Training Package

INTRODUCTION

This document, entitled “Training Package”, was developed under the Forest-IN Project INovative and Educational INformation for the Sustainable FOREST Management by Smallholders. This is a short-term training package for smallholders to acquire or improve their knowledge of Sustainable Forest Management under the Project's philosophy, ie a cross-ground approach to knowledge.

This implies that instead of just learners receiving direct material and predetermined learning materials, there will be genuine incentives to engage them in collaborative planning, sharing the tasks of goal setting, information gathering, development and analysis of alternatives, and interpretation of learning outcomes.

FOREST-IN is a complex and multidisciplinary project whose dissemination through communication channels, conferences and dissemination sessions (multiplier events) has allowed the involvement of various entities and people. The project results fall into one of two categories: material (sessions, computer applications, articles, reports, training packages, forestry initiatives, among other tangible actions) and immaterial.

The purpose of this training package is to provide forest organizations with a set of ready-to-use courses so that they can spread the word about FOREST-IN and replicate training, raising awareness of their areas of influence by promoting sustainable forest management and ecologically correct proactive attitudes.

The main concept presents the forest as a set of components that, when properly managed, can reach all pillars of sustainability (environmental, social and economic) providing all kinds of benefits.

It is important to support unprofessional forest owners, and to show that there are several forest solutions that can promote biodiversity while generating income using the concept of multiple forest use.

This is a European funded project, obtained through the Erasmus + program, lasting three years. Erasmus + is the European program for education, training, youth and sport for the period 2014-2020. This program aims to encourage job expectations and personal development as well as to help in education, training and youth. The Forest-IN project started from the need to create a common platform for the different forest players in Portugal, Spain and France, countries that generally deal with similar forest difficulties. In these countries, the predominance of small private forest properties and the lack of technical training of forest owners lead to the proliferation of practices that in some cases may undermine the whole forest and productivity, conditioning ecosystem services as a whole. Therefore, it is urgent to promote good practices and encourage forest education.

The consortium was formed by a team led by the Aveiro University that provided scientific content and advice in different areas (forests, biodiversity, sustainability and communication). The

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remaining partners were Unimadeiras (Portugal), Asociación Forestal de Galicia (Spain) and Forêt Modèle de Provence (France). These institutions bring together a huge network of forest owners and technicians. In total, these partners manage more than 72.000 ha of certified forest, which will serve as a laboratory and “cross-border space” for good forest practice. The CESEFOR Foundation (Spain) has provided communication expertise and developed computational tools for forest management and education. Finally, the consortium also included the forest certification systems PEFC™ (Spain) and FSC® International.

The main outputs of the project are:

- Project Research Summary

A state-of-the-art multidisciplinary evidence-based report.

- Dissemination package

FOREST-IN is a complex project whose innovation factors will include areas such as digital technology, forests and nature conservation, communication and knowledge transfer and adult education. Such a comprehensive and multifaceted approach attracts the expertise and support of these sciences, and requires the development of a framework that respects innovation, knowledge and sets out the key competences to be included in the project.

- App (smartphone / tablet)

The project includes the design, development and dissemination of a mobile application (for both iPhone and Android devices) to help small forest owners manage and plan their exploitation while fully respecting biodiversity and meeting criteria for sustainable forest management. The system consists of an application connected to the Internet and using the GPS device chip to connect to a server and locate the position. Any interested participant can register, describe and map their forest. Data collected with the app will enter a database and include a geographic information system that will provide a large-scale environmental diagnosis.

- Online platform

Online platform with associated database and map features. The project has developed an online platform that includes the information recorded through the mobile app, but also a website that presents the project, its contents and informational products, partners, sponsors, the objectives and targets for virtual audiences. It can be used as a repository tool for project partners and for the general community throughout the project life cycle and functions as a project library in which all documents, outputs and reports are stored for reference or reference purposes. It also stores webcasts of proposed meetings / discussions, training materials and multiplier events.

- Smallholder Training Package

The project has developed this training package for a certified training course for smallholders and other forest owners and managers. The course used all materials and toolkits developed in the project. The aim is to provide forest technicians and forestry organizations with a package of ready-to-use courses so that they can disseminate the FOREST-IN concept and replicate training and raise awareness in their areas of influence. This training package was developed by FSC.

- Forest Technician Training Package

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The project developed a training package for a certified training course for forest technicians and other agents. The course used all materials and toolkits developed in the project. The goal is for forest companies and organizations to take advantage of a ready-to-use package of courses to train their forest technicians and decision makers with up-to-date information on sustainable forest management, forest certification processes, biodiversity conservation and forest assessment, non-forest products, multiple forest uses, forest economics, among other relevant issues. This training package was developed by PEFC™.

- Assessment tutorial

Tutorial for independent evaluation of small forest properties. A tutorial, structured as a form of checklist, has been developed to enable all smallholders and other forest producers to correctly diagnose their forests with regard to: (1) biodiversity; (2) forest health; (3) soil quality; (4) water availability and quality; (5) tree growth and productivity; (6) income from forest products; (7) potential income of non-wood products; (8) social contributions (jobs, indirect contributions, tourism, etc.); (9) threats; among other relevant subjects.

- Layman's report

At the end of the project, a final lay report was prepared, aimed at large-scale distribution within an unskilled forest public such as smallholder associations, schools, environmental associations, etc. The report summarized the project logic, objectives, methods and main results achieved and critical discussion on sustainable forest management. The whole report was written in very simple terms, using very intuitive infographics and informative content, so that it can be understood by any person or entity concerned.

It also directs readers to project platforms, web-based tools, documents and tutorials, contributing to project sustainability after the funding period - and reinforcing the project's replicative potential.

This training package is distributed in 5 Modules according to the following:

- Module 1 - Welcome Session.
This module explains how is the course planned, the program of the course and its objectives.

- Module 2 - Field Natural Resource Assessment Tutorial.
Module 5 will address the forest certification topic, one of the requirements of certification is the knowledge of the natural values present in the management unit, this practical module will enable the owner to expeditiously identify and monitor natural values.

- Module 3 - Biodiversity and Citizenship.
This is a module that aims to alert to the state of Biodiversity in the World, to characterize the Mediterranean region in terms of biodiversity and to warn of the main threats to it.

- Module 4 - Planning Exercise.
This practical module develops a group exercise, which proposes the realization of a property multifunctionality model.

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- Module 5 - Forest Certification.

The course concludes with the forest certification module, which allows the owner to see recognized all good practices applied to the forest. The two Forest Certification systems will be discussed here.

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Module 0 - Welcome Session

This is the first course module for forest owners (Figure1).

Figure 1 – First PowerPoint slide.

When everyone is sitting in the room, we begin by thanking everyone for their presence (Figure 2). Say that you will explain how the course works and the coming days.

The trainer gives a brief presentation of himself: name, organization he represents and relationship with the ForestIN Project.

Figure 2 - Welcome device.

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Following is the slide “Healthy forests, benefits for all” (Figure 3).

Figure 3 - “Healthy Forests, Benefits for All” device.

The theme “***Healthy Forests, Benefits for All***” projects the word “healthy” to the idea of active management and the word “benefits” to the obvious and first objective of any economic activity that is to provide income. In this case, income for the foresters, so that they can generate, after their activity, positive services / externalities for “all”, that is, for society.

On the slide “**Training Course**” (Figure 4), we present the Course Program (Table 1), the necessary logistics and its calendar. The course was designed from a perspective of horizontal knowledge transmission. To this end, most modules have a very strong practical component, putting on the part of the trainees the development of an interactive thinking strategy that enables them to solve problems and the development of forest management and planning strategies.

Figure 4 - “Training Course” device.

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Table 1 - Course Program.

Date	Module	Contents	Duration (hours)
Day 1 (afternoon)	Module 1 - Welcome Session	Project and Training Course Program Presentation	2
Day 2 (morning)	Module 2 (TP)	Field Natural Resource Assessment Tutorial Biodiversity Monitoring: Checklists: Group Exercise / Dynamics	3
Day 2 (afternoon)	Module 3 (T)	Biodiversity and Citizenship - Good forest management practices that favor soil quality, water quality, promote biodiversity and the correct management of forest space. - Threats to Forest Systems: abiotic and biotic agents (pests and diseases, fires, invasive) Forest Citizenship	4
Day 3 (morning)	Module 4 (P)	Planning Exercise From theory to practice: Forest management and resource protection Management Simulation Exercise of a Forest Management Unit - Realization of a multifunctionality model based on agricultural / forest aptitude charts, ecological indicators and risk assessment.	4
Day 3 (afternoon)	Module 5 (TP)	Forest Certification - The different phases - Motivations and Advantages in adhering to Forest Certification General Principles of a Certification Scheme. - Types of functions associated with forest spaces - How to value and make forest production compatible with other services and benefits provided? - Multiple Use of the Forest: Non-Wood Products (cork, pine cone, chestnut, game, mushrooms, berries, etc.) Group Dynamics Exercise - Role Play	4
Day 4 (morning)	Closure Session	Evaluation and closing session	2

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Finally, wishes to all a great course (Figure 5).

Figure 5 - Closure Device.

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Module 2 - Field Natural Resource Assessment Tutorial

Introduction

The aim of this module is to provide a template tool to help forest owners to monitor and quantify the biodiversity present on their properties. It is expected to last about 3 hours for this module.
Given that it is intended to provide owners with more skills in terms of responsible forest management, this module allows the owner to make simplified natural values surveys, because only knowing what exists in a property can think of ways of management that enhance biodiversity and nature conservation. For the forest owner who wants to certify his areas is already a way to meet some indicators of the Forest Management Standard.

Field Evaluation

The forest is fundamental for the balance of ecosystems and one of the main renewable resources.
As an increasingly competitive and demanding society, both in terms of the products quality that we consume and in terms of conservation and improvement of natural resources, our concern with this resource is a reality. In this regard, the proper use of natural resources must be made to ensure the ecosystems, water and soil quality and the maintenance or conservation of biodiversity.
Portugal, within the framework of its national policies and environmental and forestry strategies, has adapted them to the commitments made globally.
To this end, the forestry industry has become more dynamic, organizing guides to good forestry practices that allow forest owners to adapt best practices to conserve soil, water and biodiversity. Therefore, forest certification is an engine for the implementation of good practices. As one of the certification requirements, knowledge of the natural values present in the management unit, this document will guide them in this context.

The assessment is made through simple visual and auditory observations. These observations constitute the first stage of the study and from them it is possible to obtain simple conclusions about the site. As you gain more experience, better results will be obtained.
Simplicity with observations and records allows the owner, usually over the age of 60 and with a relatively low level of education, to better understand what he has on his property. It was not wanted to develop a very technical template, due to these constraints regarding the average characterization of an owner.

The purpose of this assessment is to survey the natural values that occur in the Management Unit by completing a checklist.
The Management Unit to be chosen should, if possible, have the greatest number of habitat and land diversity. Ideally, you should choose an area with a water point (waterline, river or pond), a bush and / or meadows area and a woodland area.

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Within the scope of the project were visited areas of different characteristics, from areas where pedestrian routes were already in operation, areas with archaeological and monumental elements of interest, with rivers and areas of natura 2000 network.

Following is the checklist or template to be distributed by the trainees during the field visit. It is available for download from the project website.

Management Unit:		
Site:		
Assesser(s):		
Date:	**Time:**	**Occupation:**
STRUCTURE AND COMPOSITION		
Several trees > 10 cm		
Several trees > 20 cm		
Tree > 40 cm		
Several trees > 40 cm		
Tree > 60 cm		
Several trees > 60 cm		
Tree > 80 cm		
Several trees > 80 cm		
Climbing plants		
Tree with cavities		
Tree with high canopy and thick branches		
Tree with markings made by mammals or birds		
Fruit bearing trees or bushes		
Several trees of varios species		
Trees with nests		
Standing dead tree		
Several bushes of different species		

KEY HABITATS	
Rivers and Creeks	

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Permanent ponds or lakes	
Temporary ponds	
Open areas with grass / pasture	
Steep slopes (over 1 m : 3m)	
Marsh or muddy areas important for wildlife	
Springs	
Coastal areas with cliffs	
Climax scrublands	
Moor / heath	
Caves	
Grasslands with orchids	
Meadows	
Peat bogs	
Dunes and Dune ecosystems	
Rocky hillsides	
Cork oak forests	
Oak forests	
Gravel pits	
Chestnut groves	
Wild olive groves	
Juniper groves	
Holm oak / Cork oak groves	
IMPACTS AND RISKS	
Tree species with commercial value	
Tree species cut for local uses	
Mean visibility in the forest > 10 m	
Mean visibility in the forest > 20 m	

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No traces of invasive species: animals or plants	
No traps or capturing devices	
No burnings	
No signs of logging	
No signs of non-timber products collecting: mushrooms and aromatic plants	
No deforestation for agricultural purposes	
No grazing	
No rubbish or other residues	
Distance to road, way or path > 1 km	
Distance to road, way or path > 5 km	
TOTAL SCORE:	
NOTES:	

Adapted from https://hcvnetwork.org/wp-content/uploads/2018/05/FIA_Manual_Final_Press_Updated_ENG.pdf

RESULTS SUMMARY

Now with all the records and observations obtained it is possible to sum all the points. The result will give you an idea of the ecological state of the place. How many points did your study area have? The greater the number of points obtained, in principle the "healthier" and "diverse" in terms of ecosystem services will be the area. Trainees will be able to confide among themselves the number of points obtained and come to conclusions, discussing why that values were attributed.

Fieldwork preparation

In the morning and in the afternoon all the data in the checklist will be registered. The longer the survey lasts at the outset, the more reliable the results will be. However, it must be borne in mind that the data will always be a sample and representative of reality and may vary between seasons

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and even from year to year.

Materials: Field notebook, camera, writing material.

Optional: A bag to collect traces or plants found for future room identification.

How to record the results

The assessment is carried out in the morning and includes not only the recording of the natural values found, but also in the field (NOTES), should be identified forest management practices and recorded. Both parties are important for understanding the study area and determining what conservation actions are required.
Groups of 2 to 3 trainees should be created and the group will have to choose who is responsible for recording all collected data. This will save time and reduce clutter when the group is filling out the form in the Management Unit.

RESULTS DISCUSSION

It should be set about 1 hour in the late morning to discuss management guidelines to recommend for the area based on observed and identified natural values.

There is no total value scale to reach. Each will have its own final score. Higher punctuation values correspond to higher Biodiversity levels, and thus to better conserved and managed areas.

This time frame can be used to identify some species that need more careful and scientific observation.

ACTIVITY PICTURES (Figure 6)

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Figure 6 - Photographs of biodiversity found during field trips and groups filling the template.

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Module 3 - Biodiversity and Citizenship

Before starting this Module, ask each participant to try to define biodiversity and set an example. Try defining Biodiversity in a 4 letter word: LIFE.

In the following slides explain what Biodiversity is (Figure 7).

Figure 7 - Slides referring to the concept of Biodiversity.

Diversity has different levels of biological organization. It results from the sum of all biological variability from genes to ecosystems.

The term can be used to describe the number of species, the amount of genetic variation or the number of community types present in an area [(1)].

The Convention on Biological Diversity defines Biodiversity as: Biological diversity, defined in terms of genes, species and ecosystems, is commonly used to describe the number and variety of living organisms. From a global perspective, this term can be considered synonymous with "Life on Earth", the result of over 3 billion years of evolution. The exact number of species currently in existence is unknown, in fact about 1.7 million have been identified so far, but estimates point to a minimum of 5 million and a maximum of 100 million.

Genetic diversity - The genetic variety among individuals in a population (and, by extension, species).

Ecological diversity - Wealth and complexity of a region (different communities, habitats, trophic levels, vegetative forms, etc.).

Specific diversity - Number and equitability of species (most commonly discussed and studied).

On the slide "**Why Protect It?**" (Figure 8) ask graduates to say to themselves and their view why Biodiversity is important to us? Today, due to human activities, species and ecosystems are more threatened than in any other historical period. Diversity losses occur both in tropical forests (where

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50 to 90% of the species already identified are present), as well as in rivers, lakes, deserts, Mediterranean forests, mountains and islands. The most recent estimates predict that at current deforestation rates, 2 to 8% of species living on Earth will disappear over the next 25 years. These extinctions have profound implications for economic and social development and are considered an environmental tragedy.

The human species depends on biological diversity for its own survival, given that at least 40% of the world economy and 80% of peoples' needs depend on biological resources. In addition, the richer the biological diversity, the greater the opportunity for discoveries in medicine, food, economic development, and to find adaptive responses to environmental change. Maintaining the variety of life is a safety measure ([2]).

Figure 8 - Slide addressing the importance of protecting Biodiversity.

On the slide "**Biodiversity Hotspots**" (Figure 9), explain that we are in one of the Biodiversity hotspots: the Mediterranean region. More than half of the habitat types listed in the Habitats Directive exist in the Mediterranean Basin (European Directive whose main objective is to contribute to ensuring biodiversity through the conservation of natural habitats and species of flora and fauna considered endangered within the European Union), of which 37 occur only in this region. This diversity of habitats derives from a range of factors including climate, variable geology and complex landscape topography and the fact that this region has not been seriously affected by the last glaciation that hit Europe. The Mediterranean Basin is a very diverse and landscaped topographic region with towering mountains, deserts, rocky coastal areas, extensive sandy beaches, impenetrable forests and scrub, pseudo-steppes, coastal wetlands and a myriad of islands of different shapes and sizes. It is a mosaic of landscapes not only natural, but cultural, where human civilization and wild nature have existed for millennia. This coexistence, marked by the exploitation of natural resources through agricultural-silvopastoral activities, coupled with the high summer temperatures, has led to the successive reduction of the original plant stratum and the consequent replacement of much of the initial Mediterranean forest by woods, shrub communities with shrubs and shrubs, namely sclerophytes, at different stages of evolution, and herbaceous communities (eg herbs, grasses) [(3)].

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Figure 9 - Slide Biodiversity Hotspots in the World.

As a result, the Mediterranean landscape is now made up of a number of different biotopes: forests, cork oak forests, woodlands, wetlands, scrubland and scrubland, as well as some more degraded and arid areas with only annual plants or bare rock [(3)].

In Portugal, the most important biotope is the *montados* - cork forests correspond to an area of approximately 736,000 hectares (70% of which in the Alentejo region), being the country in the world with the largest area of this type of forest (around 33% of the total world area), despite the small size of the national territory [(3)].

In Spain the second national forest inventory (IFN) of 1996, classifies the area with the presence of cork oak in 811.558.434 ha.

Forests

Today's forests are usually dominated by various species of the genus *Quercus*, but as altitude increases they are replaced by chestnut trees (*Castanea sativa*) and conifer species of the genus *Abies*, *Pinus*, *Juniperus* and *Taxus* [(3)].

Montados

The *montado* consists of a silvopastoral or agricultural-silvopastoral system developed over millennia as a result of the openness of the canopy and artificial management of natural forests to achieve greater long-term productivity in often adverse conditions (poor soils and harsh weather conditions). It is a specific, semi-natural, delicately balanced ecosystem where agriculture (pastures and cultivated fields) and livestock (extensive cattle raising) are naturally integrated into the extensive cork and holly forests [(3)].

The main functional and structural changes in relation to the initial forest habitat were: increased insolation in the understory, disappearance of the microclimate forest, alteration of the forest soil, understory elimination, natural regeneration depression, tree pruning and replacement of the undergrowth through the promotion of non-forest vegetation in the undercover (pastures, heliophilic shrubs, cereal crops, fodder, sunflower, etc.).

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In the absence of management, many *montados* are not ecologically sustainable systems (pastures depend on the agropastoral system and the tree component of forestry) [3].

Biodiversity

The unique combination of climate, orographic irregularity of the landscape (geology and biogeography of the region), high degree of natural disturbance (eg fires of natural origin) and history to which the Mediterranean ecosystem has been subjected over time (eg area affected by the last glaciation), has resulted in its unusual internal environmental heterogeneity, extremely rich biodiversity and a large number of species found nowhere else in the world (endemics) (3).

All 5 Mediterranean regions are included in the global list of ecoregions that deserve special conservation attention, as well as in the list of the world's 25 hotspots with the highest biological diversity and endemics at risk. In fact, in terms of biodiversity hotspots, the Mediterranean ecosystem is only surpassed by tropical forests, as it has a vast floristic diversity [3].

In the Mediterranean basin alone, one of the richest places in the world in terms of plant and animal diversity, and of which Portugal is a part, there are about 25,000 vascular plant species (10% of the world's flora), 60% of which are endemic. There are more plant species here than in all the other biogeographic regions of Europe.

With such rich floristic diversity, the fauna associated with this type of ecosystem is also very varied, as well as well adapted to the climatic conditions of these regions. About 1/3 of the fauna species are endemic to the region, with emphasis on the groups of amphibians, crabs, reptiles, freshwater fish and macroscopic marine species. [3].

Almost half of the flora and fauna species listed in the Habitats Directive occur in the Mediterranean Region [3].

On slide "**Threats to Biodiversity**" (Figure 10), ask graduates to say what are the threats to Biodiversity. Examples: human population growth (relating to the concept of ecological footprint); the extinction of species. Trying to come to the conclusion that man is the main threat… (introduces exotic species, destroys habitats, intensively exploits plants and animals, pollutes water and soil…).

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Figure 10 - Slide that begins the discussion among those present about the threats to Biodiversity.

On the slide "**Biodiversity in the context of spatial planning and management**" (Figure 11), say that in much of the world, human beings change and adapt landscapes due to the use of goods and services with economic, social or ecological value they provide [(4)]. The landscape is developed with a particular purpose in mind and can therefore be considered as an element of physical planning [(5)]. Sustainable landscape development requires landscape planning to aim for "a condition of stability in social and physical systems achieved by accommodating the needs of the present without compromising the ability of future generations to meet their needs" ([6]). The landscape maintains its potential over time to provide ecological, social and economic values. Per urban areas are still poorly defined and have often been described according to their degree of urbanization and thus strictly due to their being more urban or more rural [(7)]. In per urban areas there is a multiplicity of land uses that contribute to the occupation of the territory, leaving the fragmented natural landscapes [(8)] [(9)], which leads to greater challenges for biodiversity conservation. Per urban areas can be defined as "areas that are in a form of transition between strictly rural and urban. These areas often form the immediate urban-rural interface and may eventually evolve to entirely urban. Most per urban areas are on the outskirts of urban areas, but can also be clusters of residential development within rural landscapes. Per urban areas are often the result of the process of suburbanization or urban sprawl. [(10)]. This means that per urban areas are seen, from the spatial planning point of view, only as areas in transition to urban areas, that are, waiting to be consolidated. Spatial planning is a fundamental instrument for the conservation of biodiversity. It should consider the geographical distribution of natural values and make landscape protection compatible with land use proposals. The identification and protection of the ecological structure, natural resources and values and the indispensable systems for the protection and environmental valorization of rural and urban spaces or the sustainable use of the territory, as well as the prediction of green spaces, are essential requirements of the territorial management instruments, in particular municipal planning plans [(2)]. However, in the process of setting urban planning priorities, biodiversity lags behind more anthropocentric goals such as economic development, transport or recreation [(11)]. In order to be able to protect biodiversity in per urban spaces, they must be treated as a "type of space in their own right" [(12)], where natural and semi-natural areas can contribute to greater resilience of these areas. Territories in view of today's challenges, such as extreme events arising from climate change or disruptions in the supply of agricultural products [(13)]. Biodiversity is often misinterpreted as a concept with little

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relevance to cities and with few direct benefits essential to humans, but when there is greater understanding and assessment of biodiversity functions and services, biodiversity protection will be widely accepted and considered priority in urban planning and design [11]. Biodiversity directly supports the functions of ecosystems [11], which provide valuable goods and services for humans and which they can obtain directly or indirectly [14] [15]. Urban biodiversity can be understood in the context of response diversity [11], the diversity of responses to environmental change, and species that contribute to the same ecosystem [16]. Considering floods as an example: by intercepting large amounts of precipitation, trees help cities to mitigate the impacts of floods, so a large diversity of tree species will contribute to this function of response diversity [26]. Thus, in a system with high biodiversity, the local extinction of a species is less likely to endanger this function. If cities continue to suffer from the effects of climate change, then this diversity of response, and hence biodiversity, becomes a key factor for urban resilience [11]. However, local ecology may be affected by risk mitigation activities [17], such as fire risk mitigation, which may involve controlled burning and therefore may undermine the effectiveness of biodiversity conservation policies [18] or change the perception of the value of green spaces for recreation, health and leisure [19].

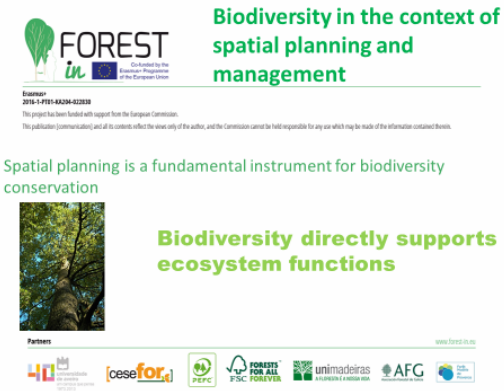

Figure 11 - Slide “Biodiversity in the context of spatial planning and management.

Spatial planning

Inconsistent land use planning is one of the main threats to biodiversity, so land management tools should identify natural resources and values, agricultural and forest areas, ecological structure, and articulate locations and conditions of residence to ensure the functions of territories from the perspectives of production, conservation and evolution. Biodiversity can even be used as a result indicator of the adequacy of spatial planning processes. In the last 40 years, a set of classified areas has been created in Portugal, culminating in the establishment of the legal regime for nature conservation and biodiversity that formalized the fundamental nature conservation network, constituted by SNAC. Ecological networks and green infrastructures provide an operational model for biodiversity conservation based on ecological principles and allowing a degree of human use of the landscape; are useful in implementing the Convention on Biological Diversity. Investments yield benefits not only for biodiversity conservation but also for the ecological services provided to local communities, contributing to poverty alleviation, differentiation and territorial cohesion.

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On the slide "**Main Economic Activities Associated with the Mediterranean Landscape in Portugal**" (Figure 12), address the issues of cork. Cork is the bark that covers trunks and branches of the cork oak, which has great economic value for the numerous applications that can have, extracting periodically. Cork stoppers are the main product of this raw material. The lower quality cork resulting from the crushing of by-products also has various types of application: flooring and coverings, decorative articles, soles and footwear products, automotive, military and aerospace applications, or products for the chemical and pharmaceutical industry. It is a very eco-efficient industry, whose full use, since even cork dust can be used for the production of electricity.

Figure 12 - Slide introducing the theme of economic activities associated with the Mediterranean landscape.

Portugal is the country with the largest industrial production of cork in the world and in some villages this is the main source of income, keeping these areas economically viable, thus avoiding depopulation and desertification by keeping the cork oak parklands 'alive'.

The breeding of cattle breeds well adapted to the demanding conditions of the region and bred in extensive regime, such as Serpentine goats, Merina Branca sheep, black pig and Alentejo Garvonesa and Mertolenga cattle. Also noteworthy are some derived products, such as leather and wool, used in handicrafts, and traditional sausages that characterize and enrich the regional cuisine, such as black pig ham, fresh cheese, and cured cheese, among others.

Hunting

Hunting is as old a practice as human societies themselves. As well as being a recreational activity (culturally), it also ensures the maintenance of species, hunting and non-hunting, through the restoration and maintenance of habitats that would otherwise be lost to more erosive land use types (eg intensive agriculture). Hunting is a very important economic activity in the Iberian Peninsula (estimated annual turnover of € 350 million in Portugal alone), helping to promote rural development, creating employment opportunities and moving people, attracting them to more unpopulated places.

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The most exploited game species in the Mediterranean landscape are the wild rabbit, the partridge (*Alectoris rufa*), the wild boar (*Sus scrofa*), the hare (*Lepus granatensis*) and the deer (*Cervus elaphus*). Of these, the wild rabbit is one of the main and therefore the most important game species in Portugal and Spain. However, over the last 60 years, their populations have suffered a drastic decline (estimated to be around 5%). Still, and although rabbit hunting has been replaced in some places by partridge hunting or larger hunting in response to this decline, wild rabbit hunting remains an important cultural and economic activity. As such, many game owners and managers are currently investing significant effort in time, material and economic resources to recover this species. [(3)].

Traditional Activities

Shale, clay, iron, wood, wicker sticks, bouquet, wool, leather, linen, among others, are transformed by artisans into local handicrafts (eg footwear, clothing, wicker basketry), chairlift chairs) that keep the local customs and traditions alive [(3)].

Ecotourism

Ecotourism is a form of nature tourism aimed at the sustainable enjoyment of the natural heritage (eg bird watching), encouraging its conservation, while seeking the formation of an environmentalist awareness through the interpretation of the environment, promoting well-being and benefit of local populations. Ecotourism also acts as an important marketing vehicle for attracting potential residents and new businesses to often abandoned and unpopulated places [(3)].

In addition to these activities, there are also a number of natural resources that can be collected and that represent a source of food or extra income for local populations, such as medicinal plants (eg *Hypericum perforatum*), aromatic (eg oregano, rosemary, pennyroyal (*Mentha pulegium*), or for culinary use (eg asparagus), acorn (very important in the feeding of cattle), wild mushrooms or even rock-nut, used as firewood for traditional bread ovens and for the extraction of essential oils (laudan) for the perfumery industry (3).

In the slides "**Forest and Biodiversity**" (Figure 13), explain that Portugal has about 22 per cent of the continental territory classified in the National Network of Protected Areas and the Natura 2000 Network. It is very easy to find a private owner within the Natura 2000 Network.

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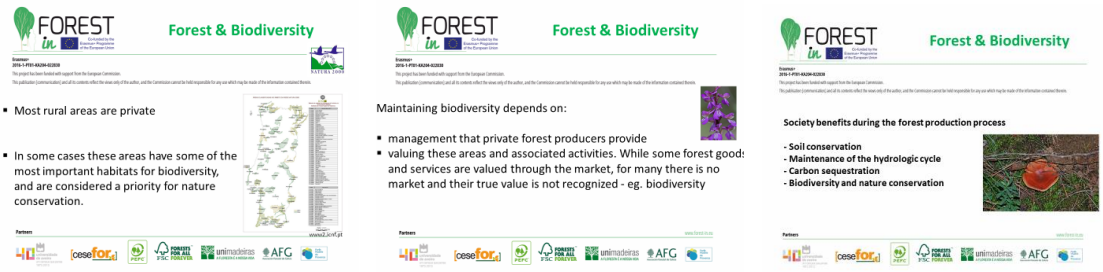

Figure 13 - “Forests and Biodiversity” slides.

The Natura 2000 Network includes the Sites of Community Importance and Special Protection Zones.

Portugal has a national park, 13 natural parks, 9 nature reserves, 10 protected landscapes and seven natural monuments.

The *montado* is one of the 14 sanctuaries of the world biodiversity. 135 species per m^2 can be identified in the *montado* [22] (Figure 14).

Figure 14 - Slides explaining the importance of the *montado*.

Choosing wines with certified cork stoppers: This is one of the best examples where consumers, through an informed buying decision, can contribute to ensuring high levels of biodiversity and sustainable economic activities. The use of cork for cork-stoppers production is the main economic activity - vital for maintaining the economic value of cork.

Regarding the management of the *montados,* explain that the use of a shredder instead of a disc harrow for vegetation control brings many ecological benefits of soil conservation.

Explain that in cork oaks there are superficial roots that are damaged by the use of heavy machinery, being exposed to diseases and making the system more fragile. The clearing of spontaneous vegetation with manual machinery (brambles and reeds), followed by planting riparian species is another good option. Do not “fully” clean the water line. Maintain shelter and refuge areas for species. Explain that brambles are also a source of food for animals….

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On slide "**Good forest management practices**" (Figure 15), mention some good practices that may apply - Site preparation with maintenance of erosion protection slopes on the slopes and surrounding areas of the waterlines.

Figure 15 - Slides explaining some of the best practices to apply.

Water lines surrounding areas:

• Mechanized control as long as the slope is very low (less than 5%);

• Manual or moto-manual control on tracks or localized;

• No control interventions.

When the slope is greater than 20%, it is advisable to control the vegetation in bands with a maximum width of 20 m (equivalent to the width of a minimum of 5 lines), contoured and separated by bands not intervened with a minimum width of 4 m. - When the slope is less than 20%, the width of the intervened strips may gradually increase to 40 m (equivalent to the width of at least 10 lines) as the slope decreases and erosion risks continue to decrease, separated by uninterventioned lanes with a minimum width of 4 m. When erosion risks are very low or null, the fraction of vegetation to be maintained will be advised for the other reasons mentioned above and no longer those most directly related to those risks [(23)]. For recommendations on soil mobilization for other countries please contact the respective responsible entities: Ministry of Environment and Rural Environment and Marino - Govierno de España and the Government of France.

Some soil mobilization, due to the high degree of exposure to it, contributes to increase the risks of erosion. In these cases, the choice of partial mobilization methods (eg strips) is of utmost importance in order to increase soil protection [(23)].

Soil mobilization at a contour, when compared to mobilization carried out according to other orientations, results in higher water retention and infiltration rates and, consequently, lower erosion risks [(23)].

On the slide "**Pest and Disease Minimization**" (Figure 16), the objectives are to reduce inoculum transmission between trees, reduce the potential for pest propagation and improve the genetic base. Evidence of the existence of inoculum of various pathogenic fungi in the trees is considered, when the ability of the fungus to transmit by adherence to the cutting tools is real.

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Figure 16 - Good practices for pest and disease minimization - slide.

On the slide "**Undercover Management**" (Figure 17), give the example of Nitrogen-fixing Legumes in the soil through the roots and the Grazing- Compressive loading effect of the soil. Lack of aeration.

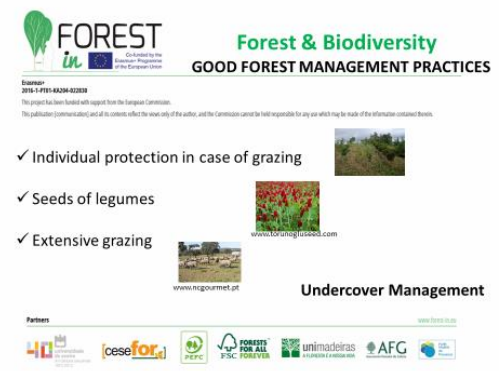

Figure 17 - Good Practices for Undercover Management - Slide.

On slide "**Invasive Species Management**", discuss the different techniques (Figure 18):

Figure 18 - Slides addressing the different invasive control techniques.

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Combined harvesting with herbicide application

It can be performed on all species as long as the individuals have a reasonable diameter for herbicide application (> ca. 2cm), although it is less effective on root regenerating species.

Cut as close to the ground as possible and immediately brush / spray the mop with the most appropriate herbicide in the correct concentration. This mix depends on the species and site conditions.

The peripheral area of the xylem and phloem must be particularly well affected by the herbicide. The herbicide should be applied to avoid dripping into the soil.

A dye (which does not react with the herbicide) may be used for better control of the treated plants.

The herbicide dilution should be done “fresh” and taking into account the constitution of the water used.

If subsequent shoot formation occurs (shoot or root), the shoot should be eliminated when it reaches 25 to 50 cm in height by re-cutting, tearing or spraying the leaves.

Application should be performed on windless days to avoid parallel impacts on other species, soil or water.

Harvesting

Harvesting can be performed on all species, although it is ineffective on all that can regenerate by them selfes.

This method consists of harvest the individual as close to the ground as possible.

If subsequent sprouts formation occurs (sprouts or root), the shoot should be eliminated when it reaches 25 to 50 cm in height by re-harvest, tearing or spraying the leaves.

Alternatively, if they have exceeded these dimensions they can be peeled or cut again.

Peel off

This method is best suited to smooth / continuous bark trees. Plants with a cracked, wounded bark that is very brittle or interspersed with acuminus, i.e. in which peeling cannot be completed, should not be barked.

Examples of species to which it may be applied: mimosa (*Acacia dealbata*), australia (*Acacia melanoxylon*), other acacia (*Acacia* spp.), Incense tree (*Pittosporum undulatum*).

How to do it

Make a continuous ring incision around the torso at the height that is most comfortable for the

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applicator; the incision should cut the bark (phloem and outer tissues) and reach the wood (xylem), but without cutting the latter.

Remove all bark (and exchange - “pink film”) from the incision ring to the ground surface, if possible to the root.

Apply only when currency exchange is active which may vary from place to place. The best application times coincide with mild temperatures and some humidity - usually late winter / spring - but in some riparian areas it may apply all year round.

It is critical to evaluate all these conditions before starting a peeling operation!

In the case of trees that are not easy to bark, it is preferable to wait for their growth and only to bark later. Although it is advisable not to bark in these situations, under conditions of high stress (eg very dry), sometimes trees that cannot be fully barked can still dry up and eventually die.

In these cases, it is necessary to evaluate the result for several months to a few years before applying it on a large scale.

All trees of the invasive species in the area to be controlled must be barked, as untreated individuals can facilitate the survival of bark neighbors.

Attention: let it dry completely and only then cut the tree. Drying can take several months to a few years.

Manual pulling up

This method is suitable for most herbaceous species as well as seedlings and young individuals of woody species from germination. Individuals from root regeneration can also be uprooted, but the difficulty is increased.

Plants can be uprooted by hand, whether or not using small auxiliary tools such as a planter or hoe.

The plant should be held close to the ground as possible (separation of stem from root) to prevent only the aerial part from being removed.

Grubbing should be done so that no larger roots are left in the soil as in some species new individuals can regenerate from there.

In more compacted soils, grubbing should be carried out at a time of rainfall to facilitate root release.

Natural control of invasive plants is the use of natural enemies (eg, the insects that cause galls on oaks, seed-eating weevils or leaf-eating larvae) from the regions of origin of these plants to reduce their potential vigor or reproductive potential. This type of control is based on the principle that one of the factors contributing to plants becoming invasive is that they are introduced into a new region without any of their natural enemies.

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These species thus gain an advantage over native species that have their natural enemies feeding on them, causing them disease or otherwise slowing their growth. Basically, natural control is then an attempt to deprive exotic species of their competitive advantage by reducing their vigor to values similar to those of native species.

Natural control agents do not completely kill the populations of their host plants. At best, they reduce the density of the invasive species to acceptable levels or reduce their vigor and / or reproductive potential. The fact that some plants survive ensures that the agent does not disappear, leading to biological control being seen as a self-sustaining method.

Herbicide Blow / Injection

The application of herbicide should be done directly in the vascular system (functional xylem and phloem), and two forms of application can be chosen:

1. Blow + Injection

At the height that is most comfortable for the applicator, several cuts are made at an angle of 45° to the sapwood. It does not have to be very deep, but it must go through the bark and cut the outermost part of the wood.

The cuts can be made with an ax or saw.

The various cuts should be made at the same height as the trunk so that they almost touch, leaving about 2-4cm of bark left uncut between them.

For smaller individuals only 2 or 3 cuts are required and should not be deep to prevent the plant from breaking.

Immediately after each cut the herbicide is injected into the incision with a squirt: slowly apply about 1ml (0.5 to 2ml depending on the size of the cut) of herbicide to each wound (usually squirt +/- 1ml); The herbicide should stay inside the wound.

After treatment the tree will quickly turn brown and look dead. However, it is important for the tree to stand 1 year longer and not be removed - so it is ensured that the tree uses up some of the root reserve carbohydrates.

In deciduous species, the best time of application is in summer or spring, ie with dry weather and as soon as the plant has fully expanded leaves.

On the slide "**Managing Exotic Species**" (Figure 19), explain that many of the plants around us have been transported from their natural habitat to what they are called exotic plants (from the Greek "exotikós"). Some of these species coexist with the native species in a balanced way, but others develop very quickly and escape the control of man and become harmful - these are called invasive species. In addition to overcoming geographical barriers, these species can overcome

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biotic and abiotic barriers, maintaining stable populations.

Figure 19 - Examples of some invasive plants - slide.

An exotic plant is considered invasive when it produces numerous and separate breeding populations from the initial one, both in space (over 100 m) and in time (less than 50 years for seed-dispersed species; another 6 m every three years for species with vegetative reproduction), regardless of the degree of disturbance of the environment and without direct human intervention. Often the proliferation of these species promotes environmental change and / or economic damage [24].

What characterizes an invasive plant?

The great diversity of invasive plants implies that their characteristics are diverse. However, there are some characteristics that are common to many of these plants, for example:

- have rapid growth and / or high dispersibility;

- compete more efficiently for available resources than native species;

- produce many seeds, which can be viable for long periods of time and can be stimulated by fire, which is particularly serious in a Mediterranean area such as the one in which we live;

- where they are invasive, they have no natural enemies as they are displaced from their place of origin;

- reproduce vegetatively without seed production to disperse.

These characteristics are not necessarily all present in an invasive species. Additionally, other characteristics may contribute to the invasive behavior of the species.

Despite the positive aspects that have at times justified the introduction of invasive species, they are responsible for many negative impacts, often difficult and costly to resolve and in some cases irreversible. Among the negative impacts are:

1) high economic impacts, both on production, particularly when they are species that invade

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agricultural, forestry or fish areas, or on the application of control and recovery measures on invaded systems - at European level, a recent estimate refers to losses close to € 10 billion / year associated with invasive species [25];

2) impacts on public health, when they are species that cause diseases, allergies, or act as pest vectors;

3) decreased availability of water in the groundwater in the case of species that are very demanding in their consumption, resulting in large losses in this resource which is scarce in many parts of the world;

4) impacts on ecosystem balance achieved over thousands of years of evolution and is currently one of the major threats to biodiversity. This includes, for example, changing biogeochemical cycles (carbon and nitrogen cycling), standardizing ecosystems, changing fire regimes and food chains, and competing with native species sometimes replacing them completely.

In this context, invasive species are one of the biggest threats to the planet's environmental and economic well-being.

On the slide "**Forest Citizenship**" (Figure 20) we can ask trainees what is the most serious environmental problem that affects us?

Figure 20 - Slide Forest citizen and the role of the citizen.

A survey of the Portuguese population - "The Portuguese and the Environment" [26]- notes that 74% of respondents select "Forest Fires" as the most serious environmental problem, followed by "untreated city sewers" with 61% of respondents. The enormous weight of the threat of forest fires in this study, which is certainly higher than the hot summer of 2003, will not be unaware of the image and media presence that the subject assumes today.

Can learners be asked what ideas they associate with the forest?

Similarly, in a survey of the French population about "What ideas do you associate with the forest?" The majority response (47%) was nature and environment. Fresh air, oxygen, and the

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earth's lungs collected 41%. The social function of the forest - walks, freedom and evasion, well-being and calm, and beauty and pleasure - is also highlighted. The economic aspects are almost forgotten in this evocation, clearly reflecting the present weight of a largely urban population largely disconnected from the rural world. Seeing forests as a national issue and problem, the common citizen must exercise his right and duty of citizenship.

Learn how to be a true sustainable citizen. Participate as a volunteer in forest defense activities. Present your input to identify environmental issues, opportunities and ideas for a better future.

Volunteering

Participating in the community can be extremely rewarding! Here you can find out how to value your time by helping the environment and those who need it most. Discover volunteer opportunities based on availability, as well as reports on the experiences of other volunteers. You can enter your profile for consultation by host organizations. Ex: LET'S CLEAN THE HOUSE OF PENEIREIRO-DAS-TORRES (LPN), Removal of Invasive Species, or the ALDEA Program for Educational Centers (Andalusia - Spain).

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Module 4 - Planning Exercise

The aim of this group exercise is to develop a multifunctionality model based on agricultural / forest aptitude charts, ecological indicators and risk assessment.

This exercise aims, in a pedagogical way, to develop on the part of the trainees, a critical analysis in relation to the interpretation of land use maps and conditions that act on a territory. During the exercises, each group should exchange experiences among its members, giving suggestions and making compatible what exists about the territory, its physical and ecological characteristics and define profitability for it.

Depending on the number of trainees, about 3 groups are formed. Each group should have a monitor. The exercise will take about 4 hours, followed by a 3-hour field trip.

There is no result that is “right” to achieve. However, it is preferable to think of creating different landscape dynamics, such as: more productive forest uses (pine, eucalyptus, meadows and oaks), agricultural uses (orchards, vineyards, berries), conservation areas (woods, shrubs, meadows waterfalls, water lines, ponds…).

The following materials will be needed:

• 3 x Paper Size 2m x 1m

• Sticky tape

• 3 sets of different color markers

• 3 projectors

• 3 laptops with loaded GIS information

• Cartoon stickers (mushrooms, hives, pines, eucalyptus, oaks, etc.)

Laptops should be loaded with the following geographic information:

- Boundaries Ortho

- Slopes

- Exposures

- Military Map

- Conditioners (REN, RAN, RN 2000…)

- Water Lines

- Social Areas

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As the maps with the above information are loaded, the monitor should accompany the group according to the following information which may serve as an example (Table 2):

Table 2 - Themes to be addressed.

SIG	Theme	Content to talk / do
Picture of the ortho boundary	Boundary	• Delimit ownership
Ortho with each alternating physiography theme	Physiography (upload themes and download as needed): -Orto - Road Network - Water Lines - Points of existing houses - Slopes (0-15, 15-25,> 25) -Exposure (N, S, E, W) - Military Map	• Draw on ortho - the main ways - the rural roads - the main and secondary forest paths - forest roads - the water lines - houses and infrastructure Draw buffers for the above elements - Draw houses based on ortho - Delimit exhibitions - Slope Orientation - North facing slopes - South Facing Slopes - East Slopes - West Slopes - Mark maximum and minimum quota based on military map
Ortho with alternating conditioners	Constraints (upload themes and download as needed): - REN - RAN - Striped waterlines - Fuel management stripes. - Other GIS restrictions (Natura network, ecological corridors, etc.)	• Draw the REN, based on the theme • Draw the RAN, based on the theme • Ask if they know the protection distance to water lines (ephemeral, temporary, permanent, rivers), already mentioned. Make the buffer. • Ask if they know the size of the fuel management stripes mentioned above. Make the buffer. • Carry any other constraints, such as the Natura 2000 Network and protected areas that set objectives and limitations to activities.

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SIG	Theme	Content to talk / do
Ortho with fires map	- Fires	• Draw the limit of the last fires The history of forest fires should condition the decision on the type of forest and its management.
Ortho with the drawing made by the trainees		Establish the objectives of each zone and delimit the investment / intervention plots. • Set various goals (eucalyptus, pine, poplar, oaks, other noble hardwoods, riparian vegetation, arbutus, honey, mushrooms, tourism, agriculture, others) • Limit homogeneous spots by purpose. • Place on each spot the stickers that each group chooses, after discussion between them.
Put the drawings on a wall		Bringing all the groups together, each explaining the options and the debate opens.
Field visit		
Take drawing made in A1 Take orthophotomap with boundary at A3		Make a trip through the terrain, stop at points (Pine occupation with several ages, Poplar, Eucalyptus, riparian vegetation by the river) to discuss the plans made by each. • In each group ask what was proposed, why? The idea of making a field trip after the practical part will be to confront the trainees with what they designed for the territory concerned and to demonstrate what actually exists. A discussion can be created here about production versus conservation, about territorial benefits and ecosystem services, local community involvement, and so forth.

ACTIVITY PICTURES

Following are some images of the proposed activity (Figure 21 and Figure 22). This way, the potential future user of this Training Package can realize how the exercise was done.

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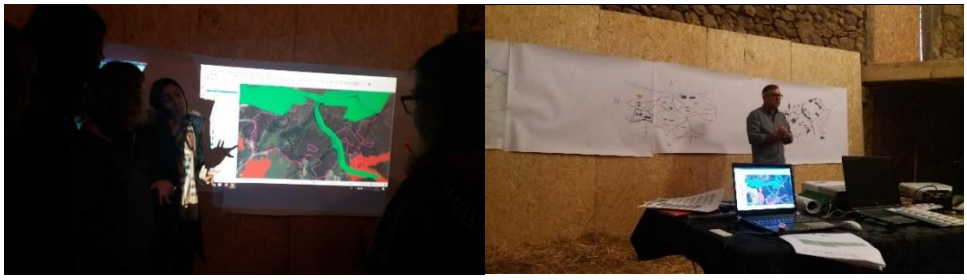

Figure 21 - Photographs of the activity developed in Portugal.

Figure 22 - Photographs of the activity carried out in Spain.

ACTIVITY DISCUSSION

The exercise was very well received by the trainees. A great interaction was generated within each group and in the end the same happened with the discussion and presentation of the works by the groups. A significant difference was noted between the holdings of the France and Portugal / Spain group. While the groups from Portugal and Spain had projected for the territory a concept more related to productive areas, being buffer areas left as conservation areas. The group from France devised a much more conservationist concept for the territory in question and opted for a model of territory conservation.

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Module 5 – Certification

This module will cover both forest certification systems (FSC® e PEFC™) - Figure 28. The trainer start by asking if the trainees know the symbols. If you know what they mean? What is certification for you?

Forest management certification is a voluntary instrument for improving the quality of forest management and demonstrating, in accordance with rigorous and internationally recognized criteria, taking into account economic, social and environmental aspects. This concern also covers the natural resources with which the forest interacts, as well as the populations that depend on it, and has acquired international status from the Interministerial Conference for the Protection of the European Forest in Helsinki (1991) and the United Nations Conference. Environment and Development in 1992 in Rio de Janeiro, as a natural response to a growing concern about how the world's forests were being exploited.

Thus, an independent entity provides a written assurance that a product is sourced from a responsibly / sustainably managed forest and meets the requirements set out in technical standards or specifications for the purpose of promoting responsible / sustainable management, where economic, environmental and social functions are safeguarded in an equitable manner.

Figure 23 - Slide that identifies the two marks.

The next slide (Figure 24) then explains the two certification systems, which means the acronyms and main concepts. FSC® and PEFC™ systems have two different types of certification:

Forest Management Certification, which demonstrates that the forest is managed responsibly and sustainably in accordance with the Principles and Criteria of the FSC® and PEFC™.

Chain of Custody / Accountability Certification, which verifies the traceability of certified forest-based materials and products along the production chain from the forest, or in the case of recycled materials from the collection site to the final consumer, and applies to manufacturers, processors and traders of certified forest products.

Through the labeling of certified products, associated with the FSC® or PEFC™ Certification

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system brands, customers and consumers are able to identify products from responsibly / sustainably managed forests and contribute, through market driving capacity, to stimulate potential for continuous improvement of forest resource management.

Figure 24 - Slide that defines the two certification systems.

This module will also address issues related to certification in its environmental component, such as the functions that ecosystems provide (Figure 25). The trainer should follow the concepts covered in each slide, referring to each ecosystem function.

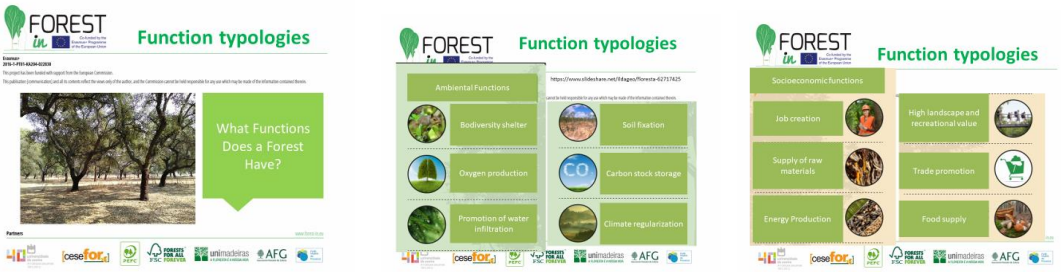

Figure 25 - Slides referring to ecosystem functions.

Next, the ecosystem services will be addressed (Figure 26). The trainer begins by characterizing each one.

Production services - products / consumer goods obtained from ecosystems. Examples are food, drinking water, clothing (fibers), fuels, genetic resources and medicines.

Regulatory services - “intangible” benefits (generally without market value) resulting from process regulation. Examples are climate regulation, air quality maintenance, hydrological regulation, erosion control, water purification and waste recycling, human disease regulation, biological control (crop pests and animal diseases), pollination and mitigation of the effects of storms and other natural disasters.

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Support Services - services that are fundamental to the provision of all other services, with indirect impacts on humans. Examples are soil formation, primary production, water and nutrient recycling, atmospheric oxygen production, and provision of habitat for flora and fauna.

Cultural services - non-material, albeit sometimes market value, direct benefits from ecosystems. Examples are cultural and knowledge diversity, spiritual and religious values, science and education, aesthetic values, inspiration, social relationships, sense of place, cultural heritage values, tourism, leisure and recreation.

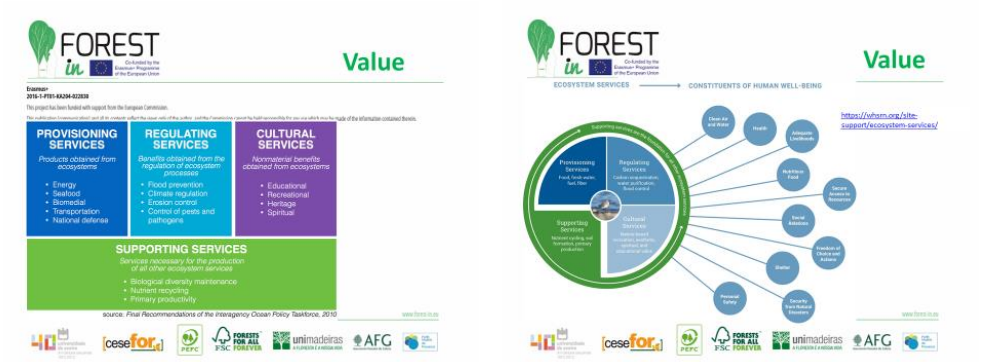

Figure 26 - Slides for ecosystem services.

Finally, referring to the theme of Multiple Use of the Forest (Figure 27), explain that one should invest in product diversification, in search of sustainable management of the productive area.

The producer should achieve an economic return during the forest growth phase through the interleaving of other crops or management objectives, such as: honey, mushroom, aromatic, resin, arbutus, biomass production, among others.

Figure 27 - Slides referring to the multiple use of the forest.

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Module 5 - Role-Play Exercise - Forest Certification

Activity: Group Dynamics Exercise * - Role Play

Learning Objectives: introduce participants to the concept of forest certification and place them in different perspectives. It was achieved through the dynamics:

- Develop a critical analysis by participants;

- Encourage teamwork;

- Provide a healthy, positive, relaxed environment;

- Develop trainee creativity and critical thinking;

- Provide a reflection on different perspectives;

- Generate and create learning;

-Possibility of exchanging experiences.

Support Information:

Necessary background knowledge (for the facilitator): The facilitator must have an average understanding of the subject of forest certification to perform this activity.

Duration: 1h:30 m

Support Material: pens, post-its, 5 sheets A3 cardstock

Instructions:

The trainees are divided into 5 groups according to the different categories of sector agents:

- Industry;

- NGOs;

- Rulers;

- Forest Owners;

- Certification Systems.

The target audience will be defined according to the participants' profile. Groups will be encouraged to define problem situations and their responses according to the category they are representing.

There is a facilitator who is leading questions for each group to analyze from their character's

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point of view (eg definitions of production areas versus conservation area; delineation of possible multiple forest uses; advantages and benefits; prioritization of the principles of the Standard).

After each presentation, in a circle, the group discussed the dynamics, their relevance to the problem situation, perspectives through the target audience and the impact of the decision-making of the various agents. At the end of all presentations, the group discussed the importance of knowing all the points of view of the different actors in a forest certification process.

ACTIVITY PICTURES

Following are some images of the proposed activity (Figure 28). This way, the potential future user of this Training Package can realize how the exercise was done.

Figure 28 - Photographs of the activity carried out in Portugal and Spain.

ACTIVITY DISCUSSION

It is interesting to see how each group interprets its role in society, contributing in different ways to the way it incorporates certification into its professional activity.

While Nongovernmental Organizations proposed to use certification as a tool for building green corridors, for limiting the application of fertilizers or as a way to award prizes by distinguishing who applies good practices. The Owners group understands Forest Certification as a way of qualifying service providers as well as improving the training of their workers. It is also important

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for forest owners to assign a higher value to certified timber, as well as a possible tax break for certified areas.

Groups that have incorporated the role of the state in their definition of certification, understand that public procurement policy should prioritize purchases of certified material. This group also sees certification as a form of regulation and improvement of the forest register.

The Industry group sees certification as a way of promoting producer training. It proposes the possibility of providing quality plants to owners free of charge, helping to promote certification implementation meetings and providing extra value to those who produce certified timber.

Finally, the certification systems themselves see certification as improving process transparency as well as a way to gain greater oversight. They also propose to work on the public visibility of these systems and on training. This group also mentioned the importance of creating a greater relationship with the certifying entities.

LOCAL LEARNING MOMENTS

The 3 courses held in Albergaria-a-Velha, Lousã and Santiago de Compostela, were attended by different external entities and guests who shared their know-how and experience on the topics covered throughout the courses.

Regarding the course that took place in Albergaria-a-Velha, very focused on the theme of **Multiple Use of the Forest**, we can count on the participation of Carlos Fonseca from the company Medronhalva who brought his experience with the production of arbutus (*Arbutus unedo*). Also on this topic, was invited to participate the Association of Central Coast Beekeepers Associação dos Apicultores do Litoral Centro - FNAP, which gave a presentation on "Eucalyptus honey and its specifics."

In Lousã, the Course addressed the theme of **Safety at Work**, and was attended by COTF - Center for Forest Operations and Techniques (João Fernandes), with a presentation on some notions of safety in the forest sector and a practical demonstration on safety with forest machinery and equipment. This course was also supported by ALTRI Florestal (Raquel Rosado and Pedro Serafim) who explained how their traveling van is used to train workers within the front work. The ACT - Working Conditions Authority (Isabel Nunes) presented the Iberian Occupational Accident Prevention Campaign, the risk factors associated with forestry work and the employer's obligations in terms of occupational safety and health.

In the course that took place in Lousã, the theme of **Invasive Species** was approached, which was attended by Hélia Marchante, from the Coimbra University, who gave a practical demonstration of how to peel acacia.

Finally, the course held in Spain - Santiago de Compostela, addressed topics such as **Multiple Use of the Forest** with the participation of Francisco Javier Barreiro Carracedo, who gave a presentation on Monte Caballar, a certified area and Ruth Barros with a presentation about

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medicinal herbs in Galicia. Also visited Pico Sacro, a certified area for observing the techniques installed for habitat management for fauna.

This Course also addressed the theme of **Parcel Concentration and Land Exchanges** in Spain, with the participation of technicians from the Agrarian Infrastructure Service of the Regional Government of Galicia and Alejandro Sánchez de Dios, from the Land Mobilities of the Galician Rural Development Agency of Board of Galicia.

In Spain the field trip was to the Natural Park of Fragas do Eume with Antonio Rigueiro Rodríguez, professor of botany at the University of Santiago de Compostela. Regarding the theme of Forest Certification, the course was attended by Daniel Rodríguez Cebreiro by Selga, Compañía Galega de Silvicultores, who explained SELGA's experience as a forest certification group.

These were the external speakers invited to participate in the 3 training courses. The user of this training package may or may not choose to invite speakers related to the course topics they develop, depending on the availability of training time or the availability of external trainers / guests.

For the present training package, it is interesting to visit a certified area or a natural area where you can address topics such as good practice and multiple use of the forest.

CLOSING SESSION

The closing session can be used as a tool to assess participants' progress and also allow course coordinators, trainers and guests to receive feedback from participants. A formal classification system can be implemented.

Participants' progress can be assessed during the course by participating in hands-on exercises and discussion sessions in which each module would be discussed before proceeding to the next stage of the course.

Carrying out an end-of-course satisfaction survey covering all modules of the training course can also serve as a tool for evaluation.

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