

Fire risk assessment in the cross-border area using national technical specifications

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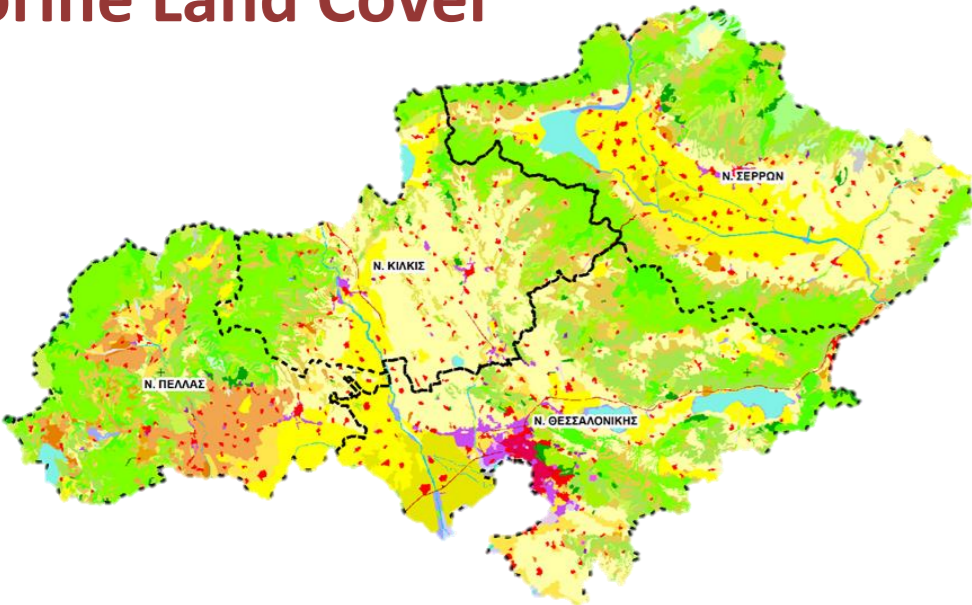
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BACKGROUND & OBJECTIVES

- Wildfires are an integral process in Mediterranean natural ecosystems-yet they are also a major source of disturbance.
- Especially in cross-border regions, co-operation is challenging for addressing them in a holistic and sustainable manner.
- Initiatives are needed to standardize cross-border (CB) co-operation & protocols for wildfire fire risk reduction & climate resilience
- A standardized approach with open-source data is proposed in the CB region between Greece and North Macedonia
- Spatially explicit maps for prevention and mitigation of fire disasters are developed through a robust, transferable approach.

CASE STUDY WORKFLOW

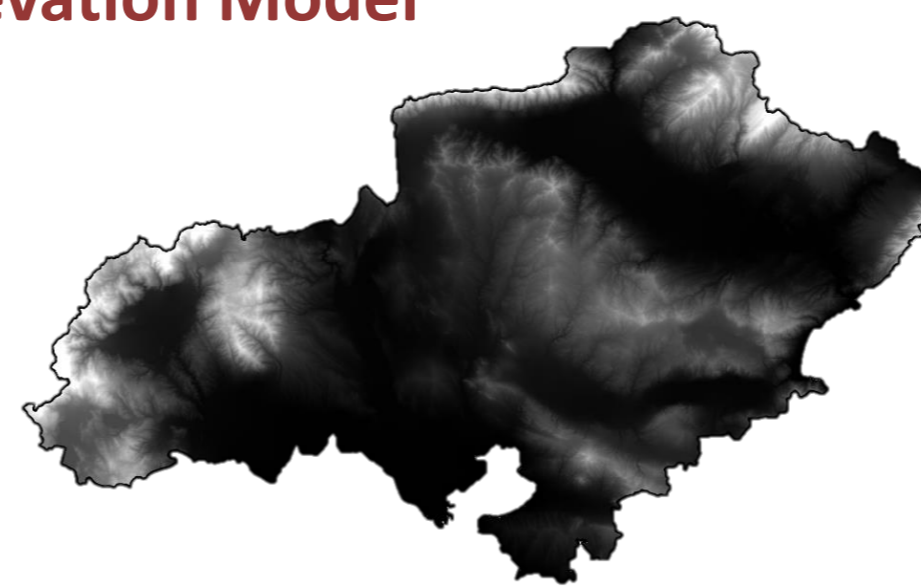
Corine Land Cover



1. Coniferous forest
2. Broad-leaved forest
3. Mixed forest
4. Shrubs
5. Pastures
6. Agriculture
7. etc

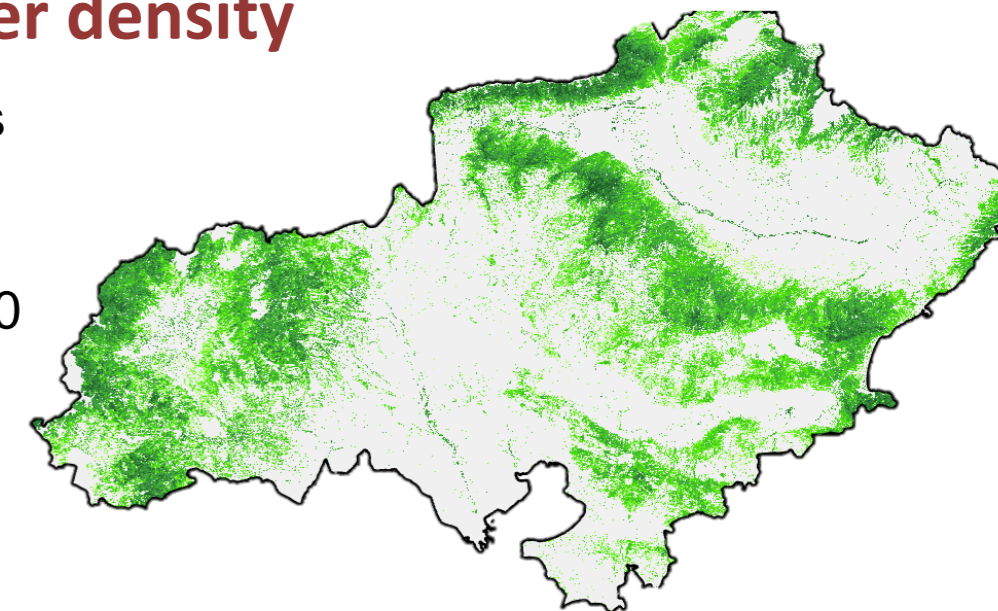
Digital Elevation Model

- 3 classes
1. 0-600
 2. 600-1200
 3. >1200



Tree cover density

- 3 classes
1. 0-40
 2. 40-70
 3. 70-100
 4. >100



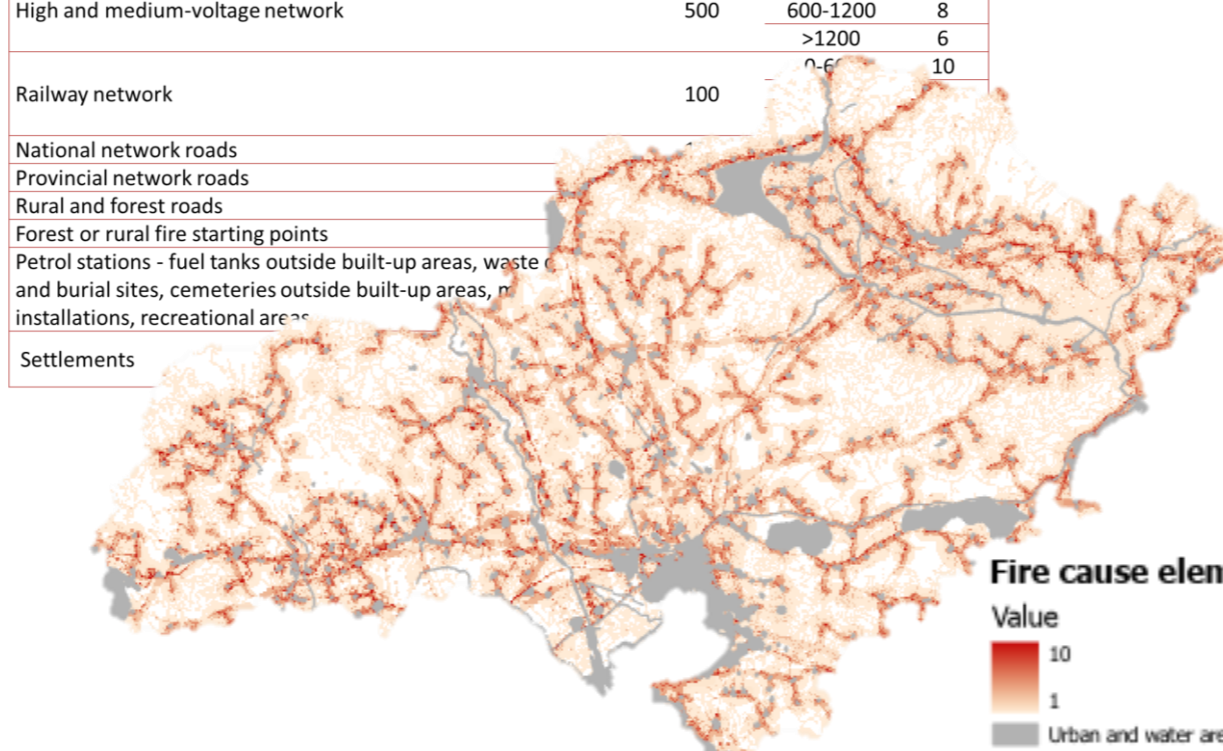
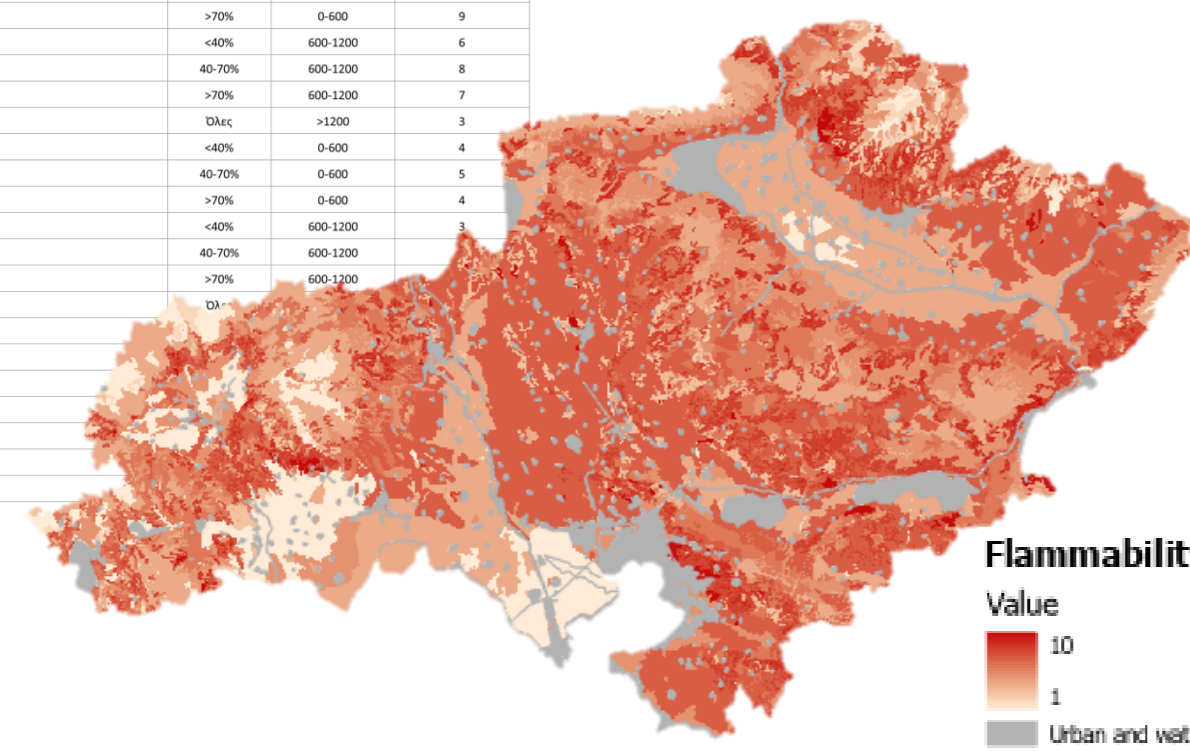
Flammability x Fire cause elements

Flammability scores

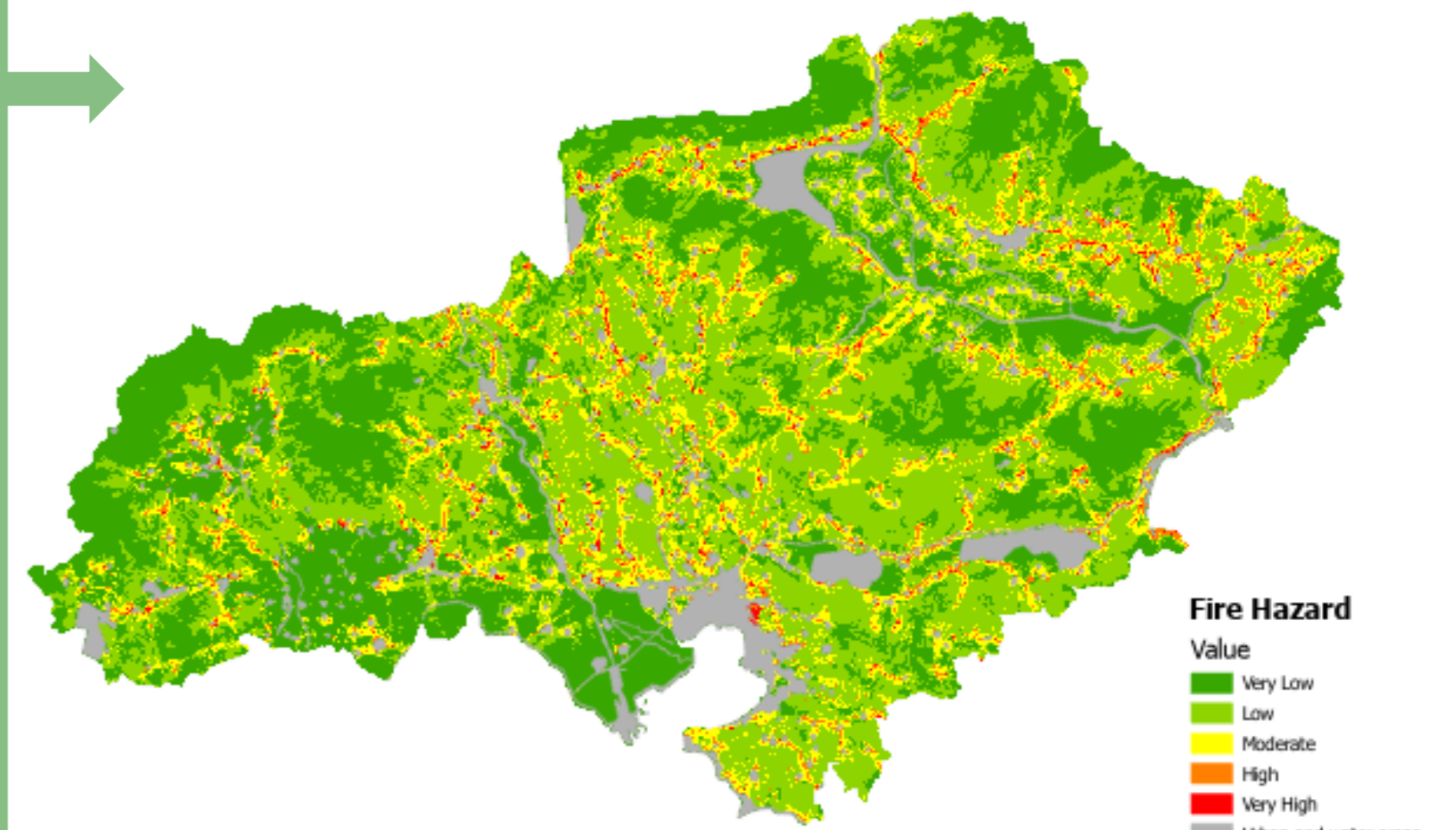
Vegetation	Factors	Tree density	Elevation	Flammability score
Coniferous forest	<40%	0-600	0-600	3
Coniferous forest	40-70%	0-600	0-600	10
Coniferous forest	>70%	0-600	0-600	9
Coniferous forest	<40%	600-1200	0-600	6
Coniferous forest	40-70%	600-1200	0-600	8
Coniferous forest	>70%	600-1200	0-600	7
Coniferous forest	<40%	>1200	0-600	3
Broad-leaved forest	<40%	0-600	0-600	4
Broad-leaved forest	40-70%	0-600	0-600	5
Broad-leaved forest	>70%	0-600	0-600	4
Broad-leaved forest	<40%	600-1200	0-600	4
Broad-leaved forest	40-70%	600-1200	0-600	5
Broad-leaved forest	>70%	600-1200	0-600	4
Mixed forest	<40%	0-600	0-600	4
Mixed forest	40-70%	0-600	0-600	5
Mixed forest	>70%	0-600	0-600	4
Mixed forest	<40%	600-1200	0-600	4
Mixed forest	40-70%	600-1200	0-600	5
Mixed forest	>70%	600-1200	0-600	4
Mixed forest	<40%	>1200	0-600	3
Mixed forest	40-70%	>1200	0-600	4
Mixed forest	>70%	>1200	0-600	3
Mixed forest	<40%	0-600	>1200	3
Mixed forest	40-70%	0-600	>1200	4
Mixed forest	>70%	0-600	>1200	3
Mixed forest	<40%	600-1200	>1200	3
Mixed forest	40-70%	600-1200	>1200	4
Mixed forest	>70%	600-1200	>1200	3
Shrubs	<40%	0-600	>1200	3
Shrubs	40-70%	0-600	>1200	4
Shrubs	>70%	0-600	>1200	3
Shrubs	<40%	600-1200	>1200	3
Shrubs	40-70%	600-1200	>1200	4
Shrubs	>70%	600-1200	>1200	3

Fire cause elements scores

Factors	Buffer (m)	Elevation (m)	Score
High and medium-voltage network	500	0-600	10
		600-1200	8
		>1200	6
Railway network	100	>600	10
National network roads			
Provincial network roads			
Rural and forest roads			
Forest or rural fire starting points			
Petrol stations - fuel tanks outside built-up areas, waste and burial sites, cemeteries outside built-up areas, installations, recreational areas			
Settlements			



HAZARD



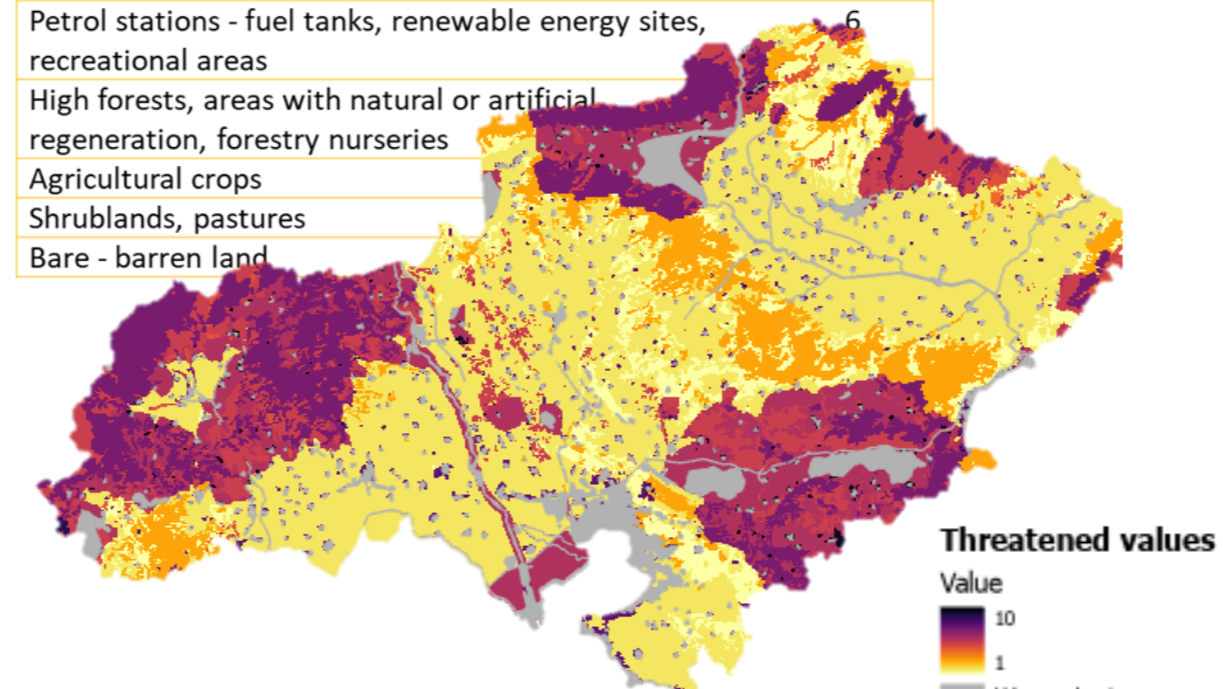
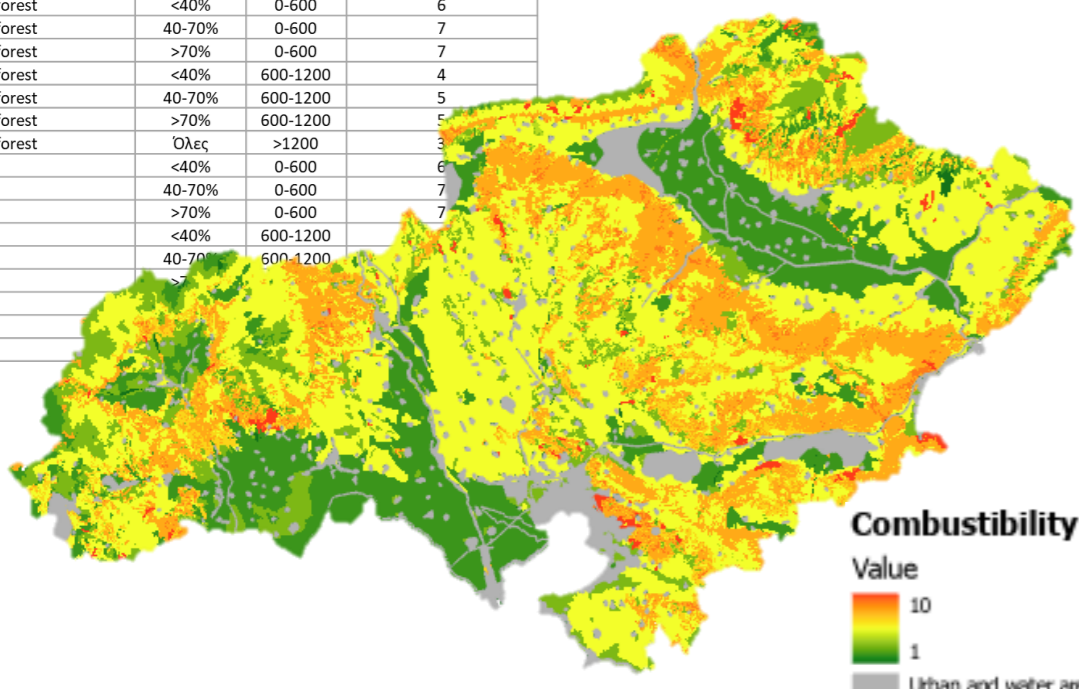
Combustibility x Threatened values

Combustibility scores

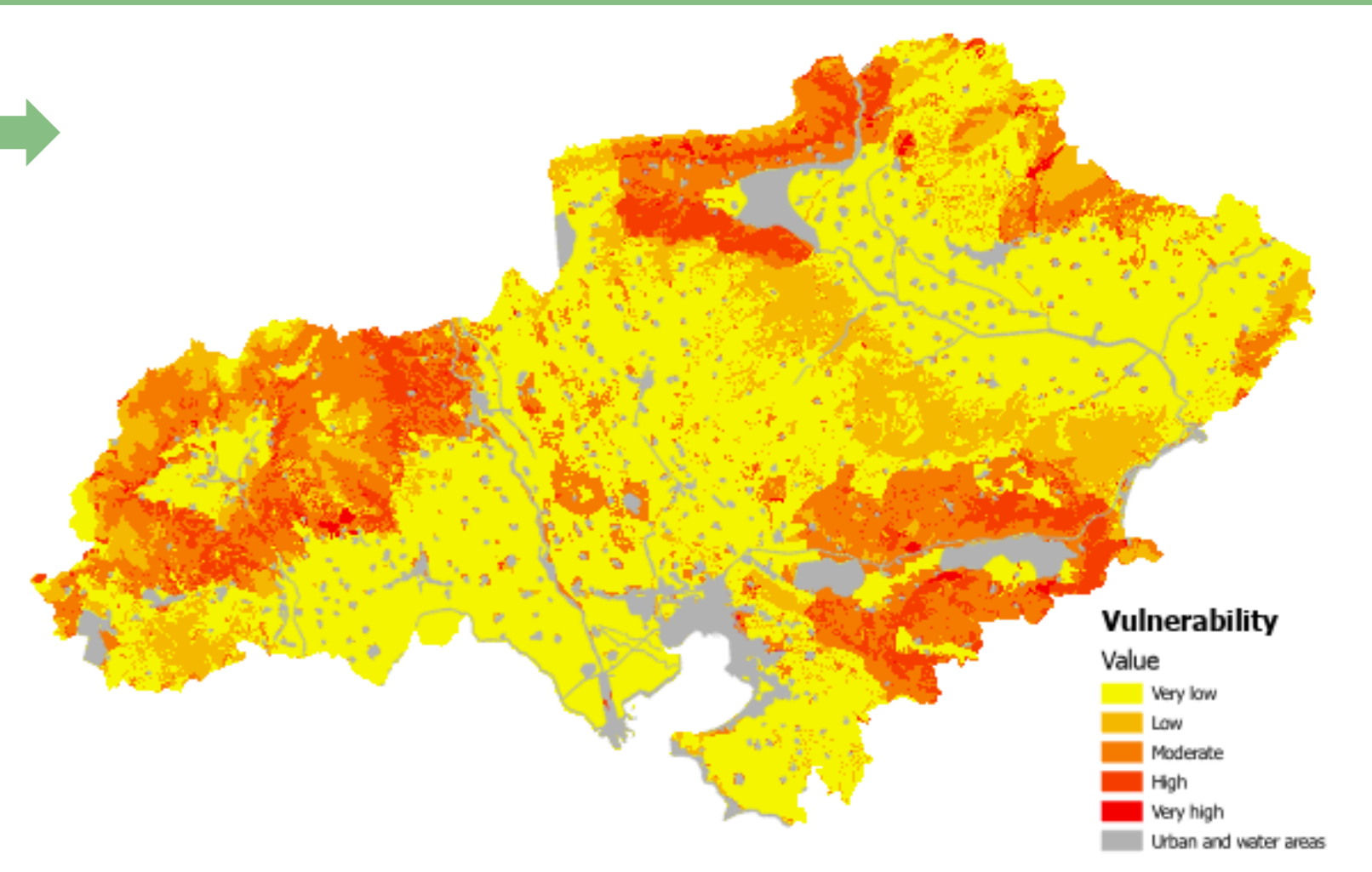
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Coniferous forest	>70%	600-1200	0-600	7
Coniferous forest	<40%	>1200	0-600	3
Broad-leaved forest	<40%	0-600	0-600	4
Broad-leaved forest	40-70%	0-600	0-600	5
Broad-leaved forest	>70%	0-600	0-600	4
Broad-leaved forest	<40%	600-1200	0-600	4
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Shrubs	>70%	600-1200	>1200	3

Threatened values

Threatened values	Scores
Human lives (settlements, children's camps, etc.),	10
Airports, military facilities, other important facilities	9
Archaeological sites - monuments	8
Protected areas (Natura 2000), places of worship	7
Petrol stations - fuel tanks, renewable energy sites, recreational areas	6
High forests, areas with natural or artificial regeneration, forestry nurseries	5
Agricultural crops	4
Shrublands, pastures	3
Bare - barren land	2



VULNERABILITY



CONCLUSION

The present work, as part of the "Early Fire Detection and Ranging for disaster prevention and management" (eFIDAR) project, is a step towards common forest fire management in the cross-border region, increasing forest fire preparedness and knowledge transfer between Greece and North Macedonia.

REFERENCES

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Hazard x Vulnerability = FIRE RISK

