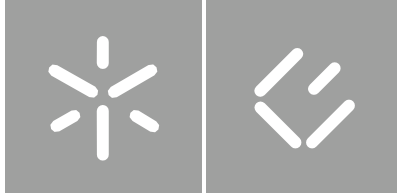


Universidade do Minho
Escola de Economia e Gestão

Lídia Manuela Ribeiro Novais

Citizens and forest fire prevention: an exploratory study with Scouts from northern Portugal



Universidade do Minho
Escola de Economia e Gestão

Lídia Manuela Ribeiro Novais

**Citizens and forest fire prevention: an
exploratory study with Scouts from northern
Portugal**

Dissertação de Mestrado
Mestrado em Economia

Trabalho efetuado sob a orientação da
Professora Doutora Lígia Costa Pinto
Professora Doutora Marieta Valente

DIREITOS DE AUTOR E CONDIÇÕES DE UTILIZAÇÃO DO TRABALHO POR TERCEIROS

Este é um trabalho académico que pode ser utilizado por terceiros desde que respeitadas as regras e boas práticas internacionalmente aceites, no que concerne aos direitos de autor e direitos conexos. Assim, o presente trabalho pode ser utilizado nos termos previstos na licença abaixo indicada.

Caso o utilizador necessite de permissão para poder fazer um uso do trabalho em condições não previstas no licenciamento indicado, deverá contactar o autor, através do RepositóriUM da Universidade do Minho.

Licença concedida aos utilizadores deste trabalho



Atribuição-NãoComercial-SemDerivações
CC BY-NC-ND

<https://creativecommons.org/licenses/by-nc-nd/4.0/>

ACKNOWLEDGEMENTS

Contrary to what I thought, the path isn't done alone, it is made side by side, and it is this valence that makes us grow and become better people, for this reason, I could not fail to thank special people who walked with me during the course of this work:

To my supervisors, Prof. Dr. Lígia Pinto, and Prof. Dr. Marieta Valente, for their availability, for the enormous patience they had in guiding my dissertation, and for being willing to help me in this long journey. And to Dr. Carla Ferreira, for her availability in conducting the focus groups and for the precious tips for their analysis. This dissertation was carried out within the FCT research project ECO.FIRE (PCIF/AGT/0153/2018).

To my parents for accompanying me in this process, it was not an easy path, but with your support, it became better, thank you for making me a better person with your examples.

To my sisters, for being a symbol of love, and even if there are disagreements, may love never fail. I hope I'll be the best example for you.

To those who entered slowly and quickly became an assiduous and fundamental presence in this process, always believing in my capacities: to Nelo, for seeing in me characteristics that not even I recognise and for being an unshakeable force of will in the face of all adversities, to Belémzinha for all the frank and honest conversations that helped me more than I can think, and to Maria, for even without knowing, being tenderness in its most beautiful form and having provided me, every day, moments of fun.

To Bárbara, Cristina, Inês, Lilas, and Rita for always being a safe port and motivation in all stages of this path, not letting me fall.

To Bruna, for the friendship that can't be explained, and to João Pedro and André, for all the help provided.

To all the Scouts who showed immediate availability for participation in this work, my sincere thanks for giving up some of your time.

"The most worthwhile thing is to try to put happiness into the lives of others."

Baden Powell

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

RESUMO

A floresta, enquanto bem indispensável para o ser humano, providencia inúmeros bens e serviços necessários à nossa condição humana. Para avaliar a importância deste bem é possível recorrer a diferentes métodos que possam ajudar na tomada de decisão no que concerne a gestão florestal e a prevenção dos incêndios florestais.

Uma forma de atenuar as dificuldades associadas à complexidade da gestão florestal e de incêndios, passa pela maior participação cívica dos cidadãos nestes assuntos. Os cidadãos são os motores da democracia, sendo que é necessário cada vez mais o seu envolvimento no desenho e na adoção de medidas de proteção da floresta e do meio ambiente em geral. Os cidadãos podem ser chamados a participar quer nos processos de recolha de informação, quer na implementação de certas medidas.

O Corpo Nacional de Escutas, enquanto movimento que pretende a formação integral de crianças e jovens, é o subgrupo da população que será objeto de estudo da presente dissertação pelo seu carácter de educação não formal e pelo permanente contacto com a natureza, bem como na promoção de uma cidadania ativa e de serviço. Para avaliar as perceções deste grupo e as diferenças entre três secções do mesmo, Pioneiros, Caminheiros e Dirigentes, sobre a proteção da floresta e o envolvimento dos cidadãos, foram conduzidos grupos de foco complementarmente com a administração de um questionário. O estudo envolveu grupos de escuteiros da região Norte, maioritariamente de Guimarães.

Os resultados mostram que os escuteiros têm opiniões vincadas nestes tópicos, reconhecendo o valor da floresta e os seus principais problemas. Além disso, nos grupos de foco foi pedido que os participantes sugerissem soluções para os problemas enumerados, bem como aferida a sua disponibilidade de envolvimento na gestão florestal. Apesar de ser um estudo exploratório, os resultados revelam que este grupo da população está disponível para ser envolvido na conservação da floresta e preservação de incêndios, podendo participar ativamente, contribuindo para o processo de envolvimento de cidadãos.

Palavras-Chave: floresta; cidadãos; escuteiros; grupos de foco; questionário.

ABSTRACT

The forest, as an indispensable asset for human beings, provides numerous goods and services necessary for our human condition. In order to assess the importance of this asset, it is possible to use different methods that can help in decision-making regarding forest management and the prevention of forest fires.

One way to mitigate the difficulties associated with the complexity of forest and fire management is through citizens' greater civic participation in these matters. Citizens are the drivers of democracy, and their involvement in the design and adoption of measures to protect the forest and the environment, in general, is increasingly necessary. Citizens may be called upon to participate either in the processes of gathering information or in the implementation of certain measures.

The *Corpo Nacional de Escutas*, as a movement that intends to contribute to the integral training of children and young people, is the subgroup of the population that will be the object of study of this dissertation due to its character of non-formal education and permanent contact with nature, as well as in the promotion of active citizenship and service. In order to assess the perceptions of this group and the differences between the three sections of it, Pioneers, Rovers and Leaders on forest protection and citizen involvement, focus groups were conducted complementarily with the administration of a questionnaire. The study involved members of Scouts groups from the Northern region of Portugal, mainly from Guimarães.

The results show that the Scouts have strong opinions on these topics, due to the Scout method, recognising the value of the forest and its main problems. Furthermore, in the focus group, the participants were asked to suggest solutions to the problems listed, as well as assess their willingness to get involved in forest management. Despite being an exploratory study, the results reveal that this group of the population is willing to be involved in forest conservation and fire preservation and can actively participate, contributing to the process of citizen involvement.

Keywords: forest; citizens; scouts; focus group; questionnaire

TABLE OF CONTENTS

Direitos de autor e condições de utilização do trabalho por terceiros	ii
Acknowledgements	iii
Statement of Integrity	iv
Resumo	v
Abstract	vi
Table of contents	vii
List of tables.....	ix
List of Figures	x
List of abbreviations	xi
1. Introduction.....	1
2. Literature review.....	3
2.1 Forest	3
2.2 Citizens involvement and participation	8
2.3 Scouting and forests	10
2.3.1 Overview of the Scouting movement.....	10
2.3.2 Forests and Citizenship.....	12
3. Metodology and Implementation.....	13
3.1 Overview	13
3.2 Implementation: focus groups.....	14
3.3 Implementation: questionnaire	16
4. Results	19
4.1 Sample characteristics.....	19
4.2 Focus groups	20
4.2.1 Problems of the forest in Portugal	20
4.2.2 Scouting influence on social responsibility towards the forest.....	22
4.2.3 Scout's role in the promotion of the education of the citizens.....	24
4.2.4 Scouts' involvement in decision-making concerning forest management.....	27
4.2.5 Scouts' willingness to organise forests' activities.....	28
4.2.6 Forests' benefits.....	30
4.2.7 Scouts' willingness to participate in forest protection actions.....	30
4.3 Questionnaire	32

4.3.1	Forest’s protection and value.....	32
4.3.2	Forest fire risk factors.....	36
4.3.3	Importance of fire risk prevention actions.....	38
4.3.4	Scouts’ willingness-to-pay for local firefighters.....	41
4.3.5	Forest fire responsibility.....	43
5.	Conclusion.....	45
	References.....	47
	Appendix.....	51

LIST OF TABLES

Table 1: Level of financial comfort of participants 19

Table 2: Level of the living area of all participants 19

Table 3: Main problems of forests (absolute frequency of mentions)..... 20

Table 4: Influence that the experiences as a scout had on the responsibility towards forest (absolute frequency of mentions) 22

Table 5: Reasons and ways of improving a mindset shift by citizens toward protecting the environment (absolute frequency of mentions) 24

Table 6: Reasons for why scouts could or not integrate teams that make the political decisions about forest management (absolute frequency of mentions)..... 27

Table 7: Willingness of scouts for organising activities in forest areas (absolute frequency of mentions)..... 29

Table 8: Benefits that forests bring to the life of the participants (absolute frequency of mentions)..... 30

Table 9: Willingness of Pioneers to participate in actions to help defend the forest (absolute frequency of mentions) 30

LIST OF FIGURES

Figure 1: Forest' protection and value according to all participants.....	32
Figure 2: Forest' protection and value according to Leaders.....	33
Figure 3: Forest' protection and value according to Rovers.....	34
Figure 4: Forest' protection and value by Pioneers.....	35
Figure 5: Forest fire risk factors mentioned by all participants.....	36
Figure 6: Forest fire risk factors mentioned by the participants across the different groups.	37
Figure 7: Importance of fire risk prevention action of all participants.....	38
Figure 8: Importance of fire risk prevention action of Leaders.....	39
Figure 9: Importance of fire risk prevention action of Rovers	39
Figure 10: Importance of fire risk prevention action of Pioneers	40
Figure 11: WTP of all participants.....	41
Figure 12: WTP of Leaders.....	41
Figure 13: WTP of Rovers	42
Figure 14: WTP of Pioneers	42
Figure 15: Forest fire responsibility by all participants	43
Figure 16:Forest fire responsible by Leaders	43
Figure 17: Forest fire responsible by Rovers	43
Figure 18: Forest fire responsible by Pioneers	44

LIST OF ABBREVIATIONS

AEP Associação dos Escuteiros de Portugal

AGP Associação de Guias de Portugal

CNE Corpo Nacional de Escutas

NMFB Non-Market Forest Benefits

TEV Total Economic Value

WOSM World Organization of the Scout Movement

WTP Willingness-to-Pay

1. INTRODUCTION

The present dissertation intends to comprehend the perceptions of scouts regarding the value of the forest and their potential involvement both in decision-making processes and potential participation regarding forest management and forest fire prevention.

Life as we know it could not happen without the contribution of the forest, as it is an indispensable asset that provides us with all types of goods and services, from wood to carbon storage. But problems arise when it concerns choices about forest uses and forest management, since these goods and services are not normally measurable in markets. Additionally, forest goods and services are considered public goods which makes it even more complicated for decision-making process in forest management (often private forests). The difficulties arise when a choice must be done, for example, whether you cut down a tree to sell its wood or preserve the tree so that others can enjoy its benefits, the dilemma lies in what decision to take and how to assess its impact.

Nevertheless, it is why to improve the decision-making process regarding forest management public participation in these topics could be encouraged. Active citizenship can and must be acknowledged as a way to improve the forest management decisions since the citizens should be heard through the different aspects of society; in the case of this dissertation, those concerning the forest and their problems. But also to think about solutions that can have a real impact on the protection of this asset in the present, for example, the data collection regarding a forest site.

Citizens must be part of the change and make themselves heard promoting active citizenship and be part of the solution, for example, by volunteering in the fire season to monitor forests or be involved in the creation of public policy measures. So, one particular group of citizens that can take such initiatives are the scouts, in this case, *Corpo Nacional de Escutas*.

The movement of scouts is categorized by the frequent contact with nature, where scouts learn the scout method, which leads its members to follow of rules inherent to the movement such as the protection of the environment.

The participation in the scout movement teaches to young people valuable lessons, through the beauty of the scouting method, where they learn by doing, allowing them to experience

valuable values such as respect, teamwork, altruism and the will to help, whether these are living beings or the planet. The virtue of scouting consist in the experiences that each young person has, the contact with nature is always emphasized, in particular with forests. This involvement with nature allows one to be a better citizen, more active and available to serve. For these reasons, the motivation to carry out this study arises, and the main objective is to understand how the scouts perceive the value of the forest and their perception of the potential involvement of the community in general, such as their own.

To assess the perceptions of the scouts about the forest and citizens involvement, focus group sessions were prepared concerning these topics with three sections of the *Corpo Nacional de Escutas, Pioneers, Rovers and Leaders*, followed by a questionnaire about those topics, scouts from the Northern region of Portugal, mainly from Guimarães were recruited to take part in the focus groups.

This dissertation is divided into several sections, Section 2 illustrates the main literature in the field. Section 3 aims to identify the methodology adopted in this work, with a summary of the processes used as well as a demonstration of how these were implemented. The presentation of the results is expressed in section 4. In chapter 5 the main results are summarized and the conclusions of this study are presented.

2. LITERATURE REVIEW

2.1 Forest

Forests are one of the most valuable natural resources at our disposal. Forest ecosystem services constitute the process and conditions by which the forest allows human life to be supported and satisfy their needs. Although in the recent past, the awareness of the importance of this limited resource has been increasing daily, and people have begun to evaluate the potential of this asset properly, the authors recognise that life without these resources could not happen in the same way. (Daily,1997; Krieger, 2001)

This asset's importance is mainly recognised by the services and products available to us, whether in wood or recreation services that people usually attend since "forest provides us all types of goods, wood, fuel, food, etc. and recreational opportunities for hiking, biking and scenic landscapes (...); waste protection, watershed services and carbon storage (...); and wildlife habitat and diversity preservation (...)" (Barrio & Loureiro, p. 1, 2010)

A good or service is considered valuable whenever it increases human well-being. However, Krieger (2001) believed that for a ecosystem's good or service to be considered valuable in economics does not imply that their capacity to generate income is the main determinant that should be considered when assessing their value and consequently use for decision-making. Most individuals enjoy ecosystem goods such as recreational activities; others consider the forest's goods and services without gaining utility. There is a common distinction between the utility we gain with the ecosystem goods and services and the importance of these assets because they can't be measured in traditional ways. (Upton et al., 2019)

The necessity of using other forms of valuation to address this problem resulted in different approaches to measuring non-market forest benefits (NMFB). NMFB are the diverse range of goods and services produced by the forest that can't be traded in a market and, thus, usually have not been priced. , highlighting their importance to acknowledge them in forestry policy-making.

The most common way to attribute value to these assets is by finding the willingness-to-pay (WTP) of the individuals. This concept symbolises the maximum that an individual is willing to spend from their budget to attain protect a given benefit (Upton et al. 2019), which will enable

us to better understand the preferences of individuals about an environmental good or service.

Alongside the WTP, there is the notion of Total Economic Value (TEV), which is "a taxonomic deconstruction of the range of values associated with a given environmental asset" (Dhubháin et al. 2012, p.10), divided into use and non-use values. The first refers to the value that an individual derives from the use of a given environmental asset: directly, established in markets such as timber production, which is quantifiable and measured in an efficient way for that reason; or indirectly, which is associated with the range of services that forest provides us, even if we don't acknowledge them for example, carbon sequestration and watershed protection. Then, non-use values can be, for example, the estimated WTP of the forest in a conserved state, and intrinsic values are frequently associated with moral, ethical, religious or cultural values. (Dhubháin et al. 2012)

As stated before, NMF becomes challenging to measure, hence the necessity to value these benefits properly. It is not only an easy but challenging task since the forest provides us with different types of goods and services. Whenever a good or service's production or consumption impacts others' welfare in an unintended and uncompensated way, we are in the presence of an externality (Perman et al., 2003). According to Dhubháin et al. 2012, for example, harvesting can create both positive and negative externalities, which are not accounted for in the "normal profits" that the forest gives. The externalities associated to this service may impact social welfare since their nature is associated with characteristics of non-excludability and non-rivalry, which results on their exclusion from the markets that dictate how a resource can be measured efficiently. (Hanemann, 2006). The characteristics stated above are intrinsic to the publicness of the goods and services. Non-rivalry means that one person's consumption of a good or service does not affect the consumption of the same good by someone else. For example, an individual can obtain value from appreciating the clean air in the forest and this does not withhold the same benefit from another. Non-excludability is where no one can exclude anyone else from consuming a good or service, such as appreciating the forest landscape.

The definition of publicness of goods and services is challenging since it is not always clear the combination of the public goods characteristics for different categories of goods. If a good is rivalrous and excludable it is a pure private good such as wood; as for rivalrous and non-

excludable we have the case of mushroom picking; non-rivalrous and excludable is for example, a forest park recreation; non-rivalrous and non-excludable it is a pure public good, e.g., carbon sequestration. (Dhubháin et al. 2012)

As stated, since some forest goods and services are public goods and as such cannot be traded in the traditional markets so they do not have a price assigned meaning they do not have an identified monetary value (Upton et al. 2019) which results in a difficulty for policymakers because if it is not known their economic value it difficult the trade-off between this good and others economically established in the markets, jeopardizing forest management and social welfare. (Costanza et al. 1997) So when comes the time to evaluate the loss/gain of a forest good or service rather than another, it gets difficult to account for “unquantifiable” benefits such as conservation and recreation, for example. (Convery, 1970)

Another aspect that influences NMFB is the lack of clear property rights, which is a market failure, regarding the forest, since if it is not stated who is the owner, how can the State perform measures to improve forest management? If there is a clear definition of property rights, the State can apply measures to prevent the existence of externalities, for example, “internalise non-market values in the behaviour of producers and consumers, ranging from the introduction of strict environmental standards to ecological tax reform, and from facilitating environmental damage claims in the courts to the promotion of trade in environmental services or “pollution permits””. (Bishop, p.5, 1998)

The population attributes increasing importance to the forest preservation as a whole and not only as the traditional valuation of tangible goods. Bishop (1998) believes that the population and by extension elected representatives view forests as more than a source of raw materials, but taking into account the many services they provide. Despite this recognition, there was little progress done in forest policy and management, which is required to have better forest practices. Bishop (1998) recalls that landowners are reluctant to modify their forest practices, because money is still the big engine that makes their property be managed better or worse, which creates difficulties for the design of forest regulations. Additionally, one criticism relates to the uniformity of forest regulations since it is equally applied through forestland, regardless of their location or type.

For this matter, the challenges faced by landowners and policymakers are: to assess the current and future economic value of NMFB through the national, regional and local level

regarding different types of land, and consequently, different measures to adopt in forest management of those lands, to create proper regulations that enhances the potential use of the local forest, enhancing their benefits, both from use and non-use values, in which landowners must be aware and account their NMFB in their management decisions. (Bishop, 1998)

Regarding Portugal, Mourão and Martinho (2016) reinforce the value of the forest as an important economic sector, but highly dependent of several factors and problems, such as forest fires. The consequences derived from fires are socioeconomic problems as it reduces the income and employment in the area, as well as the environmental damage.

According to Kraft & Furlong (2015), there are three reasons for government intervention: political (changes in public opinion that demand strong action by political actors or a given issue); moral or ethical reasons (arise when, even without public pressure, most citizens agree that the expected public action is the correct and most obvious to do, e.g., the fundraising for the reconstruction of Pedrógão Grande due to the forest fires in 2017); economic and market failures (fires externalities such as the ones affecting socioeconomic development in the area). To address these problems, government creates public policy mechanisms, through public policy instruments such as regulation, forest management, taxing, or education.

Forest fires are a problem in Portugal, Beighley & Hyde (2018) highlighted the reasons why Portugal is one of the countries with the highest risk of forest fire in Europe, which combined with climate change, will bring catastrophic damage to the level of burnt area. The authors list some of the factors that could lead to this: the "shifting demographics with population moving from rural to urban areas, changes in land use with more agricultural and forested areas left unattended and not being maintained, and fragmentation of land ownership patterns that discourage investment in forest management and fire planning". (Beighley & Hyde, p.6, 2018)

"Can municipal vigilance, public awareness and media attention be sustained in the future and the "out of sight, out of mind" national attitude that prevails in mild fire years be avoided?" (Beighley & Hyde, 2018) The truth is that, according to them, 98% of all fires in Portugal stem from human-caused ignitions and are not only destroying hectares of forests but also taking lives, businesses and means of subsistence for those who lost their home and land. These authors suggest recommendations such as " (1) preventing unplanned human ignitions, (2) creating a structural fire defence system of fuel breaks and by reducing fuel load in critical

areas, (3) improving firefighting capability by implementing perimeter control tactics and large fire management strategies and, (4) restructuring Portugal's fire organization". (Beighley & Hyde, p.7, 2018)

Beighley & Hyde (2018) recognize the importance of firefighters, however, it is shown that their tactics also contribute to the problem, 16% of the fires, with a known cause, is due to rekindles; they also stress that "fire-proof" forests are neither economically viable nor realistic but can be managed in such a way that their capacity to survive a fire can be increased.

The problem of the Portuguese forest is sustained in an effective lack of management derived, for example, from the lack of registration of the forest land, about 80% of the forest in Portugal are unmanaged, influenced by factors such as the inadequate practices, for example, the plantation of eucalypts. (Beighley & Hyde, 2018)

According to ICNF (2017), forests occupy around 35% of mainland Portuguese territory and only 3% are public land, what about the other 32%? Portugal must recognise that the actual forest management practice is not producing the necessary effects to contradict the problems that emerge, such as forest fires, it is going to be necessary to take real action to face off this and contradict the effects of climate change in Portugal.

To do so, it's urgent that citizens, municipalities, government and the entities linked, work together for better management of these lands, also there must be an encouragement for the owners of the land to clean them throw tax support, for example, after all, they are protecting not only their houses but also the forest ecosystems.

2.2 Citizens involvement and participation

Citizens, as an integral part of a functioning democracy, should be and should make themselves heard in any sphere of society, - especially regarding climate change and environmental problems and in this case, those problems affecting forests, by thinking of ways to mitigate its effects and present it to those in charge. Besides being heard, citizens can also participate in the scientific process through data collection for example (a form of citizen science) or by engaging with scientists offering their perspective on complex issues, such as forest fire prevention.

Steelman & Ascher (1997) state that citizens' involvement in policy-making concerns both public authorities and citizens and interest groups, highlighting that public participation and deliberation should be seen as indispensable asset on public involvement, which they believe can enhance the creation of a better and more informed policies that can boost citizens empowerment.

Although one of the leading critics relies on the fact that most of the population is not interested in being participative, which can make the whole process inefficient. Another criticism pointed out is the inconsistency that may arise in citizens' preferences, which hinders the decision-making process regarding the best policies from applying in the future.

Public participation should be encouraged through mechanisms previously established in the community forum, such as active citizenship, which allows the connection between individual and community dimensions, both social and institutional. (Moro, 1998). According to Frazer (2008), citizenship concerns a normative concept that is connected with the dimensions stated before.

To do so, Bäckstrand (2003) studied how civic science can promote better chances for the environment, focusing his research on the relation between civic science and democracy, he suggests that citizens' science is disguised in a way to grow public participation and improve scientific knowledge so the interface between politics and science should include citizens' voice to enhance policy-making decisions, reinforcing that citizens could act not only as followers of a specific policy but as a bridge towards the change, Edwards (1999) believe that the relation between scientific knowledge and public policy-making should incorporate the

public sphere, which includes active citizenry, space where citizens usually meet to discuss public matters.

If we understand citizens' science as the democratisation of science, Cunningham (2002) stated that the public involvement in the deliberation on the problems of people's lives are considered the normative core of democracy. Therefore, it is highlighted that the uncertainty of environmental problems creates difficulties for the collective decision-making process (Bäckstrand, 2003).

On the other hand, citizen science is considered a science by and for citizens, since they are not conventional scientists. (Irwin, 1995). The definition depends on the subject and project type. Accordingly, McKinley et al. 2017 reinforces that to engage citizens in a scientific project is challenging, because as they are not trained as scientists, the project itself has to be able to produce reliable data with the public contributions and be used by scientists, decision-makers and the public. For example, it can be in a local issue by stimulating the engagement of the citizens in the decision-making process about environmental concerns where they make observations about the topic and can also identify the problems and ideas of respective solutions about the subject (Couvet et al. 2008; Eden, 1996), e.g., the possible contribution of scouts in the decision-making process of forest management, as McKinley et al. 2017 states, citizen science is valuable and can be used to interdisciplinary collaboration such as projects that have for example social and natural dimensions..

Therefore, citizens can be involved in the production of science either through help in the data collection process or by providing insights into specific problems. More broadly, citizens can be a part of the solution to natural resource challenges, either by helping design more effective policies or by volunteering to address a particular problem. In the case of forest fires, different groups of citizens can be involved in helping scientists study the problem or policy makers implement solutions. One such group is the Scouts, who by the nature of their civic engagement and involvement with nature activities are in a good position to both lend a hand and share insights into forest issues.

2.3 Scouting and forests

2.3.1 Overview of the Scouting movement

As a non-formal education associative movement, Scouting has contributed to the education of children and young people over time and all over the world. Their primary purpose is the contribution for children and young people development helping them to achieve their full potential as persons, in their intellectual, social, physical and spiritual life and to be responsible citizens and part of the community. (OMME, 1983)

As a movement based on "voluntary adherence to values expressed in the Scout Promise and Law, through an original method that allows each young person to be the protagonist of his growth, so that he feels fully realised and plays a constructive role in society" (CNE, 2016), just as Baden-Powell envisioned at the time of his founding, in 1907.

Baden-Powell conducted an experimental camp in England, on Brownsea Island, with twenty boys aged between 12 and 16, transmitting knowledge in various areas, e.g., first aid, field cooking and forest safety techniques. It was a way of testing the Scouting method based on his experience as a soldier when during the Siege of Mafeking resisted for 217 days with the help of local youth. (Reis, 2013)

In 1908, Baden-Powell published the first edition of "Scouting for boys", where he gives instructions about the activities to do and the organisation per se of Scouting. It is a method based essentially on the "game of self-government" to promote physical, civic, and moral health (Vicente, 2004). It is also a system based on "fidelity to the Law and Promise, its moral foundation, and is structured based on two essential instruments: the patrol system and the progress system". (Vicente, 2004)

After the movement's success, it was necessary to create a worldwide organisation to guide the movement, and in 1920 the World Organization of the Scout Movement (WOSM) was founded. Currently, the organisation counts 172 National Scout Organizations, corresponding to 57 million young people involved with the support of 5 million active volunteers, "shaping young people's future as active citizens". (WOSM, 2022).

In Portugal, the scouting movement is present in three associations: "*Associação de Escoteiros de Portugal*" (AEP), the first founded in 1913, which is open to all religions and political ideals,

then "*Associação de Guias de Portugal*" (AGP) has the same standards but is exclusive for girls and is under the authority of the World Association of Girl Guides and Girl Scouts, the latter is "*Corpo Nacional de Escutas*" (CNE) whose inspiration relies on the catholic church. Finally, AEP and CNE formed the Portuguese Federation of Scouts, founded in 1928, which the WOSM recognises. Although in the present work, the focus will be CNE, as it is the largest youth organisation in Portugal.

CNE is a "Catholic non-profit, non-governmental and non-political association of non-formal education, aimed at the integral formation of young people, whose main objective is to contribute to the education of young people" (Barrosa, 2020). Founded in Braga in 1923 by the Archbishop Primate of Braga, D. Manuel Vieira de Matos, with his secretary Dr Avelino Gonçalves. Currently, the CNE is for boys and girls, has 71993 members, and is divided into 20 regions with 1030 groups, spread all over the national territory.

CNE divides into "two types of effective members designated as *non-leader effective members* and *leaders*" (Rodrigues, Menezes & Ferreira, 2015). The non-leader members divide into four sections according to their age: "*Lobitos*" (6 to 10), where "the important thing is to play with others, among joy and imagination, with the first contact with nature" (CNE, 2016); "*Exploradores*" (10 to 14), "are at the age of wanting to discover the world and life, it is the age of adventure, of fabulous projects, of invincible heroes, of penetrating the mysteries of nature" (CNE, 2016); "*Pioneiros*" (14 to 18), "age of the great challenge: the youth want to show what they are capable of, they want to see their personality recognised, they want to get to know others in depth, to live in a group and with them "help to transform the world" (CNE, 2016); "*Caminheiros*" (18 to 22) "undertake a Walk that allows them to dare through action, to intervene in the community by following common paths of growth and autonomy". (CNE, 2016) Last but not least, these sections can only work if there is a group of people willing to donate their time to educate young people according to the Scouting method, "Dirigentes", "in Scouting, the adult is the basis of the integral education of the children and young people of each small group, through the guarantee of the regular functioning of the other constituent elements of the Scouting method and the correct framework and environment for the Scout game" (CNE,2016)

As stated before, Baden-Powell designed the Scouting method based on a set of principles, and it is a system of progressive self-education based on seven equally essential elements: (1)

Law and Promise; (2) Patrol System; (3) Life in Nature; (4) Mysticism and Symbology; (5) Learning by Doing; (6) Personal Progress System; and (7) Youth-Adult Educational Relationship. (CNE,2016)

2.3.2 Forests and Citizenship

Two of the seven lines of guidance are essential in this research work to better comprehend the meaning of nature and service within the Scouting movement. Therefore, it is crucial to explore (1) Law and Promise and (3) Life in Nature, as follows (1) are what "makes up the ideal of Scouting and thus present the values belonging to it throughout the world brotherhood" (Garcia, 2019), this includes the law of scout which is a set of 10 articles where (3) is a recurrent theme since the 6th article tells us that "the scout protects the plants and animals" (CNE,2016) which shows us values of contemplation, responsibility and protection for the environment, Baden-Powell reminds us that "forests are at the same time a laboratory, a club and a temple" (Sardinha, Barszczak & Cunha, 2013). Also, life in nature is "one of the most strikingly identifying elements of the Scouting method as a pedagogical proposal, exploring Nature and living in communion with Nature, taking advantage of its resources and the benefits of the open air". (CNE,2016)

Therefore, it is also necessary to highlight the importance of the Promise present in (1) because it is where the voluntary adherence to the movement begins, where the scout affirms its values and fidelity to the Catholic faith, Mission, and Citizenship (CNE, 2011),

All scouts follow the law and principles when adhering to the movement, which means they will do their best to follow them. Generally, they are active citizens and give importance to matters such as for example voluntary work. Consequently, this group of citizens has a special connection to nature and forests and is also likely to be prone to involvement in activities that are related to nature conservation.

In the present work, my focus of analysis is the perceptions of scouts about environmental aspects regarding forests and citizenship towards the protection of the environment. As participants in the study, I recruited "*Pioneiros*", "*Caminheiros*", and "*Dirigentes*" which from now will be designated as Pioneers, Rovers, and Leaders, respectively.

3. METODOLOGY AND IMPLEMENTATION

3.1 Overview

I used two types of methods for data collection, quantitative and qualitative, namely through a questionnaire and focus group sessions, respectively, to comprehend how scouts value the forest and its importance to them, as well as their opinions on the decision-making processes and respective willingness to help in forest fire prevention and their potential role as scouts.

The questionnaire represents the quantitative method that was used to collect the data from scouts, its objective is to understand their opinions on certain topics by asking questions to a sample that is ideally representative of the population we are studying.

Morgan (1997) defined a focus group as a qualitative technique aimed at controlling the discussion of a group of people, inspired by non-directive interviews, “it favors the observation and recording of experiences and reactions of the individuals participating in the group, which would not be possible to capture by other methods, such as participant observation, individual interviews, or questionnaires.” (Galego & Gomes, 2005). It has several objectives such as to look at the person as a whole, and be able to analyse their perspectives and understand their attitudes, feelings and beliefs about an issue.

The purpose of using focus groups, in this case, is to produce a better interpretation of both the preferences of the individual respondents and their opinions, which are not always apparent from the questionnaires. For the construction of focus groups, it is necessary that the individuals participating have identical characteristics which allows similarity and diversity among them. Focus groups allow us to construct research designs that make the most of it in combination with other research methods. But one of its main limitations is that it is always subject to the interference of the moderator/researcher and the dispersions typical of heterogeneous groups. (Galego & Gomes, 2005)

As the first method of data collection, several focus group sessions were run by one of the researchers in the Eco.Fire research project to ensure there were no group differences due to different styles of interview. The focus group method is a qualitative data collection technique which enables the researcher, through interaction with different individuals, to get to know the perspective of the subjects and thus understand the opinion of a given group on an issue.

This method was applied to individual scouts that belong to groups in the North region of Portugal, namely from Guimarães, Santo Tirso, Penafiel, Santa Marinha da Feira, Póvoa de Lanhoso e Vila Nova de Famalicão.

As a second method of data collection, a questionnaire was developed to briefly survey focus group participants' opinions and be administered directly after the sessions.

3.2 Implementation: focus groups

The study aimed to study the Scouts' perceptions regarding their beliefs in the value of the forest, for example: how they can help in the collection of forest data (given that they spend much of their time in the woods); and their availability to be present in decision-making processes regarding forest management. Scouts are organised in a hierarchical structure depending on age and experience, as stated before. To capture differences in the different Scouts subgroups, I established differentiation between the participants, and the study focused on three sections of the CNE: pioneers, rovers, and leaders.

Prior contacts were established with members of the different sections mentioned above, assessing the potential of this topic and their availability to participate in this study.

Ensuring the availability of the participants and meeting the necessary conditions for data collection, making the script and corresponding informed consent to guarantee the confidentiality and anonymity of the participants. A researcher moderated the focus group and guided its moderation through a structured script. At first, after receiving the participants, the moderator presented the study's primary objective. There was a previous clarification of the rules and the explicit free acceptance of participation, as well as the fact that the focus group sessions were recorded using a digital recorder. Then, the moderator asked the participants to introduce themselves and share how many years they took/have spent scouting, thus facilitating the discussion. The sessions took place online in mid-February 2022.

Since there would be distinct groups to be observed, in this case, two sessions with Leaders, three with Rovers and two with Pioneers, the script followed was not the exactly same for the three groups. For Leaders and Rovers, the moderator asked the following questions:

(1) What are the main problems associated with forests? What factors do you consider necessary in forest management? [problems]

(2) To what extent you would consider taking action to help mitigate these same problems? In what ways? Do you believe that policies can benefit the forest in the long term? Would you consider being part of a team prepared to be involved in political decision-making to proceed with changes in their management? [solutions]

(3) Would you be willing to organise activities to collect data on certain forest areas to prevent and recognise the site? Ex. In a raid, observe and record the different characteristics of the forests where they are found (level and type of vegetation, accessibility, etc.[involvement]

(4) How do you consider that the experience you had/have in the Scouts association positively or negatively influences individual and/or society's responsibility toward the forest? Does being a scout condition or change the way you understand your commitment to the forest/nature? [scouts and the forest]

The Pioneers had the following questions:

(1) Can you list examples of problems associated with forests? [problems]

(2) And some benefits that forests bring to our lives? [benefits]

(3) To what extent you are willing to participate in actions (raising awareness or otherwise) to help defend the forest from these problems? [involvement]

(4) Would you consider considering activities of this kind to be included in your activity plan? [scouts and the forest]

The analysis consists of the focus group transcription following a thorough reading, key concepts were found in the participants' opinion which coincided, generally, in the three study groups. In this case, the concepts were categorised based on the statements made by the participants and the existing literature. Finally, the data analysis process was carried out by the interpretation of the results from a questionnaire, which aimed to characterize participants and explore further their opinions regarding the value and protection of the forest.

3.3 Implementation: questionnaire

The questionnaire was made available online after the end of each focus group, in which participants were invited to participate anonymously. For the analysis of the statistical data, the program Microsoft Excel for Windows was used.

The questionnaire included the following topics:

- the value of the forest and its protection,
- the main factors contributing to the risk of fire,
- the importance of fire prevention risk measures,
- the participants' WTP to prevent forest fires (and expressed through a one-off donation to the local fire brigade) and the attribution of responsibility for fires.

The value of the forest and its protection was assessed through two multiple-choice questions regarding the extent of agreement (using a 5- point Likert scale of strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree) with the following statements:

- the forest itself has value and must be protected, regardless of its cost,
- the forest has value for its natural landscape,
- the forest has value because it allows citizens to use it for sport or recreation,
- the forest has value because it allows for the exploitation of forestry products,
- the forest has value because it protects the habitat and preserves the diversity of animal life,
- citizens have a duty of care for her,
- the government should adopt effective measures to ensure their protection,
- the forest is a part of my identity,
- forest fires are a huge problem in our country,
- the State is ultimately responsible for the existing forest management,
- as a citizen, I must protect the environment,
- there could be a tax that would go directly towards forest protection.

Then to understand how participants view the main contributors to the risk of forest fire, they were asked to choose the three main factors among:

- climate change,
- natural disasters,
- land abandonment by owners,
- lack of maintenance and cleaning of land by the owners,
- low profitability of the forestry sector,
- lack of surveillance of forest land and the lack of state funding.

To assess the importance scouts, give to the forest fire prevention measures, participants were asked to attribute importance (very, some, none) to the following measures:

- cleaning of the land by landowners,
- monitoring by the State authorities the state of forest and its conservation,
- fines and penalties for negligent landowners,
- financial support as a way to increase the economic exploitation of the forest,
- full registration of the ownership and type of land,
- increase funding for fire fighters.

Regarding their willingness to pay for forest fire protection it was asked how much they were willing to donate to the local firefighters, with the value ranging from 0€ to more than 15€, with the following categories: 0€, more than 0€ and less than 5€, 5€-, 10€, 10€-, 15€, over 15€.

Then to see their perceptions about who's the main responsible for forest fire prevention, they were asked to assign grades (1 is the primary responsible and 3 the least responsible) to entities or agents that can have an impact on forest management such as the local government, central government, landowners, and population.

There were also two open answer questions¹ to understand the citizens' engagement towards the protection of the forest, stating their difficulties and what can be done to improve this, through the following questions:

- In your opinion, what are the main barriers to citizen involvement in protecting this asset?
- What measures do you think that Scouts could promote to lead to greater involvement of the population with the forest?

Then, the questionnaire included seven questions allowing the collection of participants' socio-demographic data such as gender, age, municipality, level of education, employment status, level of financial comfort and type of participants' area of residence.

¹ The answers to those questions are available in Appendix

4. RESULTS

4.1 Sample characteristics

In this study, 34 subjects participated, of which 21 (61,76%) were female and 13 (38,24%) were males. The sample has ages ranging from 15 to 69 years old, with 29,41% with ages from 15 to 17, 44,12% with 18 to 23 years, 8,82% from the age group 24-39, 14,71% from 40-54 and, finally, 1 (2,94%) participant belongs to the age group from 55-69. As for the municipality of residence, it is possible to verify that 28 (82,35%) people from Guimarães participated, 1 (2,94%) from Penafiel, 1 (2,94%) from Póvoa de Lanhoso, 2 from Santo Tirso (5,88%) 1 (2,94%) from Santa Maria da Feira and 1 (2,94%) from Vila Nova de Famalicão.

Regarding the level of education of the participants, it is indicated that: 13 (38,24%) completed primary education, 16 (47,063%) secondary education, 3 (8,82%) bachelor's degree and, finally, (5,88%) completed master degree. In terms of employment, there were 8 (23,53%) individuals employed, 2 unemployed (5,88%) and 24 (70,59%) students.

Concerning their level of financial comfort and area of living, if it is more rural or urban, table 1 and 2 report their status according to their answers. As shown below, most participants have some comfort financially speaking, 52,94% are in the medium point of the scale. On the other hand, when it concerns the participants' area of residence in terms of rurality, although one participant considers his place of residence rural and another urban, it seems the rest consider their zone in the middle of the scale (32,35%).

Table 1: Level of financial comfort of participants

Level of financial comfort	None	2	3	4	Very
	0,00%	8,82%	52,94%	38,24%	0,00%

Source: Self-elaboration with data from participants' forms (n=34).

Table 2: Level of the living area of all participants

Area of residence	1-Rural	2	3	4	5-Urban
	2,94%	38,24%	32,35%	23,53%	2,94%

Source: Self-elaboration with data from participants' forms. (n=34).

4.2 Focus groups

Seven focus groups were conducted to assess the different perspectives regarding the relationship of individual scouts with the forests and forest fires. Three sections of the CNE were considered to the development of this methodology: *Pioneers*, *Rovers*, and *Leaders* with two, three and two sessions conducted, respectively. Individuals from these groups were invited to share their views about the problems regarding forests, their value, how they would be willing to participate in initiatives that could improve forest management, and how their involvement in the decision-making process could be fostered. It is important to note that *Pioneers* had slightly different questions about these topics since, as they are younger, they could lack some information to answer some of those truthfully, so we focus on their view as forest users in 4.1.6 and 4.1.7, that is why questions 4.1.3, 4.1.4 and 4.1.5 were only made for leaders and rovers, 4.1.1 and 4.1.2 were intended to all participants.

4.2.1 Problems of the forest in Portugal

Table 3 illustrates Scouts' perception of the main problems facing the forest in Portugal by the different groups involved. Each cell reports the number of mentions that each problem gets within the subgroups.

Table 3: Main problems of forests (absolute frequency of mentions)

Problems	Leaders	Rovers	Pioneers	Total
1. Educational issues				12
a) education	3			
b) Lack of respect/care for Nature	2	2	3	
c) Lack of consciousness	1	1		
2. Cleaning issues				12
a) cleaning	6	3		
b) Existing industrial waste	3			
3. Owners				2
a) Land abandonment	1			

<i>b) Disorderly land use</i>	1			
4. <i>State power</i>				3
<i>a) Bureaucracy</i>	1			
<i>b) Lack of public policies</i>	2			
5. <i>Pollution</i>	2	7	6	15
6. <i>Forest conditions</i>				6
<i>a) Deforestation</i>		1	2	
<i>b) Forest residues from logging</i>		3		
7. <i>Fire</i>		2	1	3
8. <i>Economic Issues</i>		1		1
9. <i>Overuse of scarce forest resources</i>		1		1
10. <i>Planting of non-indigenous trees</i>			1	1

Source: Self-elaboration with the data from the focus group (n= 34)

The opinions of all respondents converge on some key ideas, even if distinct positions are adopted among the different groups. The leaders focus essentially on the issue of education, believing that nowadays the population in general shows a lack of care/respect for nature and a lack of awareness consequently, and the problem of cleanliness, admitting that it is a shame to see industrial spoils in this habitat. One such comment is: "we need to clean, we need to educate so as not to spoil"². They also highlight that bureaucracy and lack of public policies help foster the structural problems of this asset, especially the lack of examples that municipalities and the government give to the citizens, if the central organisation that creates legislation and measures to protect this asset cannot set an example, it is expected that citizens don't deposit their trust in the protection of this asset. However, it is not a strong enough reason for random citizens to pollute forests. One of the problems featured was also forest property abandonment, where in most cases, the owner is not acquainted with the rules they must follow to have a lawful forest area and a lack of money incentives where

² All the quotes present in 4.2 are from the transcriptions of the different focus groups conducted in this dissertation.

property owners are forced to leave their properties abandoned leading, sometimes, to territorial disorganisation.

Rovers also recognise the issue of cleanliness and education as existing problems (for example: "it's the lack of care essentially, you don't notice the commitment of people in trying to improve, whether it's the forest or what's around it"), and they reinforce that there is an increasing carelessness with the care of the forest. They also place greater emphasis on pollution and deforestation, specifically the forest waste left behind by lumberjacks, saying that: "there is a lot of dry vegetation, a lot of trees that are not treated in the sense that they fall and then, for example, there is no one there to take advantage of that wood, it dries up, with higher temperatures can become a fire". Fire is a vast problem in Portugal, and Rovers state that many of wildfires are motivated by economic reasons since there is low profitability of the sector, although they also point out the excessive use of its raw materials.

Pioneers focus essentially on pollution and deforestation, and one such comment is that "people are not careful to preserve the environment and that the situation is becoming more and more degrading". They also refer that the plantation of trees whose species are not autochthonous harms forests (for example: "our autochthonous species are, e.g. the stone pine, the cork oak, which are characteristic trees of our forest, and nowadays, taking into account the market, many of these trees are replaced by eucalyptus and various fast-growing trees. This not only has an impact on the soil but also on forest fires").

4.2.2 Scouting influence on social responsibility towards the forest

Table 4 shows how the experiences of the participants, as scouts, have influenced, positively or negatively, their individual or social responsibilities for the forest.

Table 4: Influence that the experiences as a scout had on the responsibility towards forest (absolute frequency of mentions)

<i>Answer</i>	<i>Leaders</i>	<i>Rovers</i>	<i>Pioneers</i>	<i>Total</i>
1. Yes				25

<i>a) Law of the scout</i>	5	
<i>b) Development of a love for Nature</i>	1	
<i>c) Social responsibility towards the environment</i>	15	
<i>d) Scouting experiences</i>	4	
2. No		0

Source: Self-elaboration with the data from the focus group. (n=34)

The short answer for almost all participants is that their experiences as scouts positively influenced their individual and social responsibility toward the forest. Leaders enhance that they have been scouts for a long time, so they cannot put into perspective which would be their perception without the contribution of Scouting to their life-long education highlighting for example that: “we have a different sensibility which changes everything straight away”. In fact, they are taught from an early age to preserve the environment like it is stated on scouts’ law: “the scout protects plants and animals” (CNE, 2016) and they seem to believe that by experiencing some activities in the forest that help to create a love for nature. Therefore, it makes sense that this asset is protected by them, since accordingly, scouts feel that have “a positive influence not only on our movement but also in those around us”.

All rovers believe that being a scout has improved their lives, especially the awareness and appreciation of the environment as something that must be protected (for example: “at the level of this concern for the forest, it is undoubtedly something that marks our journey a lot”), they reinforce the scout’s law as stated above, and one illustrative comment is that “we are Catholic scouts and we have very much the maxim that nature was made by God, which is the common home, so it should be like a temple for us, it should be treated, it should be venerated, for us, being in nature is a moment of relaxation, of getting out of that day-to-day zone where there is a lot of stress from work, from school, so from a young age we are very much taught to protect where we feel good.” For them, “being a scout, without a doubt, influences us in a positive way, not only to nature but I think about the world and society in general”, one of them even mentions an example of an activity they do in their groups as a way of helping the planet, it consists in calculating the ecological footprint of a particular activity they are going to carry out including food, transport and all the logistics related, then

at the end of this activity they commit to planting the number of trees associated with this activity to “restore the status quo”. This participant also states that one of the objectives is to reduce the ecological footprint of each activity.

Finally, Rovers believe that what differentiates them from other young people is their experience in caring for the environment, stating that the lack of information is not a problem nowadays, but they believe that Scouting changes the way they see the world and nature reinforcing that “we speak of a common house, as the second house of all of us”.

Regarding Pioneers, they believe that being a scout is not a critical factor in the social awareness towards the protection of forests, saying that “as people, we can develop this in ourselves.” Still, Scouting is instead a means of giving them an added value that allows, through the experiences they live, to see this asset differently and to be concerned for what happens to the environment.

4.2.3 Scout’s role in the promotion of the education of the citizens

Table 5 states the different reasons scouts illustrate as an improvement in the protection of the environment as to promote a mindset shift in the education of general citizens, highlighting their role in this paradigm’ change.

Table 5: Reasons and ways of improving a mindset shift by citizens toward protecting the environment (absolute frequency of mentions)

<i>How</i>	<i>Leaders</i>	<i>Rovers</i>	<i>Total</i>
<i>1. Improve awareness</i>			9
<i>a) Awareness-raising campaigns</i>	2		
<i>a) Green Brigades</i>	2	1	
<i>b) Knowledge sharing in the form of lectures or activities</i>	1	2	
<i>c) Tree planting</i>		1	
<i>2. Take the problems to the state power in a local way</i>	2		2
<i>3. Educate young people</i>	5		5

4. Preservation of the forest	1	1
5. Education		8
a) To be an example to society	2	
b) Teaching children to reach their parents	3	
c) Introducing in the syllabus forest awareness actions	1	
d) Training or lectures in primary schools	2	
6. Forest litter		1
a) Public policies of forest surveillance all year round and application of proportional fines	1	
7. Creation of forest guards	1	1

Source: Self-elaboration with the data from the focus group. (n=24).

The opinions of Leaders and Rovers are similar in this case, even though leaders focused more their view on the creation of awareness-raising campaigns such as “*Brigada Verde*” which is an initiative made by the municipality of Guimarães where the different parishes have people, scouts typically included, that promote initiatives regarding the cleaning of parks, forest, and sustainability (Câmara Municipal de Guimarães, 2018). For example, Rovers pointed out the role of education in this problem, with one participant saying that “education, as it is a good that is equally distributed to everyone, I think would be the starting point for this improvement at the level of our society” by suggesting training or lectures in primary schools because we need to “start acting more locally and then try to change globally”.

Leaders also believe that scouting’ role in the mindset shift to better and sustained protection of forests goes through the promotion of forests education. One such comment is “we are a movement for the education of children and young people, the adults of tomorrow, and therefore for each and every child and young person we can leave the seed of the importance of caring for nature and caring for these spaces because we do not know if we are looking at a child who will own large hectares of forest from today to tomorrow, and therefore on the day that this happens, this owner will have a better awareness of the importance of care for forests”. There is a need to show good examples of what has been done in forest protection

to contribute to citizens perspectives that not everything is poorly done as far as forests are concerned.

Another contribution that they highlighted was the lack of proximity between scouting and government entities, and that if this relationship is strengthened, they believe that one way to help the environment is to focus locally to improve on a larger scale (for example: “using children as a means to educate the parents”). Participants also reinforce that there are partnerships regarding the protection of forests in which several national groups are active such as forest surveillance, strengthening the organisation’s active role in defending forests.

Then, rovers suggested also introducing this issue in the school curriculum. They say that they are “lucky to be scouts (...) and to have this approach to this issue”, they believe that young people need this type of experience, giving examples of activities that can be carried out for these purposes. They also think that the scouts can set an example as citizens who are more aware of these issues and that in a school activity this type of engagement can also be achieved (for example: “take a rubbish bag and some gloves and collect the rubbish they find on the way”), assuming that it is “something simple that can make a difference”.

They also mention that regarding forest litter, a good decision would be to create forest rangers so that the level of this type of pollution could be controlled and, for example, the Portuguese national guard, by order of the government, had a more active role in this area, not only during the crucial fire season.

Regarding property rights, as each forest area has an owner, be it the State or a private entity, they also believe that there could be a specialised team dedicated to these procedures (for example: “understand if it was the owner himself who did not clean up as in the case of the bush, big weeds and bark or if, ok, there was deforestation here and there was not and the rest of the land is not cleaned up and then tell the owner of the land that he pays and also pays the entity or in this case the lumberjack (...) because the lumberjack himself also has to take that responsibility”). In this specific public policy case, the scouts’ role would be to divulge and clarify these questions more easily among the population.

They also add that one way to avoid so much domestic rubbish in the forests would be to place recycling points in them. They believe that this lack of recycling points combined with people’s laziness in carrying their rubbish and lack of education contributed to the

degradation of the forest, so they suggest that recycling points should be placed at the beginning and end of every trail.

4.2.4 Scouts' involvement in decision-making concerning forest management

Table 6 shows the participant's opinion in being involved in the decision-making process about forest management, e.g., if they should integrate teams that are responsible for the political decisions, and if scouts were listened, if it will be an added value to this process.

Table 6: Reasons for why scouts could or not integrate teams that make the political decisions about forest management (absolute frequency of mentions)

Answer	Leaders	Rovers	Total
1. Yes			2
<i>a) We know nature better than the state power</i>	1		
<i>b) By understanding the existing situation</i>		1	
2. Maybe		2	2
3. No		1	17
<i>a) Perspective of using the space and not managing it</i>	2		
<i>b) Lack of necessary qualifications</i>	3		
<i>c) It is not our role</i>	1	5	
<i>d) "to listen as a testimony and not as an opinion".</i>		4	
<i>e) CNE cannot be involved directly with politics but can be heard as a consultative body</i>		1	

Source: Self-elaboration with the data from the focus group. (n=24).

Regarding this question, two participants of Leaders and Rovers feel they have the capacity for this task, one such comment is: "we have more knowledge about nature than state power

and are aware of how this asset is” admitting that “we already know nature, we walk there almost every day”.

Most respondents feel this task gets a bit out of their depth, invoking three perspectives. First, they seem to believe that to be able to make decisions about forest management, they should have the necessary qualifications, they consider they lack on the theoretical knowledge to make the best decision for the problem. However, assume that the presence of a Scout trained in the area in these decision groups would be vital since it reconciles the two aspects, theory, and practice.

Second, they believe that it is not their role because they think that they are not in the best position to make decisions on this issue stating that “we are very much in the perspective of users of this space and not in the perspective of its managers”. Also, participants add that many forest areas are given over to scouts and that these make excellent use of the space. However, recognising that it is difficult for the opinion of the scouts to be heard by those in charge, they seem to believe that as frequent users of forest areas, they should have the right to be heard by the competent authorities, as testimony and not as an opinion per se (for example: “it would be good to listen to us, the idea of listening as a testimony and as the voice of experience, not as a party, less as an opinion, but as a testimony”).

Finally, one participant highlights that “the CNE cannot get directly involved in politics. However, I think, and it is an excellent idea for the CNE to be used as a kind of consultative body”. Overall, scouts believe that only combining academic knowledge with the scouting experience would scouts be able to make decisions in this area, otherwise they only consider important to be heard as a voice about their tremendous experience with forests and nature.

4.2.5 Scouts’ willingness to organise forests’ activities

Table 7 focus on the willingness of scouts to organise activities that intend to collect data from forest areas to recognise a specific site and record its characteristics, e.g., type of vegetation and accessibility.

Table 7: Willingness of scouts for organising activities in forest areas (absolute frequency of mentions)

<i>Answer</i>	<i>Leaders</i>	<i>Rovers</i>	<i>Total</i>
<i>1. Yes</i>		9	11
<i>a) Knowledgeable about the forest land in our parish</i>	2		
<i>2. No</i>			8
<i>a) Lack of qualifications and availability, considering the plan of activities and the number of influential groups</i>	3	5	

Source: Self-elaboration with the data from the focus group. (n=24).

Some believe that it is within their capabilities to perform this activity with success and to be an enriching activity for the younger ones, such as identifying the species existing in a particular forest area since the existing databases are vague concerning these issues and could be advantageous to pass such information to firefighters. However, they do not know to what extent they would have, for example, “scout availability at the level of our program of activities and objectives” and they also assume that the “effective number of individuals in the groups that can do this are not very large and will not put children doing this”.

On the other hand, others think that it does not correspond to their role, one such comment is: “we are always available to help and to do good (...), but I think that it is a little bit out of our reach”, assuming that it should be left to the specialists since the probability of doing it wrong is higher because they lack the scientific and training basis to do so.

Nevertheless, they think that they should be more active in the surrounding forest areas belonging to their parishes, and having updated maps would be an added value (for example: “if we made a trail that has two meters, we are saying that we are making, for example, a path for possible fire trucks to pass, we are saying that if we treat the paths well, even people with some reduced mobility can do it”, which would help in the fight against fires. On the other hand, some shared that there is a mobile phone application where it is possible to identify the existing species which is an added value in the case of mapping (for example: “to help understand the diversity that exists in various parts of countries”).

4.2.6 Forests' benefits

Table 8 refers to the benefits that forests provide into the participants' life.

Table 8: Benefits that forests bring to the life of the participants (absolute frequency of mentions)

Benefits	Pioneers	Total
<i>1. Necessary for our existence</i>	3	9
<i>2. Peace aka peaceful environment</i>	3	
<i>3. Supply of raw material</i>	3	

Source: Self-elaboration with the data from the focus group. (n=10).

The participants believe that the forest “is necessary for everyone to be able to live in the world because without the forest and the trees, we have no oxygen,” reinforcing the need to preserve this ecosystem.

Pioneers believe that forest brings peace and positivism to their lives (for example, it is: “a quiet environment where there is always peace, where we can escape the noise of the city”). It is also the habitat of living beings, a source of income for some sectors like wood or cork, for example, and allows the supply of organic matter as well, and the green spaces themselves, which they use so much.

4.2.7 Scouts' willingness to participate in forest protection actions

Table 9 shows the pioneers' willingness to participate in awareness-raising or other actions to help defend the forest from the problems stated before and if they were willing to include these actions in their annual activity plan.

Table 9: Willingness of Pioneers to participate in actions to help defend the forest (absolute frequency of mentions)

Answer	Pioneers	Total
<i>1. Yes</i>		7

<i>a) Forest cleaning</i>	2
<i>a.1) Green brigades</i>	1
<i>a.2) Tree planting</i>	1
<i>b) Awareness-raising campaigns</i>	3
2. No	3
<i>a) Awareness campaigns</i>	3

Source: Self-elaboration with the data from the focus group. (n=10)

Pioneers mention awareness-raising to educate citizens and protect the forest. Although this is more widespread among children and young people, which transmit the message at home about preserving the forest and not throwing rubbish on the ground, for example. Nevertheless, they believe that many of the population can carry out such actions, which have a high environmental impact.

Accordingly, most assume they are fully available to participate in awareness-raising actions so that more people become informed of these problems. They believe that many times the problem is due to the general lack of interest of people (for example: “there is no lack of incentives, but people do not pay attention to this, so however much we raise awareness, people will not be careful”), which makes it difficult for the scouts to raise awareness about these issues.

They advocate activities such as collecting rubbish in the forest through green brigades and workshops on woods such as for example: “demonstrating how harmful it is to throw simple objects like a bottle of water or a tissue into the forest, showing how long it takes for these objects to degrade in a forest” or “demonstrating how harmful it is not to clean the forests, for example, showing that native species are much more resistant to fire than species brought from other places”.

The participants believe that changing how these themes are presented to most of the population can help raise awareness. As for including this type of activity in their annual plan, they believe that it would be an added value. But, of course, there are choices to be made since “the activity plan is extensive, and there is no time for everything, obviously, so maybe we have to give up some activity to do that one”.

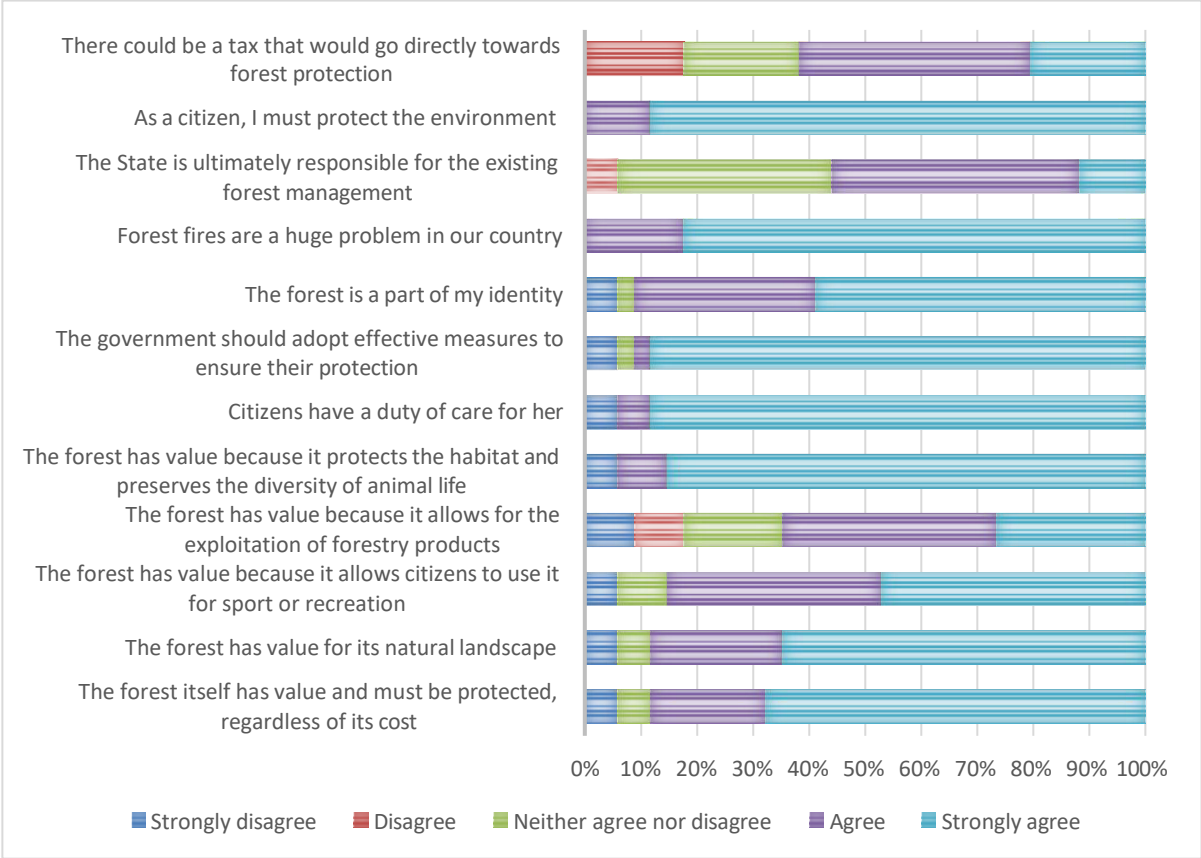
4.3 Questionnaire

To better understand the participants’ opinions in this study, a short questionnaire was conducted after each focus group session to assess their preferences regarding the value of the forest, forest protection and management. So, I will evaluate the results for the whole sample and make comparisons between groups, shown in the different figures in this chapter.

4.3.1 Forest’s protection and value

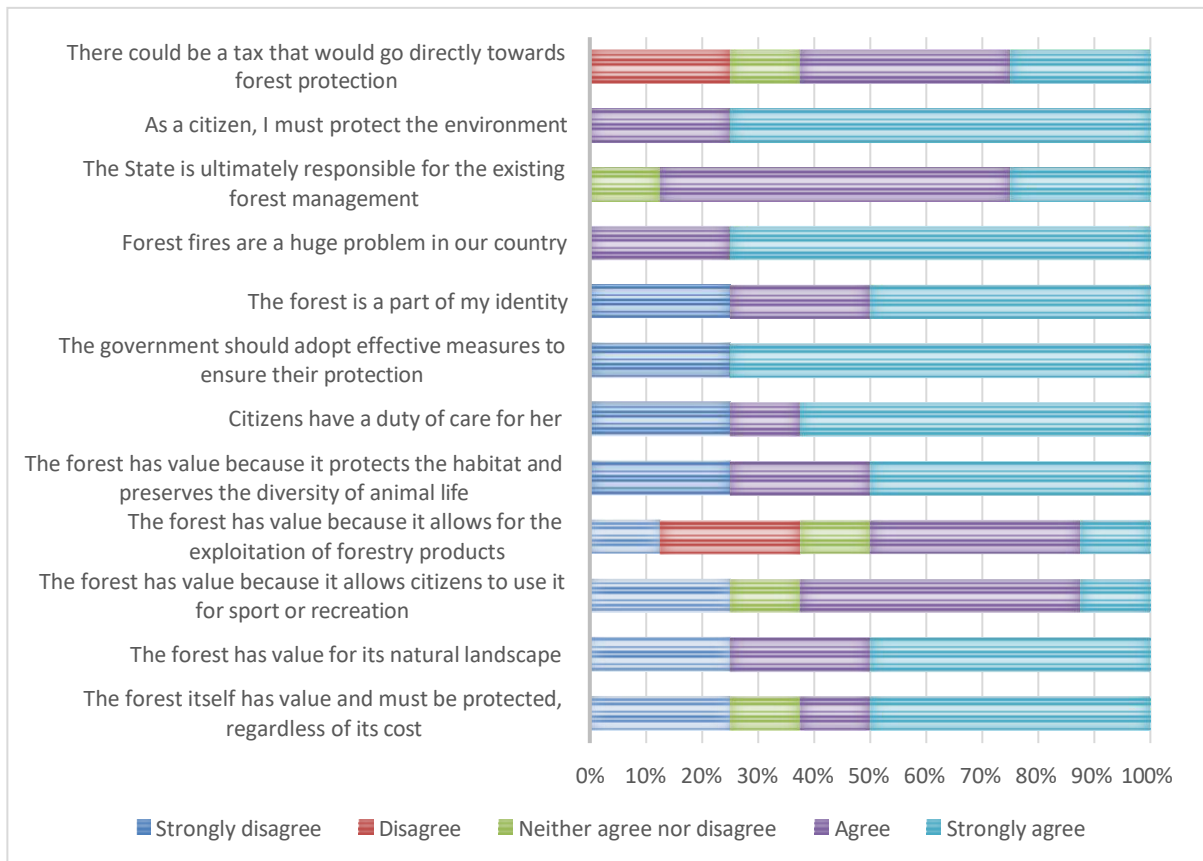
Figure 1 shows scouts’ perceptions about the value of the forest and its protection and determines their extent of agreement. Figures 2, 3 and 4 divides the sample across the three groups, Leaders, Rovers, and Pioneers, respectively.

Figure 1: Forest’ protection and value according to all participants



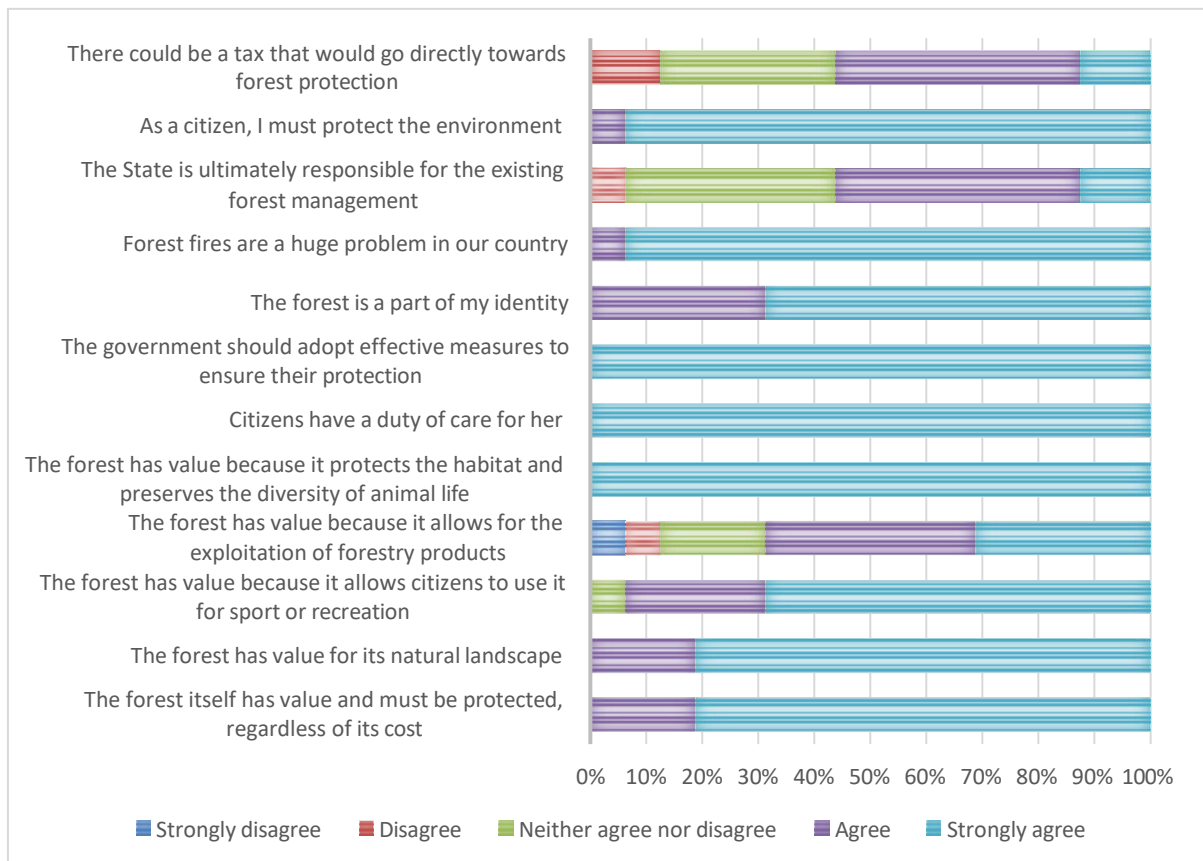
Source: Self-elaboration with data from participants’ questionnaire (n=34).

Figure 2: Forest' protection and value according to Leaders



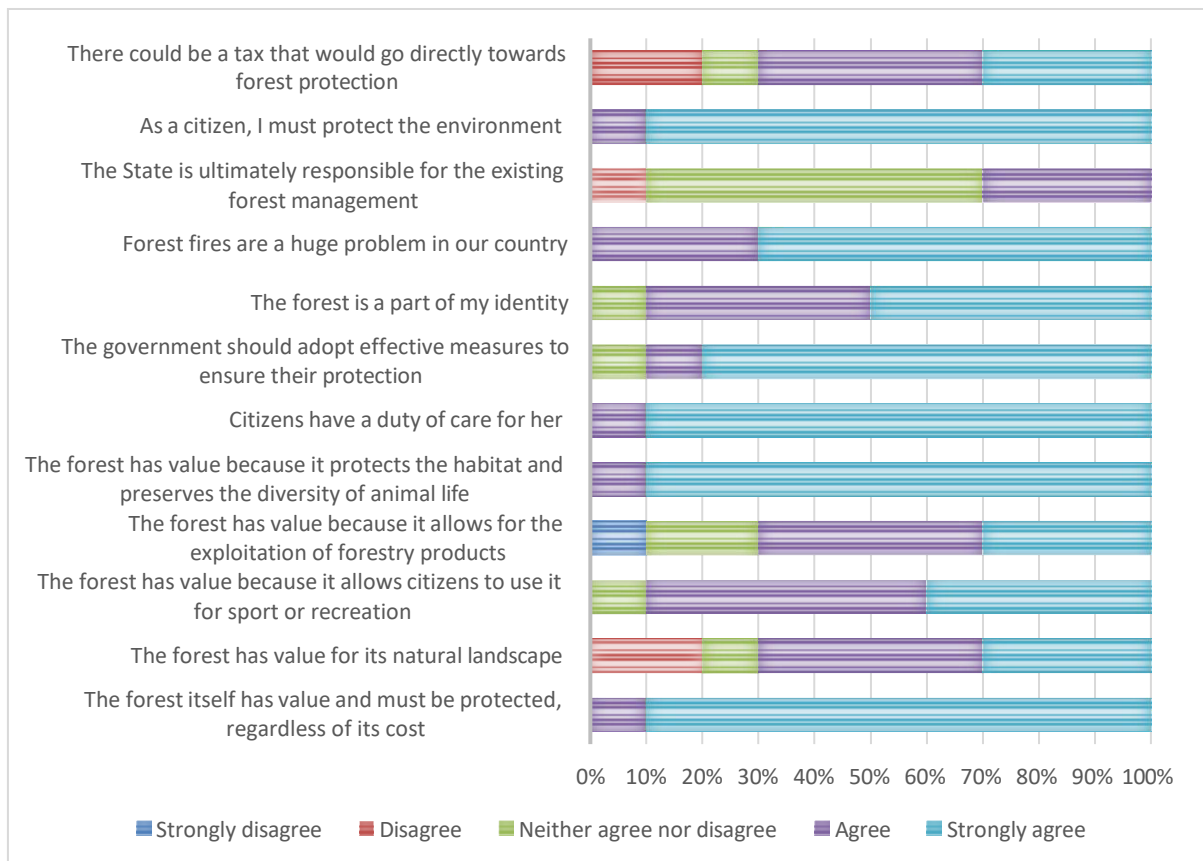
Source: Self-elaboration with data from participants' questionnaire (n=8).

Figure 3: Forest' protection and value according to Rovers



Source: Self-elaboration with data from participants' questionnaire (n=16).

Figure 4: Forest' protection and value by Pioneers



Source: Self-elaboration with data from participants' questionnaire (n=10).

Concerning the value that participants place on the forest and its protection, the statements that generated the highest level of agreement among all participants, with almost everyone agreeing with them, relate to the value of the forest; in this case, the fact that forests protect the habitat and diversity of animal life, as well as the obligation that citizens should have in caring for it, and their social responsibility in its protection. One of the issues on which opinions differed was the existence of a tax that would go directly towards the protection of the forest, as well as the recognition of the value of the forest concerning the exploitation of its products.

In what concerns the Leaders the trend is the same, although there is one participant who strongly disagrees with the value of the forest as a direct use value, apart from this, two of the Leaders strongly disagree with almost all affirmations concerning the value of the forest. In the remaining statements, the respondents agree or strongly agree with them, and follow

the trend of the aggregate results, showing the divergence of opinions regarding a possible tax and the use value of the forest.

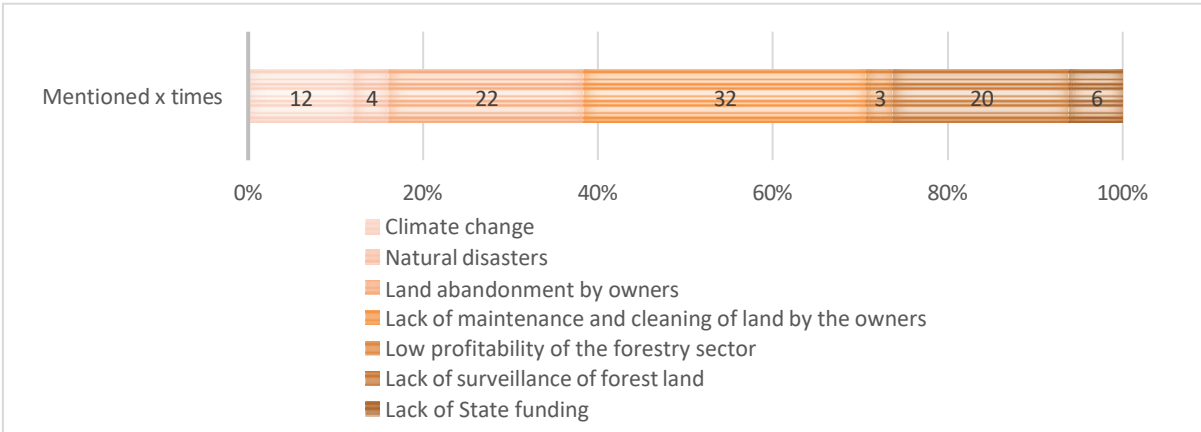
On the other hand, the Rovers are the participants who show more signs of agreement with the statements placed, following the general trend regarding the divergence of opinions, however, they diverge on the question of whether the State is ultimately responsible for the existing forest management.

As for the Pioneers, since they are the youngest, they show different opinions regarding the different statements, nevertheless they follow the general trend observed in the other groups, a curiosity is that only this group has two participants who disagree that the forest has value for its natural landscape and six of them do not have perceptions if the State is the ultimate responsible for the existing forest management.

4.3.2 Forest fire risk factors

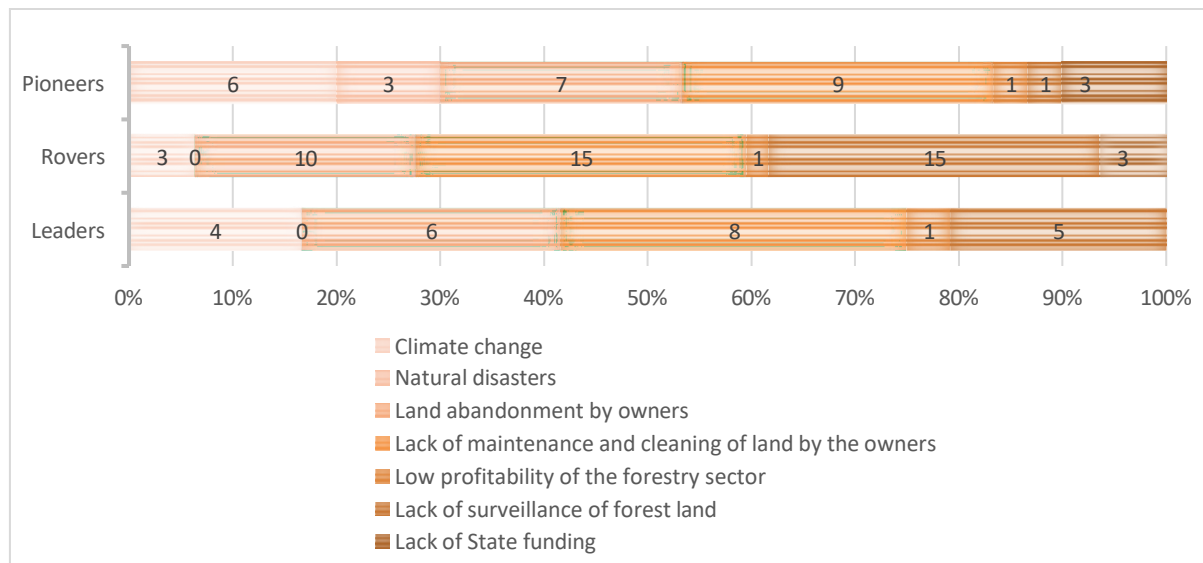
To assess scouts’ opinions, we presented the main factors that can contribute to the risk of forest fire, showing their opinions as a whole and divided across the chosen sections, in Figure 5 and 6, respectively.

Figure 5: Forest fire risk factors mentioned by all participants



Source: Self-elaboration with data from participants’ questionnaire (n=34).

Figure 6: Forest fire risk factors mentioned by the participants across the different groups



Source: Self-elaboration with data from participants' questionnaire (n=34).

Regarding the main factors that contribute to the forest fire risk, the participants believe that one crucial factor is the lack of maintenance and cleaning of the land by the owners since it was mentioned thirty-two times, followed by the land abandonment by the owners (22) and the lack of surveillance of forest land (20), climate change was still mentioned by 12 persons, it is also seen that natural disasters, the low profitability of the forestry sector and the lack of state funding are not seen as critical forest fire risk factors.

Following the aggregate trend, the sections believe that the factor that positively increases the risk of forest fire is the lack of maintenance and cleaning of land by the owners, especially Rovers since it was mentioned 15 times, followed by Pioneers with 9 and Leaders with 8.

It is common sense that forest land is owned by "someone", and, as it may seem, most of the time, the owner is not known, which is the second reason since they believe it is the second factor that can contribute to the risk of forest fire because, with the growing vegetation, every sparkle can become a fire; this was mentioned 10, 7 and 6 times by Rovers, Leaders, and Pioneers, respectively.

Another factor that stands out within Leaders and Rovers is the lack of surveillance of forest land, with 15 and 5 mentions, respectively, and leaving things "to God's will" can originate cases of arson, for example. Pioneers do not give as much importance to this factor since it

was only mentioned once. Although it is strange, it is expected that they do not acknowledge this factor since they are younger.

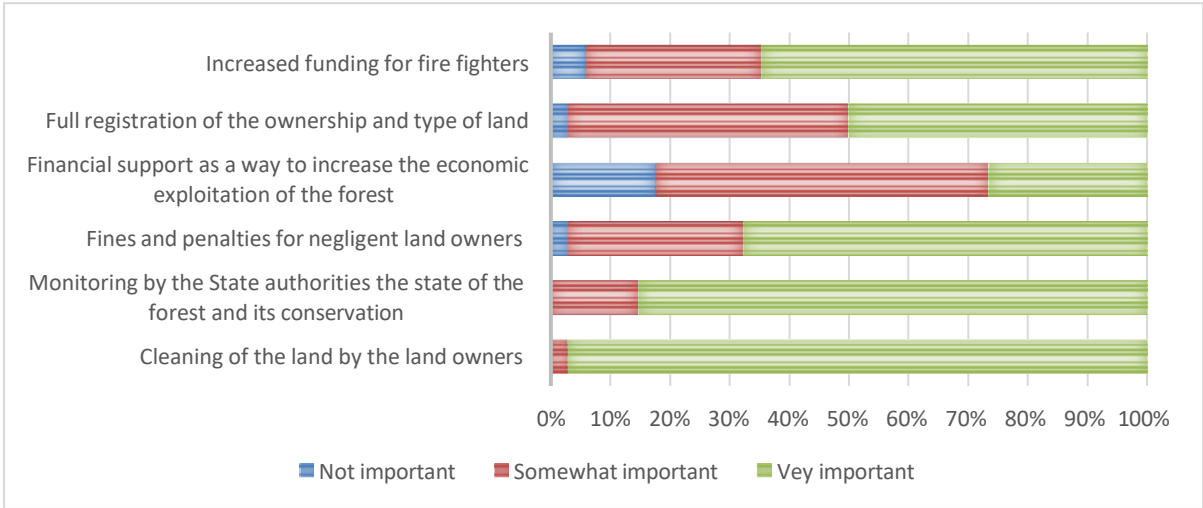
Then, climate change is a contributing factor to the forest fire risk according to Pioneers (6 times mentioned), followed by Leaders (4) and Rovers (3). Climate change enhances the persistence of heat waves, for prolonged periods beyond the “normal” period.

Although within the three groups, participants also acknowledged that the low profitability of the forestry sector and the lack of State funding could contribute to the forest fire risk, these were not mentioned with the same intensity as the other factors.

4.3.3 Importance of fire risk prevention actions

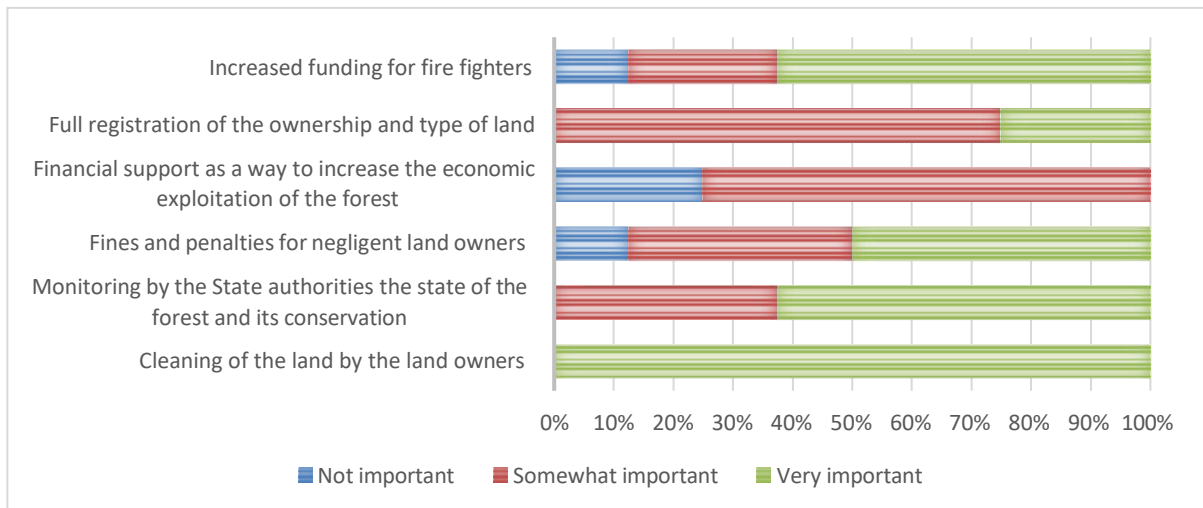
Figure 7 helps us to understand the importance given to fire risk prevention actions and to state the impact that such measures can have on the protection of forests from fires. Figure 8, 9 and 10 divides the sample across the sections chosen, Leaders, Rovers, and Pioneers, respectively.

Figure 7: Importance of fire risk prevention action of all participants



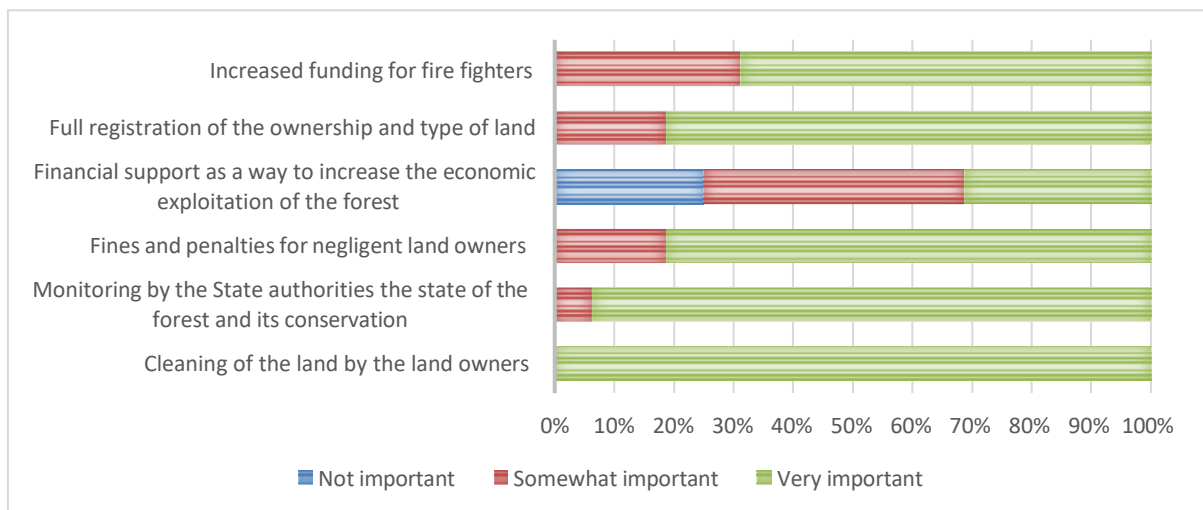
Source: Self-elaboration with data from participants’ questionnaire (n=34).

Figure 8: Importance of fire risk prevention action of Leaders



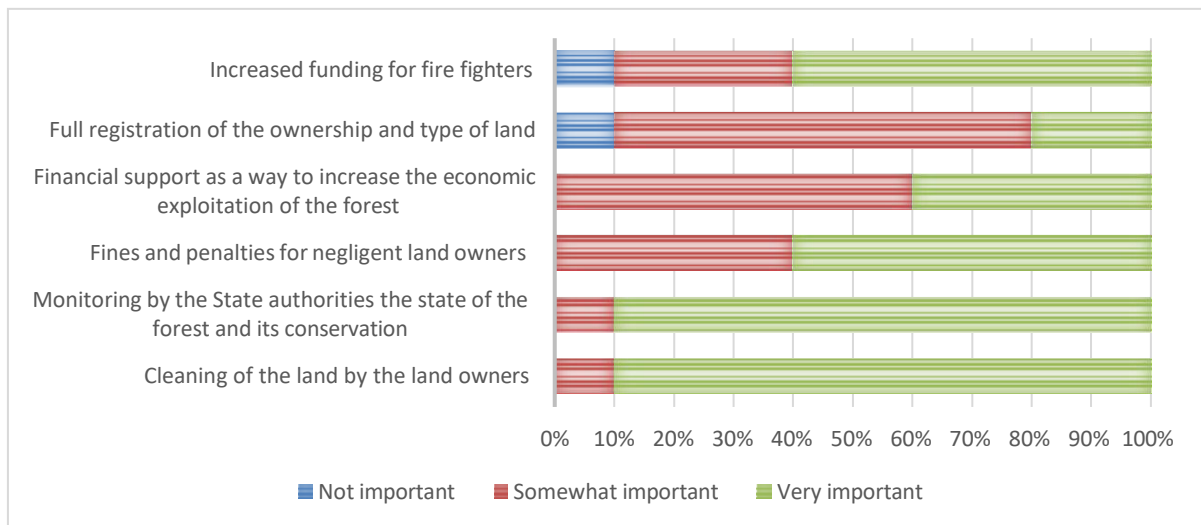
Source: Self-elaboration with data from participants' questionnaire (n=8).

Figure 9: Importance of fire risk prevention action of Rovers



Source: Self-elaboration with data from participants' questionnaire (n=16)

Figure 10: Importance of fire risk prevention action of Pioneers



Source: Self-elaboration with data from participants' questionnaire (n=10).

Regarding the impact of fire risk prevention measures, among the three groups of analysis almost all the participants attribute the most relevance to the cleaning of the land by the landowners. However, when it comes to increasing funding for firefighters, one leader and one pioneer believe that this measure does not have an impact on the risk prevention of forest fire, although the rest of the participants believe that this measure can have some and a lot of importance, namely 25% and 62,5% (respectively for Leaders), 31,25% and 68,75% (respectively for Rovers) and 30% and 60% (respectively for Pioneers).

One of the main problems associated with forest land is the lack of registry of the ownership of those lands that can enhance the risk of a forest fire so 90% of Pioneers and all of Leaders and Rovers give importance to this attribute.

Regarding the financial support to increase the profitability of the forestry sector, some Leaders and Rovers believe this measure does not influence the risk prevention actions (25% and 25%, respectively). On the contrary, Pioneers believe that this measure can have some and a lot of importance, namely 60% and 20%, respectively.

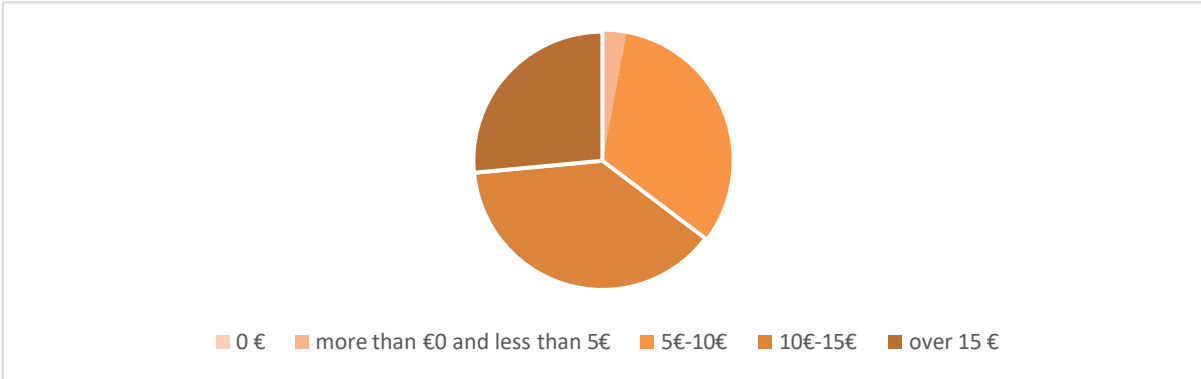
When it concerns the fines and penalties attributed by local authorities and the State for negligent landowners, only a tiny proportion of Leaders, 12,5%, believe that this action makes no impact on fire risk prevention. On the other hand, Rovers and Pioneers believe this measure can be particularly important (81,25% and 60%, respectively).

Finally, all the inquired within the three groups believe that the monitorisation by State authorities of the state of the forests and their conservation is an aspect that could reduce the probability of forest fire, so they attribute importance, namely 62,5%, 93,75% and 90% by Leaders, Rovers, and Pioneers, respectively.

4.3.4 Scouts’ willingness-to-pay for local firefighters

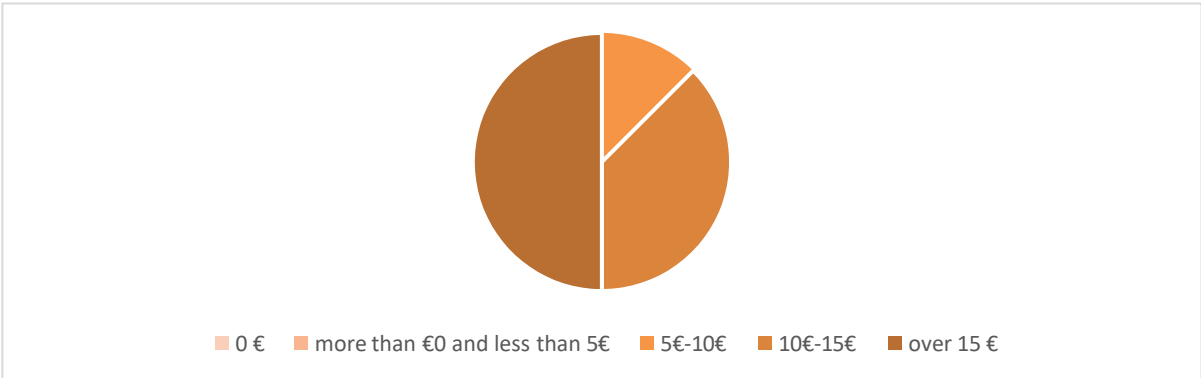
To access the WTP of the participants, they stated the amount they were willing to donate as a one-time donation to the local firefighters of their municipality, as stated in Figure 11. Figure 12, 13 and 14 divides the sample across the groups, Leaders, Rovers, and Pioneers, respectively.

Figure 11: WTP of all participants



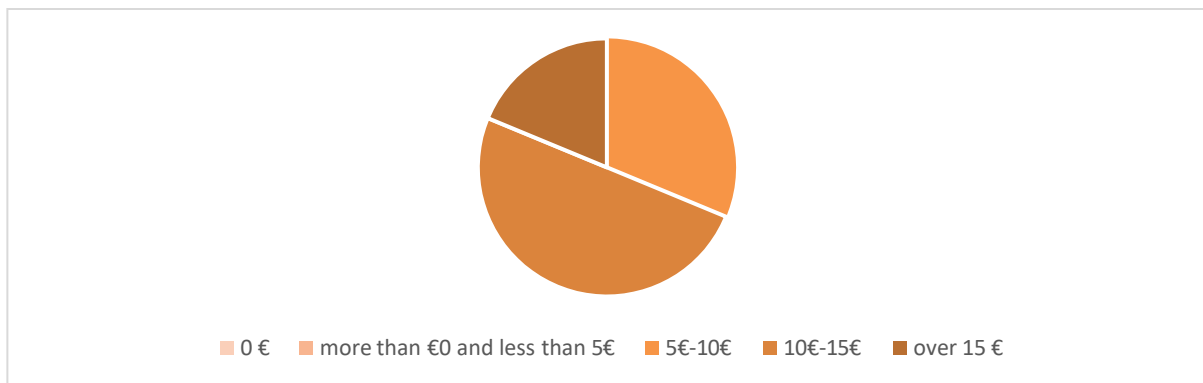
Source: Self-elaboration with data from participants’ questionnaire (n=34).

Figure 12: WTP of Leaders



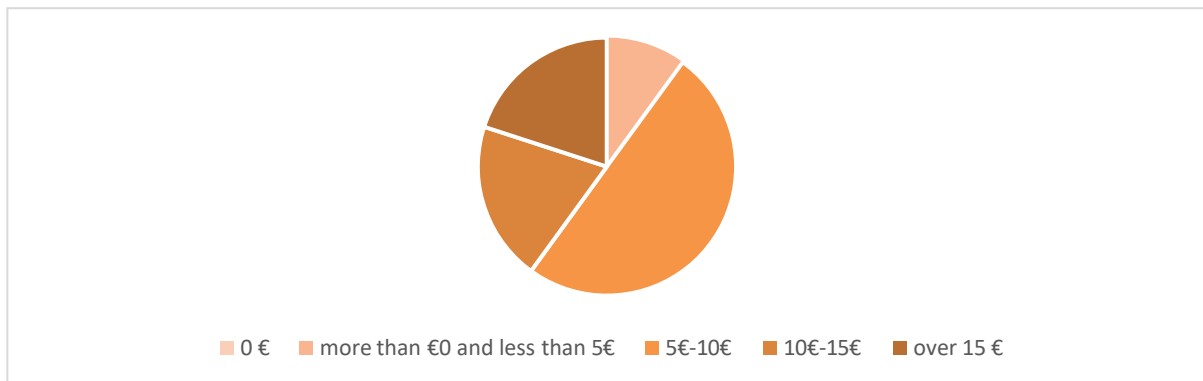
Source: Self-elaboration with data from participants’ questionnaire (n=8).

Figure 13: WTP of Rovers



Source: Self-elaboration with data from participants' questionnaire (n=16).

Figure 14: WTP of Pioneers



Source: Self-elaboration with data from participants' questionnaire (n=10).

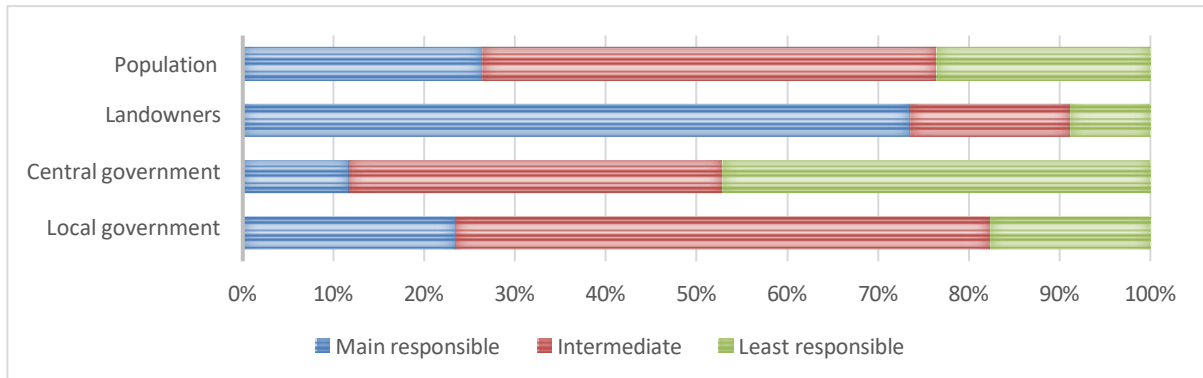
Regarding the maximum amount that participants were willing to give when considering the prevention of forest fires by a one-off donation to local firefighters of their municipality, all participants were willing to share something with the community, 3% would donate an amount between 0€ and 5€, which corresponds to the 10% by the Pioneers, which is in part understandable since they are students that don't have funding of their own. In general, 38% were willing to donate between 10€ and 15€, 32% between 5€ and 10€ and 26% over 15€ to local firefighters to protect forests.

Relatively to whom would donate between 5€ and 10€, 13% of Leaders, 31% of Rovers, and 50% of Pioneers, then 38% of Leaders, 50% of Rovers, and 20% of Pioneers were willing to spend from their budget an amount between 10€ and 15€. Finally, only 50% of Leaders, 19% of Rovers, and 20% of Pioneers were willing to give more than 15€ to local firefighters to protect forests.

4.3.5 Forest fire responsibility

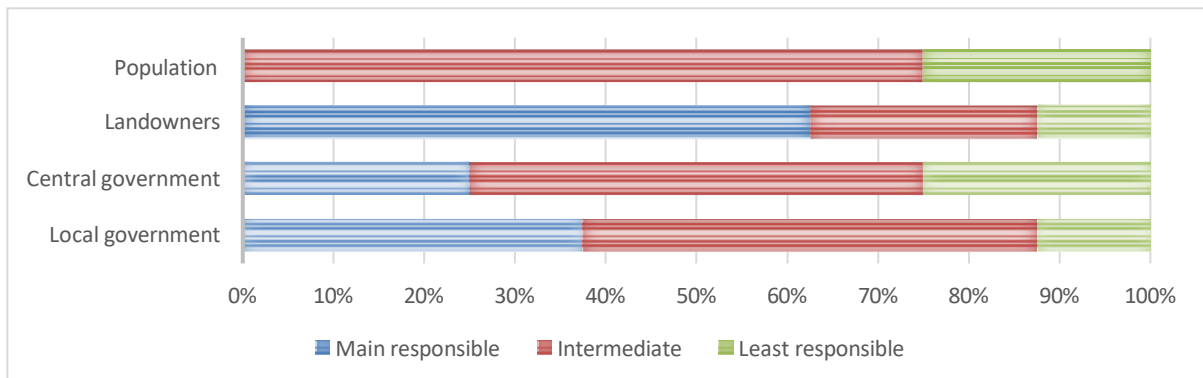
To understand participants' views on the attribution of forest fire responsibility, participants stated who has the most responsibility and the least, as shown in Figure 15. Figure 16, 17, and 18 divide the sample across the sections chosen, Leaders, Rovers, and Pioneers, respectively.

Figure 15: Forest fire responsibility by all participants



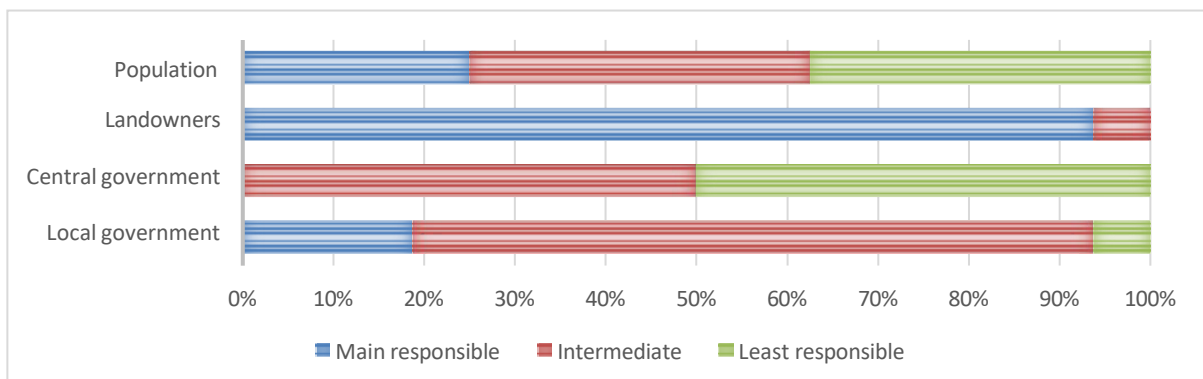
Source: Self-elaboration with data from participants' questionnaire (n=34).

Figure 16: Forest fire responsible by Leaders



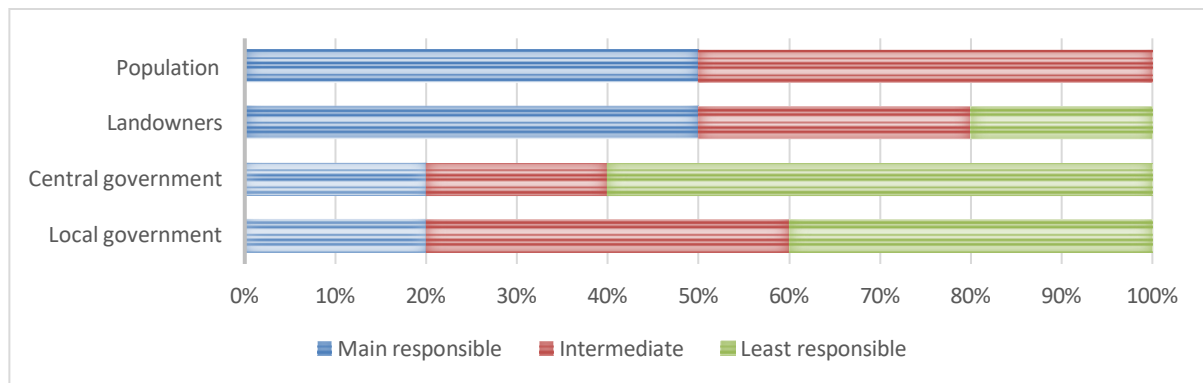
Source: Self-elaboration with data from participants' questionnaire (n=8).

Figure 17: Forest fire responsible by Rovers



Source: Self-elaboration with data from participants' questionnaire (n=16).

Figure 18: Forest fire responsible by Pioneers



Source: Self-elaboration with data from participants' questionnaire (n=10).

Forest fires can be caused by natural factors, from extreme heat waves, or human factors, such as arson, hence the need to understand the perception that participants have on this topic and to whom they “attribute more blame”. In this way, we can observe that the general trend is that the property owners are to participants’ perspective the main responsible for forest fire, followed by the population, they also believe that the least responsible for a forest fire is the central government, in an intermediate level is the local government.

Leaders blame the property owners as well as the local authority more notoriously, representing around 62,5% and 37,5%, respectively, thus attributing less importance to the general population and the central State.

It is also shown that almost all rovers attribute the primary responsibility to landowners, around 93,75%. However, they believe that the population in general and local government can also have the commitment, 25% and 18,75% respectively, and that central government is less responsible for forest fires, about 50%.

Pioneers believe that the “guilt” is divided between the population and landowners (50% each). In their view, both local and central governments are less responsible for forest fires, with 40% and 60%, respectively.

5. CONCLUSION

The present work intended to study the perceptions of the sections of CNE scouts concerning forest protection and citizens involvement in decision-making process and forest fire prevention. Additionally, I explored whether there were differences across the different subgroups, Leaders, Rovers and Pioneers. To do so, qualitative and quantitative methods were applied, namely through focus group sessions and a questionnaire. Scouts were chosen due to their involvement in nature activities and philosophy of helping others, making them a relevant group of citizens to study, when it comes to forest fire prevention (which can involve a lot of fieldwork both in terms of data collection and forest cleaning activities).

Regarding the results of the focus groups, although there were different questions between groups, namely for the younger subgroup, the Pioneers: it was shown that they have more sensibility towards the protection of the environment, even if they are the youngest which also explains some of the answers stated by them. As far as Rovers and Leaders are concerned, the latter attribute more responsibility to public entities in the case of the forest management. For Rovers this is also a problem, but they focused their perspective on the lack of care by the landowners. Both groups believe that there could be improvements in this area if it was promoted by those in charge. Also, the simple act of planting a tree or picking up rubbish from the ground, could enhance and engage citizens in the promotion of a clean forest. When asked about the impact that scouting had on their individual/social responsibility towards the environment all participants believe that scouting made them more connected to nature, and it made them understand that it was necessary to recognise the value of the forest in its fullness, as well as the importance of protecting it.

When it concerns the questionnaire, it assessed the value of the forest and its protection, the main factors contributing to the risk of fire, the importance of fire prevention risk measures, the participants' willingness to donate to prevent forest fires (and expressed through a one-off donation to the local fire brigade) and the attribution of responsibility for fires. Although there is some divergence of opinions concerning these aspects most of the participants attribute value to the forest and recognise the continuing need to protect it. Also, they state that there is a lack of forest management but it can be improved. Indeed, the difficult path to a better and sustained management it is due to systematic causes in the forest management of Portugal, which need to be reformulated.

The results, in spite of this being an exploratory study, show that scouts are willing to be involved in fire preservation as well as forest conservation participating actively in the community and contributing to the process of citizen participation.

To conclude, this dissertation allows us to better understand scouts' perspectives on topics of forests conservation and forest fire prevention and reinforces the notion that citizens can become actively involved in these activities.

REFERENCES

- Bäckstrand, K. (2003). Civic science for sustainability: reframing the role of experts, policy-makers and citizens in environmental governance. *Global Environmental Politics*, 3(4), 24-41.
- Baden-Powell, R. (2014). *Scouting for boys: the original 1908 edition*. Courier Dover Publications.
- Barrio, M., & Loureiro, M. L. (2010). A meta-analysis of contingent valuation forest studies. *Ecological Economics*, 69(5), 1023-1030.
- Barrosa, A. (2020). O impacto do escutismo no desenvolvimento de competências profissionais. Lisboa: Iscte. Dissertação de mestrado. Available at [www:<http://hdl.handle.net/10071/21740>](http://hdl.handle.net/10071/21740).
- Bateman, I. J., Lovett, A. A., Brainard, J. S., & Pearce, D. W. (2003). *Applied environmental economics: a GIS approach to cost-benefit analysis*. Cambridge university press.
- Beighley, M., & Hyde, A. C. (2018). Portugal wildfire management in a new era assessing fire risks, resources and reforms. *Centro de Estudos Florestais–Instituto Superior de Agronomia/Universidade de Lisboa*: Lisboa, Portugal.
- Bento-Gonçalves, A., Vieira, A., Ferreira-Leite, F., & Lourenço, L. (2012). Mudanças climáticas e risco de incêndio florestal no ave (noroeste de portugal). *Revista Geonorte*, 3(4), 830-842.
- Bishop, J. (1998). The economics of non-timber forest benefits: An overview. *International Institute for Environment and Development*, Environmental Economics Programme.
- Câmara Municipal de Guimarães. (2021). Brigada Verde da União de Freguesias da Cidade assume a promoção de ações de sensibilização. Available at <https://www.cm-guimaraes.pt/viver/noticias/noticia/brigada-verde-da-uniao-de-freguesias-da-cidade-assume-a-promocao-de-acoes-de-sensibilizacao>
- CNE. (2011). Projecto Educativo – Manual do Dirigente. CNE.
- CNE. (2016). Escutismo. Available at <https://escutismo.pt/imprensa/quem-somos/escutismo/escutismo:139>
- CNE. (2016). Factos e números. Available at <https://escutismo.pt/imprensa/factos-e-numeros/factos-enumeros:145>
- CNE. (2016). O que fazemos. Available at <https://escutismo.pt/imprensa/o-que-fazemos/o-que-fazemos:141>
- Convery, F. (1970). Forestry and Irish economic and social development. *Irish Forestry*.
- Costanza, R. (2000). Social goals and the valuation of ecosystem services. *Ecosystems*, 4-10.
- Couvet, D., Jiguet, F., Julliard, R., Levrel, H., & Teyssedre, A. (2008). Enhancing citizen contributions to biodiversity science and public policy. *Interdisciplinary science reviews*, 33(1), 95-103.
- Cunningham, F. (2002). *Theories of democracy: A critical introduction*. Routledge.
- Dhubháin, ÁN., Bullock, C., Moloney, R., & Upton, V. (2012). An economic evaluation of the market and non-market functions of forestry. Forestry Section, School of Agriculture and Food Science, University College Dublin.

- Eden, S. (1996). Public participation in environmental policy: considering scientific, counter-scientific and non-scientific contributions. *Public understanding of science*, 5(3), 183.
- Edwards, A. (1999). Scientific expertise and policy-making: the intermediary role of the public sphere. *Science and public policy*, 26(3), 163-170.
- Farber, S. C., Costanza, R., & Wilson, M. A. (2002). Economic and ecological concepts for valuing ecosystem services. *Ecological economics*, 41(3), 375-392.
- Frazer, E. (2008). Key perspectives, traditions and disciplines: Overview. *The Sage handbook for citizenship and democracy*, 281-291
- Galego, C., & Gomes, A. (2005). Emancipação, ruptura e inovação: o “focus group” como instrumento de investigação. *Revista Lusófona de educação*, 5(5).
- Garcia, C. (2019). O papel do corpo nacional de escutas na educação para a cidadania: um olhar sobre os caminheiros (Dissertação de mestrado não publicada). Instituto Politécnico de Lisboa, Escola Superior de Educação. Available at <http://hdl.handle.net/10400.21/9920>
- Granja, S. F. D. C. (2007). Pedagogia escutista como complemento à educação escolar (Doctoral dissertation, Dissertação apresentada para a obtenção do grau de Mestre em Ciências da Educação, Aveiro: Universidade de Aveiro).
- Hall, G. R. (1963). The myth and reality of multiple use forestry. *Natural Resources Journal.*, 3, 276.
- Hanemann, W. M. (2006). The economic conception of water. *Water Crisis: myth or reality*, 61, 74-76.
- ICNF Instituto da Conservação da Natureza e das Florestas – Statistics. Available at <https://icnf.pt/florestas/gfr/gfrgestaoinformacao/estatisticas>
- Irwin, A. (1995). *Citizen science: A study of people, expertise and sustainable development*. Routledge.
- Kraft, M. E., & Furlong, S. R. (2019). *Public policy: Politics, analysis, and alternatives*. Cq Press.
- Krieger, D. J. (2001). Economic value of forest ecosystem services: a review. *The Wilderness Society*.
- Lindhjem, H. (2007). 20 years of stated preference valuation of non-timber benefits from Fennoscandian forests: a meta-analysis. *Journal of Forest Economics*, 12(4), 251-277.
- Luís, J. C. A. (2021). A relação entre a economia circular nas empresas e o comportamento dos consumidores: o caso dos plásticos ((Dissertação de mestrado). Universidade do Minho. Available at <https://hdl.handle.net/1822/77671>
- Marinetti, M. (2003). Who wants to be an active citizen? The politics and practice of community involvement. *Sociology*, 37(1), 103-120.
- Mattijssen, T. J., Buijs, A. A., Elands, B. H., Arts, B. J., van Dam, R. I., & Donders, J. L. (2019). The transformative potential of active citizenship: Understanding changes in local governance practices. *Sustainability*, 11(20), 5781.
- Mattijssen, T., Buijs, A., & Elands, B. (2018). The benefits of self-governance for nature conservation: A study on active citizenship in the Netherlands. *Journal for Nature Conservation*, 43, 19-26.

- McKinley, D. C., Miller-Rushing, A. J., Ballard, H. L., Bonney, R., Brown, H., Cook-Patton, S. C., ... & Soukup, M. A. (2017). Citizen science can improve conservation science, natural resource management, and environmental protection. *Biological Conservation*, 208, 15-28.
- Mills, S. (2013). 'An instruction in good citizenship': scouting and the historical geographies of citizenship education. *Transactions of the Institute of British Geographers*, 38(1), 120-134.
- More, T. A., Averill, J. R., & Stevens, T. H. (1996). Values and economics in environmental management: a perspective and critique. *Journal of Environmental Management*, 48(4).
- Morgan, D. L. (1997). *Focus group as qualitative research* (2^a ed. Vol. 16). London: Sage University Paper
- Moro, G. (1998). *Manuale di cittadinanza attiva*, Carocci. Editore SpA, Roma.
- Moro, G. (2011). *Citizens in Europe: Civic activism and the community democratic experiment*. Springer Science & Business Media.
- Mourao, P. R., & Martinho, V. D. (2016). Discussing structural breaks in the Portuguese regulation on forest fires—An economic approach. *Land Use Policy*, 54, 460-478.
- Oliveira, C. A. F. (2017). Avaliação de um percurso formativo recorrendo à técnica de focus group (Dissertação de Mestrado). Universidade do Minho. Available at <https://hdl.handle.net/1822/54707>
- OMME. (1983). Constituição e Regulamento da Organização Mundial do Movimento Escutista. Available at <https://www.escoteiros.pt/wp-content/uploads/2017/04/WOSM.pdf>
- Palhares, J. (2009). A experiência cidadã em contextos educativos não-escolares: representações e práticas de jovens pertencentes ao escutismo. *Revista Portuguesa de Educação* (22 (2)),
- Perman, R., Ma, Y., McGilvray, J., & Common, M. (2003). *Natural resource and environmental economics*. Pearson Education.
- Polson, E. C., Kim, Y. I., Jang, S. J., Johnson, B. R., & Smith, B. (2013). Being prepared and staying connected: Scouting's influence on social capital and community involvement. *Social Science Quarterly*, 94(3), 758-776.
- Reis, M. (2013) *O Livro dos Escuteiros*. Lisboa: Leya.
- Rodrigues, M., Menezes, I., & Ferreira, P. (2015). The organisational and educational contexts of the Portuguese Catholic Scout Association: their impact on youth participation. *Italian Journal of Sociology of Education*, 7, 148-175.
- Sardinha, B. B., & Cunha, O. O. (2013). O valor económico do voluntariado do CNE - Corpo Nacional de escutas. Instituto Politécnico de Setúbal. Available at <http://hdl.handle.net/10400.26/5313>
- Steelman, T. A., & Ascher, W. (1997). Public involvement methods in natural resource policy making: Advantages, disadvantages and trade-offs. *Policy Sciences*, 30(2), 71-90.
- Tietenberg, T., & Lewis, L. (2018). *Environmental and natural resource economics*. Routledge.
- Tweddle, J. C., Robinson, L. D., Pocock, M. J. O., & Roy, H. E. (2012). *Guide to citizen science: developing, implementing and evaluating citizen science to study biodiversity and the environment in the UK*. NERC/Centre for Ecology & Hydrology.

- Upton, V., Dhubháin, ÁN., & Bullock, C. (2019). The valuation of non-market forest benefits in Ireland: A review. *Irish Forestry*, 109-125.
- Valente, S., Coelho, C., Ribeiro, C., Liniger, H., Schwilch, G., Figueiredo, E., & Bachmann, F. (2015). How much management is enough? Stakeholder views on forest management in fire-prone areas in central Portugal. *Forest policy and economics*, 53, 1-11.
- Vicente, A. C. S. (2004). A introdução do escutismo em Portugal. *Lusitânia sacra*, (16), 203-245.
- Vieira, A., Gonçalves, A. B., Lourenço, L., Martins, C. O., & Leite, F. F. (2009). Risco de incêndio florestal em áreas de interface urbano-rural: o exemplo do Ave. *Territorium*, (16), 139-146
- Watkins, S. L. (2015, April). The Public Good Nature of the Urban Forest and Implications for Management. In *Workshop in Political Theory and Policy Analysis*, Indiana University, Bloomington, IN.
- Wood, J. (2010). Preferred futures': Active citizenship, government and young people's voices. *Youth & Policy*, 105, 50-70.
- WOSM (2022). Scouting's history. Available at <https://www.scout.org/who-we-are/scout-movement/scoutings-history>
- WOSM. (2022). Scout Movement. Available at <https://www.scout.org/scout-movement>

APPENDIX

A1: Questionnaire applied to the participants after the focus group session.

Questionários "Preferências e valor da floresta"

Como parte indispensável da elaboração da minha Dissertação de Mestrado em Economia da Universidade do Minho e com o propósito de conhecer melhor as suas opiniões, peço a sua colaboração na resposta a este questionário. Os dados recolhidos serão tratados de forma anónima, pelo que é garantida a confidencialidade das suas respostas.

Desde já, obrigada pela sua colaboração.

*Obrigatório

Floresta

A floresta constitui um dos mais valiosos recursos existentes no nosso planeta, a importância deste recurso para o nosso dia-a-dia traduz-se também na nossa qualidade de vida, uma vez que a mesma providencia inúmeros bens e serviços que todos utilizamos, sendo necessária a sua conservação e valorização.

1. Participante número: *

2. 1. Assinale Sim ou Não *

Marcar apenas uma oval por linha.

	Sim	Não
A sua residência situa-se próxima (a menos de 5km) de uma área florestal?	<input type="radio"/>	<input type="radio"/>
Da sua residência vê uma área florestal?	<input type="radio"/>	<input type="radio"/>
Nas suas deslocações diárias, vê ou passa por uma área florestal?	<input type="radio"/>	<input type="radio"/>

3. Assinale nas seguintes afirmações o seu grau de concordância. *

Marcar apenas uma oval por linha.

	Discordo bastante	Discordo	Nem concordo nem discordo	Concordo	Concordo bastante
A floresta tem valor em si mesma e deve ser protegida, independentemente do seu custo.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A floresta tem valor pela sua paisagem natural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A floresta tem valor porque permite aos cidadãos o seu uso, na prática de desporto ou em atividades recreativas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A floresta tem valor porque permite a exploração de produtos silvícolas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A floresta tem valor porque protege o habitat e preserva a diversidade da vida animal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
É dever dos cidadãos zelar pela mesma.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
O governo deve adotar medidas eficazes que garantam a sua proteção.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A floresta faz parte da minha identidade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Assinale nas seguintes afirmações o seu grau de concordância. *

Marcar apenas uma oval por linha.

	Discordo bastante	Discordo	Nem concordo nem discordo	Concordo	Concordo bastante
Os incêndios florestais constituem um enorme problema no nosso país.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
O Estado é o responsável máximo pela gestão florestal existente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enquanto cidadão, devo proteger o ambiente.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poderia existir um imposto que revertia diretamente para a proteção florestal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Quais os três principais fatores que podem contribuir para o risco de incêndio florestal? *

Marcar tudo o que for aplicável.

- Alterações climáticas
- Desastre natural
- Abandono dos terrenos pelos proprietários
- Falta de limpeza e manutenção dos terrenos pelos proprietários
- Pouca lucratividade do setor florestal
- Falta de fiscalização dos terrenos
- Falta de apoios provenientes do Estado

6. Na sua opinião, em caso de incêndio florestal, quem são os responsáveis, sendo 1 o principal responsável e 3 o menos responsável. *

Marcar apenas uma oval por linha.

	1	2	3
Administração local	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estado central	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proprietários dos terrenos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
População	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Relativamente às medidas de prevenção de risco de incêndio, qual a sua importância? *

Marcar apenas uma oval por linha.

	Nenhuma	Alguma	Muita
Limpeza dos terrenos por parte dos seus proprietários	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fiscalização pelas autoridades competentes do Estado, o estado da floresta e a conservação da mesma.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multas e penalizações para os proprietários negligentes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apoios financeiros como forma de aumentar a exploração económica da floresta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cadastrar de forma completa a propriedade e tipo de terrenos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aumentar o financiamento para os corpos de bombeiros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Tendo em vista a prevenção de incêndios florestais, qual seria o montante máximo que estaria disposto a contribuir, através de uma doação única para os bombeiros locais? (considere o seu rendimento e as suas despesas habituais) *

Marcar apenas uma oval.

- 0€ Avançar para a pergunta 9
- mais de 0€ e menos de 5€ Avançar para a pergunta 10
- 5€-10€ Avançar para a pergunta 10
- 10€-15€ Avançar para a pergunta 10
- mais de 15€ Avançar para a pergunta 10

9. Se respondeu 0€, quais das seguintes razões justificam a sua resposta (assinale todas as aplicáveis) *

Marcar tudo o que for aplicável.

- Não tenho rendimento suficiente
- Não considero relevante
- Existem outras opções de prevenção mais eficazes
- Já contribuo para causas semelhantes
- Deve ser o estado a financiar essas despesas
- Devem ser os proprietários das florestas a financiar a prevenção
- Outra
- Outra: _____

Envolvimento
dos
Cidadãos

Os cidadãos constituem uma importante fonte de informação para as autoridades competentes no que concerne à floresta e ao combate a incêndios florestais, como tal o seu envolvimento é crucial na gestão florestal.

10. É escuteiro (escoteiro) atualmente? *

Marcar apenas uma oval.

- Sim
 Não
 Já fui

11. Em termos da sua participação, o quão disposto estaria a participar em ações, *
por exemplo, de limpeza e proteção da floresta?

Marcar apenas uma oval.

	1	2	3	4	5	
Muito Pouco	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bastante

12. Estaria disposto a fazer parte de uma equipa que junto das autoridades locais *
promovesse um maior envolvimento dos cidadãos na defesa e valorização da
floresta?

Marcar apenas uma oval.

- Sim
 Não

13. Na sua opinião, quais os principais entraves ao envolvimento dos cidadãos na *
proteção deste bem?

14. Que medidas considera que os escuteiros (escoteiros) poderiam promover para levar a um maior envolvimento da população com a floresta? *

Dados Sociodemográficos

15. Género *

Marcar apenas uma oval.

Masculino

Feminino

16. Idade *

Marcar apenas uma oval.

15-17

18-23

24-39

40-54

55-69

mais de 70

17. Concelho de Residência *

18. Grau de escolaridade máximo que completou *

Marcar apenas uma oval.

- 9º Ano
 12º Ano
 Licenciatura
 Mestrado
 Doutoramento
 Outra: _____

19. Situação Profissional *

Marcar apenas uma oval.

- Empregado (a)
 Desempregado (a)
 Estudante
 Aposentado (a)
 Outra: _____

20. Qual o seu grau de conforto financeiro? *

Marcar apenas uma oval.

	1	2	3	4	5	
Nenhum conforto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Muito conforto

21. Como descreveria a zona onde reside? *

Marcar apenas uma oval.

	1	2	3	4	5	
Rural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Urbana

A2: Responses of the focus group participants to the open-answer questions of the questionnaire

<p>Na sua opinião, quais os principais entraves ao envolvimento dos cidadãos na proteção deste bem?</p>	<p>Que medidas considera que os escuteiros (escoteiros) poderiam promover para levar a um maior envolvimento da população com a floresta?</p>
<p>A falta de informação, e interesse em fazer algo que não é lucrativo.</p>	<p>A educação dos jovens para a proteção do meio ambiente e ao educar os jovens estes em sequência iram educar os adultos pelo exemplo.</p>
<p>Falta de envolvimento das comunidades no governo do território local e falta de disposição/motivação para participar ativamente na resolução dos problemas.</p>	<p>Os escuteiros para além de movimento de educação, também são um movimento de envolvimento e um promotor de visibilidade para a ações em que colaboram, sendo que essas vertentes poderiam ser coordenadas pelas autoridades locais para a resolução de alguns dos nossos problemas florestais.</p>
<p>Naturalmente para alguns o acesso</p>	<p>Atividades de sensibilização</p>
<p>Comodismo</p>	<p>Convidar a população, numa limpeza as nossas matas.</p>
<p>Falta de conhecimento sobre o tema, não sabendo a devida importância de estarem envolvidos.</p>	<p>Através das Brigadas verdes, convidar a população para se juntar a nós na limpeza. Também poderíamos distribuir informação pela freguesia tentando sensibilizar os cidadãos.</p>
<p>Na minha opinião, o principal entrave é a despreocupação que existe para a proteção da natureza, pois esta é dada como um bem adquirido, muitas das pessoas desvalorizam a proteção deste bem, pois não veem neste uma casa comum.</p>	<p>Atividades de Vivência com a Natureza abertas a toda a população; Palestras de sensibilização no âmbito dos mais novos; Envolvimento na realização das ODS de toda a população.</p>
<p>O facto de uma determinada parcela da floresta ter dono, os cidadãos não estão tão abertos a ajudar na proteção.</p>	<p>Se os escuteiros criarem na floresta, um bom local para lazer, através de trilhos, parques, etc., poderá fazer com que a população comece a gostar da floresta e o que ela representa, e depois acabar com que a sociedade queira proteger este bem.</p>
<p>Na minha opinião, por vezes os mais velhos acabam por querer sempre deitar as culpas uns aos outros e nunca tomarem iniciativa de, por exemplo, limparem áreas protegidas, ou até mesmo os montes/florestas das zonas. Tendem sempre a pedir ao outro para fazer do que eles próprios tomar vontade de fazer e começam eles com a iniciativa.</p>	<p>Ações de sensibilização pela comunidade local; numa iniciativa que os escuteiros tomassem de realizar uma limpeza da floresta tentar chamar membros da comunidade e mostrar que quantos mais é melhor para obtermos resultados positivos</p>

Falta de sensibilização	Atividades ao ar livre, onde a comunidade faria parte, onde estás pudessem partilhar os pontos de vista em relação ao tema, de forma a tentar perceber pontos fracos/fortes e forma de os colmatar/preservar
O facto de a população não ter noção do meio envolvente, que conseqüentemente não faz com que sintam a obrigatoriedade de proteger, assim como também o total desprezo pelo meio ambiente e o foco apenas nos bens materiais	Na sua comunidade organizar atividades direcionadas ao tema, por exemplo
inexistencia ou fraca divulgação de atividades para a proteção da floresta	promover dias de limpezas florestais
A não valorização do espaço florestal.	Campanhas de sensibilização e demonstração da importância da floresta na vida do cidadão.
Falta de informação/divulgação de necessidade e existência.	Aliar-se à autarquia local/junta de freguesia e promover campanhas de sensibilização perto da população.
Penso que os cidadãos não pensam nas desvantagens futuras. Também por vezes os cidadãos não querem despende um pouco do seu tempo a falar e a proteger a floresta.	Maior sensibilização aos cidadãos sobre o que nos dá a floresta de forma dinâmica e prática.
Falta de boas oportunidades para colocar em prática, e em conjunto, medidas de proteção das zonas florestais. Um cidadão comum dificilmente sai sozinho e faz algo para melhorar a condição atual, mas se a sua freguesia ou grupo de jovens, como os escuteiros, colocar em prática um dia dedicado a ensinar e formar os cidadãos em relação a este tema, era sem dúvida uma mais valia e teríamos mais envolvimento dos mesmos.	Dias dedicados a formações/passeios pelas zonas florestais, com momentos de aprendizagem, limpeza e algumas dinâmicas.
A falta de empenho e a ignorância em relação á proteção.	Criação de workshops de sensibilização florestal, ações de formação
Desinteresse da comunidade, falta de informação	workshops com crianças/adolescentes; sensibilização da população do estado das florestas via redes sociais; estipular encontros semanais/quinzenais/mensais junto da comunidade local
Atividades que cativem os mais adultos	Com atividades e workshops junto da população
Falta de conexão com o ambiente visto vivermos em cidades muito grandes e sem	Numa fase inicial, organizar atividades com os pais dos jovens de forma que estes

parques naturais onde seja possível usufruir deste bem	interajam com a floresta e posteriormente abrir este tipo de atividades à comunidade local
Distanciamento dos proprietários face aos cidadãos.	Aproximarem-se mais dos proprietários dos terrenos para fomentarem a sua proteção
Falta de interesse na maior parte dos cidadãos. Todos concordam, mas a disponibilidade por vezes não é a melhor.	Realizar mais ações que envolvesse a floresta.
Disponibilidade para ajudar	Iniciativas entre secções para limpar pequenas zonas da floresta da sua localidade
Falta de interesse	Workshops junto da comunidade
A nossa opinião não conta, pois quem sabe é quem manda nos terrenos.	A população estando em contacto com os escuteiros, está envolvida na proteção da floresta. Uma das nossas bandeiras é preservar a mesma. A promoção vem em atividades como a recolha de ferro velho, a brigada verde, entre outras.
Falta de sensibilização das pessoas perante a natureza	Criação de pequenos grupos de recolha e criação de caixotes do lixo com materiais recicláveis espalhados pelas florestas
As pessoas não têm consciência da importância da floresta/natureza principalmente as pessoas mais velhas, passando esse pensamento para as gerações futuras.	Organizar uma "palestra" para quem estiver interessado em saber mais sobre o assunto e possivelmente sensibilizar as pessoas para uma atividade de limpeza.
Nada impede os cidadãos de protegerem as florestas, apenas uma grande parte da população não se importa com o bem-estar do mundo em que vivemos.	Recolha de lixo e plantação de árvores.
Na minha opinião, as pessoas que têm uma mentalidade mais primitiva não pensam nas consequências da proteção deste assunto que é muito importante para o nosso futuro, e mesmo que não afete diretamente essas pessoas, afeta pelo menos os seus descendentes e a família que deixam para trás.	Na minha opinião, devíamos sensibilizar as pessoas de uma maneira que elas conhecem e que elas entendem, pois quando estamos a tomar conhecimento de algum assunto deve ser de uma maneira que percebamos. Também poderíamos organizar um convívio coma freguesia, que em vez de fazer atividades como sorteios, poderíamos levá-los a limpar as florestas, e assim estávamos a alertar o quão importante é proteger as florestas.
o facto de ser um assunto que não é falado tanto e talvez não desperte interesse a muita gente pois não se preocupa com a proteção da floresta	Fazer um dia de limpeza de floresta

Pouca divulgação sobre ações de limpeza e proteção da floresta e os recursos económicos disponíveis para as mesmas	Realização de palestras e campanhas de sensibilidade junto da população
acho que devia haver mais cidadãos para a proteção das florestas assim mais ajuda menos custa a todos	fazer um workshop, fazer campanhas
A meu ver, um dos principais entraves no envolvimento dos cidadãos na preservação deste bem é a falta de ações sensibilizadoras para o risco que geram ao poluir as florestas, ainda que inocentemente.	Os escuteiros podem, juntamente com as comunidades, fazer ações de sensibilização e desenvolver na comunidade uma maior preocupação com a preservação de todas as nossas florestas.
Falta de conhecimento sobre os problemas florestais.	Limpezas das florestas, atividades que envolvam as mesmas e demonstração do que a poluição lhes vai causar.
Os principais entraves ao envolvimento dos cidadãos é não deitar lixo para o chão e incentivar os outros a também não o fazer.	Por exemplo antes de montar as tendas fazer uma limpeza ao campo.