WORKING REPORT ON SOCIAL USES AND COLLECTIVE BENEFITS ON THE MEDITERRANEAN FORESTS

Leisure, sport, culture activities... with the forest as background frame

SYLVAMED
Mediterranean Forests for All
March 2012

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With the participation of:

With the support of:

Layout: Communication Department, Forest Sciences Center of Catalonia

DL: L 931-2012

This report was published in 2012 by the SYLVAMED project. www.sylvamed.eu

This project is Part Financed by the EU’s European Regional Development Fund through the Med programme

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This report forms one of the deliverables of the “SylvaMED: Mediterranean Forests for All” project, funded by the MED programme of the European Union. The report focuses on the state of the art regarding the social uses of the Mediterranean forests in general, as well as the forests of the countries participating in the project. Despite their proximity to the Mediterranean basin, different countries have varying types of forests, each with their particular characteristics. Each of those countries has variable legislation regarding the drafting and implementation of forest management plans on public and private forests and each state offers different incentives to the private owners for the implementation of particular forestry actions. The great financial risk and the low potential income deter the private owners from pursuing the development of their forest for social use by the public. Due to cultural and economic differences, the public of these countries has different perceptions on the importance of forests as far as its social functions are concerned and portray variable desires to take advantage of the different social functions.

The SylvaMED project aims to investigate the potential of establishing Payment for Environmental Services (PES) schemes that will promote the social uses of the forests, while yielding a profit for the owners of the forests, providing them with an incentive to sustainably manage the forest and contribute to the protection of the environment. To this end, the project has established pilot actions in different countries, with the aim of establishing such a scheme. Evaluation of the social functions of the forest are based on scientific socio-economic methods, essential for the establishment of a PES scheme, and this report covers the most frequently used methodologies for estimating market values for non-market social functions. The report concludes with recommendations on actions that need to be undertaken, in order to promote the social functions of the Mediterranean forests.
1. INTRODUCTION

Since the 1970s, all forest functions followed in the wake of the production function, in order to avoid restrictions on forest management, imposed by societal concerns for recreation and nature protection functions. Sustainable forest management now recognises the presence of multiple forest values, including non-timber products and eco-services and incorporates the preferences of multiple stakeholder groups, such as local communities, environmental groups and forest industries in forest management decision making (Blum, 2004). Globally the management of forests for social and cultural functions is increasing but the area is difficult to quantify. Only 4% of the global forests are designated for the provision of social services. The percentage is higher in Europe and more reliable data are available regarding the designation of forests for recreation, tourism, education or conservation of cultural and spiritual heritage. It appears that even though the main economic benefits of forests (employment and value of products) are static or declining, the social and cultural benefits are showing an increasing trend (FAO, 2010).

However, the distinction of the uses has proven inefficient in directing policies and has been unable to meet the demands of a theory. Nowadays, it is the interest approach of the social sciences which is employed, in order to describe, analyze and explain processes in forestry and activities of forest-related stakeholders (Blum, 2004). In Europe, excluding the Russian Federation, over 6.4 million ha (3.3 % of total European forests) are designated for social uses, in comparison to a 3.7 % globally (FAO, 2010). Public owned forests are usually managed by the state, with the consultation from expert groups and the local residents. In the case of privately owned forests, certain European or national legislation applies, but any form of exploitation requires the consensus of their owners. Timber and most non-wood products have certain market values, making it possible to calculate whether their production is profitable or not. On the other hand, it is not easy to attribute a price to non-market goods, including social uses of the forests. Alternative methods need to be developed in order to evaluate which social uses are required by the public, and pursue financially viable social uses of forests.
2. LEGISLATIVE CHAPTER

The SylvaMED project has produced reports on the legislation related to the PES schemes and three forest functions, water quality and quantity, non-wood forest products and social uses of forests. Detailed information regarding the legislation related to the social uses of the Mediterranean forests can be found in the latter. In this section, a brief overview of the legislation regarding the forest management plans in each of the countries/region participating to the SylvaMED project, is provided.

Forest Management Plans

Catalonia (Spain)

Forest management plans are voluntary for private owners in Catalonia. However, those that do commit to a management plan have access to grants, reduction in taxation and payment of the liability for the civil insurance. The maximum lifespan of a forest management plan is 30 years but they are usually reviewed every 10 years. For land parcels that are less than 25 hectares, their duration is fixed at 15 years.

Languedoc-Roussillon and Provence-Alpes-Côte d’Azur (France)

In France, in accordance with the article L6 of the National Forest Code, any owner of forest land with a surface equal or larger than 2.5 ha and located in the same geographical zone, must have a management plan (PSG) for the forest. The management plan has a lifespan of between 10 and 20 years, and is approved by the Regional Centre of forestry property. If the surface area of the private forest is between 10 and 25 ha, a voluntary PSG, with the same characteristics, can be established. A management plan takes into consideration the economic issues, environmental and social values of the forest, and also includes a program of wood cutting and work for forest reconstitution and improvement. It also specifies the management strategy of the animal species populations, which is part of the hunting plan. The approval of the document can take in to account the local practice.

Liguria (Italy)

Forest management plans in Liguria are only compulsory for municipalities and other public bodies that own more than 100 ha of forest in one or more forest land parcels, as long as there is a single forest land parcel of at least 50 ha. Forest management plans are not compulsory for private owners, however they have the obligation to dedicate at least 15% of the earning deriving from timber production and sale, for the maintenance of the area they own. In any case, areas that belong to the NATURA2000 network or other type of protected area category, must adhere to the restrictions imposed by their protected status, and if there is a management plan, it has to take those restrictions into consideration. Despite most of the forested land being privately owned (87%), only 12.8% of the forested area is under a management plan (RaF Liguria, 2010).

Slovenia

Forest management plans are prepared for all forested areas (public and private) by the Forest Service (SFS) and are updated every 10 years. If the private owners wish to perform any kind of silviculture measure in their forests and therefore prepare a specific management plan, they receive free counseling from the Forest Service professional staff. SFS also drafts the management plan for them. All the costs related to forestry actions (cutting, skidding), required by the management plan, are covered by the private owner, but there are various kind of subsidies for those purposes. There is full or partial funding for certain silvicultural and protective measures, regarding the intensity of social and/or ecological functions. However, private owners seem more interested in acquiring information about the intensity of possible cuts in their forest and also about forest protection and silvicultural measures relevant to the forest management (Ficko et al., 2010).

Crete (Greece)

The public Forest Service of Greece drafts long term management plans for the protective forests. These usually focus on timber production and protection. Forest management plans are updated every 10 years. Most activities in a forest must be authorised by the Forestry Service. Land use change is forbidden, both for private and public forests and areas where there has been a forest fire are declared as reforested areas. Forest recreation and the social function of forest is not yet taken into consideration when management plans are drawn, even though there is growing concern from the scientific society regarding the potential multi-functionality of the forests.

3. TECHNICAL CHAPTER

3.1 Government–private owners relationship on the social uses of forests

One of the difficulties that arise with the implementation of actions promoting the social uses of forest is the conflict between the private forest owners and the state, which varies among the European Mediterranean countries. In general, the private owner is keen to make a profit out of his or her forest, which in some cases would involve changing the land use from forest into something else (pasture, agriculture, etc.). At the same time the state wants to encourage the owner to maintain the forest and manage it properly. In order for the owner to adhere to the desires of the state he or she needs a financial incentive. This is where the Payments for Environmental Services (PES) come into play, a mechanism that pays the forest owner in order to maintain and manage the forest, while benefits are reaped both for the environment and the local society. Social uses of forests require access of the general public to the forest, something that some private forest owners are generally not very keen on. Legislation in each country regulates the right-of-passage of the public to forested areas, and this issue is also addressed for each region participating in the SylvaMED project, in the following paragraphs.

3.2 Summary of social uses of forests

Forest social values perceived by the public can vary between different countries and even different forests within the same country (Simpson, et. al., 2008). In a publication by the European Parliament (1997), five main social functions are identified: Landscape, Recreational, Educational, Cultural and Strict Sense social functions. The EU Forest Action Plan 2007–2011 breaks down the social functions of the forests into 1) supplying recreational and leisure amenities, especially to city dwellers, 2) providing a healthy living environment, 3) protecting against natural disasters, 4) making rural areas attractive to live in and 5) safeguarding cultural heritage and spiritual values (EC, 2006). According to the Millennium Ecosystem Assessment (2005) the Social Forest Services include Ecotourism, Recreation, Sports and Fishing/Hunting. The Global Forest Resources Assessment 2010 (FAO, 2010), recognises recreation, tourism, research, education and cultural and spiritual significance as the main social services provided by forests.

One of the difficulties that arise with the implementation of actions promoting the social uses of forest is the conflict between the private forest owners and the state, which varies among the European Mediterranean countries. In general, the private owner is keen to make a profit out of his or her forest, which in some cases would involve changing the land use from forest into something else (pasture, agriculture, etc.). At the same time the state wants to encourage the owner to maintain the forest and manage it properly. In order for the owner to adhere to the desires of the state he or she needs a financial incentive. This is where the Payments for Environmental Services (PES) come into play, a mechanism that pays the forest owner in order to maintain and manage the forest, while benefits are reaped both for the environment and the local society. Social uses of forests require access of the general public to the forest, something that some private forest owners are generally not very keen on. Legislation in each country regulates the right-of-passage of the public to forested areas, and this issue is also addressed for each region participating in the SylvaMED project, in the following paragraphs.

3.2.1 Walking/Cycling (Recreation)

One of the simplest and most popular social uses of forest in the EU and around the world are forest walks. People with close proximity to a forest have the opportunity to visit the forest and walk amongst the trees, observing and absorbing the natural environment. Forests are a very popular destination for those that want to avoid the artificial environment of an urban centre. This is why many cities try to maintain the urban forests that are near or within the city borders.

Natural forests grow on uneven ground and walking through such a forest can be treacherous. In order to allow people to safely visit the forests, actions are taken to improve access.
Narrow pathways are opened and maintained, offering both a safe surface and direction to the visitors. Barriers also offer support and separate the area the visitor can walk from the rest of the forest. Whenever the ground is leveled, visitors can use their bicycles to travel through the surface, provided that a flat and even surface is laid and maintained. These improvements aim to ease access for the people but must be kept at a minimum, in order not to alter the naturalness of the forest.

3.2.2 Sports (Recreation)

A variety of sporting activities can take place in a forest. Racing with bicycles, mountain biking, running and trekking and horse riding are common in most forests. Motorised races with quad-bikes or off-road motorbikes are also organised. Those that contain a river also offer the possibility of canoeing or rafting, while those with lakes can accommodate sailing and swimming. Forest where snowfall occurs during the winter can also permit skiing and snowboarding, provided the slopes can allow such activities.

3.2.3 Hunting (Recreation)

There is variable legislation throughout the EU countries, with the exception of environmental EU directives regarding the maintenance of fauna species and ecological equilibrium. The topic of hunting is too large to be covered within the framework of this report and it is already sufficiently developed. However, it can be said that hunting takes many forms, depending on the animals being hunted and the forest environment in which it takes place. It is formally allowed in many EU countries, with certain restrictions which vary between the number of animals that can be hunted at one time and the season within the year in which they can be hunted. In most cases, in order to be granted permission to hunt, a certain license must be obtained from the authorities and in many cases permission from the forest owner, in the case of a private forest, must be granted. In the UK hunting is traditionally seen as an aristocratic privilege, particularly fox hunting (Nail, 2008). In a sense, this activity does not only fulfill a social aspect but also serves as a cultural and hereditary activity, which people associate with their nationality and social status. The same type of hunting also takes place in France, in addition to boar, deer and bird hunting.

3.2.4 Mushroom picking (Recreation)

Mushroom picking is a very popular activity in many countries in the EU and around the world. Following their gathering instincts, people frequently roam the forests during the appropriate seasons in search of edible fungi. However, this activity is not only seen as a food-collecting process, but also as a social activity, since, in many cases, mushroom picking is done in small groups. One of the issues that arise with mushroom picking is the conflict between the pickers and the forest owners, when this activity takes place in a private forest. Most EU countries every person has a right of passage through a private forest, with the occasional restrictions. Forest owners see the mushrooms growing in their forest as their property and even though they allow access to their forest, they often frown upon passers-by collecting the mushrooms growing on their land. On the other hand, mushroom picking is a very traditional activity and the general population feels that it is their right to pick mushrooms anywhere, whether in private or public forests. Since mushrooms are considered to be a non-wood forest product, the topic of mushroom picking is covered by the relevant Working Report on Non-Wood Forest Products, produced by the SylvaMED project. The reader is advised to consult that document for more information.

3.2.5 Aesthetic/Landscape

Who hasn’t enjoyed a panoramic view of a forest? The sense of nature offered by the forest, with the numerous trees covering large expanses is appealing to most people. This is the reason that attracts people to visit the forest in the first place. However, even without people visiting the forest for walking or any other activity mentioned above, the aesthetic pleasure offered by the view of the forest is another very important function that forests offer to the people. Whenever there is a need for relaxation in a natural environment, people can socialise within the forest, by organising barbecues or picnics. Similar to walking, these activities also require some infrastructure that will make the experience more pleasant. Benches and kiosks offer seating space and protection, while specifically designed fire pits in clearings allow cooking without the risk of a forest fire.

3.2.6 Historic Value and Cultural Heritage

Forests can change in size or species distribution, as they are a dynamic ecosystem, but they generally exist in a particular location. Human generations change but the presence of the forest remains. Due to the long-term presence of forests, people often associate their place of residence with nearby forests and provide them with a sense of location. Many historical events that have taken place in such areas are often directly or indirectly associated with the forest. The presence of the forest reminds people of the historical provisions of the forest to the past generations. In some cases forests can host archaeological sites, reminding people of their past and cultural heritage. This service of the forest to the people is offered simply with the presence of the forest.

3.2.7 Environmental Education

With the increasing rate of urbanisation, more and more people abandon the rural areas, in hope of a better employment in the city. However, the newer generations born in urban areas, do not have the opportunity to interact with natural environments. The topic of environmental education has seen increasing significance over the last few decades, with the increase of environmental consciousness amongst the European populations. Primary and secondary education curricula often include visits to forests within the framework of environmental education, allowing children from urban centres to get in touch with nature. In a similar manner that chemistry is better instructed in the lab where students can conduct experiment, environmental-related subjects, such as ecology and biology are better taught when the pupil has the opportunity to witness the flora and fauna present in a forest ecosystem.
3.3 Social uses of forests in EU Mediterranean countries

The regions or countries covered by the SylvaMED project include (from west to east): Catalonia (Spain), Languedoc-Roussillon (France), Provence-Alpes-Côte d’Azur (France), Liguria (Italy), Slovenia and Crete (Greece). The forests in these regions differ significantly between them and the preferences of the public regarding the social uses of forest also portray great variability. The following section addresses the significance of each social use mentioned above, for each region involved in the project.

3.3.1 Catalonia (Spain)

Catalonian forests cover approximately 2 million hectares, about 61% of the total extent of the region. More than three-quarters (76.9%) of those forests are privately owned. The vast majority of the forests are available to the public and most activities are permitted, with the exception of certain restrictions in protected areas. Almost 30% of the forests are included in the Network of Special Interest Sites (PEIN; Figure 3 and Table 1), and are under form of protection. The PEIN includes all Natura 2000 areas, which contain priority habitats and some important places for birds, at European level.

Figure 3: In green, the Network of Special Interest Sites -PEIN-

Table 1 Protection values and permitted uses.

<table>
<thead>
<tr>
<th>Values</th>
<th>Scientific</th>
<th>Educational</th>
<th>Economic</th>
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<td>Recreation</td>
<td>Forest production</td>
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<tr>
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<tr>
<td>Natural Reserves</td>
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Figure 1: Relative importance of social services (from MCPFE, 2007)

Figure 2: Trend of importance of social services (from MCPFE, 2007)
Catalonia has 18 Natural Parks (Figure 4), their management intends to ensure that people can know and enjoy nature. The activities held in a park have to fulfill 3 objectives: i) offer a quality touristic experience; ii) contribute to the economic development of the region where they are; iii) raise awareness on the need to conserve the natural heritage.

![Figure 4: Natural parks of Catalonia](image)

### Right-of-passage

The Spanish Civil Code (Art. 388) allows for fencing of and limiting public access to private properties. Nevertheless, traditionally free access is granted to most forests, with a few exceptions where holdings devoted to hunting, truffle production or cattle breeding can be fenced. Forest owners who do not want outsiders to enter into their property must explicitly indicate so on the limits of the forest with clearly visible signs.

Catalan Law on Motorized Access allows landowners to prohibit or limit the driving of cars or motorbikes along the roads that are of their property (Art. 6.5); the government can impose conditions in order to preserve natural values and public services (e.g., forest fires extinctions). Even if it is not explicitly mentioned, this article implicitly permits forest owners to establish an entrance fee to their forest.

The historical importance of cattle in Spain has resulted in the custom of drovers' paths. Such cattle trails are recognised nowadays as an easement, owned by the regional authorities with a guaranteed open access. While ranching is the priority use of the cattle trails, trekking or horse riding are contemplated by the law as complementary activities (Art. 17), allowing also for the possibility of harvesting of fruits and products not used by the cattle (Art. 15).

### Social uses

According to 2010 data, there were 298,000 visitors in Catalonia, 95% of which were Catalans. The recreation and sporting activities promoted in the Natural Parks are:

- **Trekking/hiking** and normal walking activities are quite popular in Catalonia. There are many attractive walking and hiking routes in the Catalan side of the Pyrenees, going through rivers and valleys. *Horseback riding* is also popular and there are organised holidays focusing around horse riding. *Skating* slopes and resorts can also be found at the Pyrenees, with over 600 Kms of skiing routes. *Cycling* is another popular social use. The region also portrays many cycling routes for all types of bicycles. Worthy of notice are the "green ways", old rail lines travelling through the Pyrenees, which have been converted into paths for cycling, walking or horse riding. The rivers of the Pyrenees also offer opportunities for rafting and canoeing. The steep slopes in the mountains of the Pyrenees also provide great spots for climbing.

At the moment there are 8 *Adventure Parks* established in the Catalanian countryside. These are private initiatives of forest owners, who maintain their forest in a manner that allows the hosting of various sporting activities and organise events related to these activities.

- **Skiing** is widespread in the mountains of the Pyrenees also offer opportunities for rafting and canoeing. The steep slopes in the mountains of the Pyrenees also provide great spots for climbing.

### Right-of-passage

Public forests in France are free to access to everyone, with the exception of Natural Reserves where access may be prohibited, due to its delicate state and environmental value. On the other hand, private owners have the option to forbid public access to their forest. However, the owner must explicitly inform the visitor that access is not permitted and physically obstruct the point of entry of any private roads that go through the property. But in the majority of the cases, the private forests are not enclosed and the public can access the private property. Many routes of excursion cross French forest spaces and they are generally (but not always) included in a convention between the public community which organises the paths and the owner, in order to obtain the agreements of passages and sometimes means to maintain the path. However, there is no payment for this use.
3.3.3 Liguria (Italy)

Forested area makes up 71.5% of the total land area, covering 387,170 ha, most of it being privately owned (87%). The area is largely a coastal area with over 220 Km of coastline, with ten Regional Parks of protected areas and one Natural Park. In total there are 125 sites of community interest (SCIs) and 7 Special Protection Areas (SPAs), covering an area of 138,000 ha and 20,000 ha respectively. One of the main problems the area is facing is the floods following intense rainfall and forest fires. The lack of proper forest management from the private owners limits the capacity of the forests to mitigate the effects of floods and makes them more susceptible to forest fires, a fact the local population identifies as the most important problem with the forests in the region.

Right of passage
In Liguria there is free access to all forested land, public or private, with the exception of natural reserves, where it is prohibited. However, off-road motorised traffic is restricted in certain areas, due to the damage the vehicles cause.

3.3.4 Slovenia

Slovenia is a country rich in forests, covering 1.17 million hectares, approximately 58.1% of the entire country. Following the independence of Slovenia, some public forests were given back to the former owners (or their heirs) and, as a result, 74% of the forests are currently under private ownership (Slovenia Forest Service, 2011). Most Slovenian forests are located within the area of beech, fir-beech and beech-oak sites (70%), which have a relatively high production capacity (Debevc, 2010). There are two types of protected forests in Slovenia: protection forests with a highly emphasized protection role and special purpose forests. In the so-called, special purpose forest - forest reserves, all human activity and forestry measures are unconditionally forbidden (Figure 5). Those forests (covering an area of 9,600 ha) are also protected by the valid legislation.

Leisure involving motorized vehicles is growing in the regions and their development is rapid and unorganized, despite French regulation and in particular the Code of the Environment, which restricts motorized traffic in natural spaces, with the exception of roads which are open to traffic. Forest owners underline this emerging trend which is difficult to manage and has severe impact on the forest.

Several private forest owners develop activities of tourism, sports and leisure in their forest, mainly in the Provence area. They are organized in an association ("FORESTOUR, Forest – Network – Tourism") for improved collaboration and advertising. They offer lodging services, sporting and cultural activities.

Social uses
According to the National survey “French people and the Forest” in 2004, people mostly visit the forest for walking (59%), followed by picking of flowers, berries and mushrooms (35%), and then by sport activities (22%), relaxation and picnicking (15%) and nature observation (15%). People tend to visit the forest if it is nearby (less than half an hour). The preferences between following the paths and straying off them are equally popular. One of the main attractions to the forest is the naturalness of the forest and the fact that they also see it as a social activity, since people tend to go walking with company. Only a 15% of the French people visit the forests on a weekly basis, 27% do so monthly and 29% at least once a year, while 29% never visit the forest. There are approximately 500 million visits to the French forests every year. The average annual visits to the forest per person for France is 7.3 (EC, 2008).

Camping is a very popular activity in south-east France. In order to accommodate the visitors, the area has a very well developed network of organised campsites, with plenty of facilities, both for camping and caravanning. At the south-east corner of the region, at the French-Italian and French-Swiss borders, the Azure Alps offer stunning scenery and suitable slopes for hiking and other snow sports. There are organised resorts established in the region, offering accommodation and all the necessary facilities. At the same vicinity, the forest-covered slopes of the Alps form various rivers and streams, suitable for white water sports such as rafting, canoeing and kayaking. For the cycling enthusiasts there is an extensive network of cycling paths in the regions of Languedoc-Roussillon and Provence-Alpes-Côte d’Azur, with varying degrees of difficulty, for all types of cycling.
The second type of protected forests - special purpose forest with forestry measures includes different types of protected forests, mostly forests within the nature protected areas (national, landscape and regional parks, nature reserves and monuments) (Figure 6) and some urban forests. In these forests, forest management is allowed but adapted for the conservation and improvement of those forest services, which are the reasons for the protected status. This means that often additional special measures, such as different management activities (e.g. lower intensity of forest management, restrictions) and other instruments (e.g. subsidies, compensations and other financial tools) are implemented according to the approved forest management plans. The area of forests within national, landscape and regional parks is 233,862 ha.

Education within a forest is very important. The Slovenia Forest Service is creating and managing forest educational trails for young people and adults alike. Furthermore, the Slovenia Forest Service also holds educational meetings for forest owners, in an attempt to inform them on the benefits of forest management. The Slovenian Public Opinion Survey in 1998 (Malnar and Sinko, 2000) showed that 95% of the respondents considered forest to be an essential element of the Slovenian landscape, which proves that in the mind of the local residents the forest is associated with their identity.

3.3.5 Crete (Greece)

Approximately 6.4 million ha of Greece are forest or partly wooded land, which is roughly 50% of the total land area of the country. Of these 65% are state owned forests, 15% are privately owned and 20% are owned by municipalities, monasteries or the church and other legal entities (banks, foundations etc.).

Right of passage

Legislation permits free access to all forested areas, unless a specific area is fenced and access is explicitly restricted. Access to protected areas is allowed, as long as no actions are taken that can cause damage.

Social uses

Forest recreation was created as an idea in 1970 in Greece, due to the increase of urban population and people moving away from nature. Initial works have focused on the opening of footpaths and creation of benches, kiosks, rubbish bins and other small utility constructions, to serve those visiting the forests for walking or picnicking. In more recent years (the last 10-15) there have been some shelters and organized hostels in the mountains, to allow people to stay overnight. Crete has very rich biodiversity both for flora and fauna. There are many endemic plant species growing on the island, many of which are found at secluded locations. The variety of the elevation from coastal areas to mountainous ridges and gorges forms a complex and variable environment with high amenity value, attracting many walkers in the area. Because Greece is very mountainous, there are also many opportunities for people to go climbing at forested slopes. Agro-tourism and eco-tourism are growing sectors in Greece. Many forest villages have been established recently, offering accommodation in or near a forest, and at the same time offering a variety of nature-related activities (trekking, climbing, cycling, etc.). Canoeing and rafting is also performed in rivers that flow through forests, whenever the slope and water flow is suitable for such sports (for example the Nestos river at north-eastern Greece).

3.4 Pilot actions for implementation under SylvaMED project

Each of the seven partners has provided information regarding the social uses of forests in their region. However, four partners (CRPF-Languedoc-Roussillon, CRPF-PACA, SFS and MAIC) are implementing pilot actions related to the social uses of forests.

3.4.1 Pilot action in the region of Provence-Alpes-Côte d’Azur, France

The objective of the CRPF of Provence-Alpes-Côte d’Azur (PACA) is to establish a “win-win” partnership between sport federations and private forest owners, with an agreement on a model which will aim to provide high quality recreation to sports-people, while ensuring their safety. In parallel, there is an aim to provide environmental education using the private sites, stimulating the interest of the younger generation for the natural spaces, and take into account the necessary management of the forest. These activities will require certain equipment and the cost of purchasing and maintaining this equipment is also taken into consideration, as are the various possibilities of remuneration for these sporting services.

The CRPF of PACA and the Departmental Olympic committee are currently investigating the existence of a private forest, to function as a pilot site for testing of the installation of an experimental device and agreement with the private owner.
3.4.2 Pilot actions in the region of Languedoc-Roussillon, France

There are two pilot actions regarding the social use of forests in the region of Languedoc-Roussillon. The first action is related to the convergence between a tourism economic development project in the territory of the “Pays Pyrénées Méditerranée” and the financial support for the public opening of private forests. The political committee of the Pays Pyrénées Méditerranée (Department of Pyrénées Orientales), between Canigou/Massif and Mediterranean sea, is interested in the implementation of a tourism development project. The aims are to search for a combination between the littoral, which is very popular, and the rural back-country, the extension of the touristic period and the development of environmental services, which will help further develop the authenticity of the territory.

The priorities of the local actors are to develop sporting activities within the natural environment (hiking, climbing, etc.), and also promote cultural tourism (including natural heritage). The challenge lies in the effective involvement of the private forest owners and providing them with development opportunities, provision of financial support for the management of the local forests and the possibility for diversification of activities for the owners.

The second pilot action is related to the management of the public visiting of private forests within the Régional Natural Park of the Narbonnaise (Aude). This area receives many visitors along its coastline, particularly during the summer period. The Natural Park of the Narbonnaise is interested in providing environmental and educational services in the area, in order to diversify the activities in the littoral. People are interested in visiting natural and forest spaces, however the majority of the forests away from the coastline are privately owned, without production, and under serious fire threat. The aim is to assist the private owners to provide incentives to potential visitors to come and visit their forest, providing the private forest owners with an income and the encouragement to appropriately manage their forest.

3.4.3 Pilot action at the urban forests of Celje, Slovenia

**Background**

Forests around cities, defined as urban forests, are important elements of the urban landscape. With their social and environmental functions, they influence living quality and ecological stability of a wider urban space. Urban forests are the most heavily visited forests in the Slovenian public. In contrast, the majority of them are privately owned. Urban forests are specific spaces with emphasized public significance, which differs from the prevailing economic interests of private owners.

**Aims**

The general aim of the pilot action is to examine the possibilities for additional economic income for private forest owners, due to the ecosystem services provided by urban forests. The pilot project in the urban forests of Celje is focused on recreation, as the most emphasized social function. The economic expectations of private urban forest owners will be investigated through detailed personal interviews with forest owners in the area of four previously designated potential walking paths and cycling forest tracks. The results will be compared with the possibilities and willingness of the local municipality to pay for the public recreational use through the financial compensation of the affected forest owners.

Project phases

1. Designation of the pilot area.
2. Designation of potential routes of two walking paths and two cycling forest tracks.
3. Interviews with forest owners.
4. Analysis of forest owners’ opinions and expectations.
5. Preparation of development proposals for the local municipality.
6. Conclusions of the pilot project.

**Time frame**

In 2011 the project proposal was elaborated and confirmed. Two pilot areas in the urban forests of Celje were designated: Lokrovec area (210 ha) and Lahovna area (155 ha). Their characteristics are highly fragmented private forest property with an average forest ownership area of 1.72 ha. The basic topics and guidelines of the questionnaire for interviewing forest owners were selected as well as potential locations for designation of walking paths and cycling tracks.

In 2012 the phases 2 – 6 will be further developed and concluded. Phase 2 and 3 will be conducted in late winter and spring, phase 4 and 5 in summer and early autumn and phase 6 at the end of the year.

3.4.4 Pilot action at the forest of Anopoli in Crete, Greece

The forest of Anopoli/Agiou Ioannis is located at the south-west coast of the island of Crete in Greece (Figure 7). It extends from the Samaria gorge on the west to the road leading down to the coast on the east, covering an area of approximately 1220 ha. The forest is located at the side of the south-facing White Mountains between elevations of 500 and 1800 metres.

There is an existing path that leads from the hamlet of Loutro at the south coast to one of the summits of White Mountains at an elevation of 2435 metres (Figure 8). The 19 km path goes through the Anopoli village, through the forest and finally through the near-bare landscape as it approaches the summit. This path has been used frequently in the distant past as it was one of the main roads that connected the port of Chania on the north coast, with the south coast.

**Figure 7: Location of pilot area in Crete, Greece**

These days, sections of the path are used by the locals to access their beehives or for hunting. Trekking enthusiasts both from the region and also national and international visitors frequently use it to experience the way the scenery changes as the elevation increases along the path. Its unique amenity value and the popularity amongst those who love trekking make it an attractive site for the organisation of a sky-race, a race that begins at sea level and ends at high elevation.

In co-operation with the local municipality of Sfakia, the Management Body of the White Mountains and the Forest Directorate of Chania, such a race is organised to take place during autumn of 2012 for the first time. The
path will be cleared during spring of 2012 and appropriate signs will be erected to mark the path, to ensure the safety of the participants. Part of the fees paid by the participants will be used to cover the expenses of organising the race and the remaining portion of the income will be provided to the Forest Directorate, in order to fund necessary forestry actions for the protection of the forest.

Figure 8: Foot race course

4. ECONOMIC CHAPTER

This section covers the economic aspects of designing and establishing a scheme that promotes the social uses of forests. A variety of methods are initially described and a short review of the costs involved and the amount of money the users are willing to pay, is provided. These elements are necessary in order to set up such a scheme, particularly when it is a Payment for Environmental Services scheme.

4.1. Payment for Environmental Services (PES) for provision of social functions

The term Payment for Environmental Services (PES) is often used broadly to cover any market-based mechanism for conservation. In general, it can be defined as “a voluntary transaction where a well-defined environmental service (or a land-use to secure that service) is being ‘bought’ by a service buyer from a service provider, if and only if the service provider secures the service provision” (Wunder, 2005). In most cases the payment is made from the buyer to the seller to ensure a particular land-use of the land owned by the seller, and in many cases the land in question is forested.

Land owners often receive few benefits from a particular land use, such as forest conservation, in comparison to an alternative use, such as pasture or crop land. However, this conversion would result in loss of benefits to other users (water filtration, biodiversity and carbon emissions). Payments for these services from the users to the land owners, can persuade them to maintain the original land use (Engel et al., 2008). The payment to the seller of the ES should be higher than the benefits incurred from changing land use and at the same time the cost of buying the ES should be less than the value lost for the buyer, should the ES not be provided. If that does not occur, then the PES programme is socially inefficient. In some cases it is necessary to change land use in order to allow the desired service to be provided. In those cases the costs tend to be much higher, rather than providing an ES by maintaining the current land-use (Engel et al., 2008).

The most common types of PES are funded by the state, particularly when the forests in question are public owned. Alternatively the PES can be directly financed by the users of the service. User-financed programs are better targeted, more closely tailored to local conditions and needs, have better monitoring and a greater willingness to enforce conditionality, and have far fewer confounding side objectives than government-financed programs (Wunder et al., 2008). However, there are cases where government-funded programmes are the only option, when the user is indirectly making use of the service and it is not possible to identify which member of the public is using the service and to what extent (Engel et al., 2008).

A PES programme needs to have a monitoring method to ensure the provider is complying with the adoption of the land use. Some go even further in monitoring that the actual environmental service is provided, even though most PES simply monitor the compliance and not the provision of the service (Pagiola and Platais, 2007).

4.2 Social values identification and assessment methods

In order to identify the social values which are important for a particular forest, the relevant stakeholders must be consulted. These include all those involved with the forest, whether those are private owners, the local community or environmental groups. The initial step of the identifying the social values requires the identification of those stakeholders.

Stakeholder analysis begins by defining the system boundaries, in order to then define the groups of people who may have an interest. Direct and indirect research methods are then applied to analyse the perspectives of each stakeholder. This is a useful tool to identify potential conflicts in terms of goals, beliefs or values, and a good starting point of building a consensus between the conflicting stakeholders (Lawrence, 2004). Once this consensus has been reached, the original set of social uses to be pursued would have been identified. It is now the turn of the potential users of the forests to be consulted on their preferences and desires and their valuation of the social values.

Traditional methods of collecting information and opinions from the people employ the use of questionnaires.
The responses undergo statistical analysis, in order to detect trends and summarize the opinions of the group of respondents. Even though this method is still a valuable one, experience suggests that quantitative valuation may be fallacious because the resulting numbers do not represent reality. The value of valuation may lie in the actual process. Through the activity different stakeholders may understand each others’ goals and objectives. Participatory methods, semi-structured interviews focus group discussions and storytelling may help people express their values in ways that can be communicated to foresters (Lawrence, 2004). Those alternative methods could supplement the traditional use of questionnaires or individual interviews.

The formulation of the questionnaire is a very important step in the process of inquiring the public opinion. Various methods have been proposed for a range of applications, each with its own success stories. It is evident that the survey method needs to be adapted to the particular application, which in this case is the identification of the social values held by the public.

There are two broad categories of valuating non-market goods and services, the revealed preference methods and the stated preference methods. The first category uses the fact that the user pays to acquire the non-market good or use the non-market service and employs it as proxy for the valuation of the good or service. The stated preference method, directly inquire the user on the maximum amount of money they would be willing to pay for a non-market good or service and use this value to estimate the value of the non-market good or service (MCPFE, 2007).

4.2.1 Travel Cost Method

The travel cost method is a revealed preference method, and measures the actual cost of using a social service, instead of inquiring the user on their willingness-to-pay. Taking advantage of a social service of a forest usually involves travelling to the location of the forest. The decision to visit the forest or not, involves the distance and accessibility to the forest and the cost that the journey will incur. The travel cost method is particularly designed to estimate economic use values associated with ecosystems or sites that are used for recreation. The method can be used to estimate the economic benefits or costs resulting from changes in access costs for a recreational site. Elimination of an existing recreational site, addition of a new recreational site and changes in environmental quality at a recreational site. The basic premise of the travel cost method is that the time and travel cost expenses that people incur to visit a site represent the “price” of access to the site. Thus, peoples’ willingness to pay to visit the site can be estimated based on the number of trips that they make at different travel costs. This is analogous to estimating peoples’ willingness-to-pay for a marketed good based on the quantity demanded at different prices.

The zonal travel cost method is an adaptation of the travel cost method and is the simplest and least expensive approach. It will estimate a value for recreational services of the site as a whole. It cannot easily be used to value a change in quality of recreation for a site, and may not consider some of the factors that may be important determinants of value. The area surrounding the site of interest needs to be separated in zones and information must be collected on the number of visits from each zone. Those visits need to be aggregated per 1,000 of people residing within each zone. Distance covered and time spent travelling, as well as the total cost is required and aggregation of cost per km and minute travelling. A regression analysis between number of visits and total cost can provide an indication on the change of demand, depending on the cost (Roovers et al., 2002).

4.2.2 Hedonic Pricing Method

The Hedonic Pricing method is another revealed preference method. However, instead of estimating the value of a good or service based on the cost of the user to acquire this good/service, the Hedonic Pricing method measures the changes in the value of other marketed goods or services (variables) which are directly related with the non-market good/service. For example, a study in Finland used the Hedonic Pricing method to attach a market value to urban forests in Salo in Finland (Tyrvaenen and Miettinen, 2000). The study collected house market values in the area and observed that an increase of the distance from an urban forest to one kilometre brought about a 5.9 % decrease to the house value, and that houses with a view of an urban forest were 4.9 % more expensive.

4.2.3 Contingent Valuation Method (CVM)

The Contingent Valuation Method (CVM) is a method to estimate economic values for all kinds of ecosystem and environment services through questioning of individuals on their willingness to pay for a good or a service, particularly the non-market goods or services. Contingent Valuation Method is a simple flexible non-market valuation method widely used in cost-benefit analysis and environmental impact assessment. However it is under severe criticism regarding its validity and reliability and the effects of biases and errors (Prato, 2000; Clark et. al., 2000; Venkatachalum, 2004).

Use of CV method showed that residents in the Lagoon of Venice drainage basin associate a positive value and a preference with the implementation of an agroforestry network (plantations), but its value is strongly affected by their identity with the landscape and their income. The expectations of the farmers were lower than European Union incentives due to poor information and bureaucratic difficulties. Landscape choices strongly involve issues of identity perceived rights and evaluation capacity that cannot be simply expressed in terms of preference cost benefit analyses (Franke et al., 2001). Forest recreation valuation in Poland using the CV method showed that it is highly valued at 0.64-6.93 euros per person per trip (Bartczak et al., 2008). In Croatia the Contingent Valuation, Hedonic Price and Expert Assessment methods were used to estimate the aesthetic/ambient value of forest view to tourism and local population (Horak et. al., 2002a). Valuation of non-material forest services in Croatia and value of actual tourist recreational forest service through CVM. Tourists were willing to pay for at least one activity related to the protection of the forest surrounding their accommodation, and stated they enjoyed hiking, cycling and seeing and learning more about nature (Krnar et al., 1998). The willingness-to-pay of people for services in Finland’s state-owned parks was measured, in order to evaluate outdoor recreation. A variant of the Tobit model was used to examine willingness-to-pay responses (Huhtala, 2004). Nature-based tourism provides locally owned small businesses with more direct income, in comparison to externally owned large-scale ones (Lee, 1997).

Despite its weaknesses, the CV method is the only technique at hand for the assessment of non-use values of environmental goods. The willingness-to-pay is biased upwards because the respondents do not properly observe the pollution, and overestimated the costs. Additional attributes associated with their behavioral change. The CV method showed that it is highly valued at 0.64-6.93 euros per person per trip (Bartczak et al., 2008). In Croatia the Contingent Valuation, Hedonic Price and Expert Assessment methods were used to estimate the aesthetic/ambient value of forest view to tourism and local population (Horak et. al., 2002a). Valuation of non-material forest services in Croatia and value of actual tourist recreational forest service through CVM. Tourists were willing to pay for at least one activity related to the protection of the forest surrounding their accommodation, and stated they enjoyed hiking, cycling and seeing and learning more about nature (Krnar et al., 1998). The willingness-to-pay of people for services in Finland’s state-owned parks was measured, in order to evaluate outdoor recreation. A variant of the Tobit model was used to examine willingness-to-pay responses (Huhtala, 2004). Nature-based tourism provides locally owned small businesses with more direct income, in comparison to externally owned large-scale ones (Lee, 1997).

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4.2.4 Choice Modelling

Non-use values associated with preservation of forests are difficult to be estimated with non-market valuation techniques such as the Contingent Valuation Method (CVM). In addition, when considering social uses of forests, the opinion of the potential visitors is very significant. In order to balance the user requirements with the problems that can arise from satisfying those requirements, the provision of choice sets when consulting the users through questionnaires, is a useful tool (Heare and Salinas, 2002). An alternative to CVM in such cases is the Choice Modelling (CM), which can handle complex situations and frame choices consistent with real life choices (Rolfe et. al., 2000). Choice Modelling are the procedures that use questionnaires presenting to the respondents with ‘bundles’ of attributes and ask them to choose between these bundles, or rank or rate them. There is no direct questioning of their willingness-to-pay, but one of the attributes of the choice sets includes a cost and a price, so that willingness-to-pay can be inferred (Secretariat of the Convention on Biological Diversity, 2001). However, when deriving welfare measures from hypothetical utility functions of a forest, both methods produce similar results, as long as the functions are described in detail (Mogas et. al., 2006).

A study in Mount Kilimanjaro in Tanzania employed the CM and surveyed villagers, foresters, park employees, entrepreneurs and environmentalists in order to investigate the societal states of forests that are perceived to enhance human and environmental well-being. The survey applied a multi-group choice method, following six steps: (i) identification of all relevant social states for sustainable forest management; (ii) elicitation of preferences, for different social states, of forest user groups’ members; (iii) determination of attributes of users and social states; (iv) aggregation of individual forest value preferences into social value preferences; (v) inter-group comparison of preferences; and (vi) estimation of predictors of social forest value preferences. There was
a distinction between household-perspective and the citizen-perspective of evaluations, and socio-economic and institutional-legal attributes of stakeholders were tested as predictors of stakeholder preferences. The results showed that non-consumptive forest uses, including ecosystem services, were given highest priority by all stakeholders and consumptive values were weighted more discriminately, while non-consumptive values were viewed more holistically. Forest dependence and environmental-resource entitlements led to more household consumption-based valuations, whereas the appreciation of diverse forest values increased with the education of people. Finally the stakeholders exercised higher consensus on the importance of non-consumptive uses when such values were evaluated in the context of societal needs but not as household needs, while consumptive uses registered the opposite effect (Kijazi and Kant, 2010).

A study in Finland examined visitors’ preferences for forest management at five adjacent municipal recreation sites. The study design accounted for changes in scenery and biodiversity indices in the forest environment resulting from forest management practices. Respondents were asked to choose their preferred management option from alternative management regimes for the sites. Results showed that visitors had a strong preference for a more representative and scenic beauty. However, there was a trade-off between these benefits, visitors chose their favourite scenery at their favourite recreation site and opted for management options, which preserve biodiversity at the other sites in the recreation system (Horne et. al., 2005).

4.2.5 A social choice modelling

A stated preference technique (SPT) based on the Conceptual Content Cognitive Mapping (3CM; Kearney and Kaplan, 1997) was proposed by Kant and Lee (2004). According to the method, the respondents are initially informed of the objectives of the exercise and the steps that were going to follow. They are assured that there is no right or wrong answer, nor is there an upper or lower limit to the number of stakeholders involved. Multi-criteria Analysis (MCA) is a social choice method, that derives the relative preferences of the stakeholders in relation to specific criteria, in order to produce an overall strategy for the management of a particular issue. Sheppard and Meitner (2005) employed multi-criteria analysis for sustainable forest management. According to the method, the stakeholders were asked to prioritise the criteria by means of weighting, which were then aggregated to produce scores for various management scenarios. The criteria are usually developed by experts, based on early consultation with the stakeholders. The result of the process is a matrix combining the effect of each criteria under different strategies. A thorough review of studies using MCA models for forestry has been produced by de Steiguer et al. (2003) and Kangas et al. (2001). A similar method, was tested in Finland, where the stakeholders were provided with the alternative scenarios and were asked to develop the relevant criteria and attach weightings to them. The same final matrix is produced, but instead of calculating weighted scores for each scenario, the scenarios were compared based on the number of criteria which surpassed a certain arbitrary threshold, such as median values (Laukkanen et al., 2003).

Certain principles need to be observed, in order to ensure reliable results from a participatory decision-support method. The stakeholders group needs to be representative and cover a large base of stakeholders, to ensure all interests will be voiced. This is also promoted by allowing open access to the stakeholders. The decision-making process should be clearly structured and engaging, to stimulate the interest of the stakeholders and the information provided need to be clear, understandable and accurate. It is important to ensure that the participants are relevant to the scale of the area involved in the decision-making process. Finally, the process needs to be credible, requiring the use of straightforward and comprehensive methods, the agreement of the participants to the rules enforced by the process and the assessment of their satisfaction with the process and the outcomes. Capacity building and mutual learning is particularly important, in order to assist the participants to their future work and enable them to feel more involved (Sheppard, 2005).

A social choice method was used by Ebert and Welsch (2003), when they provided a characterisation of meaningful environmental indices in terms of preference ordering on multidimensional states. Investigation of the pluralism of sustainable forest management these days was performed by Wang and Wilson (2007), highlighting the importance of the social choice method. The method was also applied when it was shown that landscape content and land cover interactions should be considered when deciding on land use development (Njink et. al, 2009). The Analytic Hierarchy Process (AHP), a form of MCA, has been used to demonstrate its capability to enhance the overall participatory process of the public being involved in sustainable forest management decisions, by deriving stakeholder weightings for management objectives (Kangs, 1994; Ananda, 2007).

4.3 Application of valuation methods and willingness-to-pay around the Mediterranean Europe

Social uses of forests are often services that do not have a designated market value. In order to set up a payment scheme, one of the initial steps that need to be taken is to determine the economic value of the forest, with regards to its social functions. This is often done by estimating the tendencies of the users of the forests, with regards to the amount of money they would be willing to pay, in order to receive the service that is the social function of the forest. Some examples of willingness-to-pay estimates in various countries were presented in the previous paragraphs. In this section, the previous experiences in the willingness-to-pay studies around the regions covered by the SylvaMED project, are presented.

4.3.1 Catalonia (Spain)

In a study (Riera and Mogs, 2004), a sample of residents in Catalonia was questioned on their willingness-to-pay for the increase of Catalonian forest from 40% to 60%. Two methods were evaluated on different samples of the population, the contingent ranking and the choice experiment, inquiring about the opportunity to picnic, use of four-wheel vehicles, mushroom picking and CO₂ sequestration. . The results showed that the choice experiment yielded higher WTP estimates than the contingent ranking. A more recent study (Brey et al., 2007), used choice modelling, and specifically a random parameter logit model, to reveal that individuals would annually pay an average of 6.33 euros to picnic in the new forests. On the other hand, individuals would experience a loss in welfare equivalent to -9.67 euros if four-wheel driving was to be allowed in the new forests. Finally, being allowed to pick mushrooms in the new forests was valued at an average of 12.82 euros by those who live in rural areas. In an early study, Riera (1997) underlines the importance of the travel cost when estimating willingness to pay using the contingent valuation method.

In 2010, the Foundation for Rural Areas of Catalonia, made a survey for the whole agrarian-forestry sector. The recreational and cultural values of forest were estimated using the “willingness to pay” method by citizens in order to conserve a natural area susceptible of being used by recreational or cultural activities. Recreational issues were divided into two concepts: leisure, referring to the use of natural areas by families; and landscape. The estimated contingent value was 237€/ha for forests, which for the whole Catalonia would represent 448 million Euros (0,22 % of the NGP).

In 2008 the Spanish Statistical Institute launched the questionnaire “Households and environment” capturing the main environmental habits, consumer patterns and attitudes. It included a section on preferences for environmental measures, presuming their future social acceptance. It is interesting to notice that people are in favour of the introduction of an ecological tourist tax (35%). Other older experiences summarized in Kristöm and Riera (1997) estimated the willingness to pay for recreational uses in 1082 pesetas/visitor (equivalent to 6€/visitor in 1993) for the Natural Parks in the Pyrenees and 1479 pesetas/visitor (equivalent to 9€/visitor in 1994) for a Dehesa-type forest in Spain.

4.3.2 Languedoc-Roussillon and Provence-Alpes-Côte d’Azur (France)

There are no specific studies from the south-east region of France. However, a survey from 1997 (Normandin, 1998) representing 650 households in Lorraine region can serve as an example. According to the survey
65% of households expressed support to a payment for environmental services or improvement of leisure in forests. The payment solution which appeared to be most the most popular was an “eco-tax”, taxes on polluting activities. Payments by national or local tax, or by entrance fee, were much less accepted. The recreation value of forest (in this region) was estimated to approximately 255 to 390 Francs/ha/year (between 39 and 60 euros/ha/year). The study also differentiated willingness to pay in the case of a free value or with a grid of proposed values. The mean value was higher in the case of free value than with a grid value. Willingness to pay was higher among young people, highly educated or with high income. This study also tries to establish a model, and to explain WTP with segmentations of the sample according to the different factors.

There was also a study of willingness to pay to restore forest after the 1999 storm (Scherer, 2002). Again, it differentiated the means of payment (taxes, entrance fee, voluntary donation), and it showed that refusals were influenced. It also took into account the «false zeros», which corresponded to refusal of the scenario, but not refusal to pay. The study used the CV method and identified that the potential users were willing to spend 2.2 to 2.9 euros/visit.

On average, the French make 14 trips per year in forests, each individual trip generating an average surplus around 22 euros/trip. On this basis, in France, the recreational value of forests is estimated at nearly 9 billion euros per year (Montagne et al., 2009).

4.3.3 Liguria (Italy)

In a study on the economic valuation of forest recreation facilities in Liguria (Bellu and Cistulli, 1997) the economic value of open access recreation was assessed using the Individual Travel Cost Method (ITCM) and Dichotomous Choice Contingent Valuation Method (CVMD). Several forest areas were analysed for their suitability for tourism, the actual flow of tourism and the regional plans for the creation of new parks. Both methods produced similar results, consistent with economic theory and it appeared that forest recreation income would not only contribute to regional Gross Domestic Product (GDP), but also help to tackle three major problems of the area, unemployment, abandonment of the inland areas and relief of the pressure currently put on the coastal areas. In another study, Cooper et al. (2002), evaluated the Contingent Valuation Method in southern Sicily and found that the visitors to the forest were willing to pay 5.7 euros per visit.

4.3.4 Slovenia

There have been no official studies for Slovenia on the economic valuation of forest recreation and forest social uses in general, or for the willingness-to-pay of potential users, with the exception of graduate and postgraduate theses. In one of those (Rozman, 2008), the economic valuation of a hypothermal spring in Prince, used contingency methods, in combination with the travel cost method to assess the willingness to pay of the users.

4.3.5 Crete (Greece)

There have been no specific studies for the Cretan region, but there has been one study on the economic valuation of forest recreation in the forest of Kassandra at the Halkidiki region (Kazana et al., 2008). According to the study about half of the people inquired (45%) had not visited the forest of the area for recreation but the majority (76%) were interested in doing so in the future. The dominant responses stated that they visited similar areas twice a year for two days each, spending 10-15 euros for travelling, another 10-30 euros for food and drinks and 0-20 euros for other expenses, per person. Most people spent about 20-40 euros in total, per person per visit. Interestingly, people would be willing to spend an additional 10-15 euros before it became too expensive for them and travel up to 100 Km for this purpose. Spending a day in the open air was the most appealing aspect of the forest (49% of the respondents), followed closely by swimming in a forested coastal landscape (48%), walking (35.7%), spending a family day (31.3%) and picnicking (31.1%). In addition, the majority would be attracted to the forest of Kassandra if the appropriate recreation infrastructure was present, if the landscape was suitable for recreation activities, as well by the trees and nature, but not because of the fauna or the proximity to the residence. Most of the respondents also stated that forest fires had extremely important impacts on the loss of opportunities, soil erosion, flood damage to residential areas, water quality and quantity, landscape beauty and biodiversity, carbon storage and climate regulation. A total of 94% agreed for immediate restoration of the burnt areas in Kassandra and 30-40% were willing to pay 10 euros if the restoration would help against the impacts mentioned above.

According to the COST Action E33 network of the European Commission, Greece does not currently have a National Forest Programme, which would help promote forest recreation and its other social uses, and on the contrary, has given forest recreation a low priority (Mann et al, 2010).
5. RECOMMENDATIONS

The social function of the forests is extremely important for the people. However the state and the legislation do not yet give the social function the attention it deserves. There is some loose mention in some national and EU policies, mostly within the framework of multi-functional forest. However, forest owners do not yet perceive the potential for profit, as they believe the material goods produced from the forest have more concrete value. This is because a lot of them already have a market value and the forest owner can easily decide whether it is in his interest to pursue the production of the said product. Many social functions do not yet have a market value. This value must be determined for each particular location, as it depends on the preferences of the users, and must be renewed at regular intervals. However, there are still problems with the valuation of the non-market social services. Determination of the value of different recreation possibilities and assessment methods used, since all have advantages and disadvantages (MCPEF, 2007).

One of the main problems in having forest owners, as well as the general forest users participating in economic studies and forestry project is the lack of information and awareness of the potential participants (Richards et al., 2003). Sustainable forest management requires public participation following one of the emerging methods such as public multi-criteria analysis of alternative forest management scenarios and the use of decision support systems (Sheppard, 2005).

Because the private owner will be tending the forest, in order to promote the social use and make a profit, it is in the interest of the state to support him financially, as his actions will further the protection and development of the forest. More subsidies should be made available, both from national and EU bodies, supporting the private forest owner towards this direction. The forest owner should commit to following a forest management plan, in order to receive the subsidy. The plan must be drafted along with the help of a Forest Service, adhering to EU regulations, in order for the state to monitor the progress of the project.

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