

# Sustainable Forest Management in Galicia (Spain): Lessons Learned

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## 1. Introduction

Galicia is an autonomous region of Spain that produces more than 8 million cubic metres (m<sup>3</sup>) of timber, with the Galician forestry sector currently providing 12% of industrial employment in the region (Monte Industria, 2010a). However, Galicia's potential as a forest product producer can be considered to be under-developed since both the amount and unit value of forest production could be greatly increased (Xunta de Galicia, 2001). Given that the Galician agriculture and fishery sectors (traditional bases for economic activity, especially in rural communities) are declining, a healthy forestry sector can be seen as an engine for regional and rural economic development.

One of the primary causes for forest sector under-development is the high degree of private forest ownership in small, scattered holdings. According to Ambrosio et al. (2003), private forests comprise approximately 97% of Galician forestlands, with about two thirds of those in holdings of less than 2 hectares (often in several non-contiguous parcels). Approximately 30% of private forests are owned by communities, but even these average only several hundred hectares in size. About half of the community forest area is managed by an agency of the regional government as a result of agreements signed in the second half of the twentieth century.

This fragmented ownership pattern has made it difficult to promote sustainable forest management (SFM) and the development of the sector. Only a small portion of the forested land is managed in a patently sustainable manner, which does not bode well for the future of industrial forestry given the pressure for certified SFM from governments, the general public and the forest product marketplace. This makes it difficult to justify public and private investment in forestry, which in turn impedes investment in forest industry modernization. If the industry is not modernized, the degree of "value-added" processing will remain low, with most raw production sent to other regions for processing.

Given the situation, the government department primarily responsible for forest management (Dirección Xeral de Montes, or DXM, of the Galician Rural Development Ministry) recognized that it was necessary to formulate new strategies, policies and processes aimed at the development of the forestry sector based upon the principles of SFM.

The goal of this chapter is to describe the Galician SFM strategy framework as initially envisaged, assess its evolution and implementation to date, describe important initiatives that have been undertaken by the private sector itself, and conclude with a summary of what we believe that should be learned from the entire process.

## 2. Development of the initial strategy

In order to develop the strategy framework, the DXM relied upon guiding principles and foundations of SFM gleaned from international, European Union (EU) and Spanish policies and agreements. Although a wide range of documents were reviewed, the following agreements and resolutions were seen as being most relevant:

- The Rio Declaration on Environment and Development in 1992; (UN General Assembly, 1992)
- Resolutions of the Ministerial Conference for the Protection of Forests (MCPFE, 2011);
- Pan-European Criteria, Indicators and Operational Level Guidelines for Sustainable Forest Management (MCPFE, 1998)
- The Proposals for Action of the United Nations Intergovernmental Panel of Forests and Intergovernmental Forum of Forests (IPF/IFF, 1998)
- The EU Forestry Strategy (Council of European Union, 1999)
- The Spanish Forestry Strategy (Ministerio de Medio Ambiente, 2000)
- The European Environment Action Programmes; (Council of European Union, 1998);
- The Spanish Forestry Plan (Ministerio de Medio Ambiente, 2002);

Furthermore, in order to ensure that a new strategy and its related programs would be consistent with forestry and environmental policy of the EU, the DXM reviewed and summarized documentation concerning relevant Community programs and initiatives.

Further inspiration for the development of a new forest strategy was drawn from the concepts of hierarchical forest management (HFM) and integrated forest management (IFM). HFM is based upon the tenets of hierarchical production planning as described by such authors as Hax and Candea (1984). Explanations of the hierarchical approach to forest management can be found in various documents, but a paper by Weintraub and Davis (1996) is especially recommended.

The term IFM has been used to describe several distinct (though related) concepts, but in the case of the strategy development effort in Galicia, IFM was taken to mean the integration of management processes and systems to ensure that the objectives of HFM are achieved (Gallis & Robak, 1997; Robak, 1996).

Based upon these foundations, a Strategy for Sustainable Forest Management for Galicia was developed and unveiled in the spring of 2002. (DXM, 2002)

## 3. The SFM framework for Galicia

The SFM framework proposed by the DXM represented a new approach to managing the forests of the autonomous region according to the principles and norms of sustainable forestry. The eight lines of action to implement of the framework included:

1. **Development of the legal framework for sustainable forest management.** SFM requires the formulation and enactment of integrated and coherent sets of policies, laws and regulations.
2. **Establishment of integrated management structures and processes for sustainable forestry.** Based on the principles of HFM, new integrated planning, monitoring and

control structures would be implemented at the regional, district<sup>1</sup> and forest management unit levels to ensure the continuity of strategic, tactical and operational decision processes.

3. **Development of the criteria and indicators of sustainability.** Forest management processes in Galicia should be developed that are consistent with regional criteria and indicators of sustainability, which will be, in turn, based upon those affirmed in the 3<sup>rd</sup> MCPFE in Lisbon (MCPFE, 1998).
4. **Establishment of an accurate and reliable system of forestry information.** Good information is essential for forest management planning, monitoring and control, and to evaluate and document actions and results in relation to accepted criteria.
5. **Promote increased research into forest sustainability.** Forest management should be based upon scientific knowledge, and research directed by management needs.
6. **Foster public forestry education to facilitate understanding and participation.** Informed participation of the public and the forestry sector of Galicia are critical to the success of the Strategy.
7. **Foster and support the economic development of the forest sector of Galicia.** Priorities include promoting timber and non-timber forest products as renewable resources, enhancing the role of the forestry sector in rural development, and supporting cooperation amongst forest owners and forest owners associations.
8. **Promotion of forest certification.** Forest certification initiatives that lend credibility and transparency to the forest management process should be fostered, especially those that enable certification by small forest owners.

The DXM believed that a new integrated process should be a critical component of the new strategy. The following sections of this paper focus on the new SFM process and supporting information infrastructure proposed by the DXM.

#### 4. The proposed SFM process in Galicia

While many actions and programs would be required to implement the new strategy as envisaged, a key component would involve the implementation of a new forest management process. This new process, which is illustrated schematically in Figure 1, would be aimed at integrating and coordinating forest management at the regional, district and forest ownership levels while at the same time fostering the active participation of forestry stakeholders and Galician society at all levels.

The following are brief descriptions of the three major sub-processes of the proposed new SFM process for Galicia, followed by a description of how they are to interact (Fig. 1.)

##### 4.1 Regional management sub-process

The first major goal of Regional Management would be to develop a revision to the current Plan Forestal de Galicia - PFG (Xunta de Galicia, 1992) based upon principles of sustainability, input from the public and the forest sector, and the best current forestry knowledge. A Regional Committee for Sustainable Forestry representing all regional stakeholders would endorse a Declaration of Regional Principles of Sustainability based

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<sup>1</sup> Galicia is divided into 19 Forest Districts that have common physical, biological, economic and social characteristics. It can be argued that it is only at the level of the Forest District that it is possible to manage for critical landscape, territorial and community objectives and constraints.

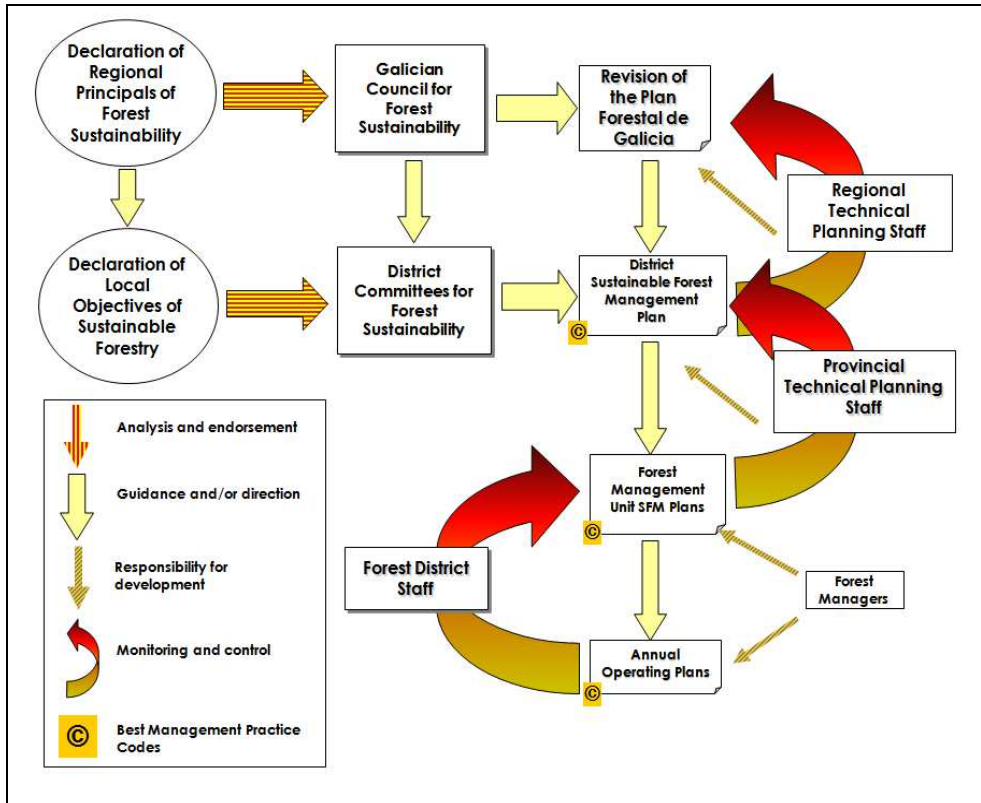


Fig. 1. Proposed SFM Framework for Galicia

upon international, EU and Spanish principles of forest sustainability, but recognizing the specific goals and constraints of Galicia. The revised PFG, developed by regional technical staff within the integrated process described below, would make explicit the long-term forest management goals of the region, the actions required to achieve goals, and terms of the “*co-responsibility contract*” that define responsibilities of forest sector players with respect to actions.

The second goal would involve the monitoring and control of results and actions to ensure that the specific objectives of SFM for Galicia are being achieved.

#### 4.2 District management sub-process

Forest District Management Plans (FDMPs) are intended to bridge the gap between the PFG and the management plans and actions of Forest Management Units (FMUs). According to the most recent draft Plan Forestal de España-PFE (Ministerio de Medio Ambiente 2002), this is the level in the management hierarchy where it is most appropriate to accommodate strategic social and economic development objectives defined by local communities and group and also consider landscape-level environmental constraints and objectives that require planning across forest ownership boundaries (Ministerio de Medio Ambiente, 2002).

It should be noted that the PFE established general goals and guidelines for lower levels of planning in order ensure the fulfillment of the international commitments assumed by the Spanish government.

### 4.3 Forest management unit sub-process

Since most individual forests in Galicia are privately owned, the government does not have direct control of the forest management undertaken in them. This is particularly true of the very small ownerships that comprise almost 70% of Galician forests, where forest management (if there is any) is up to the individual owner. Even in the 30% of private forests owned by communities and managed by government foresters, community objectives may be at odds with those of the region or district. However, the government is not without tools to influence the management of private forests. The government controls subsidies for management activities and has the right to regulate some forest activities such as harvesting in certain forest types or authorizing the plantation of certain species (such as *Eucalyptus globulus*). Furthermore, the government could be seen as the sole organization capable of implementing a management infrastructure that would be capable of facilitating regional forest certification, which could be seen as the most viable approach to certification given ownership patterns. This infrastructure would include the planning and control mechanisms, Best Management Practice (or BMP) Codes and a series of silvicultural models (SMs) for major forest species.

In the absence of clear regional and district plans, it was difficult for the government to justify the use of such tools in any focused manner, and advancing credible forest certification was seen as difficult. With regional and district forest management guidelines and plans in place, the government would be able to give priority for subsidies and harvest approvals to forest owners who followed the district (and, thereby, regional) plans. As well, the implementation of the planning, monitoring and control systems envisioned in the new SFM process would facilitate the certification of even small forest ownerships, as long as they are managed in a way that conforms to the local FDMP, BMPs and SMs.

### 4.4 Management integration processes

The application of HFM requires that problems be decomposed and the various elements handled at the appropriate level of the management hierarchy. However, since it is usually impossible to solve all parts of the problem simultaneously, it is necessary to use an iterative approach to planning and control. This means that, although higher levels of the hierarchy give direction to (or constrain) the lower-level management processes, the lower-level processes should provide feedback to the upper levels so that the plans and decisions at higher levels can be refined and improved. Depending upon the complexity and importance of the problem and the time involved and available, several iterations of this process might occur. In the case of the proposed SFM process for Galicia, the main steps of this iterative approach were expected to be:

1. A draft regional plan for Galicia would be developed by the regional DXM technical staff based upon the declaration of principles, state of the forest, knowledge of forest processes, forecasts of forest products markets and other economic data and forecasts. The plan would be general, but would define specific goals and constraints.
2. This rough first version of the plan would then be passed down to districts as (generally) aspatial guidelines and constraints to Forest District planners. It might

indicate, for example, district targets related to reforestation, wildlife habitat, timber production, production of non-timber products over a long time horizon.

3. Initial district objectives and constraints would then be defined by the District Committees by way of the Declaration of Local Objectives of Sustainable Forestry in conjunction with provincial and Forest District staff that would provide data, information and guidance to ensure that regional guidelines are properly interpreted and that objectives are realistic given the geophysical and cultural characteristics of the district.
4. The provincial technical staff would then develop a long-term, strategic, generally aspatial, multi-objective forest management plan for the entire district **as if all of these forests were being managed by the forest service**. Again, forecasting and modeling tools would be required that use knowledge and information concerning forests and economic and social factors in the district. These district plans would also take into account the expected probabilities of success in convincing forest owners to follow the district plan. While it is recognized that there is no assurance that individual forest owners would follow the plan, it should be possible to model the probability of compliance for given levels of incentives and regulation. The process of objective setting and plan development would itself be iterative, since it is certain that the planning process would uncover problems or opportunities that require modification of the initial objectives and constraints. The goal would be to produce a district plan indicating actions to be undertaken, results expected and resources (and policies) required for implementation. The district plan would also describe the actions and investments promised by other “co-responsible” parties involved in implementation, such as a community that promises to find investment for a value-added plant to process a certain kind of product that is or can be made available from the forest.
5. When a district plan that is acceptable to the entire district (and provincial staff) has been developed, it would be passed back up to the regional staff for evaluation and possible approval. The evaluation process would involve ensuring that the guidelines have been followed, the regional objectives have been met, and the resources (and policies) required by the district are appropriate. For example, although each individual district plan could be reasonable, the budget requirements of all the districts together might not be able to be satisfied. It would be up to the regional staff to use their own information and models, along with the information from the districts, to produce a rational distribution of resources. Thus, budget rationing may require that some district plans be revised, taking into account the budgetary constraints for that district. It is also likely that information from district plans would prompt revisions of the regional plan.
6. Once final versions of the district plans have been completed and approved, these would be used to produce a final version of the Plan Forestal de Galicia since most of the actions, results and resource requirements necessary to carry out the regional plan are in the district plans.
7. During the period of implementation of the regional and district plans, it would be necessary to monitor the actions and results in individual FMUs to ensure that the plans are being followed and that the results are as expected. Besides acting as a control mechanism, the monitoring processes would help to provide the data and information necessary for subsequent iterations of the planning cycle. Such a monitoring system, if

properly designed, could also support regional forest certification for any forest owner who follows the district plans (BMPs and SMs).

The implementation of the proposed SFM process for Galicia would require much greater availability of reliable data and information for planning, and much better monitoring systems than existed in 2002. The following section of this paper gives a brief description of the Information Technology (IT) infrastructure envisaged at that time for the planning and control functions of the process.

## 5. Data and information infrastructure

A great deal of time and effort went into the design and documentation of the information systems and data structures required to support the new SFM strategy and process. For the purposes of this paper, these are summarized as:

**Spatial Forest Data Infrastructure (SFDI):** The SFDI would supply basic spatial and attribute forestry data to be used by all levels of management and, eventually, the public. Based upon such concepts as Open GIS (promoted by the international Open GIS Consortium) and web-enabled designs, it would foster standardized gathering and storage of data required for planning and control of forest management, as well as for the development and evaluation of forest policies and programs.

**Integrated Forest Management System (IFMS):** An integrated system of management tools would be required to ensure that plans at all levels of the management hierarchy are consistent, that actions and outcomes are monitored and controlled, and that decisions are justified and documented. These would consist of planning decision support systems (including forest modeling and forecasting tools to enable sensitivity and trade-off analysis) and monitoring and control tools to ensure that plans are being followed, and that objectives are being achieved.

**Monitoring and Control Systems:** Although specific monitoring and control tools would be part of IFMS, others were expected to be required to implement the SFM Strategy. In particular, these would include systems to compare outcomes to criteria and indicators of sustainability, to support regional forest certification initiatives, and to enable reporting of results to the public and to national, EU and international agencies.

## 6. Implementation and revisions to the strategy

As can be imagined, the implementation of such a great change was not without its problems. Perhaps the greatest obstacles that had to be overcome were the lack of knowledge concerning the proposed new management processes on the part of key players, the lack of information concerning the forests and other key factors, and the great difficulty in coordinating the design, development and implementation of so many interrelated programs and actions. In the nine years following the development of the strategy framework, the following pieces have been put in place:

- Education sessions related to SFM, forest certification and information systems for forest management have been provided to forest service personnel;
- SFDI, which provides web access to forestry spatial and attribute data to forest service staff, is now in place;
  - <http://rimax.xunta.es/VisorRIMAX/Default.aspx>
- Preliminary designs for the IFM system and monitoring and control systems have been developed;

- New instructions for forest management planning have been instituted that are more consistent with the principles of SFM as outlined in the Strategy;
- New guidelines for the submission of standardized forest management plan data (consistent with criteria and indicators of sustainability in the EU) have been developed and put in place.
- The Galician Council for Sustainable Forestry has been created;
  - As described in the Galician government document “Decreto 306/2004” ([http://www.xunta.es/dog/Publicados/2004/20041229/Anuncio2558E\\_es.html](http://www.xunta.es/dog/Publicados/2004/20041229/Anuncio2558E_es.html)) and in subsequent legislation and regulations.
- A manual of best management practices (BMPs) has been published for landowners, forest services companies and forest harvesting companies;
  - [http://mediorural.xunta.es/areas/forestal/xestion\\_sustentabel/boas\\_practicas/](http://mediorural.xunta.es/areas/forestal/xestion_sustentabel/boas_practicas/)
- Preliminary steps have been undertaken to establish the Regional Declaration of Principles of Sustainability, such as its endorsement by the “Mesa de la Madera” (Galician Wood Council”) in 2008.
  - [http://mediorural.xunta.es/areas/forestal/produccion\\_e\\_industrias/mesa\\_da\\_madeira/](http://mediorural.xunta.es/areas/forestal/produccion_e_industrias/mesa_da_madeira/)

Some of the changes to the implementation of the strategy were the result of new regional, national and international reports, protocols, guidelines and proposals that informed and refocused the strategy framework. These included:

- The reports of the 4<sup>th</sup> and 5<sup>th</sup> Ministerial Conferences on the Protection of Forests in Europe (UNECE, 2003 and UNECE, 2007) held in Vienna and Warsaw, respectively.
- The EU Forest Action Plan which was adopted in June, 2006 (European Commission, 2006), described at [http://ec.europa.eu/agriculture/fore/action\\_plan/index\\_en.htm](http://ec.europa.eu/agriculture/fore/action_plan/index_en.htm).
- The Biomass Action Plan (COM(2005) 628 final – Official Journal C 49 of 28.02.2005) which is described in this European Union document: [http://europa.eu/legislation\\_summaries/energy/renewable\\_energy/l27014\\_en.htm](http://europa.eu/legislation_summaries/energy/renewable_energy/l27014_en.htm).
- Other EU and regional directives and initiatives, such as those related to good governance and public participation supported the direction and approach taken in the new strategy framework. The EU directive on good governance, for example, ([http://ec.europa.eu/governance/governance\\_eu/index\\_en.htm](http://ec.europa.eu/governance/governance_eu/index_en.htm)) insists that public participation must be part of the development of national policies, while public participation in environmental plans has been enforced with the endorsement of law 27/2006 in Galicia ([http://noticias.juridicas.com/base\\_datos/Admin/l27-2006.t3.html](http://noticias.juridicas.com/base_datos/Admin/l27-2006.t3.html)).
- Marey et al (2007) provide a description of the proposed content, structure and processes related to district plans in Galicia.

One of the critical pieces of the SFM strategy framework that have not been modified (or developed) and tested for the Galician situation, as was originally envisaged, is the IFM system. While this is still considered a critical element of the strategy framework and pieces that feed into it (see Data Infrastructure above) are mostly in place, the development of the IFM itself continues to be delayed.

Finally, though not enacted, a new Forest Law for Galicia is being developed, which would require more formal and effective public participation in the forest management process in the autonomous region. While this was envisaged in the original strategy (see Regional Management Sub-Process above), the fact that such participation was not mandated and institutionalized at the outset of is a major reason why the implementation of the strategy



framework has been slow and incomplete. This is more fully explained in the Conclusions and Lessons Learned section, below.

## 7. SFM and forest certification in the private sector

During the same period the aforementioned efforts were being promoted by the government, the Galician private forest sector was under growing pressure to demonstrate SFM and due diligence with respect to legal source procurement. The growing importance of certification in the forest product marketplace and legislative initiatives such as European Regulation (EC) No 1024/2008 (European Commission, 2008), (EU) No 995/2010 (European Parliament, 2010) or Spanish Order Pre/116/2008, (Government of Spain, 2008), have been instrumental in increasing pressure on the private sector in this respect. In addition, the global economic downturn that followed the collapse of major US financial institutions significantly reduced demand for forest products (UNECE/FAO, 2010). SFM, previously considered by many players as a “tool for reaching new markets”, suddenly turned into something “compulsory for maintaining declining core markets”.

Despite growing pressures, forest certification schemes have not been very effectively implemented in Spanish forestry in general and in Galician forestry in particular. The share of certified area in Galicia is far below that of most of European countries, as is shown in Figure 2. In 2009, 9% of European forests were certified under PEFC or FSC, but if the Russian Federation is not included then this figure rises to an average of 46%, with several major wood-producing countries having certification rates of 60% or higher.

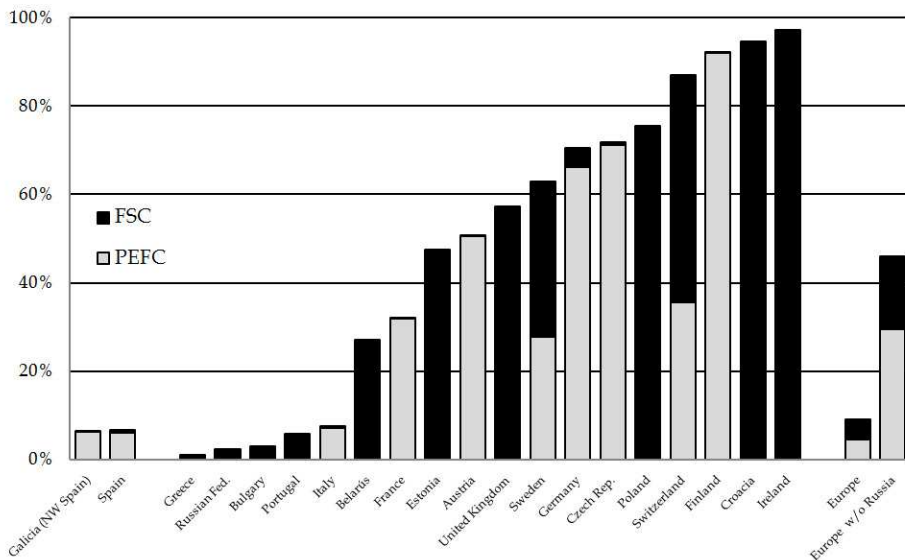


Fig. 2. Share of Forest Area under SFM certification in different European countries in 2009. Sources PEFC (2011), FSC (2011), FAO (2009). Note that due to difficulties in cross checking the FSC and PEFC databases, areas certified under both schemes are counted twice.

As of 2011, only 6.9% of the forest land in Galicia was certified under internationally recognized schemes. Regarding the type of certification scheme, 97% of the certified area is PEFC-certified and only 3% FSC-Certified. In Figure 3, contrary to what would be normally expected for region where a small private ownership predominates, it can be stated that despite some group and regional initiatives being recently launched, individual certification is most common (72%). This is probably due to the fact that 62% of the certified area is managed by DXM (Figure 4) and 10% by industries, while certification processes and SFM initiatives have not been implemented in areas managed by small private non industrial owners.

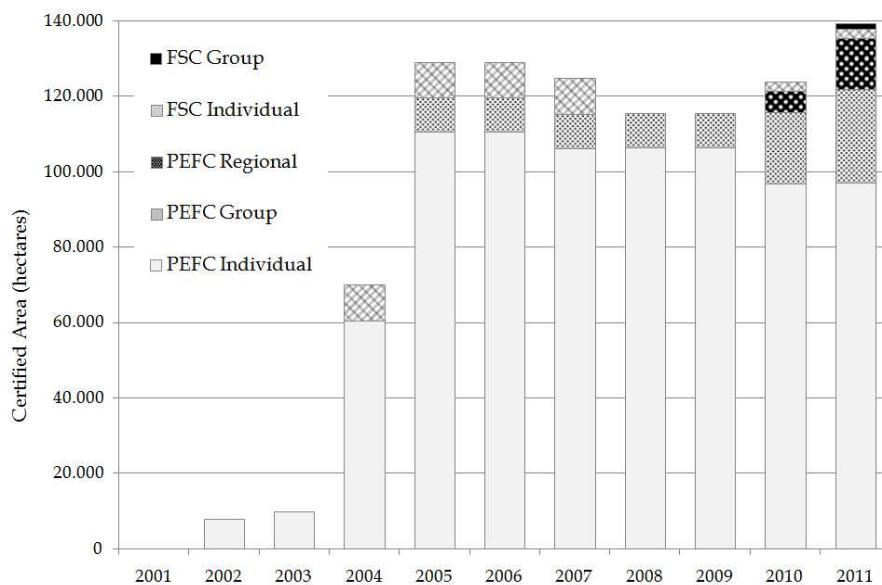


Fig. 3. Evolution 2001-2011 of certified forest area by scheme and type in Galicia. Source: Calculated from certificates public reports in registries of certification schemes. PEFC (2011), FSC (2011),

There are several possible reasons of the slow pace of forest certification in Galicia. Some authors, such as Ambrosio (2006), for example, postulate that the small size of private forest holdings implies relatively huge certification implementation and auditing costs. As well, such an ownership pattern implies significant traceability costs. For example, in 2010 there were more than 33,000 timber harvesting operations with an average of only 210 m<sup>3</sup> obtained from each harvest (Monte Industria, 2010a).

Beyond the matter of scale, Picos (2009) suggests that the requirements of the PEFC and FSC are more stringent than those of forest certification schemes in place in other wood-producing countries. This fact represents a commercial disadvantage to industries that depend upon the local Galician wood supply. Local certified wood cannot compete with imported products on price, quantity or certainty of continuous supply. The paradox is that this situation favors operations audited according to less stringent standards and more distant suppliers, thereby requiring more long distance transport.

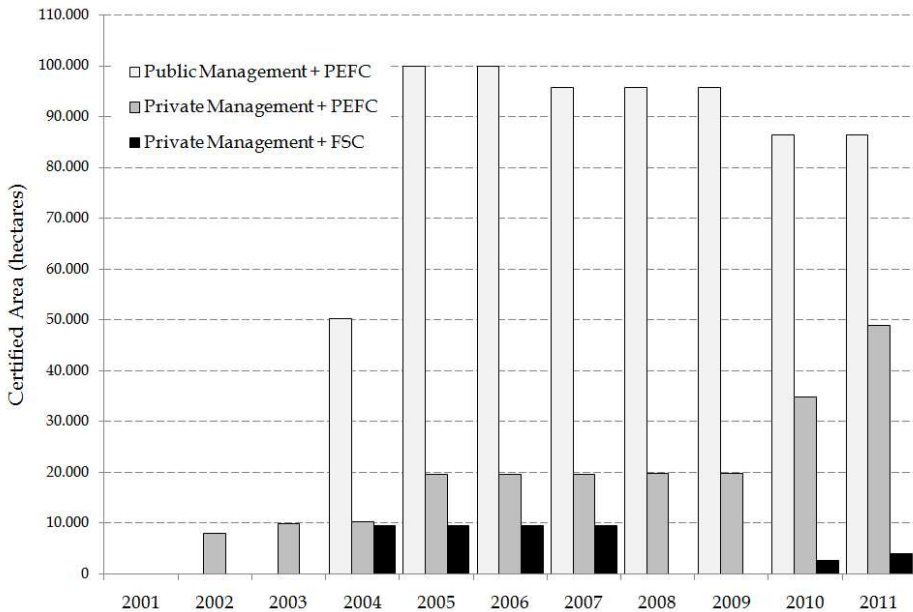


Fig. 4. Evolution 2001-2011 of certified forest area by management type and scheme. Source: Calculated from certificate public reports in registries of certification schemes. PEFC (2011), FSC (2011),

However, in the past five years, some of the Galician forest industry has been making significant investments in Chain-of-Custody certification. From indications provided by PEFC (2011), FSC (2011) and Monte Industria et al (2008a), there is a currently a potential annual demand for 3.5 million m<sup>3</sup> of certified roundwood in Galicia alone, regardless if it is PEFC or FSC certified. In addition, the industry in neighboring regions (mainly Asturias and Portugal) would demand close to an additional million m<sup>3</sup> from Galician forests. According to calculations based on public statistics on timber sales (Xunta de Galicia, 2010) and public reports on certified companies registered in PEFC (2011) and FSC (2011), as of 2009, forests in Galicia only produced approximately 275,000 m<sup>3</sup> of PEFC-certified production, while no certified production at all came from FSC-certified forests. As well, it should be recognized that there a large number of small forest contractors that buy standing timber but do not have Chain-of-Custody certification. This means that some of the timber that was purchased from certified forests by such contractors lost its certification on its way to sawmills, wood-based panel factories or pulp mills. According to the summaries of certified timber auctions in public managed forests published by Xunta de Galicia (2010), this would have further reduced the supply of certified timber to industry by 60%.

The overall situation regarding difficulties in implement forest certification schemes may also be due to the slow and incomplete progress in the implementation of the proposed SFM strategy in Galicia. Ambrosio (2006) refers to complaints by the private sector about the lack of speed of the region's forest administration in formulating strategies, policies, processes or cost-effective methods aimed at helping the private forestry sector adopt principles of SFM and certify its performance under internationally recognized schemes.

Concerned by the situation regarding Forest and Chain-of-Custody certification, in 2009 the Galician forest industry, in cooperation with some forest owners associations, founded a Forest Certification and Chain-of-Custody Group, (Grupo Galego de Certificación Forestal e Cadea de Custodia or CFCCGA) aimed at achieving certification for small forest owners (under PEFC and/or FSC) and designing a due-diligence system that would comply with the imminent introduction of the Commission Regulation (EC) No 1024/2008. According to CFCCGA (2009a), in less than two years, more than 4,500 forest holdings (with an average size of 0.7 ha) have joined the group, making this initiative the first and only one to date which has been able to implement forest certification for small forest owners in Galicia. The aims and actions of this group are relevant to this paper because they can be seen as an attempt by a stressed private sector to take more responsibility for and ownership of broad SFM initiatives despite the fact that the SFM strategy framework developed by DXM has not been fully implemented. It is notable that some of the tools and processes developed by this group, namely Grouped Management Plans (Picos, 2010a), Best Management Practice codes (CFCCGA, 2009b) and Silvicultural Models for major forest species (CFCCGA, 2009b), are quite similar to the FDMPs, BMPs and SMs proposed in the Sustainable Forest Management Framework for Galicia.

## 8. Lessons learned

Almost a decade after the development of the SFM strategy framework for Galicia, while it can be said that much has been accomplished with regard to its implementation, it must be admitted that much more needs to be done. Although the complex political and jurisdictional situation in Galicia (as is described below) has contributed to slow and incomplete progress in the implementation of a SFM strategy in Galicia, in the authors' opinions the major direct contributing reasons for this state of affairs has most to do with three major deficiencies in the strategy framework development and/or implementation processes: the insufficient public participation, the lack of clarity with respect to the appropriate roles of major players, and insufficient legislative underpinnings. All of these are described below as "lessons learned", though it should be recognized that our lessons are likely far from complete.

**Lesson One – Earlier and More Complete Public Participation:** Originally, the intent was to present an initial, but comprehensive, draft strategy as a "straw man" or "white paper" to be revised based upon the suggestions and comments, but this has not worked since many stakeholders felt that they were being presented with a "fait accompli". While the DXM forest administration may have the broadest understanding of the situation, it cannot assume that it knows, a priori, all of the major problems in the region's forest sector. The principal forest stakeholders demand that government officials first ask them their opinions concerning the main issues, problems (or potential market opportunities) before beginning to design and develop systems, instruments, tools to satisfy them. Although it is the responsibility of the government to define policies, it is critical that the principal stakeholders are consulted at the outset in order to avoid subsequent rejections or negative political influences. Therefore, it is now felt that it was a mistake not to work with major stakeholders (perhaps by means of workshops and advisory groups) to identify issues and directions BEFORE drawing up any draft document.

**Lesson Two – Clarification of Roles:** While there are several levels of government and government administration that impact SFM in Galicia (the Spanish national government,

the regional government, the provincial government and the 315 local municipalities), all of which could lead to confusion and problems, the authors believe that it is the lack of clarity regarding the roles of local municipalities, in particular, that impeded the implementation of the proposed strategy framework. For example, local municipalities regularly endorse plans, laws, decrees and regulations that regulate (ban or allow) harvesting operations, plantations and/or specific forest species in ways that contradict the Galician government's plans and laws. On the other hand, there is resistance at higher levels of government to the creation of district SFM committees for SFM due to fears that some local representatives may use these committees to advance political platforms or pressure the government for funding that is not related to SFM objectives. Therefore, before undertaking this process, the roles and responsibilities of the various levels of government (and the reasons for these as they relate to critical competencies with respect to SFM decision-making) should have been clarified and made explicit in a legal framework – preferably one that would advance sustainable management and reduce political manipulation.

**Lesson Three – Legislative Support:** Given the legislative changes required to ensure advancement of such a significant and politically sensitive initiative, it is necessary to receive full political support by the government in power right from the beginning of the process, and continuing support over the implementation period. Unfortunately, the large number of significant actions required to implement the strategy meant that inadequate progress was made before the elections of 2005, when there was a change in the Galician government, at which time the new government had to be educated regarding the strategy framework and the details of its proposed implementation. While progress continued to be made, it was slow and was then again slowed when another new government was elected in 2009. For these reasons, we believe that it would have been advisable to begin the strategy development and implementation process at the beginning of a political mandate and obtain broad political support so that any changes in government would be less likely to impede progress.

**Lesson Four – Operational Priorities and Organizational Gaps:** There are practical problems that impeded the DXM from making a sustained effort to manage and control the continued development and implementation of the new SFM strategy. The DXM has two main responsibilities: to develop and implement forest policies, and to prevent and fight forest fires. The principal forest stakeholders have persistently claimed (Monte Industria et al., 2008a; Monte Industria 2010b; Picos, 2010b) - that 95% of the time of a district director is taken up with organizing and managing forest fire fighting brigades during fire season, while forest services company associations have complained that all the technical staff of forest districts are fully occupied with fire detection and fire-fighting responsibilities from at least July 1<sup>st</sup> to September 30<sup>th</sup>, and in bad weather conditions the main fire season period may be further lengthened significantly.

While these complaints may be somewhat exaggerated, it must be recognized that the individuals and units tasked with implementing forest management practices at the district level are preoccupied with fire prevention and fighting for up to six months of the year. This significantly reduces the time and attention they have available for overseeing the implementation of new forest management strategies. It should be recalled that, within the proposed strategy (and generally), district-level staff are expected to:

- a. control and monitor the degree of accomplishment of means proposed in District plans;
- b. provide information and guidance to landowners and forest managers about regarding district and regional priorities, funding applications, BMPs, SMs and so on;

- c. monitor and control the progress of on-the-ground management plans and related actions.

Instead, however, technical staff members in districts are almost completely dedicated to fighting fires for up to half of the year. Therefore, in order to implement any new forest strategy in a coherent manner, it is necessary that responsibilities be changed so that some technical staff would be completely dedicated to forest management regardless of the severity of the fire season.

**Lesson Five – Advantages for Small Ownerships:** The implementation of a well-designed and supported SFM framework would boost forest certification in small non-industrial forestry settings. In Galicia, group and regional certifications are underdeveloped, in part as a result of the high degree of small, fragmented private ownership. It is important to note that the certification initiatives that have been most successful for small non-industrial private forest owners use documentation and processes that are very similar to those designed for the SFM strategy framework by DXM. This may indicate that a complete framework would aid to develop smallholder certification initiatives throughout the region and would reduce their implementation costs, which are a major constraint. Moreover, a SFM framework with a public participation may help auditors and group managers to verify and register the achievement of indicators and ease some of the required procedures. In addition, it also may be possible that strong public participation in the SFM framework development could help in objectively defining the certification requirements in Galicia and comparing them to what is required in other countries. This process could facilitate reviews and modifications to both FSC and PEFC national standards or, perhaps, enable the development of regional ones.

## 9. Conclusion

In conclusion, although the initial stages of its development seemed to progress rapidly, the continued development and implementation of the SFM strategy framework has been delayed and is far from complete, with some major elements progressing only slowly, if at all. Greater time and effort spent obtaining clarity of roles and support from all stakeholders and actors at the initial stages of the process, while slowing the early stages, would likely have led to more progress by this time.

Meanwhile, the forest industry in Galicia is facing increasing pressure by markets and public opinion to demonstrate that it has adopted sustainable practices. The Galician private forest sector, which is moving in this direction despite the difficulties in Galicia caused by the very small holdings and fragmented ownership, has begun to realize that the full implementation of the SFM strategy framework could mitigate some of forest sector's problems in this regard and thus might be critical to its long-term survival. Given that some positive results that correlate very well with the government's strategy framework have been achieved by private initiatives in a short period of time, there is reason to be optimistic that more and faster progress may be made in the near future.

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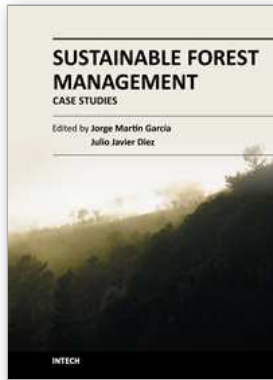
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The concept of forest sustainability dates from centuries ago, although the understanding of sustainable forest management (SFM) as an instrument that harmonizes ecological and socio-economic concerns is relatively new. The change in perspective occurred at the beginning of the 1990s in response to an increased awareness of the deterioration of the environment, in particular of the alarming loss of forest resources. The book collects original case studies from 12 different countries in four continents (Africa, America, Asia and Europe). These studies represent a wide variation of experiences from developing and developed countries, and should clarify the current status of SFM worldwide and the problems associated with its implementation.

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