Forest Policy and Economics in Mediterranean Spanish Forests

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Abstract

The economic importance of the forestry sector in Spain and particularly of the Mediterranean forest has frequently been underestimated by statistics, as a consequence of the limited contribution of the forest's primary yields.

Mediterranean forests represent the greater part of Spain's forest area and are concentrated in disadvantaged rural areas, which confers upon this sector a major social role, given the dependence on it of many communities, especially in mountain regions. Furthermore, the economic valuation of the Mediterranean forests should extend to the complex system of externalities generated by the forests, of a cultural, environmental and social-recreational nature..

Given both the increasing social demand centring on forests as areas of leisure and recent awareness on the need to protect the countryside and defend its patrimonial wealth from natural hazards, it is a matter of immediate concern to define new methods of management adapted to present socio-economic realities and to the specificity of the Mediterranean forests.

Résumé

L'importance économique de la filière forestière en Espagne, et en particulier, de la forêt méditerranéenne, a souvent été sous-estimée par les statistiques, vu la faible contribution de la forêt au secteur primaire. La forêt méditerranéenne couvre la plupart de la surface forestière espagnole. Elle est essentiellement concentrée dans les zones rurales défavorisées et de ce fait, joue un rôle social fondamental. En effet, de nombreuses communautés, surtout dans les régions montagneuses, dépendent de ce secteur. En outre, en vue d'une évaluation économique de la forêt méditerranéenne, il est nécessaire de considérer le système complexe d'externalités liées aux espaces forestiers à caractère cultural, environnemental et socio-récréatif.

Vu la demande sociale croissante centrée sur les forêts en tant qu'espaces de loisir et la sensibilisation récente sur la nécessité de protéger les forêts et de préserver leur valeur patrimoniale face aux risques naturels, il est de plus en plus urgent de concevoir de nouveaux modèles d'aménagement adaptés aux nouvelles réalités socio-économiques actuelles et à la spécificité de la forêt méditerranéenne.

1. Introduction

The forestry sector constitutes, together with the agricultural and animal husbandry sectors, the primary sector which provides the sum of yields obtained by humans through agrarian activities. This agrarian activity has been declining in importance throughout the 20th century, insofar as quantitative value is concerned, within the economies of developed countries. In the case of Spain, this decline has been very swift, as until the decade of the 50s the farming sector exceeded 40% of GDP, whereas at present it only caters for 4%. Within the minor significance held by the farming sector in Spain's economy, the forestry sector barely represents 0,2% of the GDP (Ortuño, 2000). In the case of Mediterranean forests, the economic valuation of its yield is even lower, as the productivity of its tracts is very limited, meaning that profitability is either very low or even negative. This situation goes a long way to explaining the current neglect of many Mediterranean forests in Spain, due to their lack of financial viability for the forest owners, mainly private individuals[1] whose number, largely unknown, is estimated at two million people. The social importance of the Mediterranean forests is, therefore, much greater than in economic terms. Besides, the Spanish Mediterranean forests are also a valuable ecological and culture asset which affect a vast expanse of the nation's territory; let us not forget that the surface area of forest in Spain accounts for 51% of the overall total.

The total primary production of the Spanish forestry sector amounts to a little more than 1.200 million euros (Table 1), of which the Mediterranean forests account for less than 50%. Nonetheless, the economic valuation of certain yields is scarcely reliable, as is the case of pastureland, where no consideration is given to the value added of the widespread cattle-farming associated to the same, or to hunting, given that some estimates place the latter's economic value at over 900 million euros, which would mean that the hunting sector, mainly in the Mediterranean, is the main economic yield of the forestry sector[2].

In any case, this analysis would be incomplete without bearing in mind the contribution made to the Spanish economy by the forestry industry and the environmental services provided by the forests. It is clear that the social, recreational and environmental demand has grown exponentially over the past decades and that, although quantifying it in purely financial terms is a complex matter, the economic value of the externalities of Spain's forests is very high.

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[1] Privately-owned forests account for 65% of Spain's forest area. With an approximate number of 6,85 million title deeds, the average area is 2,7 hectares, which is indicative of the predominance of the smallholding and the ensuing difficulty in profiting financially from these holdings.

Tab. 1 *Economic value of primary forest yields in Spain*

	YIELDS		ECONOMIC VALUE (million euro)
Timber (1996)	14,739	(thousand m^3)	600,0
Firewood (1996) (*)	5,044	(thousand steres)	50,0
Resin (1996) (**)	3,411	MT	1.5
Cork (1996)	90,025	MT	55,0
Esparto (1996) (***)	38,000	MT	-
Forest fruits (1995):			
-Acorn	133,511	MT	12,0
-Pine kernel	6,441	MT	1.1
-Chestnut	10,075	MT	6.5
-Others	18,293	MT	1.5
Wild mushrooms (1995)	25,783	MT	50.0
Pastureland (1995)	450,000	MT maint. R.P.	360-450
Hunting (1995)	15,919	MT	170,0
Fishing (1995)	8,869	MT	25,0

(*) Until the decade of the 60s production exceeded 20 million steres of firewood and its economic value reached 50% of the value of timber produced, as opposed to the current figure of 8%.

(**) Until the beginning of the 70s production reached 40.000 MT as an average annual figure, and its economic value expressed in constant pesetas rose as high as 50 million euros, meaning that it represented one of the main primary yields of Spain's forestry sector.

(***) Until the decade of the 70s annual production exceeded 25.000 MT, but nowadays it has practically disappeared, only featuring in forestry statistics because of its past significance.

Source: Ministry of Agriculture, Fisheries and Food, Year Book of Agricultural Statistics, 1997.

2. Methodology and theoretical approach

The methodology employed for analysing the present economic and cultural state of Spain's Mediterranean forests has been developed through three stages of work:

1/ Analysis of forest ecosystems in terms of:

- Structure: components and specificity of the Mediterranean forests.
- Functions: in relation to social demands
- Dynamics: territorial effects of recent changes in the valuation and use of forests

2/ Socio-economic diagnosis of the Mediterranean forest area in Spain: problems and challenges

3/ Proposals for forest policy adapted to the specificity of Mediterranean forests.

The first stage of the work has been aimed at defining the spatial and socio-economic framework of reference, through a critical text analysis of existing scientific studies and policy documents. The conclusions of this analytical stage have confirmed the co-existence of different approaches and partial viewpoints in the treatment of forest areas. The result is the fragmented and uncoordinated management of the different problems affecting the areas of Mediterranean forest.

Nevertheless, the natural, socio-economic and cultural specificity of the Mediterranean forests requires a political commitment and integrating management, superseding the present compartmentalisation of decisions and initiatives in forestry matters and catering for the socio-territorial reality of the Mediterranean environment. This hypothesis has been tried and tested during the second stage of the work, in which it has been shown that the socio-economic framework has to be the benchmark for the political framework. The socio-economic framework should guide the formulation of a political framework which provides solutions and answers to the current challenges posed by the management of the Mediterranean forest.

Finally, efforts have been made to identify the objectives to be addressed by a policy tailored to the specificity of the Mediterranean forests, with a defined time-span and specific programme. In short, it is a question of superseding the protracted stage of defining forestry strategy which has characterised the country since its process of decentralisation into *Comunidades Autónomas* (*Autonomous Communities*, regional level), passing on to a stage of concrete action based on a straightforward policy adapted to the regional context of the Mediterranean. In other words, developing a forestry policy within a socio-economic context.

3. Forest economics

The multifunctionality of the Mediterranean forests may be ascertained by analysing the more noteworthy aspects of forest economics, upon which 70.000 jobs depend; the greater part located in impoverished rural areas with few possibilities for economic development.

Timber constitutes the main element of forest production with a value of 600 million euros, largely proceeding from rapid growth varieties, which are largely concentrated in the north of Spain, the main area of production. Production has practically stood still since the mid 80s, whilst consumer demand has grown unceasingly, meaning that there is a significant commercial shortfall. Firewood currently has little economic or social importance, whereas in the 50s it represented 50% of the economic value of the wood.

Cork plays an important economic, social and ecological role in a rural environment which is largely poorly developed, mainly Extremadura and Andalusia.

The present output of resin is minimal, although its productive potential is very high, which together with the social and environmental importance of maintaining the growth of pine-forests, renders it advisable to implement new policies for exploiting these forest tracts. A circumstance which, furthermore, would be beneficial for the processing industry, which is currently supplied by imported products of inferior quality.

Noteworthy amongst forest fruits are acorns, chestnuts and pine kernels. They are of economic significance at lo-

[2] It is to be borne in mind that not all hunting activity takes place in forest areas, but that farming lands are also involved, especially insofar as small game is concerned.

cal level, such as acorns in the pastures in southwest Spain or pine kernels in the lands of Valladolid and Segovia, as well as in southern Andalusia, or in the case of chestnuts in the provinces of Orense and Lugo. In the case of wild mushrooms, the growth in their harvest in recent years has been spectacular, which has created the need for regulating their farming.

The Spanish forestry sector and widespread animal husbandry have gone hand in hand throughout history, given the predominance of the Mediterranean climate and, in consequence, the use of the majority of Spanish forest as pastures for grazing. The importance of widespread animal husbandry today is much less than that prevailing in the 50s and 60s, which does not alter the fact that the burden of cattle borne by the forests is very intense in certain areas as a result of the implementation of the CAP, which has favoured its growth. The economic value of the resources in pasturelands is difficult to specify, given that it is an indirect value which varies according to the method used for its calculation. Using the market value of the equivalent raw material obtained as animal feed the sum amounts to approximately 400 million euros per year.

The industrial forestry sector has been traditionally divided into industries of primary processing, which produce intermediate products, destined for the secondary processing industry, charged with producing the final products and normally located in industrial areas far removed from the centres of primary processing.

The primary processing industry consists of the following sectors:

- Sawmills and veneer manufacturers.
- Shredding industry (mainly cellulose pulp).
- Hardboard industry.
- Firewood and charcoal.
- Cork industry: preparation and shredding.
- Resin industry.
- Other minor industries.

- The sawmills and veneer manufacturers constitute the sub-sector which preserves the more traditional characteristics within the overall forestry industry, with a productive structure that is still largely based on smallholdings, with more than 1.500 companies and 12.000 direct employees. This is in spite of a highly intense process of business consolidation, whereby there has been a 40% fall in the number of companies over the past 10 years.

The total production of saw timber in Spain slightly exceeds three million cubic metres, stemming from raw production of approximately six million cubic metres in roundwood, as well as from imports amounting to 650.000 m^3.

In general, the production of saw timber in Spain is slowly increasing, given the greater value added as opposed to wood destined for shredding; it has risen from 4 million m3 in the 80s to its current figure of 6 million, which has meant, furthermore, that the degree of self-sufficiency has reached 90%.

The shredding industry: mainly dedicated to the production of cellulose pulp, there are currently 17 companies in Spain which manufacture this product (1,6 million tons in 1998, sufficient output to cater for national requirements with a small trading surplus). Many of these also manufacture paper, meaning that it is not possible to separate the data, and these are supplied together in the point covering the paper industry.

In Spain the production of felled timber destined for shredding amounts to six million cubic metres, registering a slight downward trend as opposed to the growth of production destined for sawmills. As is the case with saw timber, this is a sub-sector which is loss making[3].

The hardboard industry: total output amounts to 2,97 million cubic metres which almost satisfies the requirements of national demand, with an economic value of 240 million euros and 2.000 direct jobs generated by the sector. They are located mainly in the *comunidad autónoma* of Galicia and Castilla y León.

The firewood and charcoal sectors are devoid of industrial processing. The sole point of note is that in recent years the output of charcoal has undergone a major increase, rising to 70.000 tons annually, from the lowest figures returned at the end of the 80s. This growth is based mainly on domestic demand, given that the trade surplus has reduced significantly since the 80s.

The statistical separation between primary and secondary processing is impossible in the case of cork, given the interaction existing between the two industries. The only salient point is the greater presence of the primary processing industry in Extremadura and Andalusia, as opposed to the predominance of secondary processing in Catalonia. Nevertheless, the sector is embarked upon a process of transformation which is slowly changing this situation.

The resin industry: in crisis for more than 25 years given the displacement of the Spanish raw material by considerably cheaper imports originating in Brazil or China. It is important to mention that the crisis in this sector has had a major social impact as a result of the loss of various thousands of jobs involving resin-tapping tasks in the forests, as well as related industrial employment. A further aspect is the negative environmental impact arising from the neglect of these forests.

Other minor industries: noteworthy amongst these are those involved in processing forest fruits, besides those producing aggregates, basketry... All of these are of only local importance, but their existence should be preserved and encouraged, given the beneficial effects involved in social and environmental terms.

[3] During the decade of the 80s the output of unprocessed wood for shredding reached 7 million m3, meaning that production has fallen by more than one million m3, and the transformation of the production cycles of certain rapid growth varieties, as is the case of the Monterey pine (Pinus radiata), towards the production of saw timber heralds an increase in the shortfall of this type of wood in the future.

The industries of secondary processing consist of the following sub-sectors:
- Box and packaging industry.
- Carpentry.
- Furniture.
- Paper and cardboard.
- Cork industry: sheets, stoppers...

The box and packaging industry: in Spain there are currently 185 companies manufacturing wooden packaging, with a turnover of 300 million euros and generating over 2.000 direct jobs. The wooden packaging industry depends directly on the food and agriculture sector (fruit and vegetable farming) to which it dedicates the greater part of its output, which is why the favourable evolution of the agricultural sector in recent years (1995-2001) has benefited this industry.

The carpentry sector is especially prone to smallholdings, as there are over 9.000 companies, of which only 350 can be truly considered industrial. Nevertheless, the trend is towards consolidation, given that over the last ten years more than 5.000 companies of this nature have vanished. This sub-sector employs 25.000 people on a direct basis and has an annual turnover of 600 million euros, mainly in the manufacturing of doors[4] (60%) and windows[5] (25%). In terms of geographical distribution, the main concentrations are in the *comunidades autónomas* of Castilla-La Mancha, Castilla y León, Valencia, Galicia and Catalonia.

The furniture sub-sector is the most important within the forestry industry as a whole, and there are currently approximately 12.500 businesses providing employment for 115.000 people, with a turnover of 3.600 million euros. Furthermore, it is noteworthy that within the Spanish forestry sector, in general highly loss making, this subsector registers a significant trade surplus which exceeds 300 million euros per year (1999). The geographical concentration of this sub-sector is widely dispersed, with the leading areas being Valencia (27%), Catalonia (17%), the Basque Country (11%) and Madrid (10%).

Behind the furniture sector, the production of paper and cardboard stands in second place in importance within the forestry industry. There are currently 130 companies involved in paper manufacturing, including many which produce cellulose pulp; generating overall more than 17.000 direct jobs and a further 90.000 indirect ones, with a joint turnover in excess of 2.400 million euros. The annual production of paper and cardboard in Spain amounts to more than four million tons, yet imports account for 1.800.000 tons, which reflects the largest trade shortfall in the sector of more than 900 million euros annually.

In Spain there are 285 companies involved in the processing of cork, which generate 3.500 direct jobs, with a turnover in excess of 225 million euros and, furthermore, a trade surplus of more than 90 million euros.

Yet, unquestionably, the most important item in forest economics, and also the one that presents greatest difficulties for its financial assessment is that corresponding to the positive externalities provided by the forests of Spain. Within the numerous group of externalities[6] from forestry, we may highlight the following:
- Leisure, recreation and open-air activities.
- Rural tourism.
- Positive environmental effects:
  - Land preservation and protection against erosion.
  - Quality of water and protection of reservoirs.
  - Decrease in runoffs and increase in seepage.
  - Improved air quality.
  - Increase in rainfall.
  - Preservation of biocoenosis.
- Protection of the landscape and preservation of cultural, social and historical features.

In an urban society such as the Spanish one, with an economy increasingly dependent on the services sector and a growing awareness of environmental issues, it is to be expected that the demand for externalities generated by the forests should be undergoing a major expansion.

The forests close to large urban centres have lost their productive function and their main purpose is now recreation and leisure. The growth of tourism as the main economic activity for many rural communities is conditioned by the existence of natural features which enhance their demand, as are expanses of forest, which attract tourism to those areas.

With respect to the positive environmental effects generated by the forests in Spain, it has to be said that they present serious difficulty, insofar as determining their economic value is concerned. Nevertheless, over the last decade there has been a proliferation of studies on Environmental Valuation, amongst which we may highlight two lines of approach:

1. The economic valuation of the indirect externalities of the forests in terms of the implicit benefits obtained from them, through what is referred to as the "shadow prices". The total economic value would amount to 3.500-4.100 million euros annually in indirect environmental profits. (Madrigal et al., 1999).
2. The employment of specific methods of environmental economic valuation, in particular the application of the method of Contingent Valuation for assessing society's Willingness to Pay (disposición a pagar - DAP) in order to achieve the preservation of the Biodiversity. Consid-

[4] The greater part of the door-manufacturing industry in Spain is concentrated within the municipality of Villacañas (Toledo), where the main companies are located.

[5] The manufacturing of wooden windows is located in the coastal areas of northern Spain, due to the concentration of demand in this area.

[6] The concept of externality refers to a service or function provided through a channel other than that of the market, and which cannot therefore be directly assigned a price.

ering that, based on the various studies performed in Spain to evaluate this DAP in different natural areas, values have been obtained ranging between 150-1.200 €/ha and year (Azqueta, Pérez, 1996); by applying these values to the 26 million hectares of forests existing in Spain the value of the externalities would be 3.750-30.000 million euros per year.

Of course, even accepting with all its limitations the sum of these values obtained as the economic value of the externalities of the forests of Spain, this would not encompass them all in their entirety, as it is impossible to include cultural, historical and ethical features, and furthermore, given that there are externalities which cannot be determined: fauna, flora, chemical cycles in the atmosphere... which, moreover, in many instances provide an intrinsic worth that cannot be valued.

4. Forest policy

The present aspect of Spain's forests is the result of a century of change, which in recent decades has led to an increase and transformation of the forest area through the neglect of agricultural, forestry and grazing practices since the middle of the 20th century (Manuel, Gil, 1998). This process has highlighted the relationship existing between the degradation of the environment and the landscape and the decline in economic activity linked to the crisis in rural society in certain communities of the hinterland. The aim of forestry policy may not, therefore, apply only to the natural world, but also to actual local and rural development, which is indelibly connected to the future of these forest tracts. It is within this context that it is vital to develop international agreements, to implement Community legislation and exploit the instruments of finance that the European Union provides for these purposes.

In Spain, adapting forest policy to the new challenges and social demands and to an international context has basically been undertaken on a regional scale. The reform of forest policy has been developed by the *Comunidades Autónomas*[7], which have assumed political powers in matters of forestry through the implementation of the Constitution of 1978. Thus, the Programas Forestales Regionales (Regional Forest Programmes, RFP) are the main instrument for developing forestry policy in Spain within the current system of political decentralisation. The majority of the regions have a scheme or strategy which have been embraced as a necessary initiative for organising a forestry sector which is totally devoid of structure. It is for this reason that many of them have introduced a financial bias which determines the content.

In general, the common objective of the RFP is to ensure the ecological and economically sustainable management of the forests, based on those principles established in international agreements, in the European Forestry Strategy and in Spanish Forestry Strategy (Ministry of the Environment, 2000). Nevertheless, Spain's RFP have been drawn up applying very different procedures and objectives amongst each other (Alcanda, 2001). In overall terms, it is possible to recognise a certain similarity of approach amongst the forestry schemes of the Mediterranean regions which sets them apart from the model of planning characterising the Atlantic regions. Whereas in the Atlantic regions there is a predominance of the productive approach and the principle of allocating resources to functions, the RFP of the Mediterranean regions tend to give priority to protecting and valuating the forests from a territorial perspective.

The truth is that for the first time the Mediterranean forests are in a position to benefit from international legal and political principles, developing multifunctionality and the preservation of biodiversity as the guidelines and objectives for forestry management. Multifunctionality is, in itself, inherent to Mediterranean forest areas. The challenge consists in applying these management principles in such a way that they truly contribute to the sustainable forest management (SFM) of the Mediterranean forests. In forests which are not financially viable, but which must be preserved and managed given the social and ecological repercussions of their existence (externalities), it becomes vital to define new models of management, suited to the present socio-economic context and to the specificity of the Mediterranean region. The main problem facing this objective is the difficult involved in the self-funding of forestry management, due to the scant profitability of Mediterranean forests within the framework of the primary sector. Hence it becomes necessary to identify, assess and allocate to the forests the financial resources which correspond to the true worth of their functions, irrespective of their contribution to the GDP through the primary sector.

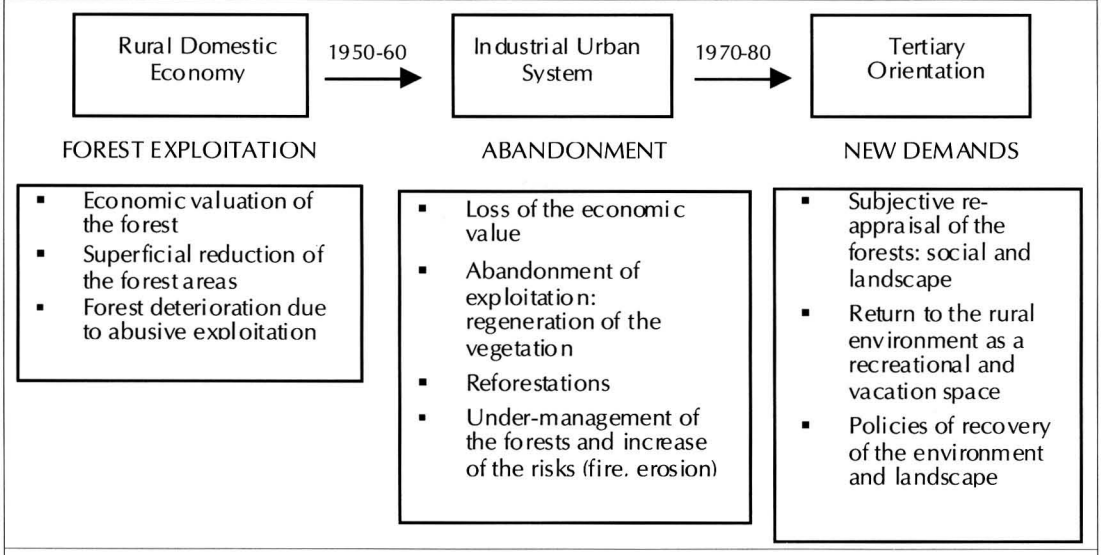
The objectives of SFM have been developed in a different manner by the RFP of Spain's Mediterranean regions. Yet, in general, we may identify two overall planning principles:

- Encouraging rural communities through the valuation of forest areas and products.
- Exploiting forest resources ensuring their survival and renewal.

In short, it is a matter of recovering and re-channelling the socio-economic model of Spain's rural areas following the protracted crisis suffered throughout the second half of the 20th century (Table 2). The initial considerations are the problems of recent appearance (a scarce and ageing population without technical expertise; accumulation of fuel; spatial and sectoral disorganisation) and the fresh demands posed at the end of the century by urban societies (social uses; protection of the environment). Based upon these assumptions, it is necessary to adapt the concept of

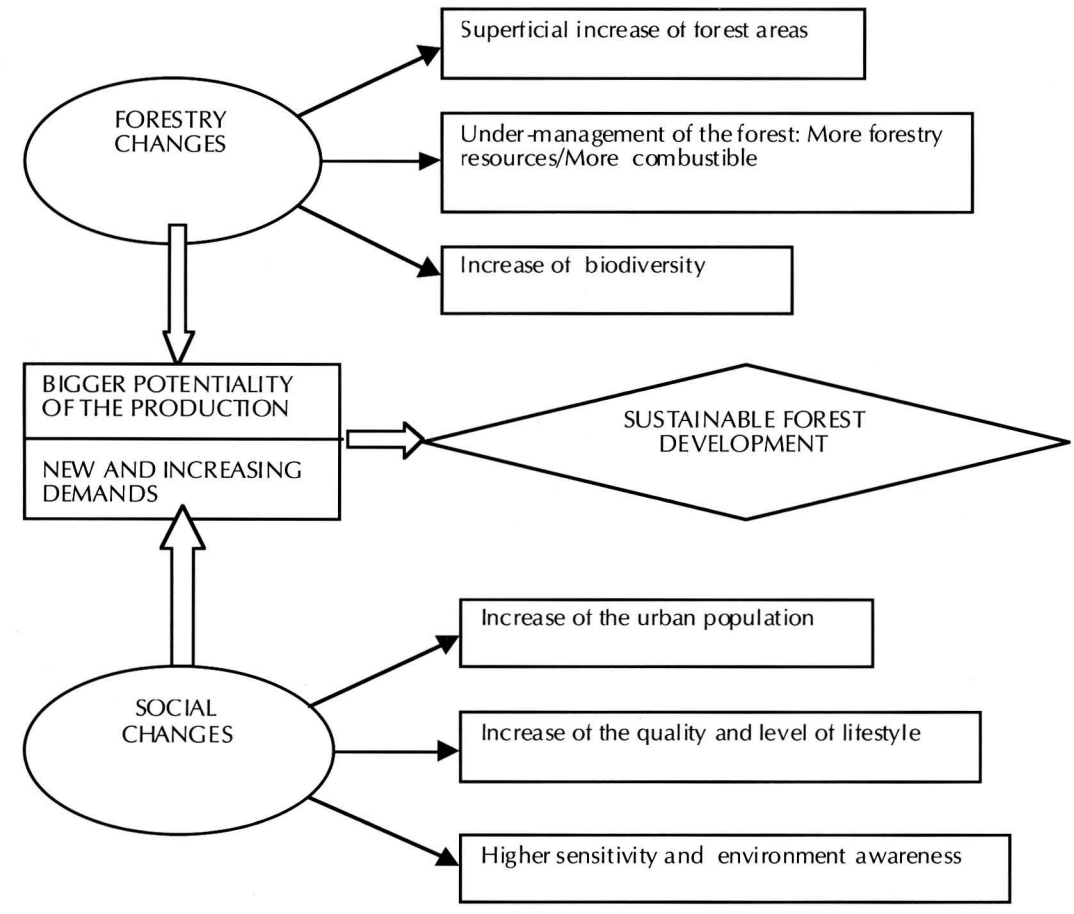
[7] Definition of the regions instituted as a result of the model of political and territorial organisation defined in the Spanish Constitution of 1978. Recognised as NUTS 2 by the European Union.

Tab. 2 *Socio-economic, natural and cultural evolution of the Mediterranean Spanish forest (20th century)*



Source: Montiel, 2001

Tab. 3 *The sustainable forest management of the Mediterranean forests*



SFM to the specificity of the Mediterranean forests, where wood production is of a reduced and highly localised nature and does not constitute the main function of the forest areas. In fact, the production of wood is a forest "sub-product" in relation to non-marketed goods and services. In the Mediterranean forests, however, it is vital to guarantee the management of forestry dynamics and of the diversity of the landscape. The spatial component and territorial aspects (through social, environmental and protective functions) are superimposed upon the productive function of the Mediterranean forests.

In the Mediterranean region, SFM means, above all, *sustainable management of the landscape and regulation of the forest area*. Therefore, forest management should be understood from a territorial perspective and in relation to policies of local development, providing a response to current social demands (Table 3). The valuation of the Mediterranean forests over the last two decades is basically related to its landscape meaning, to the protection of the biodiversity and to the demand for open-air recreational areas. Therefore, the economic value of the forests has not disappeared but its nature has been altered: as opposed to the traditional yields, the nature of which was local and material, the benefits are nowadays indirect and they are delocalised (Montiel, 2001a).

5. Future perspectives

The lack of co-ordination between the various territorial policies which affect forest areas and the severe shortage of resources for funding forest management, as opposed to other territorial purposes, constitute two major obstacles for Mediterranean forestry policy (Montiel, 2001b). Despite these limitations, there are three territorial interfaces of enormous significance for forest management in the Mediterranean region:

A/ Forest-urban interface:

This is the more complex and conflictive interface. The scant profitability of the Mediterranean forests generates – given the absence of attractive alternatives – inevitable expectations of urban development amongst forest owners which threaten the survival of the forests. On the other hand, the forest-urban interface plays a vital role in the policy of preventing wildfires.

B/ Forest-agriculture interface:

This is a fundamental relationship of co-existence and interaction within a rural context which demands the reinstitution of traditional practices through agro-environmental measures, with the aim of managing the biodiversity and diversity of landscape characterising the Mediterranean region, by means of territorial contracts.

C/ Forest-environment interface:

This is the more difficult inter-relation, given the problems of understanding and communication which exist between both policies in the Mediterranean sphere. Nevertheless, the ecological externalities generated by the Mediterranean forests are one of the principal functions of these areas. Furthermore, the forests contain the greater part of the protected areas in the Mediterranean region. It is vital, therefore, to settle conflicts and co-ordinate both policies.

The challenges facing Spain's Mediterranean forests from an economic and political point of view at the beginning of the 21st century may be summed up by the need to give rise to strategies defined in accordance with international principles in forestry policy in the form of new models of forestry policy and planning, suited to current social demands and to the specificity of the Mediterranean region. In the light of the analysis and diagnosis performed, these new models should incorporate two basic planning principles:

1) The integration of forest management within the framework of rural/local development: The new management models should assess and make the most of forest areas, responding to new demands and integrating present non-marketed forest goods and services into the planning process and forest management. It is of paramount importance to overcome the determining factors imposed by forest risks to management and the perception of the degradation of the forest areas caused by past overexploitation. Faced with these approaches, priority must be given to the value forest areas contribute to local development.
2) Interregional co-operation: Mediterranean forest areas must embrace and apply the current principles of forestry policy in the European context, strengthening the co-operation between regions as an opportunity for favouring forestry planning and policy in a Mediterranean context. Certain Community initiatives, such as the Interreg IIIB Programme, facilitate the development of this principle of co-operation, as well as providing encouragement for the regulation of the territory in forest areas (www.aifm.org).

Nevertheless, in order to render all this possible, it is vital for society to acquire, in the first place, knowledge and recognition of the forest specificities of the Mediterranean region. This is the inevitable point of departure for the management and valuation of the Mediterranean forests. There is no doubt that the main problem and the reason behind the lack of management currently affecting the Mediterranean forests is the lack of awareness and the indifference on the part of society. In this sense, the public/tourist uses offer a wonderful opportunity for the rediscovery by our society of the Mediterranean forests' natural and cultural values, following decades of neglect, misuse and lack of awareness.

In this respect, and based on the goals established in Spanish Forest Strategy regarding the promotion of the tertiary uses of the forests, our proposal focuses on two features:

a) Appraisal of the existing forest heritage: potentialities and tourist resources of the forest regions.
b) Planning of the public uses: increase and diversification of the offer; integration of the tourist-recreational function of the forests within rural development policies (Montiel, 2001a).

The public use of the Mediterranean forests has often been considered a factor of risk, for unleashing or aggravating processes of degradation in fragile and vulnerable ecosystems. However, tourist-recreational activities, integrated within an overall strategy of rural development, may also be a way of recovering these forest areas, which have been in crisis since the middle of the 20th century. Tourism contributes to the demographic recovery and revitalisation of the rural communities of the hinterland, to environmental education and to the formation of an awareness of ecology which values the need to protect the environment. Above all, tourism contributes to recovering forests through their renewed use, recognition and reassessment (Montiel, in press).

6. Conclusions

The public use in recreation, education and tourism of Mediterranean forest ecosystems currently constitutes one of the leading functions of the same, integrated furthermore in the new model of rural development encouraged by the European Union. In addition, the Forestry Strategy for the European Union, approved on 15 December 1998, high-

lights the multifunctional role of the forests and the sustainable exploitation of the forestry sector. By adopting and developing these principles, Spain's Forestry Strategy also reflects the process of the tertiary development affecting Spanish forests and recognises the priority which often befalls the recreational function over other kinds of traditional productive functions. The problem lies in the difficulty in assessing these tertiary uses of the forests, as the majority of them have no market prices. The methods for environmental assessment today present too many inconsistencies for their results to be taken as the definition of the quantitative values of the externalities, but they have shown that is it these non-quantifiable elements which provide the greatest lure for preservation, by means of their recreational-environmental use, as opposed to traditional features of production.

Tab. 4 *Outline of challenges and propositions of Mediterranean forest management*

CHALLENGES	MANAGEMENT PROPOSITIONS
Economic sustainability	LOCAL DEVELOPMENT
	PUBLIC USE
Response to the new and Growing social demands	MANAGEMENT OF LANDSCAPE / ECOLOGICAL EXTERNALITIES

The need, therefore, arises for territorial planning and involvement to regulate the development of positive externalities produced by forest ecosystems, given the limitations stressed by market forces.

Besides, it is important to recognise that the objectives of SFM in Mediterranean Europe (and consequently in Spain's Mediterranean forests) should be, in addition to the development of eco-certification, the following aspects:

- Striking a balance between the productive, protective and social functions, avoiding the prevailing specialisation of any one of them.
- Guaranteeing the survival of forest areas faced by processes of property development and to the danger of the change of use of the land through land use planning and linking forestry policy to regional planning.
- Managing forest development based on landscape principles and preserving the heritage value of the Mediterranean forests (sustainable management of the landscape).

Amongst those challenges facing Mediterranean forestry policy in the current socio-economic and environmental climate, special mention should be made of the landscape and social roles of the forests, as well as the integration of forest areas within rural systems. The forests must contribute to defining the strategies for local development by means of their valuation and exploitation. In short, it is a question of embarking upon a policy of rural development encompassing the forests and not in spite of them (through the existence of protected values which are not assimilated, integrated or commercially exploited at a local level), in detriment to them (characterised by haphazard urban and agricultural development and by wildfires) nor ignoring them (prolonging the period of neglect which has given rise to the current risk of fire and the deteriorated landscape of certain forest areas). Furthermore, it is necessary to move beyond the protracted stage of strategy definition, initiated at the beginning of the 80s, and enter a stage of formulating and implementing policies, with realistic objectives which respond to the current socio-economic and environmental forces of the Mediterranean region.

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