

Study on the Development and Marketing of Non-Market Forest Products and Services

DG AGRI, Study Contract No: 30-CE-0162979/00-21

Executive Summary



-November 2008-

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The importance of sustainable management of non-market forest goods and services has increased during the last few years. This is also reflected in a number of policy documents within the EU (e.g. *EU Rural Development Regulation, EU Forestry Strategy, EU Forest Action Plan*).

The present study was launched as a response to the issues raised in the Forest Action Plan and in particular in the key action 3 (*“Exchange and assess experiences on the valuation and marketing of non-wood forest goods and services”*). The study aims to acquire summarised information on the state-of-the-art in field of valuation of and compensation for non-market forest goods and services.

1. Forest goods and services

Forests provide numerous goods and services that contribute to the human wellbeing

It is widely recognised that forests are of high importance for the human wellbeing. On the one hand, they enable important life supporting functions, like photosynthesis, soil formation, water and nutrient cycling, which are essential for the functioning and existence of our world. On the other hand they provide goods and services that contribute to the human wellbeing. The number and variety of these goods and services is big and constantly changing. Meaning that new goods and services are appearing or already existing goods and services are used in new ways. The reasons for this are the constantly changing uses and importance the society ascribes to different forest goods and services.

Different schemes exist to classify forest goods and services

Different schemes can be applied to classify forest goods and services. A widely used approach is the functional classification. According to which the forest goods and services are divided into five main categories (Figure 1): *resources, ecological, biospheric, social, and amenities*. The *resources* category refers to all goods that may be obtained from forests (e.g. timber, fuel, and food); the *ecological services* are those related to protection of water, soil and health; the *biospheric services* are mainly climate regulation and biodiversity protection; while *social and amenity services* are comprised of the different types of recreational activities and the cultural importance of forests.

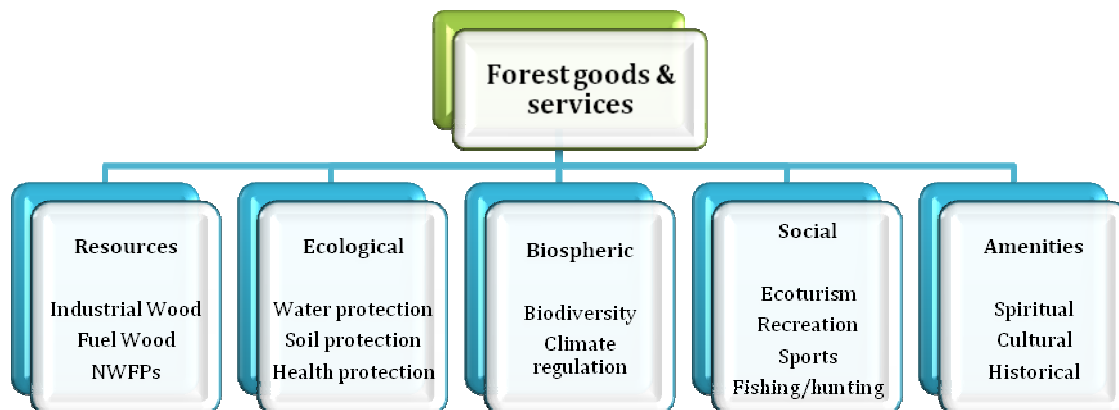


Figure 1: Major Classes of forest services

Another type of classification relevant in the context of this study, distinguishes between market and non-market forest goods and services. Market forest goods and services are those which are traded in markets, and their value can be directly observed through market prices (e.g. timber, fuel wood and non-wood forest products); while non-market goods and services are not traded in markets, thus no price can be directly observed (e.g. water protection, soil protection, health protection, biodiversity protection, climate regulation, tourism, recreation, sport activities, spiritual services, cultural services and historical services). The latter are supplied to the society or to certain groups of users, either for free or at a symbolic price far below the production costs. However, the lack of a market price does not indicate that these goods and services do not have any value for the society or that they do not contribute to the human wellbeing.

Biodiversity protection, recreation, carbon sequestration and watershed services are considered as the most important non-market forest goods and services at the EU level

There is lack of information in terms of the importance of non-market forest goods and services at the EU level. To gather data on this issue, a survey was conducted among Standing Forestry Committee representatives and different stakeholders related to forestry, like environmental non-governmental organisations, private (CEPF) and state (EUSTAFOR) forest owner associations.

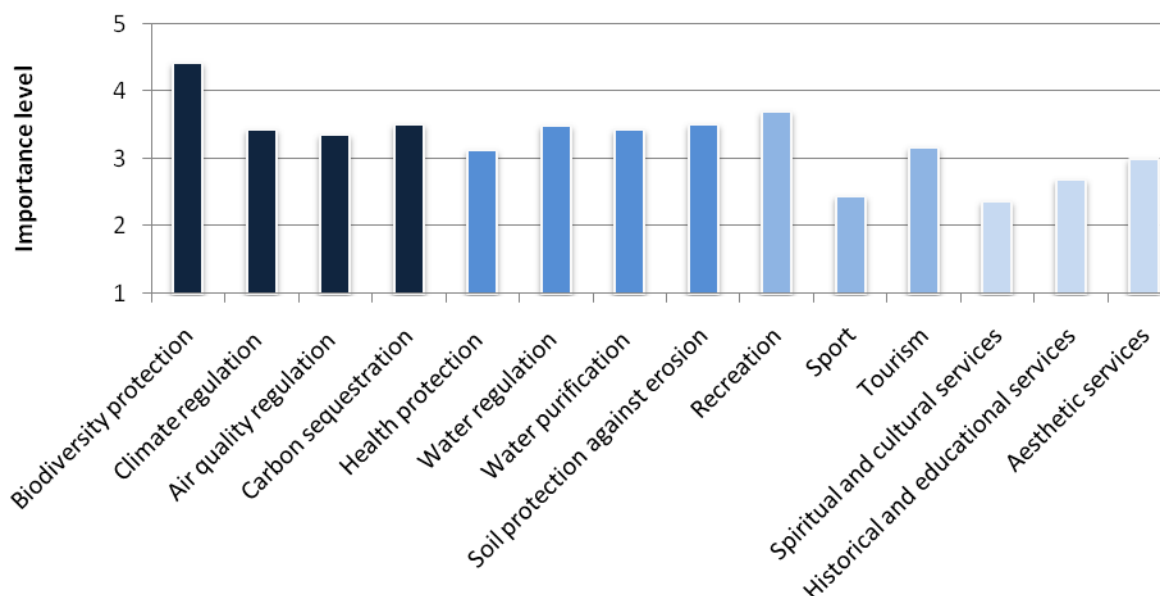


Figure 2: Importance of different forest goods and services in the EU-27 (1-not important, 2-less important, 3-important, 4-quite important, 5-very important)

According to the opinion of the experts participating in the survey, non-market forest goods and services have a high level of importance, which most likely will further increase in the future. From the pool of non-market goods and services, *biodiversity protection, recreation and tourism, carbon sequestration, and watershed services (water regulation and purification, and soil protection)* are especially important (Figure 2).

The importance of forest goods and services may vary between different stakeholders

It has to be kept in mind that stakeholders (e.g. forest owners, decision makers, general public) are likely to differ in terms of their relationship and interests towards the forest. These groups may also have differing opinions on which forest goods and services are the most important. For example, forest owners may ascribe higher importance to those goods and services with higher

income potential (e.g. timber, fuel-wood, hunting); while the general public may rank higher non-market forest goods and services (e.g. recreation, water provision) which can be enjoyed by the society.

The importance may also vary with respect to scale (e.g. local, countrywide, and international). For example, at local level those goods and services that can be directly or indirectly enjoyed may gain more importance (e.g. recreation, watershed services, aesthetics), while at the countrywide or international level forest goods and services with a “global character” may be more significant (e.g. carbon sequestration, biodiversity protection).

These differences need to be considered when taking decisions related to forest policy and management. Unfortunately, at the EU level no complete information exists, how the opinions of these groups differ and therefore more effort should be put into conducting opinion surveys.

Access to non-market forest goods and services is mainly unrestricted and free

Important factors influencing the use and the importance of forest goods and services are property rights and accessibility. Even though, more than 60% of forests in the EU are privately owned, the access to and the use of the majority of forest goods and services (except some market ones) is unlimited and in most cases free for the public.

This means that forest owners receive no monetary compensation for their provision, and thus may be less inclined to manage their forest in a way that generates socially desirable quantity/quality of these goods and services. One of the possible solutions for this problem is to apply financing mechanisms, however this requires knowledge on the estimated value of these goods and services.

2. Valuation of non-market forest goods and services

The Total Economic Value framework is widely used for the valuation of forest goods and services

The valuation of the benefits that forests provide to the society requires a coherent analytical framework. In recent years, the concept of the Total Economic Value has been extensively used to quantify the full value of the different components of ecosystems (forests). This framework distinguishes between use and non-use values. Use values are those that result from the actual or future direct (e.g. recreation, timber) or indirect (e.g. water purification, carbon sequestration) use of forest goods and services. Non-use (or passive) values are derived from the knowledge that the natural resource is preserved, and are not associated with the actual or even potential use.

Revealed and Stated preference methods are available for valuing the changes in the availability of forest goods and services

Economic valuation methods always attempt to elicit the monetary value of a certain change in the quantity and/or quality of the environmental goods and services (e.g. having or not access to a forest for recreation activities). The changes considered are always small (marginal), since bigger changes may have also impacts, which are not necessarily related to the value of the analysed good. The main types of valuation methods are revealed and stated preference methods.

The revealed preference methods are based on actual observed market behaviour (e.g. purchases of certain goods). The value of forest goods and services in question can be either derived directly (e.g. from market prices) or indirectly from surrogate markets that have direct relationship with the forest good or service of interest (Travel Cost Method, Hedonic pricing method). The advantage of these methods is that they are based on actual market behaviour; however, they can be applied only to use values.

The stated preference methods (e.g. Contingent Valuation Method, Choice Modelling) are based on hypothetical rather than actual behaviour data. The value of a forest good or service is derived from people's responses to questions describing hypothetical markets or situations. The methods in this group can be applied to all types of market forest goods and services and allow to estimate both use and non-use values. Their main disadvantages are that they are based on hypothetical situations (often dealing with goods and services unfamiliar to the wider public and thus difficult to understand) and their application is complex (requiring expert knowledge) and time consuming.

Valuation methods based on observed market behaviour should be preferred; however, the final selection of the valuation method depends on the context of the valuation

When deciding which valuation method to apply, the general recommendation is to opt for market-based methods (revealed preference methods) that are usually less time and resource consuming. However, the choice of the appropriate valuation method depends on a number of factors, such as: (i) type and number of objects to be valued; (ii) relevant population (e.g. users or non-users or both); (iii) geographical scope (local, regional, national, international); (iv) data availability (e.g. restricted data access – data on house values); (v) available time, financial and personnel resources.

Valuation methods give reliable results when applied properly

Even if some of the methods for the valuation of forest goods and services are still relatively new, in the last decade the methodology and knowledge on these methods have improved considerably. When these methods are applied according to good practice standards and their limitations are carefully considered, they provide sound estimation of economic values of all types of forest goods and services.

Benefit transfer techniques can be applied to derive values when time and resources are limited

Very often time and resources are limited and new primary environmental valuation studies cannot be performed prior to all important decisions. The benefit transfer method estimates economic values for forest goods and services by transferring available information from studies already completed in another location and/or context. The application of this method is usually less costly than other valuation methods; however it is still relatively new, thus no widely accepted standards for its application have been adopted yet. Therefore, it should be used with precaution, being aware of its limitations.

Values for non-market forest goods and services, estimated in different contexts should not be directly compared

One of the limitations of these methods is that, in general, they do not allow direct comparison of economic values estimated in different studies, or the use of the estimated values to express the relative economic importance of different forest goods and services. The limitation results

from differences in valuation objectives, methods applied, data accuracy, target populations considered, value units (e.g. value per visit, value per year, value per t of carbon), etc.

Values are available for a limited number non-market forest goods and services and only in some EU Member States

In general non-market forest goods and services that have attracted wider public and/or political attention or those which have been easier to value (e.g. the relation between the valued good or service and the forest condition is easier to establish) have been subject to more valuation studies. In this context, forest recreation and tourism as well as the conservation of certain species or habitats (biodiversity protection) have received much attention, and a vast number of studies on these topics are evidence of this.

Also the geographical distribution of valuation studies is uneven. Most studies were conducted in Western Europe and Nordic countries, while there have only been few studies in the Eastern EU Member States.

The estimated values cannot be used for defining the price of the valued good or service

The estimated value of a certain non-market forest good or service reflects the benefits perceived by the society. This value can be applied among other for raising public awareness about the contribution of the good to the social welfare; to justify the investment into certain type of forest management; to support land use decisions; to compare costs and benefits from alternative projects or programmes, etc.

However, the estimated value cannot be directly used to determine the amount of compensation that should be paid to the provider of a non-market forest good or service. The amount of compensation is subject to negotiation between the provider and the beneficiaries. In general it should be based on the forgone income or additional costs that the provider has to bear due to the provision of the non-market good/service. In this respect, there is a considerable lack of information about the costs of the provision of non-market forest goods and services, which in the past were estimated only upon income lost due to, for example, decreased timber harvest. More systematic studies are needed to provide reliable data on the EU level.

3. Financing mechanisms for non-market forest goods and services

Non-market forest goods and services are difficult to market because they are typically externalities and have public good characteristics

Non-market forest goods and services are often positive externalities of forest management or un-managed forests. They commonly have – to a higher or lesser degree – public good characteristics whereby they lack excludability and rivalry. This means that if users cannot be excluded from forest benefits (e.g. dispersed recreation in forest landscapes) and/or if users do not compete for resources (e.g. landscape amenities or protective functions) it is difficult to market them. Preconditions for market development are: scarcity of the good or service; the clear definition of property rights over the resource; low transactions costs for the market exchange and availability of information to all market participants. Furthermore, a number of social and institutional factors may stand against the development of markets, e.g. traditional user rights and certain social or political values that do not allow market solutions. Institutional capacities have to be sufficient to enforce property rights. Market exchange is improved if the transactions are perceived as fair, if there are no negative external effects on third parties, if

institutions exist to help with the exchange of goods, if the goods have commodity characteristics such as having many buyers and sellers, and if market entry and exit is easy.

State interventions correct market failures

Forests provide important positive externalities. In order to secure these externalities, the state has various ways of intervening that include the clear definition of property rights or product liability rules for establishing markets, regulations for land use (e.g. prohibiting forest clearance or prescribing forest regeneration after harvesting), subsidies for desired management (e.g. establishing mixed forest stands), taxes on undesired management (e.g. resource extraction or dumping of waste in landfills), or government provision (e.g. establishing national parks or creating recreation forests or water reserves on state or municipal land). All these measures have their advantages and drawbacks. Often, a mix of regulatory, financial and informational policy means is suitable to regulate the provision of forest goods and services for the population.

The marketing difficulties can be changed to limited degrees by public policy and by the activity of land owners and managers

Two types of processes may increase marketability: the “transformation” of the goods or services with changes to their institutional properties (e.g. property rights or contractual agreements) and the “product development” (e.g. provision of complementary/additional goods and services, marketing promotion, changes of existing contracts, etc.). The transformation lies in the competence of public policy, the product development in that of the private owners and forest managers. For both fields of action theoretical studies exist but the practical applications are still rare.

Many market-based instruments have a high level of uncertainty

Researchers have highlighted the various risks that may be associated with new market-based instruments. For instance, the efficacy and efficiency with regards to ecological goals is often unclear and their application may be particularly difficult for land owners with low capital and for small-scale land owners. The difficulties in the implementation of the new financing mechanisms are partly a result of them being in early stages of the innovation process and due to the lack of support from the institutional system. However, we should not forget that we still operate in a field where the marketability is and will remain restricted, at least to a certain extent.

Institutional settings and institutional actors barely support innovations in the development and marketing of forest goods and services

There are unfavourable preconditions for developing and marketing new forest-related products. This is partly due to the ownership structure: dominating small forest properties. Furthermore, the institutional system actors that should support the innovation activities in the sector are rather weak: there is a lack of explicit innovation policies in the sector and there is a lack of interaction between forestry and other sectors that are relevant for the future development of forestry.

The study applies a broad typology that includes public, mixed public-private, and private financing mechanisms

For the purposes of this study the term “financing mechanism” is used in order to embrace all public and private ways of financing forest goods and services. Instead of the term

“compensation” which tends to have a passive connotation of compensating only for the cost, the term “financing” is used which should include also active marketing approaches. The term “mechanism” is used to include not only public policy instruments but also all forms of private market transactions.

In environmental policy we distinguish between centralised and decentralised policies. The former comprise regulatory instruments and incentives that are imposed by the state; with the latter the state only sets the “rules of the game” and the mechanism works through private actors. Financial mechanisms of centralised policies aim to correct externalities for which no market can be established (Pigouvian instruments). Decentralised policies create market solutions by defining property rights on the externalities (Coasian approach).

For the purpose of this study a tri-fold typology of financial mechanisms is applied which follows the above distinction of centralised and decentralised instruments but further includes already existing market solutions for goods and services of the forest. It thus distinguishes public (state), mixed (public-private), and private (market) mechanisms (Table 1):

- **Public financing mechanisms:** This category includes pure public instruments of Pigouvian type and comprises negative incentives (taxes, fees and charges) and positive incentives (subsidies/subventions).
- **Mixed public-private financing mechanisms:** Under this category, state interventions of Coasian type are presented that are of voluntary nature (public-private contracts) or aim at creating new markets for externalities of forest ecosystems (tradable permits).
- **Private financing mechanisms:** This category comprises all market solutions that are developed without specific public interventions. Public or private actors may use these mechanisms that include the trade of goods and services, purchase or lease of land, sponsoring or labelling.

Governments may use all three types of mechanisms.

Table 1: Classification of financing mechanisms used in the study

Type	Mechanism
PUBLIC MECHANISMS	Taxes, fees and charges
	Subsidies
MIXED PUBLIC-PRIVATE MECHANISMS	Public-private contracts
	Tradable permits
PRIVATE MECHANISMS	Purchase of goods and services
	Land purchase
	Land lease
	Eco-sponsoring
	Donations and gifts
	Certification

Taxes and subsidies are the most frequently used financing mechanisms in the EU

Taxes and subsidies are the most frequently used financing mechanisms in EU Member States. Public-private contracts, purchase of forest goods and services, eco-sponsoring and certification are also of some significance. The other financing mechanisms, i.e. tradable permits, land purchase, land lease and donations, are found only in some countries.

Figure 3 shows how the use of financing mechanisms is assessed by government officials from 26 EU Member States.

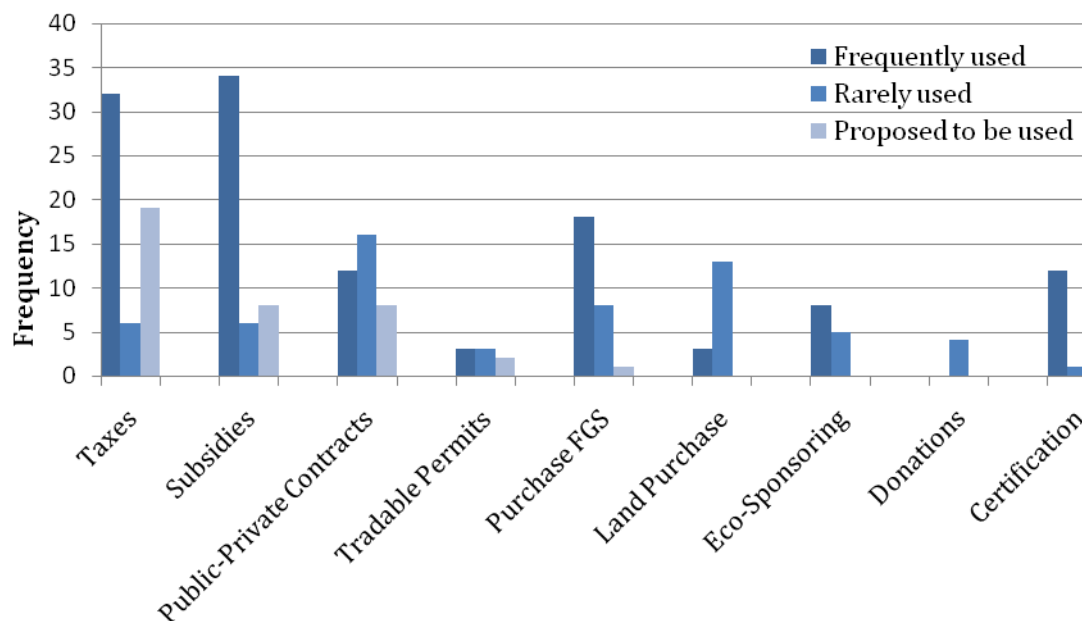


Figure 3: Use of different types of financing mechanisms for forest goods and services in EU countries

The answers from 13 respondents from forestry and environmental interest groups confirm the results on the importance of the financing mechanisms. So does the analysis of the case studies that were conducted in course of the project.

Some financing mechanisms may be generally applied; some are used for specific forest goods and services

Certain financing mechanisms are only commonly used for certain goods and services. Our survey suggests that tradable permits are only used for biospheric services (biodiversity conservation, carbon sequestration) and certification of resources (mainly timber). Purchases are common for resources (wood and non-wood forest products) and social services (recreation). Taxes, subsidies, contracts, land purchase and lease and eco-sponsoring are frequently used for almost all forest products.

There is a trend to an increased use of market mechanisms

Taxes and subsidies will remain important in future, but public administrations increasingly use public-private contracts because they are better accepted by the target groups. New markets are also being created such as for carbon sequestration and biodiversity conservation; however, these are still in preliminary stages of development.

Success factors for the application of financing mechanisms are – besides of the proper design and implementation of the mechanisms – political-institutional frameworks, the involvement of stakeholders and social acceptance

The applicability and feasibility of financial mechanisms vary from case to case, and there is no financing mechanism that is optimal for all different situations. This is illustrated by the detailed analysis of selected cases. Case studies from public, mixed public-private, and private financing mechanisms show in different ways strengths and weaknesses. In almost all cases, certain

modifications of the legal or institutional context and/or other preparations were required before the mechanism could be applied. Besides of the political-institutional factors, the involvement and motivation of stakeholders and the social acceptability seem to be important elements for the effectiveness of financing mechanisms.

Develop a knowledge base on the trade, valuation and financing of non-wood forest goods and services

An indication that non-wood forest goods and services (NWFGS) are not yet seen as a serious business field within forestry is the fact that a systematic knowledge base on the trade with and the compensation for these products is lacking. One measure in order to establish such a business area would be the regular monitoring and publication of the related economic indicators. Further measures would be the well-funded support of research on NWFGS markets, new financing mechanisms, related innovation systems and innovation processes, as well as the roles of enterprises, non-governmental organisations and institutional actors in the provision of these benefits.

Further develop all financing mechanisms

The overview of the use of financing mechanisms in Europe shows that all mechanisms need further development. Mechanisms that have been developed for certain goods or services might also be applied to others. There are good practice examples in certain EU Member States that are not known in others, for instance, tax exemptions (SK, FR), tendering schemes (FI), conservation banks (DE, FR), water protection (FR, DK), territorial marketing (IT), eco-sponsoring (Southern Europe), volunteering (UK, Alps), landscape auctions (NL), or various local labels for forest products. This calls for increased exchange of experiences among the EU Member States. Further, international examples on payments for ecosystem services might be taken up in EU countries.

Engagement of land owners is required for the marketing of goods and services

Private financing mechanisms such as the trade with goods and the offer of services are not regularly used by the land-owners. There is an evidence that many marketing opportunities exist without the need to change the institutional framework. They include new forms of marketing traditional products such as mushrooms, game, wood, etc. as well as examples for the successful marketing of new goods such as cosmetics or food and of forest-related services such as sports, adventure, spiritual, recreational and educational services and biodiversity conservation. In the field of marketing, any further development will depend largely on a stronger engagement of land owners, their interest groups and extension services.

Engagement of institutional actors is required for further developing public and mixed public-private financing mechanisms

Important ecosystem services such biodiversity conservation or the protection against natural hazards will most likely remain largely dependent on public funds. As demands seem to increase but funds are limited, the efficient distribution gains in importance. This implies the need for a further development of public and mixed public-private mechanisms, e.g. taxes and subsidies, the efficient application of contracts or the creation of markets (e.g. through tradable permits). The application of innovative and promising mechanisms such as conservation banks, carbon credit schemes or tendering systems is only at the beginning stage.

Engagement of institutional actors is also required for further developing private financing mechanisms

Political-institutional actors have an important role also with regard to private mechanisms, as land owners need support in their attempts to develop new products. Support measures comprise the provision of information, coordination of actors as well as financial support to buffer risks in the early stages of product development. The EU Rural Development Programmes allow for many of these measures under Axes 1-4. Measures for a systematic support of innovations are particularly foreseen by means of the LEADER instrument.

Support is required for cross-border exchange of experiences

The exchange of knowledge and experiences across national borders seems to be of highest importance for an improved application of financing mechanisms. This is because they are developed to different degrees and under a variety of measures throughout all the EU countries. Seminars, workshops, excursions, training programmes as well as joint research and development projects may be organised in cross-country cooperation or on EU level. Cooperation should include public and private actors as well as representatives from a range of sectors.

Support is required for cross-sectoral cooperation

Further development of financing mechanisms can be strengthened by supporting the cooperation across sectors. This should be considered on political-institutional level on different scales (EU, national, provincial, local) as well as on enterprise level, which would result in a stronger alliance of the forest sector with those sectors from which new demands are expected, i.e. the wood and chemical industries, energy production, tourism, environmental protection and nature conservation.

Provision of seed-money could support the development of new market opportunities

Only small shares of forestry funds are dedicated to the placement of new forest goods and services in the market. The provision of seed-money for the development of new business activities could help in tapping new private financing sources for forest goods and services.

Improving awareness of existing policy measures

The EU Rural Development Policy offers a range of measures under which the development of non-marketed forest goods and services may take place. However, so far, these measures were not used to the full extent. This may be due to poor awareness about the importance of non-market forest good and services and about the existing policy measures for their development, within the forestry sector. The situation could be improved by capacity building, education, training, information measures and awareness raising on EU and national levels.