

WHAT IS BRIDGE?

Bridging Science and Local Communities to forest fire risk reduction is a research project that started on 15 March 2021, funded by the Foundation for Science and Technology (FCT) under the call for Scientific Research and Technological Development Projects on Prevention and Fighting of Forest Fires.



The management of forest territories focused on fire risk reduction involves a network of actors (governments, entities and forest owners) acting in an articulated and collaborative manner to (i) promote the sharing and co-construction of knowledge on forest fire risk (social learning) and (ii) facilitate collaboration and collective action to enhance and strengthen adaptive capacities and local resilience to forest fires in territories at risk.

Objective: Develop an analysis of the actors' network of the Integrated Rural Fire Management System (SGIFR) and evaluate how the current network structure and its dynamics contribute to promote knowledge sharing (social learning) and collective action (collaboration) - both central aspects of collaborative and adaptive management to forest fire risks in Monchique.



Figure 1. Monchique Actors' Network (Project BRIDGE)

Method: Social Network Analysis (SNA) allows identifying patterns of interactions between actors within a social system (network) and analyzing the structure of the actors' network, the dynamics of interactions and the position (role) of the actors in the flows within the network. A survey was applied with actors of the SGIFR (entities and landowners) with the question: "With which organizations do you have interactions, such as information sharing and/or joint actions, on the topic of forest fires?"

Sample: 29 Entities of the SGIFR (see Appendix)
24 Landowners (10,5% of the estimated universe).

RESULTS

- The network of entities of the SGIFR has 541 interactions out of a total of 812 possible interactions of the network of all actors considered in this analysis (density of 66.6%). This high density indicates a cohesive network structure (distributed), which facilitates information flows between all entities. However, 47.5% of the existing interactions were indicated as low intensity and/or frequency (weight 1), called "weak ties". On the one hand, the expressive number of weak ties represents a potential for integrating new visions, ideas and knowledge (innovation) in forest fire risk reduction into the SGIFR. On the other hand, these (weak) ties hinder collective action and collaboration between the system's entities in the management of forest territories and can be easily "broken" within the network.

The entities of the SGIFR with the highest number of interactions in the network are ICNF and ANEPC, at the national scale, and the Monchique Municipality (CMM), at the local level. GNR and AGIF also presented a high number of interactions within the network, however AGIF showed less connection to local actors. These actors (ICNF, ANEPC, CMM, GNR and AGIF) have strong ties and are located in central positions in the structure and dynamics of the network. This centrality indicates that they have (at the time of the analysis) a potential role to promote and strengthen articulation, interaction and trust among entities less integrated in the network (peripheral positions) and/or among entities not connected to each other. Thus, these central actors can contribute to facilitate the sharing of ideas and flows of knowledge (social learning) and strengthen collaboration between entities of the SGIFR.

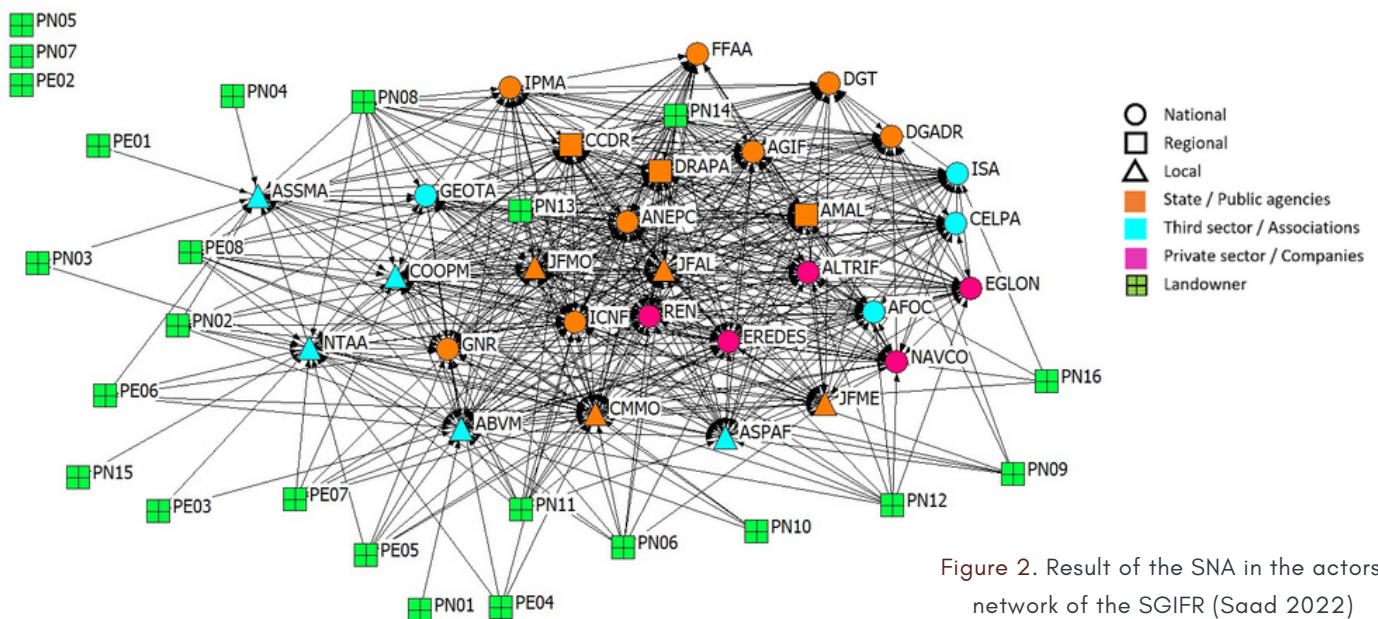


Figure 2. Result of the SNA in the actors' network of the SGIFR (Saad 2022)

- The landowners have more interaction with the local entities in Monchique. However, with the exception of CMM, local actors (landowners and local entities) occupy peripheral positions in the network (Figure 2). Thus, it is essential to promote better articulation with these actors in order to: (a) integrate local knowledge and practices for fire risk reduction into the SGIFR, (b) strengthen articulation, trust and collaboration between these actors to enable collective actions and, (c) encourage and support the active role of local actors that intervene directly in forest territories, such as strengthening the role of the Municipal Commissions for Integrated Management of Rural Fires (CMGIFR) within the SGIFR.



ENTITIES NETWORK OF THE SGIFR AND ACRONYMS ADOPTED IN THE SNA

Public Sector

Agency for Integrated Management of Rural Fires	AGIF
Institute for Nature Conservation and Forests / Algarve Regional Office	ICNF
National Authority for Emergency and Civil Protection / Algarve Reg. Com. Emergency and Civil Protection	ANEPC
National Republican Guard / Monchique Territorial Post Office	GNR
Armed Forces	FFAA
Portuguese Sea and Atmosphere Institute	IPMA
General Directorate of Territory	DGT
Algarve Regional Coordination and Development Commission	CCDR
Intermunicipal Community of the Algarve	AMAL
General Directorate of Agriculture and Rural Development	DGADR
Algarve Regional Directorate of Agriculture and Fisheries	DRAPA
Monchique Municipal Council	CMMO
Parish Council of Monchique	JFMO
Parish Council of Alferce	JFAL
Parish Council of Marmeleite	JFME

Third Sector

Association of Voluntary Firefighters of Monchique	ABVM
Association of Forest Producers of the Barlavento Algarvio	ASPAF
Agricultural Cooperative of the Monchique Council	COOPM
Grouping of Forestry Companies	AFOC
Paper Industry Association	CELPA
Monchique Alerta Association	ASSMA
Nossa Terra Environmental Association	NTAA
Higher Institute of Agronomy / Centre for Forestry Studies	ISA
Environment and Spatial Planning Study Group	GEOTA

Private Sector

The Navigator Company	NAVCO
Altri Florestal	ALTRIF
Eglon-Timbers	EGLON
E-Redes Distribution	EREDES
National Energy Networks	REN