

Supplementary Material

Bridging knowledge gaps on the role of spatial planning in wildfire risk reduction: insights from Portugal

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Table S1. Main difficulties faced by municipalities with the implementation of the IMSRF, and agreement with the decision to integrate the wildfire hazard map in the Constraints Map of Master Plans: responses to online survey (n = 175).

QUESTION	North (N=53)	% (N=53)	Centre (N=50)	% (N=50)	Lisbon and Tejo River Valley (N=24)	% (N=24)	Alentejo (N=25)	% (N=25)	Algarve (N=10)	% (N=10)	Anonymous (N=13)	% (N=13)	National (N=175)	% (N=175)
What are the main difficulties you face with the implementation of the IMSRF?	ONLINE SURVEY													
RISK MANAGEMENT TOOLS														
Hazard map does not correspond to the existing reality in the territory (spatial resolution; not based on the Master Plan's urban spaces; redundancy of the previous hazard maps, among others)	10	19%	11	22%	2	8%	4	16%	0	0%	3	23%	30	17%
LULC map (COS) 2018 does not reflect the existing reality at the local level	0	0%	1	2%	0	0%	0	0%	1	10%	0	0%	2	1%
Difficulties in surveying and mapping burned areas	0	0%	0	0%	0	0%	1	4%	0	0%	1	8%	2	1%
Obstacles to cultural and sporting activities	0	0%	2	4%	0	0%	0	0%	0	0%	0	0%	2	1%
Confusion between the concept of Hazard (structural) and Fire Weather Index (daily)	0	0%	1	2%	0	0%	0	0%	0	0%	0	0%	1	1%
Difficulty in understanding the criteria for defining hazardous areas	0	0%	1	2%	0	0%	0	0%	0	0%	0	0%	1	1%
The execution of the fuel management strips has contributed to colossal forest destruction	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%
The current dimensions of the fuel management strips are not justified, as there is no gain in defence beyond 30 meters in size	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%
Do you agree with the decision to integrate the National Wildfire Hazard Map in the Constraints Map of the spatial plans? Please justify your reply.														
Yes	42	79%	30	74%	21	96%	23	92%	6	60%	8	62%	130	74%
DECISION MARKING														
The integration of the hazard map facilitates decision making regarding the licensing of construction and expansion of buildings in rural areas depending on the hazard	11	21%	7	14%	8	33%	6	24%	2	20%	3	23%	37	21%
The integration of the hazard map in Constraint Map of Master Plans is necessary in order to bind individuals	2	4%	2	4%	0	0%	1	4%	0	0%	0	0%	5	3%
The hazard map must be integrated into the Master Plan's Constraint Map only if it is prepared by the municipality	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%
HAZARD MAP METHODOLOGY														
The methodology of the hazard map standardizes the criteria at a national level for the elaboration of this cartography, leaving no room for discrepancies	2	4%	0	0%	2	8%	0	0%	0	0%	1	8%	5	3%
The methodology for executing the hazard map should be reviewed and should be dynamic	3	6%	1	2%	0	0%	0	0%	0	0%	0	0%	4	2%
The artificialized territories in the LULC map (COS 2018) do not correspond to the urban spaces of the Master Plan, which makes procedural analysis difficult	0	0%	1	2%	0	0%	0	0%	1	10%	0	0%	2	1%
EXPECTED IMPACTS														
But the structural hazard map leads to major restrictions	1	2%	2	4%	0	0%	0	0%	0	0%	0	0%	3	2%
The hazard map must not lead to the prohibition of occupation of rural areas, increasing their vulnerability, abandonment, and inherent increase in hazardousness	0	0%	0	0%	0	0%	0	0%	1	10%	0	0%	1	1%
Hazard index encourages the management of rural areas insofar as the less dangerous nature of the plots will increase their financial value	0	0%	0	0%	1	4%	0	0%	0	0%	0	0%	1	1%
No	11	21%	20	34%	3	4%	2	8%	4	40%	5	38%	45	26%
EXPECTED IMPACTS														
The structural hazard map leads to major restrictions	3	6%	3	6%	0	0%	1	4%	1	10%	1	8%	9	5%
MISMATCHES IN THE PLANNING FRAMEWORK														
Hazard index, owing to its dynamic nature, becomes impracticable to be transposed to Master Plan's Constraint Map	0	0%	4	8%	1	4%	0	0%	0	0%	0	0%	5	3%
There is an incompatibility between the rigidity of the Spatial Plans and the dynamics of transformation of the Territory	0	0%	1	2%	0	0%	0	0%	0	0%	0	0%	1	1%
The hazard map must maintain its independent character from the Spatial Plans, supporting forestry planning and rural fire management	0	0%	0	0%	0	0%	0	0%	1	10%	0	0%	1	1%
LEGAL ENVIRONMENT														
The hazard map binds individuals without having been published for public consultation	0	0%	2	4%	0	0%	0	0%	1	10%	0	0%	3	2%
HAZARD MAP METHODOLOGY														
The hazard map should be carried out by the municipalities	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%
The hazard map was created by identifying spaces with high fire recurrence and from a standpoint of definition of defence areas, so it cannot be used as a building constraint	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%