than natural migration,
- » widespread disappearance of present taxa (varieties) over the region;

Source: SEE2020 SERIES STUDY ON CLIMATE CHANGE IN THE WESTERN BALKANS REGION

➤ **Causes:**

- Agricultural and pasture burning
 - Arson
 - Negligence (waste burning etc.)
- } **Caused by human**

➤ **Large territory of abandoned agricultural land and pastures as well as villages:**

- Fuel accumulation
 - No fuel management activities
 - Social-economic changes
 - Demographic changes
- } **Landscape changes**

“extremely fire prone landscape”

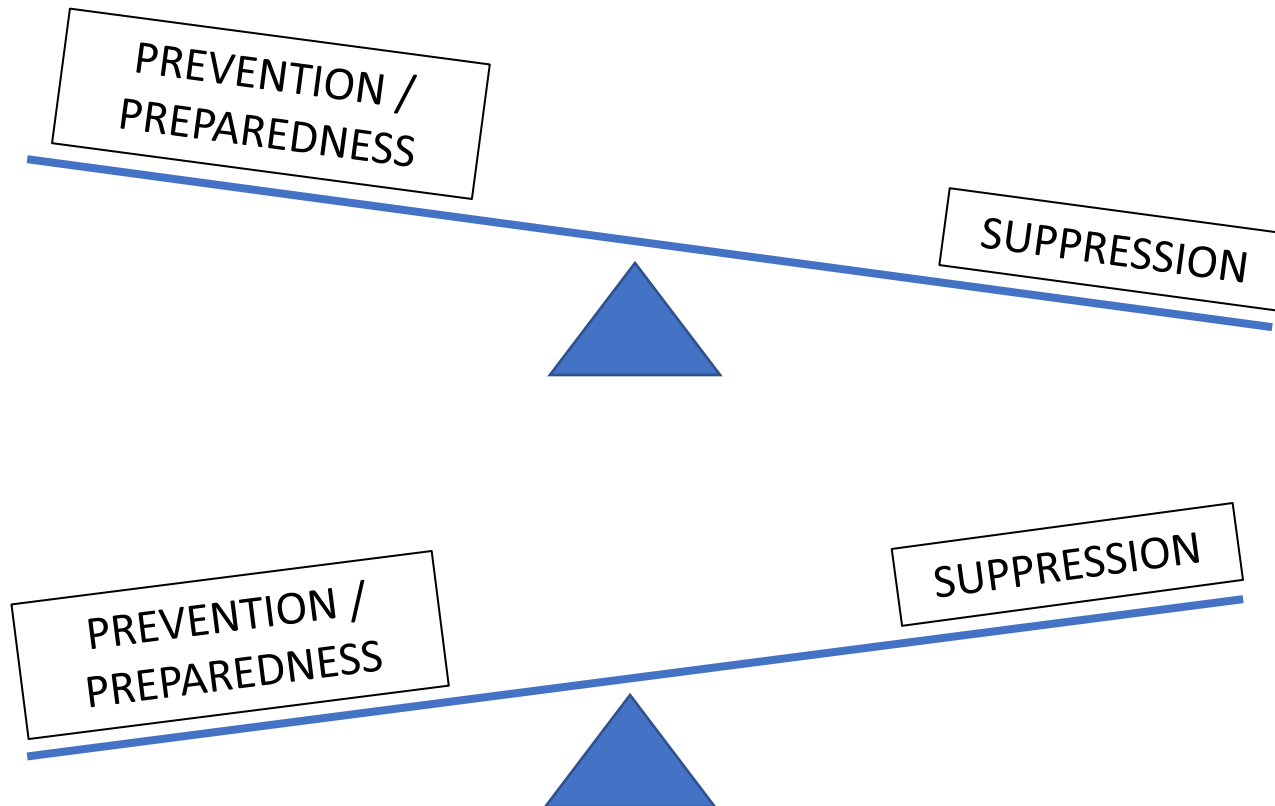
➤ **Climate change !?**



“with the climate change as a main precondition/driver”

THE CONCEPT OF FIRE PROTECTION

In general
FIRE SUPPRESSION ORIENTED !?



➤ **Causes:**

- Agricultural and pasture burning
- Arson
- Negligence (waste burning etc.)

} **Caused by human**

➤ **Large territory of abandoned agricultural land and pastures as well as villages:**

- Fuel accumulation
- No fuel management activities
- Social-economic changes
- Demographic changes

} **Landscape changes**



“extremely fire prone landscape”

➤ **Climate change**



“with the climate change as a main precondition/driver”

All measures for wildland fire protection, according to the time they are taken and their aim are divided into:

1. measures of prevention



2. measures of preparedness and



3. measures of suppression



1. measures of prevention

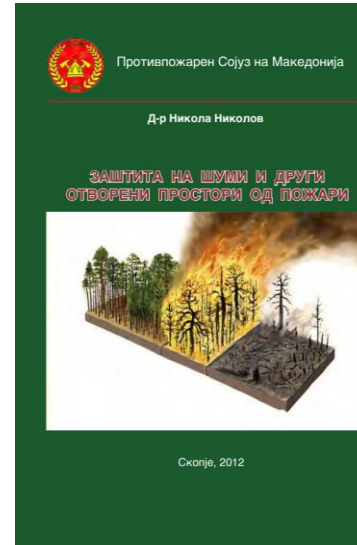


Causes:

- Agricultural and pasture burning
- Arson
- Negligence (waste burning etc.)

Caused by human

- **Legal measures** (laws, rulebooks and other legal documents)
- **Measures of education**
- **Informative-propaganda measures**



2. measures of preparedness

➤ Large territory of abandoned agricultural land and pastures as well as villages:

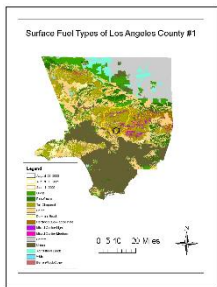
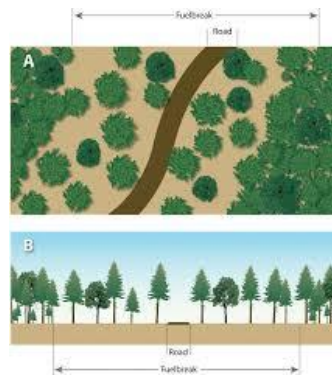
- Fuel accumulation
- No fuel management activities
- Social-economic changes
- Demographic changes

Landscape changes

PREPARATORY MEASURES

1. Early fire detection
2. Organizing of system for communication
3. Organizing transport for the firefighters, tools and equipment
4. Procurement of appropriate tools and equipment
5. Recruitment and training of fire fighters
6. Building of firebreaks and fuelbreaks
7. Fuel mapping and fuel reduction
8. Creating of early warning system
9. Preparation of annual forest fire operational plan (annual fire management plan)

fuel management



Forestry (*management technics and planning*)

Agriculture (*management technics and planning*)

Government (*legal framework and finances*)

Cadastre (*land use data support*)

Municipality (*legal framework, planning and finances*)

Min. of ecology (*legal framework and finances*)

Local population (*management practices and planning*)

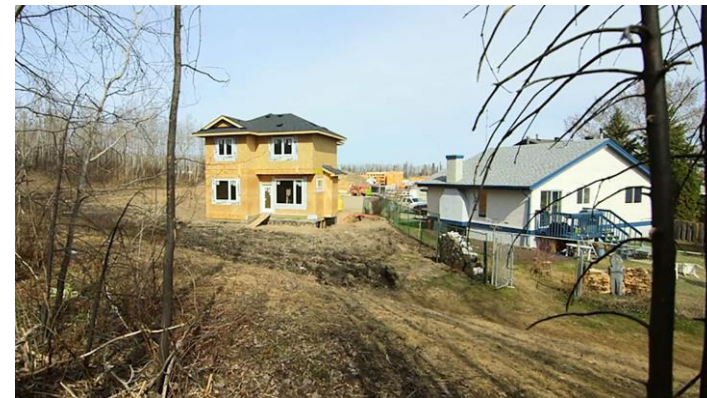
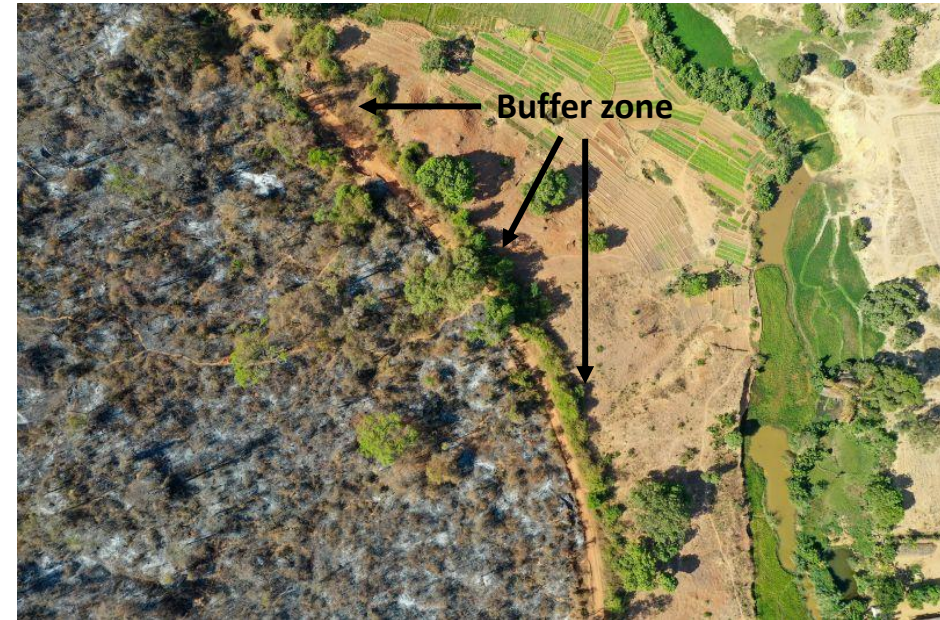
Science (*knowledge, innovations e.t.c.*)

e.t.c.

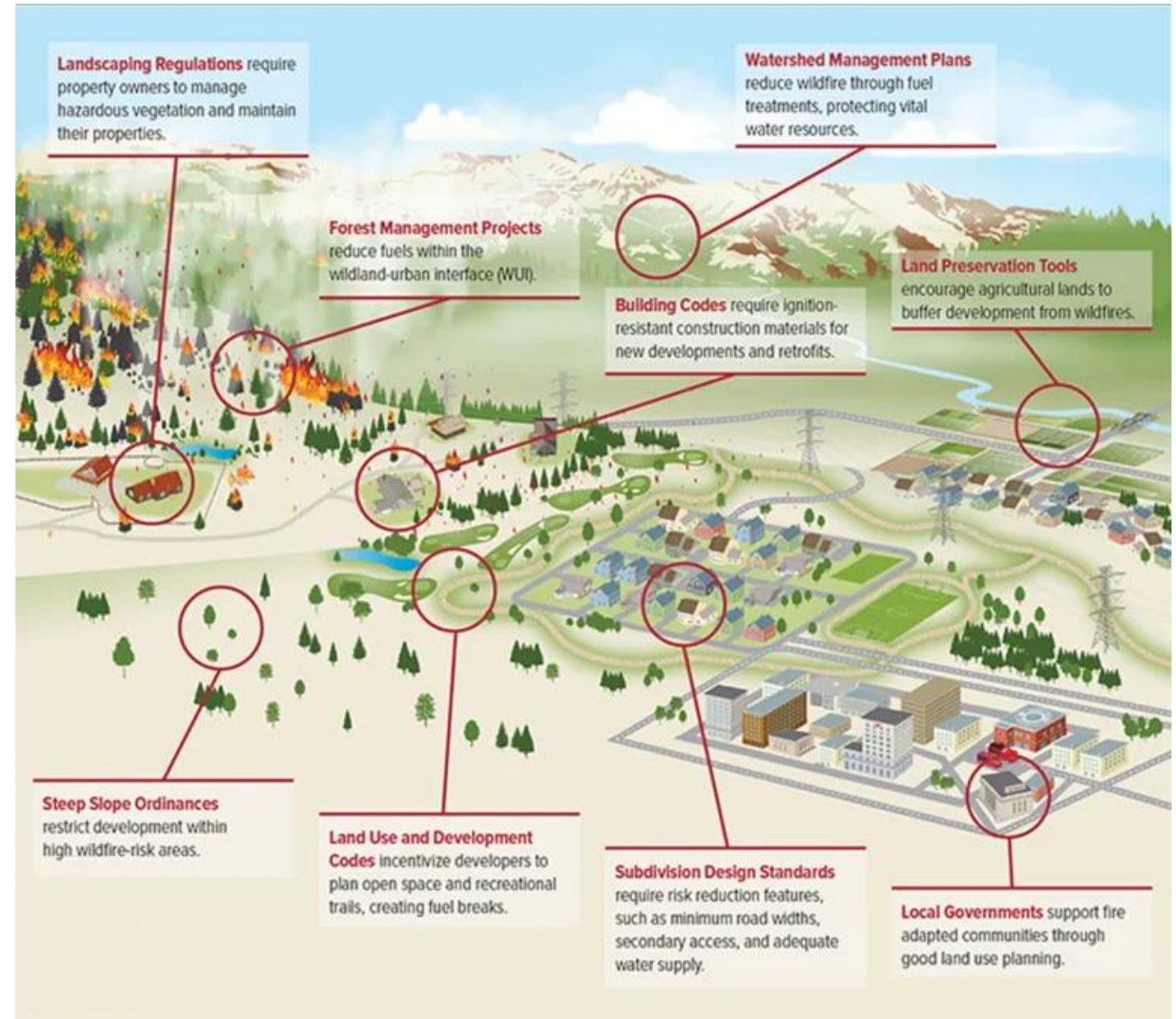


Agriculture (*management technics and planning*)

Local population (*management practices and planning*)



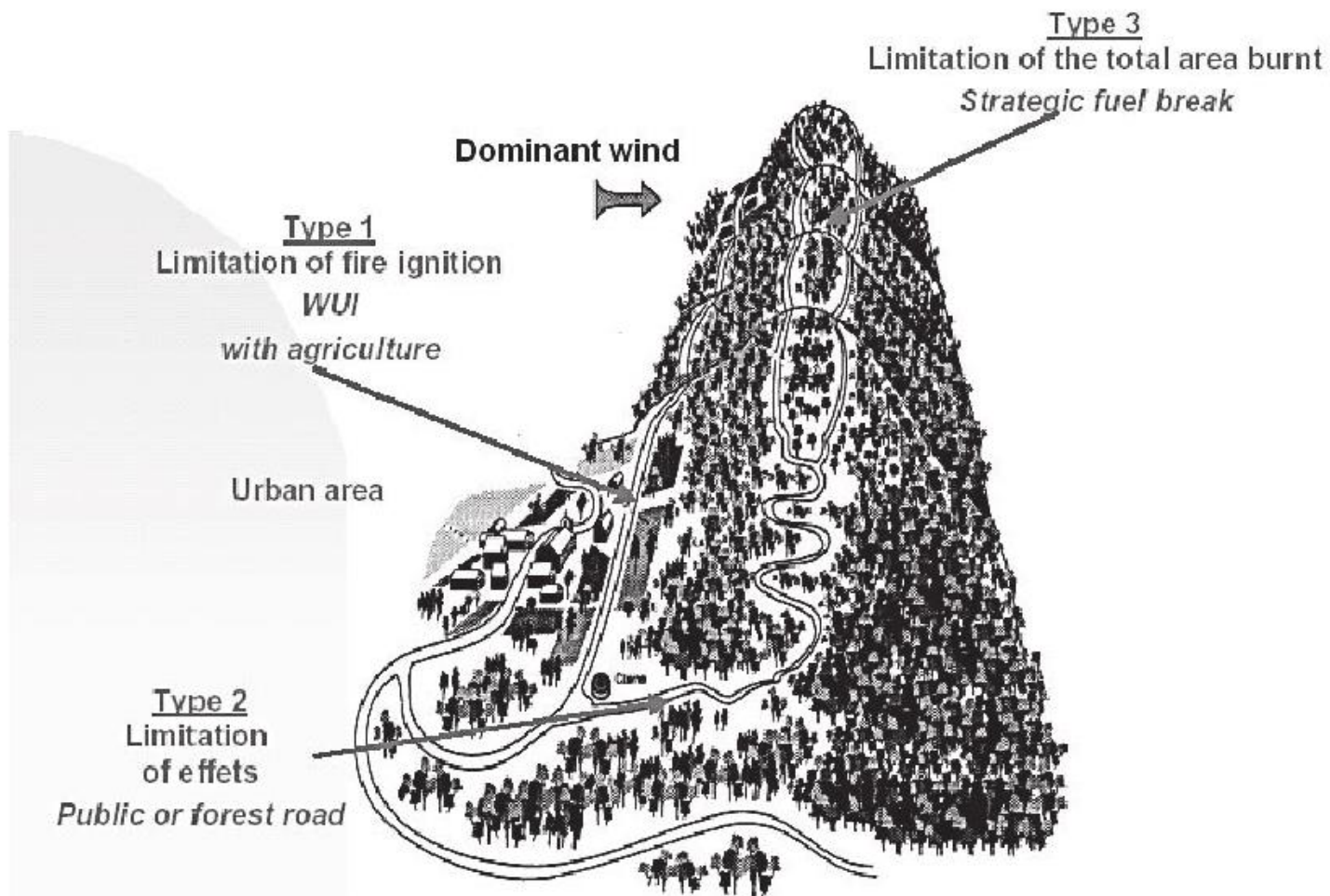
Landscape/Land use planning to reduce the landscape fire risk



Municipality (legal framework, planning and finances)

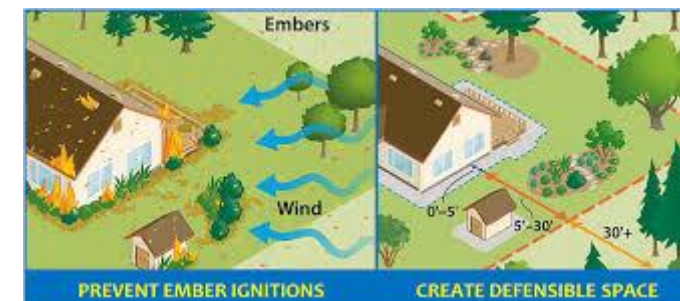
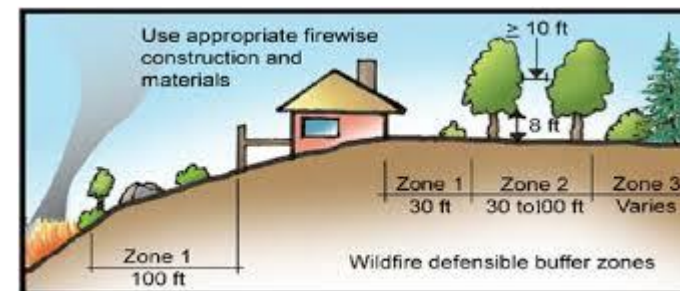
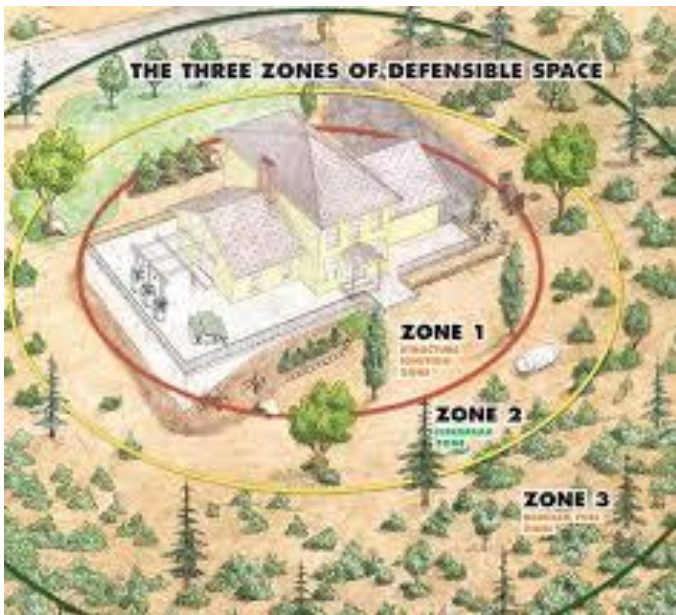
Government (legal framework and finances)

Cadastre (land use data support)



Firewise landscaping !





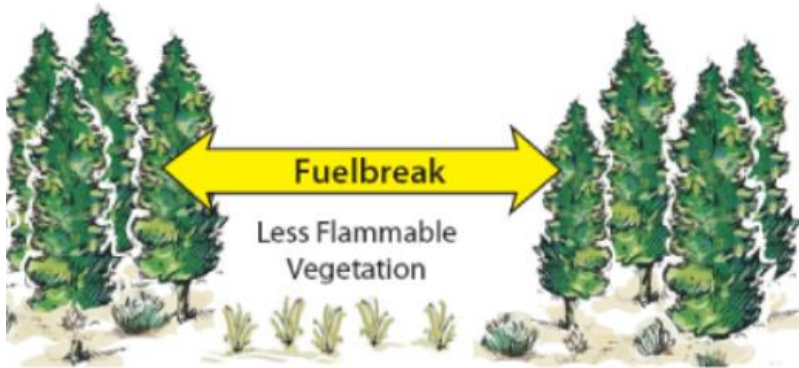


Type of vegetations:

- Pyrofobs
- Pyrofits (fire-resistant plants)

What are fire- resistant plants?

Fire-resistant plants are plants that don't readily ignite from a flame or other ignition sources. Although fire-resistant plants can be damaged or even killed by fire, their foliage and stems don't contribute significantly to the fuel and, therefore, the fire's intensity.



THANK YOU FOR YOUR ATTENTION

