



DESIRE WB-3 Stakeholder Workshop 2 report

WP3.3 Stakeholder Workshop 2 report - held in the Góis municipality, Portugal, from February 19-20, 2009.

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Stakeholder Workshop 2

Selection and decision on prevention and mitigation strategies to be implemented

Name of the study sites: Mação and Góis, Central Region of Portugal



View of Mação municipality



View of Góis municipality

Date and place of workshop: Góis, Portugal, 19-20 February 2009

Authors: Celeste Coelho, João Soares, Jorge Moreira, Manuela Carreiras & Sandra Valente

I General information

A) Workshop

Workshop venue: Góis Municipal Library

Workshop moderator(s): Celeste Coelho; Jorge Moreira; Manuela Carreiras and Sandra Valente

The local stakeholders invited to the workshop were:

- members from the municipality council and parishes;
- technicians from the Forest Technical Office (GTF);
- technicians from the Municipal Civil Protection Agencies;
- farmers;
- forest associations;
- local development associations.

The external stakeholders invited to the workshop were:

- technicians from the AFN – Autoridade Florestal Nacional (National Authority to Forest);
- technicians from the CCDR-C – Comissão de Coordenação de Desenvolvimento Regional da Região Centro (Commission for the Coordination of Regional Development in Central Portugal);
- technicians from DRAP-C – Direcção Regional da Agricultura e Pescas do Centro (Regional Directorate of Agriculture and Fisheries in Central Portugal);
- national representative of the Convention to Combat Desertification;
- researcher.

List of participants:

	First name, name	Stakeholder category / institution (e.g. land user, researcher, NGO, GO)	Local or external participant? (L/E)
Mr.	André Claro	Farmer/ NGO on community land	L
Mr.	António Ferreira	Researcher	E
Mr.	António Louro	Mação City Council	L
Mr.	Diamantino Garcia	Góis City Council	L
Mr.	Francisco Dias	Municipal Civil Protection of Góis	L
Ms.	Helena Rodrigues	Foresters cooperative of Góis	L
Mr.	João Fernandes	Municipal Civil Protection of Mação	L
Mr.	José Paúl	National Authority to Forest	E
Ms.	Marta Ventinhas	AFLOMAÇÃO – Forest Association of Mação	L
Mr.	Nuno Bragança	AFLOMAÇÃO – Forest Association of Mação	L
Ms.	Sandra Coelho	Góis City Council	L
Ms.	Susana Moita	Forest Technical Office of Góis	L

Comment CDE:

- 7 out of 12 participants already participated in 1st stakeholder workshop, 5 were new.
- 10 participants from the 1st workshop did not participate in the 2nd workshop.

Question: Whom did you invite for the 2nd workshop? Why did those 10 people not participate again? Why did you invite new people?

Answer: The invitations were exactly the same of the 1st workshop. Some of them were not available to attend to the 2nd workshop (due to date or other commitments), some of them confirmed their presence but did not appear and some of them were substituted by a colleague from the same entity.

Programme:

Time:	Programme	Facilitator
Thursday, 19th February		
9:30 – 9:35	Welcome to the local participants	
9:35 – 9:45	Presentation of the DESIRE Project and WB3	CC
9:45 – 10:25	<u>Exercise 1</u> : Review and adjustment of the objective	JM
10:25 – 10:40	<i>Coffee break</i>	
10:40 – 12:00	<u>Exercise 2</u> : Identification of the options	CC
12:00 – 14:00	<i>Travel to the field and lunch</i>	
14:00 – 14:40	<u>Exercise 3</u> : Identification of relevant criteria for evaluation	SV
14:40 – 15:10	<i>Return of the field trip</i>	
15:10 – 15:35	<u>Exercise 3 (continuation)</u> : Identification of relevant criteria for evaluation	SV
15:35 – 15:45	<i>Coffee break</i>	
15:45 – 17:50	<u>Exercise 4</u> : Scoring the options (Part A) in groups	SV
17:50 – 18:00	Evaluation of the first day and presentation of the programme to the next day	CC

Friday, 20th February		
9:30 – 10:20	<u>Exercise 4 (continuation)</u> : Scoring the options (Part B) results' analysis	SV
10:20 – 10:40	<i>Coffee break</i>	
10:40 – 12:00	<u>Exercise 5</u> : Creating a hierarchy and ranking the criteria	JM
12:00 – 13:30	<i>Lunch</i>	
13:30 – 14:30	<u>Exercise 6</u> : Analysis and interpretation of the results	JM
14:30 – 15:30	<u>Exercise 7</u> : Prioritisation of options – negotiation and decision making	JM
15:30 – 15:45	<i>Coffee break</i>	
15:45 – 17:05	<u>Exercise 8</u> : Embedding into the overall strategy	CC
17:05 – 17:35	Evaluation of the workshop	MC
17:35 – 17:45	Closure of the workshop	CC

CC – Celeste Coelho / JM – Jorge Moreira / MC – Manuela Carreiras / SV – Sandra Valente

B) Background

In Portugal, forest fires are one of the major factors of land degradation processes. Affecting large areas every year, they also have serious human, socio-economic and psychological impacts. Under the DESIRE project two Portuguese study sites were selected – Mação and Góis. Both study sites are located in Central Portugal and are frequently affected by forest fires. The main features of the study sites are:

Mação municipality (Fig. 1):

- integrated in a climatic transitional zone between Atlantic and Mediterranean;
- has rainfall from 1000 mm in the North to less than 600 mm per year in the South;
- soils very shallow and stony / Humic cambisols;
- step slopes ($> 20^\circ$);
- schist and metamorphic rocks;
- agro-silvo-pasture systems in the middle 20th century/ at the present forestry of *Pinus pinaster* and *Eucalyptus globulus* and shrubland;
- 7419 inhabitants / population density of 18,5 inhab/km² (2006);
- birth-rate of 6,3‰ (2006);
- death-rate of 23,1‰ (2006);
- negative growth rate (-2,2% in 2006);
- 16% of the population works on the primary sector;
- ageing index of 379 (pop >65 years old / pop <15 years old *100).



a)

b)



Figure 1 – Mação municipality (some aspects) – a) Land degradation; b) Human depopulation; c) Forest fires (2003); d) Forest fires directly affecting human lives.

Góis municipality (Fig. 2):

- located on the northern bank of Lousã Mountain (central Portugal);
- altitude between 600 and 730 m;
- rainfall about 1200 mm, concentrated during winter season;
- soils very shallow and stony / Lithosols;
- slope about 20°;
- major land uses are dense shrubland and forestry, with small ruminants;
- some experience in prescribe fire;
- 4499 inhabitants / population density of 17,1 inhab/km² (2006);
- birth-rate of 7,3‰ (2006);
- death-rate of 19,0‰ (2006);
- negative growth rate (-1,17% in 2006);
- 15% of the population works on the primary sector;
- ageing index of 288.



a)



b)



c)

Figure 2 – Góis municipality (some aspects) – a) Human depopulation; b) Pinus pinaster forest with tracks c) prescribed burning.

The main aims of the first stakeholder workshop were: to develop a mutual learning process, between local and external stakeholders around land degradation and conservation processes; to identify the already applied and the potential strategies to mitigate the desertification processes; and to select the best technologies and approaches to be documented in WOCAT (*World Overview of Conservation Approaches and Technologies*) database. In the Portuguese case, the Forest Intervention Areas were documented as an approach and the Primary Strip Network System for Fuel Management and Prescribed Fire were documented as technologies.

II Results and conclusions from single steps of the Workshop 2

The objectives of the second stakeholder workshop were: to select jointly 1 to 2 options (mitigation strategies) from the WOCAT database to be implemented/ field-tested in the selected study sites in the context of DESIRE WB4 and to strengthen the trust and collaboration among the stakeholders involved.

- **Exercise 1:** Review and adjustment of the objective

The aim of this exercise was to highlight the main results and conclusions of the workshop 1, either to refresh the memory of the participants that were present in workshop 1 or to inform the new participants.

It was also recognized the participatory nature of this exercise, which greatly facilitated the identification and selection of the objective. This objective was the starting point to select the technologies that will be tested in the study sites.

Thus, as identified in workshop 1, the primary objective is the reduction of the burned area. The population abandonment and ageing, that are occurring in the study areas, are closely related to forest fires occurrence, so it was mentioned that a reduction of the burned area will also demand the adoption of measures and policies to dynamize the local socioeconomic structure.

- **Exercise 2:** Identification of the options

The WOCAT database is a tool that allows specialists on Soil and Water Conservation (SWC) to share their valuable knowledge in soil and water management, to assist them in the search for appropriate SLM technologies and approaches, and to support the decision-making process at the field and at the planning level. It is also clear that the contribution of different case studies enriched this tool with the knowledge of some technologies and approaches that were not documented.

Under the first workshop two technologies were identified to be documented in the WOCAT database - Primary Strip Network System for Fuel Management and Prescribed Fire. The absence in the database of other technologies to prevent land degradation, caused by forest fires, determined the need of a more intense documentation exercise performed by the Portuguese teams.

Thus, different technologies were identified according to the selected objective (reduction of the burned area). As shown in Figure 3, seven posters were presented with the following

technologies: Primary Strip Network System for Fuel Management, Forest Fire Watch-towers, Firebreaks, Water Points, Prescribed Fire, Intervention in Sub-covered and Preventive Forestry.

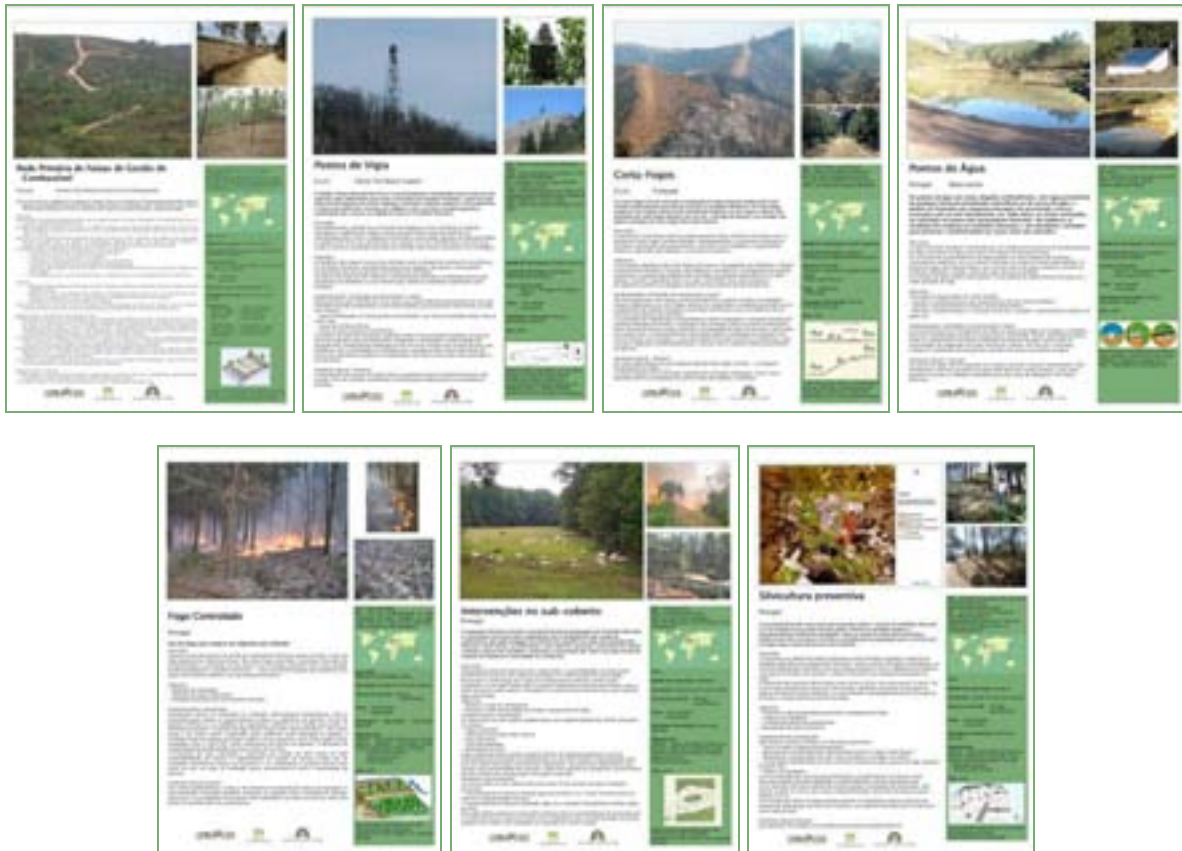


Figure 3 – Posters that document and illustrate the technologies.

According to the participants, some of the technologies are interrelated. The Primary Strip Network System for Fuel Management demands the use of other technologies (e.g. Prescribed Fire) to achieve the final goal. The changes proposed by the participants were: i) to change the designation to Strategic Management of Fuel Strips, which covers all levels of strips network (primary, secondary and tertiary) and also firebreaks; ii) to join the Water Points, Forest Fire Watch-towers and Roads in one technology designated as Infrastructures of Forest Support.

The technologies selected to evaluation were:

- i) Strategic Management of Fuel Strips;
- ii) Prescribed Fire;
- iii) Preventive Forestry;
- iv) Infrastructures of Forest Support.

o **Exercise 3:** Identification of relevant criteria for evaluation

The purpose of this exercise is to identify a set of relevant criteria to the local context. It was considered important to divide the participants into two distinct groups - group of Mação and group of Góis. Participants were asked to propose, considering the three dimensions of Sustainable Development, a set of 12 criteria at maximum to evaluate the selected technologies (Figure 4). Table 1 presents the most relevant criteria for the evaluation of the different technologies.

Table 1 – Relevant criteria for evaluation.

Relevant criteria for evaluation			
Diversification of economic activities	Increase production of forest owners	Safety of people and goods	Reduce conflicts in land ownership
Landscape aesthetics	Increase resources with economic value	Soil conservation	Implementation costs
Tourism potential	Population settlement	Improve soil cover	Improve soil quality
Reduce soil loss	Maintenance costs	Improve biodiversity	Increase water availability
Social acceptance of the technology	Reduce biodiversity	Improve safety of the population	Population settlement
Loss of water / runoff	Improve landscape quality	Increase job opportunities	Increase employment



Figure 4 – Identification of criteria for evaluation (field trip).

This exercise emphasized the need to combine these criteria in three categories - ecological, economic and socio-cultural - and to eliminate the overlapping criteria (Table 2).

Table 2 – Criteria organized by three categories.

Categories	Criteria
Ecological	<ul style="list-style-type: none"> ○ Soil conservation ○ Improve biodiversity ○ Increase water availability ○ Improve soil cover
Economic	<ul style="list-style-type: none"> ○ Diversification of economic activities ○ Increase resources with economic value ○ Implementation costs ○ Maintenance costs ○ Increase production of forest owners
Socio-cultural	<ul style="list-style-type: none"> ○ Population settlement (<i>=increase and maintain population size</i>) ○ Social acceptance of the technology ○ Safety of people and goods ○ Reduce conflicts in land ownership ○ Improve landscape quality ○ Increase employment

The concepts and objectives of each criterion were discussed in order to achieve a common understanding among the stakeholders. Then, each group selected the three most important criteria per category, considering its relevance to the local context (Figure 5 and Table 3).

Question CDE: Was the result the same for both groups? Or did you finally agree on a set of criteria used for both sites? Please explain

Answer: First the selection was made by work group and then the results were discussed in a plenary session till find a consensus among the most important criteria. The participants agreed on a set of criteria used for both study sites, since the two areas have similar problems and features.



Figure 5 – Selection of the three most important criteria per category.

Table 3 – The most important criteria per category.

Categories	Criteria
Ecological	<ul style="list-style-type: none"> ○ Soil conservation ○ Improve biodiversity ○ Increase water availability
Economic	<ul style="list-style-type: none"> ○ Diversification of economic activities ○ Implementation costs ○ Maintenance costs
Socio-cultural	<ul style="list-style-type: none"> ○ Population settlement ○ Social acceptance of the technology ○ Safety of people and goods ○ Improve landscape quality

Finally, it was important to find a common understanding of the criteria (Figure 6). The participants were once again asked to discuss and to find a consensus on the meaning and purpose of each criterion.



Figure 6 – Final result of the most important criteria per category.

o **Exercise 4: Scoring the options**

This exercise aims to assess the different technologies, using the FACILITATOR software. This software is a decision support system which uses decision rules, a hierarchical system for ranking criteria, score functions and linear programming to identify preferred management options consistent with the ranking of criteria.

In order to apply this instrument, participants were asked to score the technologies by each criterion. This was made in groups and using a scale from 0 to 10, where 0 means a bad option, 1 the worst option and 10 the best option (Figure 7). The score 0 signifies that a technology performs so poorly on that particular criterion that it is probably not viable. The results are shown in Figures 8 and 9 and in Tables 4 and 5.

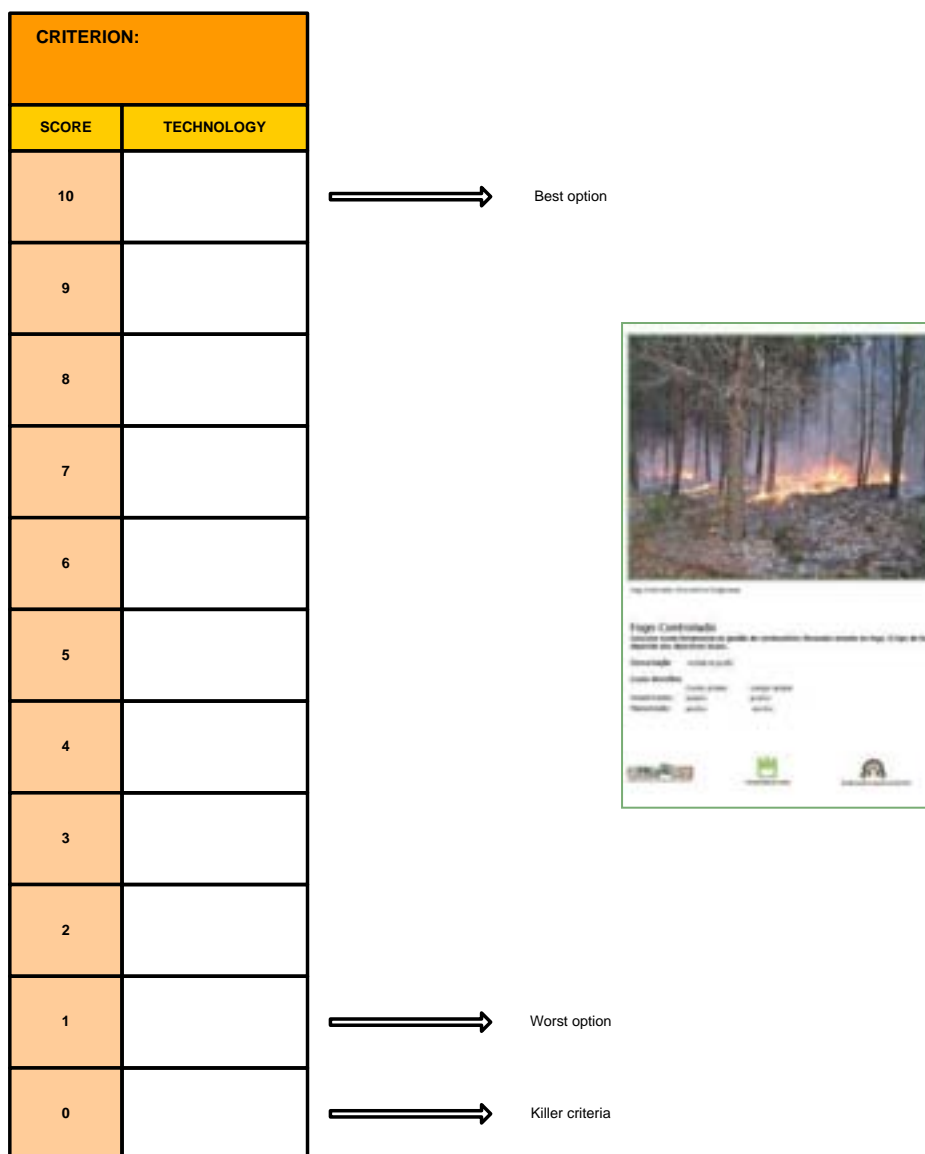


Figure 7 – ‘Scoring tool’ and the Prescribed Fire card.



Figure 8 – Score technologies according to each criterion (group of Góis).

Table 4 – Results of the scoring technologies – group of Góis.

Technologies /Criteria	ECOLOGICAL			ECONOMIC			SOCIO-CULTURAL			
	Improve biodiversity	Increase water availability	Soil conservation	Implementation costs	Maintenance costs	Diversification of economic activities	Population settlement	Improve landscape quality	Social acceptance of the technology	Safety of people and goods
Strategic management of fuel strips	3	4	3	3	3	5	3	2	3	7
Prescribed fire	10	3	4	8	8	7	1	5	8	4
Preventive Forestry	5	9	9	5	5	9	8	9	10	3
Infrastructures of forest support	1	1	1	1	1	3	10	7	2	9



Figure 9 – Score technologies according to each criterion (group of Mação).

Table 5 – Results of the scoring technologies – group of Mação.

Technologies /Criteria	ECOLOGICAL			ECONOMIC			SOCIO-CULTURAL			
	Improve biodiversity	Increase water availability	Soil conservation	Implementation costs	Maintenance costs	Diversification of economic activities	Population settlement	Improve landscape quality	Social acceptance of the technology	Safety of people and goods
Strategic management of fuel strips	6	5	4	6	5	7	5	5	5	7
Prescribed fire	4	1	6	9	9	3	1	1	2	5
Preventive Forestry	8	3	9	3	3	5	7	8	7	3
Infrastructures of forest support	1	9	2	2	7	9	3	3	9	9

The analysis of the two evaluation matrices shows significant differences in the scores. This situation did not allow the uniformization of results in order to obtain a common matrix and a direct entry of data in the FACILITATOR software. Thus, in a plenary session, the results were presented, highlighting the most divergent assessments in order to discuss and find consensus among the stakeholders (Figure 10). It was observed that in some cases different interpretations of the criteria occurred. The following table shows the result of the discussion and standardization.

Question CDE: Was this (different interpretations of the criteria) the only reason for diverging assessments? Are the two sites so similar that it is acceptable to standardise the result ? Please explain

Answer: Yes, it was the only reason and the two sites are very similar.

Table 6 – Results of the discussion and standardization of technologies/ criteria.

Technologies /Criteria	ECOLOGICAL			ECONOMIC			SOCIO-CULTURAL			
	Improve biodiversity	Increase water availability	Soil conservation	Implementation costs	Maintenance costs	Diversification of economic activities	Population settlement	Improve landscape quality	Social acceptance of the technology	Safety of people and goods
Strategic management of fuel strips	4	5	3,5	4,5	5	7	4	2	4	7
Prescribed fire	7	2	5	8,5	9	4	1	5	2	4,5
Preventive Forestry	8	5	9	4	3	4	7,5	8,5	10	3
Infrastructures of forest support	1	9	1,5	1,5	7	9	10	3	7	9



Number	Yes	No	Comments
Cancer Screening	3	5	4
Fetal Death	2	2	
Pregnancy Loss	10	7	5/9
Miscellaneous Services	0	0	
Miscellaneous	0	0	

Figure 10 – Standardization of the scores (plenary session).

o **Exercise 5:** Creating a hierarchy and ranking criteria

The main aim of this exercise is to analyze and discuss the importance of each criterion and to create a hierarchy (Figure 11).



Figure 11 – Hierarchy of criteria.

The purpose of the hierarchy is to give to the FACILITATOR the order of importance of criteria within each category. However, the categories maintain exactly the same importance in the overall assessment (Figure 12).

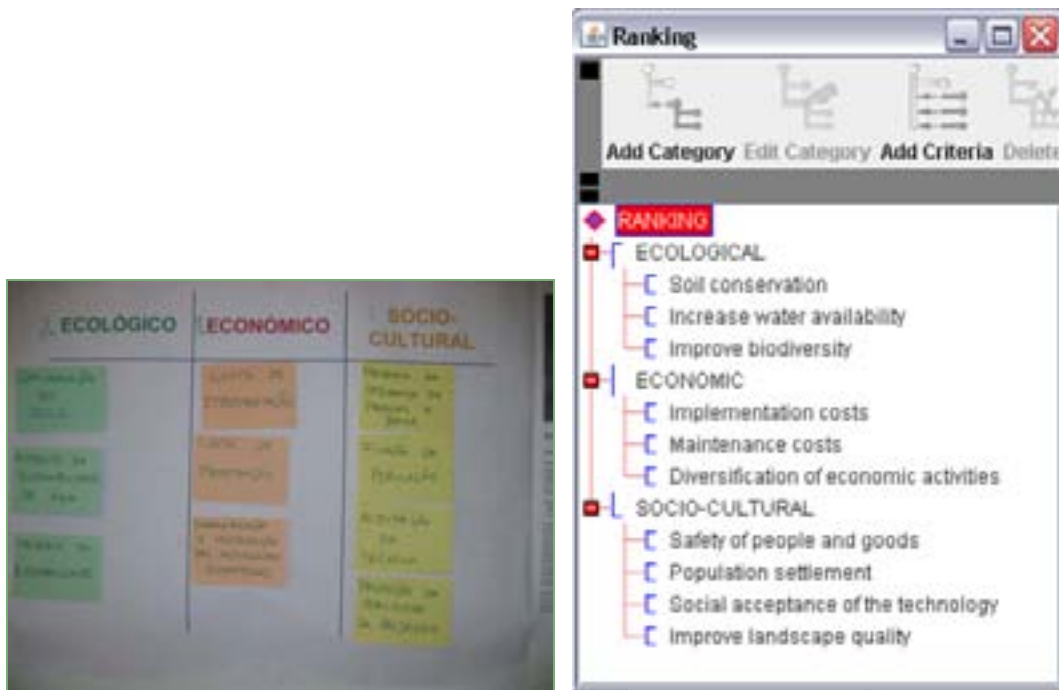


Figure 12 – Results of the hierarchy of criteria (left: poster; right: FACILITATOR software).

o **Exercise 6:** Analysis and interpretation

The final product generated by the FACILITATOR shows which are the best or the worst technologies concerning the criteria used. This product is the conclusion of all the work, defining the technologies, the criteria, the evaluation and the definition of the hierarchy.

The charts illustrate the comparisons between the different technologies considering the three dimensions of sustainable development and also the overall assessment (Figure 13, 14, 15 and 16). The analysis of the charts by category shows that different technologies are always more positive in one category than in the others. If in the ecological category the Preventive Forestry is clearly more advantageous, in economic terms the Prescribed Fire is the one that presents better results and, finally, in social-cultural terms the Infrastructures of Forest Support was considered the best technology.

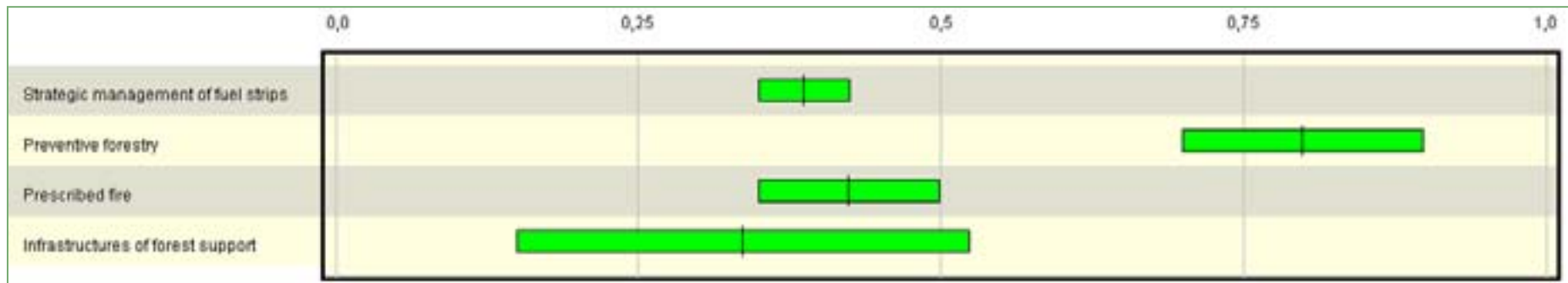


Figure 13 – Results of the evaluation of technologies for **ecological** category.

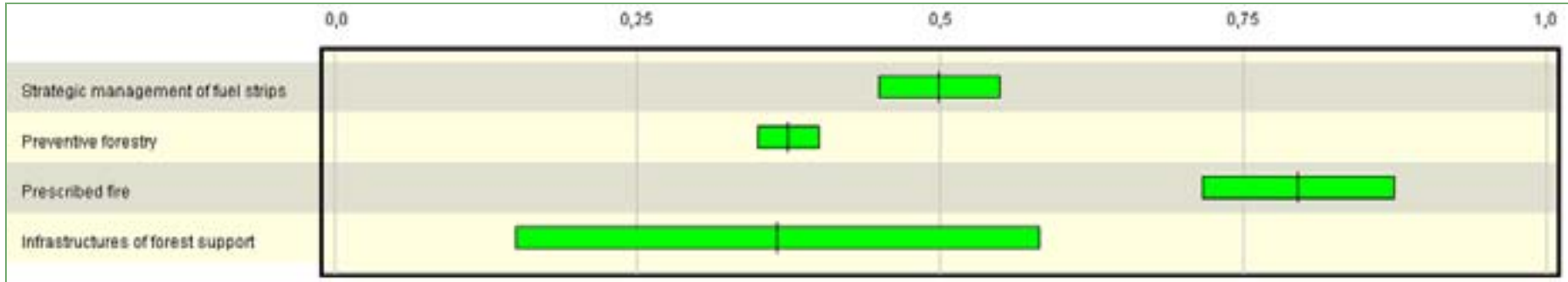


Figure 14 – Results of the evaluation of technologies for **economic** category.

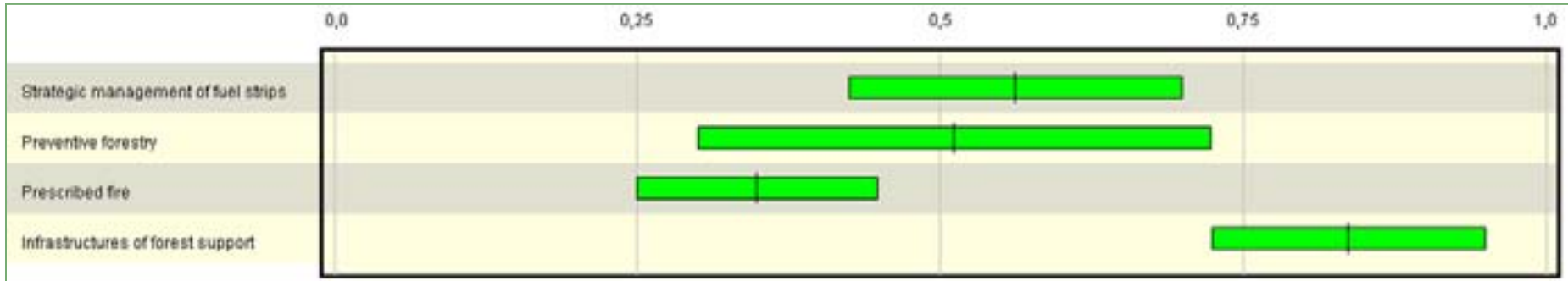


Figure 15 – Results of the evaluation of technologies for **socio-cultural** category.

The general chart (Figure 16), which presents the combination between the three categories, reflects the differences in the leadership of the charts per category (ECOLOGICAL: preventive forestry, ECONOMIC: prescribed fire and SOCIO-CULTURAL: infrastructure of forest support). In this chart it is possible to see the overlap between the technologies. It is also clear that the median are very close to each other and almost

all are located above 0.5, which means that most of the proposed technologies are good options concerning sustainable development. However, differences in the range of the bars do not allow a clear identification of the best technology. The participants discussed the results and concluded that all the technologies are important to achieve the objective purposed in the beginning (reduction of the burned area) and the evaluation to select the best technology has proved to be extremely difficult.

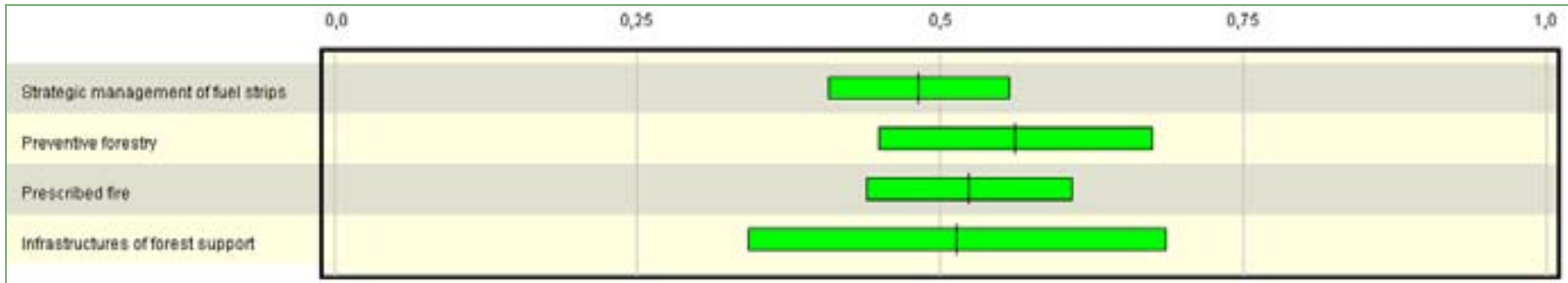


Figure 16 – Overall result of the evaluation of technologies.

- **Exercise 7:** Prioritisation of options – negotiation and decision

According to the analysis of the results obtained by the FACILITATOR, and after a long discussion in plenary session, the technologies to be implemented were decided to be the following:

- Preventive Forestry;
- Prescribed Fire.

The application of these technologies must take into account several factors, namely the natural and socio-economic contexts where the technologies will be implemented. Thus, the prescribed fire can be applied in shrubland, pine forest or in fuel management strips, while the preventive forestry can be implemented in abandoned agricultural areas, forest or agro-sylvo-pastoral areas.

The Forest Producers Organizations were identified as the main stakeholders for the implementation of technologies.

- **Exercise 8:** Embedding into the overall strategy

The main objective of this exercise was to complete the overall SLM strategy started in workshop 1, with the information collected in the workshop 2, including the objective, the technologies, the approach associated with the legal and institutional structure, and the stakeholders for its implementation (Figure 17).





Figure 17 – Review of the SLM strategy.

The final results of the SLM strategy are presented (Figure 18).

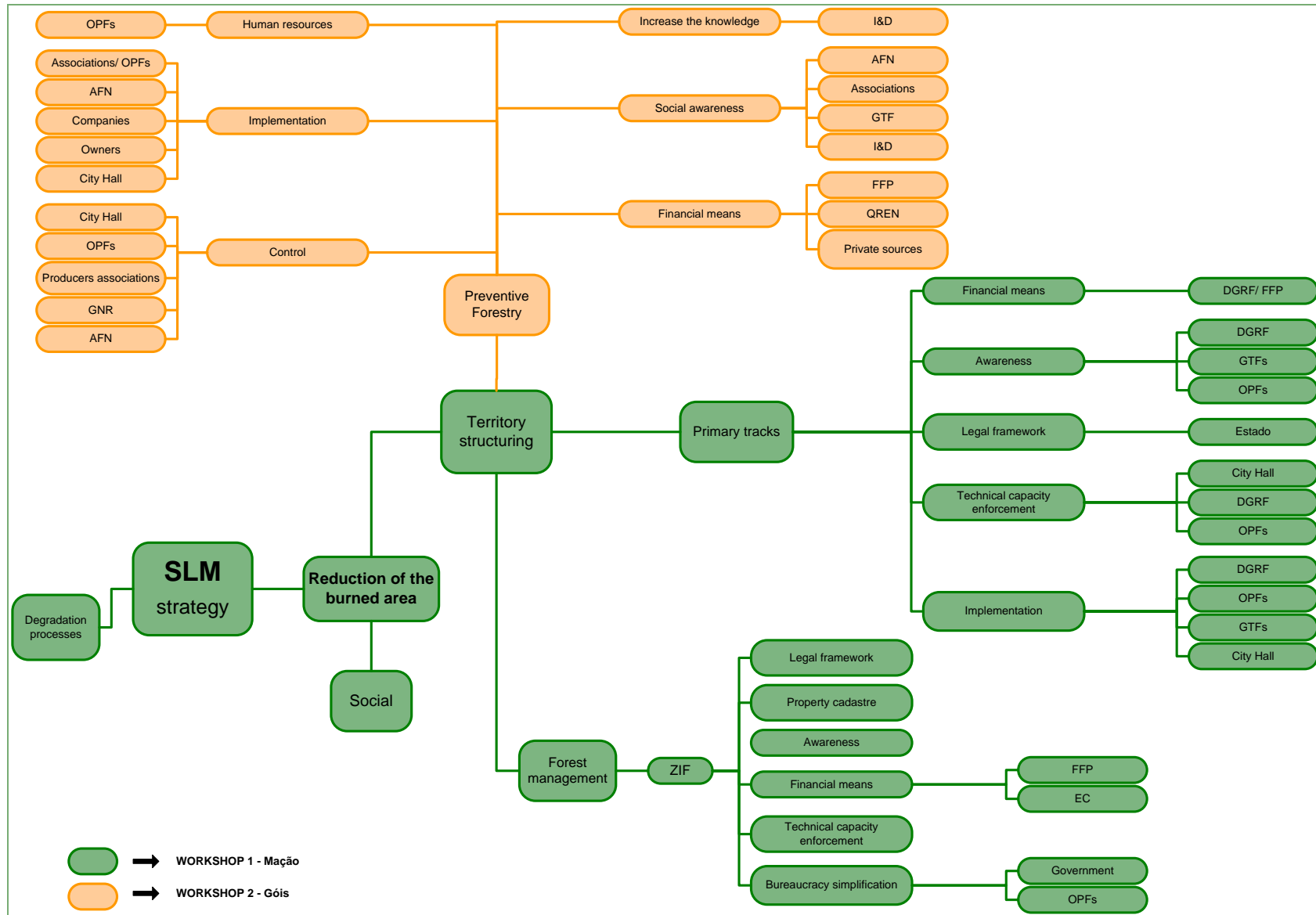


Figure 18 – Final result of the SLM strategy

ACRONYMS	
AFN	⇒ National Authority to Forest
DGRF	⇒ General Directorate of Forest Resources
EC	⇒ European Commission
FFP	⇒ Permanent Forest Fund
GNR	⇒ Portuguese National Republican Guard
GTF	⇒ Forest Technical Office
I&D	⇒ Research & Development
OPF	⇒ Forest Producers Organization
QREN	⇒ National Strategic Reference Framework

The next step of this exercise was to identify the stakeholders commitment and contribution to the technologies implementation (Tables 7, 8 and Figure 19).

Table 7 – Contribution of the group of Mação.

- MAÇÃO -	
Preventive Forestry	
Contribution to the implementation	Support I&D in monitoring
Knowledge/ technical support	Creation of study areas
Technology planning (areas definition, objectives, ...)	Willingness to establish partnerships (Góis/ Mação/ DESIRE)
Willingness to establish partnerships	Transfer of information (implementation costs, ...)
Awareness	Knowledge/ technical support
Owners mobilization	

Table 8 – Contribution of the group of Góis.

- GÓIS -
Prescribed Fire
Identification of areas subjected to prescribed fire
Operations planning
Identification of human and financial resources
Scientific monitoring
Implementation of planned activities



Figure 19 – Group work.

III Evaluation of the workshop

• By participants (local and external)

In order to evaluate Workshop 2, the following questions were raised:

1. What are your expectations and reservations about the selected technologies?
2. Did you like the methodology used in this workshop?
3. What did you learn in this workshop?
4. What are your suggestions to improve the organization of this workshop?

Referring to each of the issues, the analysis was the following:

1. The participants' expectations are high concerning the selected technologies, since they considered urgent the reduction of the burned areas. They have also shown some worries regarding the lack of financial capacity to implement these technologies and the absence of motivation among local stakeholders. Since some technologies include themselves a set of other specific technologies, there was some difficulties in selecting the ones to be implemented and evaluated.
2. All participants expressed their satisfaction concerning the methodology used. The informal environment and the creation of working groups promoted equal participation and were very positive to the workshop success. They also liked the way the workshop was conducted.
3. Participants considered that the learning process resulted from the methodology, the exchange of experiences and also from the discussion of problems and solutions with experts. It was also mentioned that these aspects certainly contributed to their personal and professional development. The teamwork was considered an essential tool for solving problems, helping in the systematization of ideas, and also for supporting the technology definition.
4. Regarding the suggestions presented, it was mentioned:
 - the idea of conducting a third workshop to verify the implementation of selected technologies;
 - the need to provide more time for discussion by participants;
 - the need for further research on these topics, as well as incentives for their implementation;
 - the idea of conducting more workshops to gather other pertinent knowledge, which will draw more and better conclusions.





Figure 20 –Evaluation of the workshop.

In general, the evaluation was very positive. The participants found this workshop a rewarding experience, allowing the possibility to exchange professional experiences and points of view. They also mentioned the connections established and willingness and readiness to continue working in partnership as aspects that deserve attention. Unanimity in the need of conducting more events was found, since they assume an important role in the integration, participation and involvement of local stakeholders, and also help to find consensus.

• **By the moderator(s)**

Some resistance was found in the participation of external stakeholders in this workshop.

The methodology applied assumed particular significance in the satisfaction of the participants throughout the workshop.

The motivation and interest of the participants for further collaboration under DESIRE project and other initiatives related with sustainable land management became clear.

IV Other information



Figure 21 – Group of participants (local, external and moderators) of the workshop 2.