



Forestry Measures in the 2007-2013 Rural Development Programmes

NRN Joint Thematic Initiative on Forestry
December 2010



Connecting Rural Europe

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Acronyms and Scientific Names of Tree Species

EAFRD	European Agricultural Fund for Rural Development
RDP	Rural Development Programme
CAP	Common Agricultural Policy of the EU
FAO	Food and Agriculture Organisation of the United Nations
DG AGRI	Directorate General Agriculture and Rural Development
MCPFE	Ministerial Conference on the Protection of Forests in Europe
OWL	Other wooded land
GDP	Gross Domestic Product
TWh	Terawatt hour
FSC	Forest Stewardship Council
GAEC	Good Agricultural and Environmental Condition
SMR	Statutory Management Requirements
SRC	Short Rotation Coppice
kW/MW	Kilowatt/Megawatt
LAG	Local Action Group
GHG	Greenhouse gases (emissions)
LFA	Less Favoured Areas

Alder	<i>Alnus</i> spp
Ash	<i>Fraxinus excelsior</i>
Aspen	<i>Populus tremula</i>
Beech	<i>Fagus sylvatica</i>
Birch	<i>Betula</i> spp
Chestnut	<i>Castanea and Aesculus</i> spp
Cork oak	<i>Quercus suber</i>
Douglas fir	<i>Pseudotsuga taxifolia</i>
Elm	<i>Ulmus</i> spp
Eucalyptus	<i>Eucalyptus globulus</i>
European larch	<i>Larix decidua</i>
Firs	<i>Abies</i> spp
Grey alder	<i>Alnus incana</i>
Holm oak	<i>Quercus ilex</i>
Hornbeam	<i>Carpinus betulus</i>
Larch	<i>Larix</i> spp
Lime	<i>Tilia</i> spp
Lodgepole pine	<i>Pinus contorta</i>
Maritime pine	<i>Pinus pinaster</i>
Monterey Pine	<i>Pinus radiata</i>
Norway spruce	<i>Picea abies</i>
Oak	<i>Quercus</i> spp
Osier	<i>Salix viminalis</i>
Pedunculate oak	<i>Quercus robur</i>
Pine	<i>Pinus</i> spp
Poplar	<i>Populus</i> spp
Red fir	<i>Abies magnifica</i>
Scots pine	<i>Pinus sylvestris</i>
Sessile oak	<i>Quercus petraea</i>
Silver birch	<i>Betula pendula</i>
Silver fir	<i>Abies alba</i>
Sitka Spruce	<i>Picea sitchensis</i>
Spruce	<i>Picea</i> spp
Sycamore	<i>Acer pseudoplatanus</i>
Wild cherry	<i>Prunus avium</i>
Willow	<i>Salix</i> spp

1 Content and Scope of the Paper

The paper sets the context of the forestry sector in the EU-27 and sketches the characteristics of forestry in the countries involved in the NRN Forestry thematic initiative. This is followed by a short overview of EAFRD forestry measures at the EU level, and then a more detailed consideration of each of the forestry measures, using examples from selected RDPs, is provided. A final section shows how some Member States will use additional EAFRD funding for the period 2010-13 to focus on the 'new challenges' of the CAP Health Check (particularly climate change). A conclusive section provides a brief commentary on the new state aid rules for forestry.

The paper has to be considered one of the main outputs of the thematic initiative. It has been thought of as a 'tool box' that can be enhanced and developed according to the needs of the group, particularly with the addition of useful examples and relevant practices coming from the exchanges promoted by the common initiatives that will be undertaken by the NRNs.

It contributes, for example:

- to guide the selection of priorities and themes that will be further investigated/developed using examples and case studies coming from the work of the group;
- to promote knowledge sharing among the members of the group (and outside);
- to investigate opportunities and bottlenecks related to the application of the RDP measures;
- to explore how Member States and regions can use RDPs to support the integrated implementation of the EU forestry strategy (and its Action Plan)
- to be used as background information in the view of the newly released Green Paper and consultation on forests and climate change¹.

¹ *On Forest Protection and Information in the EU: Preparing forests for climate change*. The consultation period runs from 1 March to 31 July 2010 http://ec.europa.eu/environment/consultations/forests_en.htm .

2 Forestry in the EU-27

At the EU level, as land use forestry is of comparable significance to agriculture, at least in terms of land cover, but under the subsidiarity principle of the EU Treaty² the competence for forest policy lies primarily with the Member States rather than with the EU. Thus there is no 'Common Forestry Policy' as there is for agriculture, but nevertheless the Forest Strategy³ for the EU sets out multifunctionality as the common principle of EU forestry, and identifies sustainable forest management as the main tool (for example for enhancing biodiversity and combating climate change). It concludes that all common measures affecting forests and forest products should be in line with the aims of the Strategy itself.

Forests cover more than 155 million ha (37%) of the EU 27 land area, compared to a utilized agricultural area of more than 171 million ha (41%). A further 21 million ha is covered by other wooded land⁴. Of the total forest area 130 million ha is available for harvesting. The largest forest areas are found in Sweden, Spain, Finland and France. The biggest providers of forest timber are Sweden, Germany and France, Finland and Poland (Eurostat, 2008). As a result of afforestation programmes and natural regeneration on marginal land, forest cover in the EU has increased over the past few decades, and in most EU forests the annual growth increment has exceeded the volume removed.

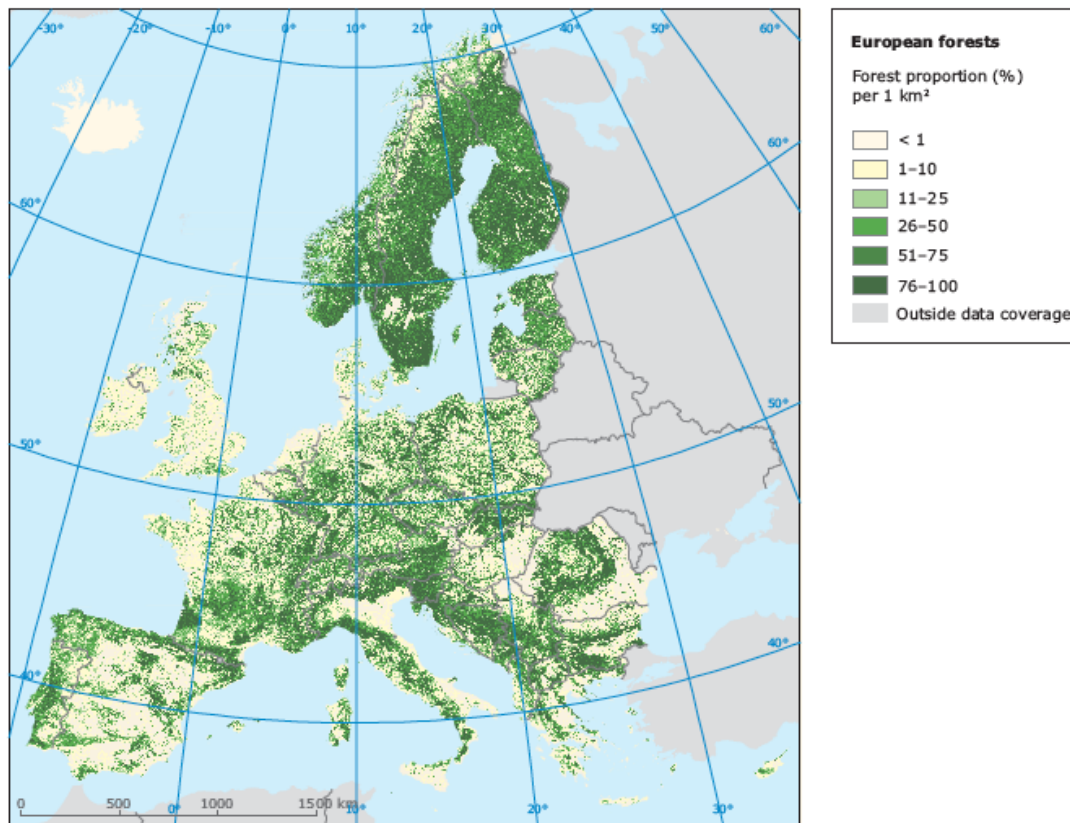
About 60% of the EU's forests are privately owned, and the majority of forest holdings are smaller than five hectares, but the share of private ownership is very diverse among the EU-27 countries. According to the FAO (2006) the highest share of privately owned forests occurs in Portugal (with over 90%), followed by Austria, Sweden and France. If other wooded land is added, Spain comes fourth, with a total of 78% of forests and other wooded land in private ownership. State ownership includes ownership by national or regional government bodies or state-owned commercial enterprises, as in Ireland. In several countries ownership by other public institutions, such as cities, municipalities and communes and so on, is of considerable importance, especially in Central Europe. There are other very significant differences in the forestry across the EU in terms of economic importance, objectives of state intervention, integration with agriculture and environmental problems. Seven distinct regional forest types have been identified (Table 1), of which the Nordic-Baltic region dominates in terms of productivity, investment, harvesting and also imports of roundwood.

² Article 5

³ Council Resolution of 15 December 1998 on a forestry strategy for the European Union (1999/C 56/01)

⁴There is no common definition agreed among EU Members States of what constitutes a forest, but the definitions used by FAO and FOREST EUROPE are: '**Forest**': Land with tree crown cover (or equivalent stocking level) of more than 10% and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5 m at maturity in situ. '**Other wooded land**' (OWL): Land either with a tree crown cover (or equivalent stocking level) of 5-10% of trees able to reach a height of 5 m at maturity in situ; or a crown cover (or equivalent stocking level) of more than 10% of trees not able to reach a height of 5 m at maturity in situ and shrub or bush cover.

Map 1 Forest distribution in Europe based on Corine Land Cover 2000



Source: EC, 2007. Pan-European Forest/Non-Forest Map 2000. Joint Research Centre, Institute for Environment and Sustainability. Available at: <http://www.eea.europa.eu/data-and-maps/figures/pan-european-forest-and-non-forest-map-2000>. [Accessed 24 March 2010].

EU forest products include sawn timber, wood-based panels, pulp for paper, firewood, chips and bark for bio-energy. Initial processing is often in rural based small and medium enterprises. The forest sector provides around 8% of the total added value in EU manufacturing. Wood production for industry steadily increased from 1950 to 1990 in Western Europe and then levelled out until 2000; there was a similar trend in Eastern Europe with the levelling beginning around 1985. There is potential to further increase sustainable wood mobilisation within the EU, but balancing issues of competitiveness of the forest based industries, economic viability, environment, fragmentation of ownership, organisation and motivation of forest owners poses considerable challenges (European Commission, 2010).

A recent report commissioned by DG AGRI concluded that the future competitiveness of the EU-based forest sector is determined mostly outside Europe, but analysis suggested that the Nordic-Baltic and Central regions will remain centres of gravity of the EU forest sectors in a globalized world, but there is potential for substantial future growth in the south-eastern European region through increased productivity and low costs. Responses in the EU forest sector to globalization have so far been focused on competing on price for global raw material commodities, but innovations in higher value-added wood products and non-timber products and services are very underdeveloped. Instead there seems to be a strong focus on traditions, limited emphasis on the future, and avoidance of risks in the EU forest sector (IIASA, 2007).

Table 1 EU Forest Types

Globalized Nordic–Baltic region	Globalized pulp in paper industry-oriented, raw material production oriented regions in Nordic countries, and related supply regions in the Baltic states
Wood production oriented in Central Europe	Raw material production-oriented regions in Central Europe supplying sawmilling in pulp and paper industry, and related supply regions
Plantation-oriented in (mainly) 'Atlantic Rim' Western Europe	Regions based on plantations, mainly supplying to pulp in paper forest industry, for the most part in 'Atlantic Rim' Western Europe
Broader, multifunctional forestry oriented regions in Western Europe	Broader, multifunctional forestry-oriented regions with industries mainly catering to domestic consumption in Western Europe
Urban society service influenced in Northwestern Europe	Regions with forestry dominated by in oriented toward serving urbanized societies and comparatively little raw material production-oriented forestry in North-western Europe
'Countries in transition' in Eastern Europe	Regions dominated by restitution issues, 'countries in transition,' weak, broken, private forestry tradition, weak infrastructure, and uncompetitive domestic forest industries in Eastern Europe
Low forest management intensity in Southern Europe	Regions dominated by low forest management intensity (if any), comparatively high importance of non-wood forest products, forest fires in southern Europe

Source: IIASA, 2007

3 Forestry in the Countries of the Thematic Initiative

3.1 Austria

Austria is one of the most densely forested countries in Central Europe, with forests covering about 47% of the territory (3.9 million ha) and providing important economic, environmental and socio-cultural benefits, from timber production to recreational opportunities. About 2.8 million ha of forest is situated within the fringes of the Alpine range in more or less steep terrain, where forest development and harvesting is constrained. In these mountainous areas the forests offer protection against landslides and avalanches.

The main tree species are 70% coniferous (primarily Norway spruce, plus Scots pine, European larch and silver fir), and 30% broadleaf (mainly beech). The forest area is increasing by about 2 000 ha a year through afforestation of non-productive agricultural land. Over the years the proportion of deciduous and mixed stands has also been increasing. The average volume of growing stock per hectare is among the highest in the world, and the net annual increment is more than twice the European average. Nevertheless, Austria's forest resource is underutilised for economic and technical reasons. The current harvest is around 18-20 million m³, while the total increment is estimated at 31 million m³ a year.

Austria is one of the four main European producers of wood products for global markets (the others being Finland, Sweden and Germany), although it relies partly on imported raw materials including roundwood, pulp and recovered paper. Large quantities of paper and sawnwood are produced, mainly for export to Italy and Germany (Austria is the fifth largest exporter of sawnwood in the world). The wood processing industry is moving towards more value-added production such as skis and solid wood panel manufacturing.

More than half the forest is privately owned, another third is in the hands of private estates and the remainder is in federal ownership. Hunting is a major forest activity, and game and its meat, as well as mushrooms, fodder and Christmas trees, are important non-wood forest products in Austria.

Forest health problems caused by air pollution resulting from decades of economic growth has been one of the main issues for Austrian forest policy, which seeks to improve the condition of the forests, in particular restoring their protective function. In addition, close-to-nature silvicultural measures have been promoted to enhance biological diversity, and a network of natural forest reserves has been established in which there is no direct human intervention. This has been achieved by means of long-term service contracts between the State and forest owners, with compensation for tending these areas and for the economic losses incurred.

3.2 Belgium

Forests and other wooded areas cover a little more than a fifth of Belgium's total land area and most of the forests are found in the more hilly, southern part of the country (the Ardennes). More than half the forest land falls into the category of semi-natural forest, with the remainder in plantations, especially of poplar.

Deciduous species make up more than half the standing stock, the main species being oak, silver birch, poplar and beech. The main conifer species are pine, Norway spruce and Douglas fir. Almost all the forests are available for supplying wood, and about 60% of forests are privately owned, belonging mainly to individuals. The net annual growth rate per hectare is one of the highest in Europe and felling is slightly lower than this growth, resulting in a steady increase in the volume of standing stock. On the other hand, the total forested area is reducing slightly each year.

Besides wood production, recreation and hunting are two major functions of the forests, but other non-wood forest products (berries and mushrooms) are gathered only on a very small scale. Belgium does not produce enough roundwood for its domestic industry, and raw materials and primary processed products are imported to meet the demand. Most of the imported roundwood comes from neighbouring regions in France and Germany.

The three regional governments of Flanders, Wallonia and Brussels-Capital are responsible for all aspects of forestry policy, and forestry services are mostly decentralized. The forested area in the Brussels-Capital region has been classified as a forest zone.

3.3 Estonia

More than 2 million ha of forest covers half of the Estonian mainland, and Estonia is one of the few European countries where the forestry sector contributes more than 10% to GDP.

The Estonian forests belong to the *taiga* zone, characterised by coniferous forests and mixed forests, predominantly pine, birch and spruce, with smaller proportions of aspen and grey alder. Estonia has a remarkable variety of ecologically valuable forest types, including deciduous swamp forests, herb-rich forests with Norway spruce, bog woodland and mineral-rich spring fens, as well as coniferous forests on eskers and kames. *Alvar* forest on calcareous areas is a distinctive feature of Western Estonia. This rich variety of habitats is reflected in the range of rare and endangered forest species, and Estonia is the only EU-10 Member State where, due to their abundance, the hunting of bear, wolf, lynx and beaver is permitted.

Commercial forests make up 69% of the total forest area and although forest management has increased to the extent that the total volume of cuttings in 2003 was more than three times that in 1993, the resources of standing timber have increased even faster. The average forest stand reserve has doubled, to 212 m³/ha, and the national reserve is increasing by more than 11 million m³ per year. Almost 40% of Estonia's forests are managed by the state and a similar proportion is privately owned. The remaining forest land is either still subject to land reform or managed by other owners such as churches and local municipalities. The average privately owned forest covers 12 ha, but 80% of forest units are less than 10 ha.

Storm damage is the most common problem and there have also been losses from game damage, but the main threats to the forest are over-harvesting, lack of restoration or reforestation, and drainage. After cutting, private forests mostly regenerate with broadleaf trees and are generally not replanted with conifers, resulting in economically inferior broadleaf forest stands on about 20% of forest land.

Of the 10 million m³ harvested each year in Estonia, about 45% is used for the production of sawn timber and some 30% for energy production, log houses, veneer, plywood, chips and other wood products. The local pulp industry uses only a small proportion of the pulpwood produced and the surplus is exported to the Scandinavian pulp and paper industries.

3.4 Finland

Forests cover almost 22 million ha, 72% of Finland's land area. Although Finland has diversified its economy, forestry and forest products today are now the second most important sector in the economy, after electronics, accounting for about 8% of GDP and 30% of total exports. Finland is a major producer and exporter of sawn wood, panels and paper products. With approximately 0.5% of the world's forests, Finland accounts for 15% of the world's exports of paper and paperboard.

Because of the harsh climate, the native tree species in Finland are restricted to two conifers, Scots pine and Norway spruce, plus two species of birch, one of aspen, and two of alder. Intensive forest management and silvicultural methods over the past 50 to 60 years favoured

the two native, economically important conifers but recent emphasis on biological and species diversity has led to less intensive silvicultural methods. These allow for mixtures of hardwoods and conifers where feasible. Finnish forest legislation was completely reformed during the 1990s and now focuses on promoting the economic, social, ecological and cultural aspects of sustainable forestry, and sets minimum quality requirements for silviculture. For example, harvesting of wood has to be done within the framework of an approved forest management plan.

Private citizens own 62% of the forest land, with more than 440 000 private forest owners. Companies own 9% and the state owns 25% of which 3.3 million ha are productive forests. The remainder are protected areas, wilderness areas, non-productive land and other special areas.

Forests maintain their traditional importance in Finnish life, providing wood and non-wood products for local consumption and industry, job opportunities for rural people, a traditional investment for citizens to draw on in times of need, and space for recreation. The traditional Nordic concept of 'everyman's right' of access to land provides income-earning opportunities for those who gather and sell non-wood forest products including lichen, wild berries, wild mushrooms and game.

The standing volume of Finland's forests is at its highest since national forest inventories began in 1921, and in recent years the annual increment has exceeded the volume removed by almost 20 million m³. The Finnish government aims to increase the forest industry's use of domestic roundwood, for example to produce more wood energy.

3.5 Germany

Forests and other wooded lands cover 10.7 million ha, about 31% of Germany's land area. Although Germany is a heavily industrialized country, its forests have some of the highest volumes in Europe, reaching 268 m³ per ha or 2 880 million m³ in total. Germany has a strong and active forest industry and is a major exporter of forest products, predominantly pulp and paper. The utilization of residual wood, recovered wood and recycled paper is important in German forest and paper industries.

About one-third of the forests are broadleaved. Measures to maintain and enhance the biodiversity of forests are an integral part of sustainable forest management. Specific measures to maintain valuable species and forest biotopes as well as increase the value of habitats are implemented on the basis of biotope mapping.

The forest land in Germany is mainly in private ownership (46%), with 34% in state ownership and the remaining 20% owned communally or by cooperatives. Of the more than 400 000 enterprises engaged in forest management, almost three-quarters are agricultural holdings with small areas of woodland. These woodlands provide an additional source of income for the farms and are capital reserve. Participation of citizens in planning the management of communal forests is often facilitated by town councils.

The forest authorities of the 16 federal states (*Länder*) are responsible for managing the state forests, technical forest planning and land-use planning at the local, regional and federal state levels, as well as for advice and extension services for owners and managers of private and communal forests.

3.6 Italy

According to estimates from Italy's National Inventory for Forest and Carbon, the area covered by forests is 8.5 million ha, plus a further 120 000 ha of plantations and 50 000 ha of land temporarily without forest cover. The inventory also reports a significant area covered

by new forests. The total area, including 'new forests', is about 10.5 million ha, one third of Italy's national surface area.

Deciduous forests predominate, both in the form of coppice and high forest, with oak, beech, ash, hornbeam and chestnut. More than half the deciduous forests are coppice or mixed coppice, especially in central Italy. Almost 90% of these are due for rotational management or are already mature. Conifers account for just over 1 million ha, most commonly larch, silver fir and red fir. In the north there are alpine forests of spruce, fir and larch, while in southern regions there are important Mediterranean pines. Other types of wooded land, which cover 1.7 million ha (16% of the total), include shrubs and *maquis*.

Most of the forests are privately owned (66% of the total), while the remainder are in public ownership, mainly the property of municipalities or provinces. Private forest holdings have an average size of 3 - 4 ha, but the majority of plots are less than 1 ha. There are considerable regional variations in ownership patterns from more than 82% privately owned in Liguria, Emilia-Romagna and Tuscany, to Trentino where 72% are in public ownership (compared to a national average of 32%).

Around 81% of the total forested area is available for harvesting, subject to licence requirements, but the relatively low levels of extraction reflect extensive under-management of forests, as a result of high costs and low profitability. Timber felling is mainly carried out in privately owned forests, which also have smaller logging areas. The rate of felling (the ratio between the area logged during the year and the total regional forest area) can be as much as 2 - 2.5%, and the rotation (the period before logging the same area again) is between 40 and 50 years. The regions with the highest rates of felling are Trentino Alto Adige, Calabria and Tuscany, whereas the regions with the lowest rates are Emilia-Romagna, Liguria and Marche.

The most recent results from the survey on forest health clearly highlight how extremely sensitive forest ecosystems are to atmospheric pollutants and to changing soil conditions, and overall 30.5% of trees have suffered damage. This represents a reduction as compared to previous years and confirms a gradual improvement in health, already evident in the preceding five years. There has been a more significant improvement in the health of conifers (approximately 3.3% fewer trees damaged) than in that of deciduous trees (1.3% fewer).

Forest fires in Italy, as in all Mediterranean countries, represent a dramatic problem, particularly when summers are dry and hot. In 2007 the burnt forest area was about 100 000 ha, with more than 10 000 fires, while in 2008, when the weather conditions were less extreme, the burnt forest area was 'only' 30 000 ha. Southern regions (Calabria, Puglia, Campania) and the islands are most affected, however some problems also arise in the northern part of the country.

Timber production is mainly from plantations, mostly of poplar, and from productive high forests, located in the north-east of the country. The total internal production of timber is less than 8 million m³. More than half the production is fuel wood, mostly from broadleaf coppice in Central and Southern Italy. In the meanwhile Italy is a big importer of wood with 14 million m³ of imported timber annually for the construction and furniture industries that have an important role in the national economy. For example, the timber-furnishings sector accounts for about 15% of manufacturing enterprises in number and 9% of total employment in the secondary sector.

3.7 Latvia

Latvia is one of the most densely forested countries in Europe, and the timber industry is the second largest industrial sector, after food, contributing 20% of the added value in industry and 7.5% of Latvia's GDP. The sector employs about 7% of the national workforce, and in 10

districts it has become the leading sector. The timber industry is competitive in external markets for low-value products, and is dominated by the primary processing sector which contributes 62% of total production, mostly from SMEs with fewer than 50 employees. Micro enterprises involved in production of sawn timber often have low competitiveness and are located in rural areas.

Just over half the territory of Latvia, almost 3 million ha, is now forest or land reverting to forest, through planting or natural regeneration. Pine, birch and fir account for 85% of the forest stands, with smaller proportions of aspen, alder and other broadleaf species. In the last 70 years the forest area in Latvia has doubled and the volume of standing timber has increased by 3.6 times. Since Latvian independence both the total area of forest and the proportion of private forests has considerably increased as a result of forest regeneration on abandoned farmland. This process continues and is reflected in the proportion of different species of trees; in the private forests there is a high proportion of pioneer deciduous species such as birch (36%), but in state forests there are more coniferous trees, especially pine (48%).

There is a relatively large proportion of private forests - almost half of all the forests. In 1995 the Soviet collective ownership of forests ceased to exist, and these forests were restored to private ownership. Thus most of the current forest owners have only 10 - 12 years experience in managing forest properties. As a result of land reform, 51% of forests are state owned, 45% are in the hands of private owners or legal managers, and 4% are managed by municipalities. The privately owned forest plots are relatively small, at 8.4 ha on average. Only 10% of forest owners actively manage their forests, but private forests are still the source of more than half the 10 million m³ of timber harvested each year, although their contribution is decreasing, a source of concern about the effective use of Latvia's forest resources.

There is a long tradition of nature protection in Latvia and a large area of Latvia's forestland, 500 000 ha, is protected, including different types of reserves and restricted natural areas - more than half the protected Natura 2000 area in Latvia is forest. Protective restrictions on management activities or felling apply to 14% of the private forests. Recreation activities, hunting and food gathering (berries and fungi) are important non-wood forest products.

Wind damage can be a problem, and the storm of 9 January 2005 affected almost 400 000 ha of forest. Fire is less significant than in Mediterranean countries but in 2006 the area damaged by fire reached an all-time-high of more than 2 000 ha due to the dry and windy weather, and grass-burning on abandoned agricultural land.

3.8 Romania

Less than 27% of Romania's territory is covered by 6.4 million ha of forest land, well below both the European average and the potential forest cover in Romania, given the country's natural conditions. One of the long-term objectives for the forestry sector is to increase the proportion of forest area to around 32% of the country.

More than half the Romanian forests are located in the mountains (52%). Broadleaf stands account for 71% of all forests and conifers 29%, and the total standing wood volume is 1341 million m³, with an average is 218 m³/ha and an annual increment of 5.6 m³/year/ha.

Following independence the legal framework of property restitution was developed in three stages in 1991, 2000 and 2005, and it is estimated that two thirds of the total forest will be privately owned or in local public ownership. Fragmentation of ownership following restitution has become a problem for the management of Romanian forests, and the current approach is either to create of associations of forests owners or to merge plots into sustainable management units. So far 106 private forests districts have been set up, managing over 1 million ha of forest.

A total of 15.7 million m³ was harvested for the year 2005, of which 75% was destined for the commercial forest sector and the rest for private use. In 2005 the forest industry in Romania (harvesting, woodworking and furniture) accounted for 3.5% of GDP, about 7% of the manufacturing sector output and 10% of total employment in industry. The sector contributes over 9% of country's exports. Logging and primary processing of wood is poorly developed, the technology is out of date and in need of investment, and private financial resources are very limited. Forest roads cover only about 6.4 m/ha, one of the lowest densities in Europe (compared to 20 – 25 km/ha in Austria, Switzerland, etc) and a major constraint to the proper management of the national forest. This results in more than 2 million ha of forests being practically out-of-reach for technical and economic reasons and leads to forest over-logging in the easily accessible areas.

Illegal logging in Romania removes 100 000 m³ annually, a problem caused by the poor living standards of rural habitants, the small size of properties, and poor organization of the wood processing industry. This is being addressed by legislative, administrative and institutional measures, including a requirement to regenerate the forest within 2 years of illegal deforestation.

Other forests products are important to the national economy including osiers, seeds, seedlings, forests fruits and fungi, winter trees, fishing etc. The rich landscape and heritage of flora and fauna of the Romanian forests are important assets for ecotourism, and hunting could also be developed as a source of income.

Romania has some of the richest biodiversity in the EU and almost 18% of the territory is proposed for Natura 2000 status. Romania is one of the few European countries that still have virgin forests – approximately 300 000 ha, mainly located in the mountain areas. There are 206 forest habitat types, ranging from Danube Delta to alpine areas, and more than 9% of the forest land is within protected areas where management is targeted at biodiversity conservation.

3.9 Spain

With more than 14 million ha of forest cover, almost 29% of the country's total land area, Spain has the fourth largest forest resources in the EU, following Sweden, Finland and France. Forests are increasing by about 86 000 ha per year, through natural regeneration of abandoned farmland, and as a result of major planting programmes of the past 50 years. Plantation forests cover approximately 3.7 million ha, about a quarter of the forested area, but provide 81% of Spain's total timber production. By 1985 1.3 million ha of fast-growing plantations had been created, mainly in northern Spain, planted by private investors and the paper industry. When EU support for afforestation of agricultural land was introduced under Regulation 2080/1992, Spain planted 450 000 ha of farmland between 1994 and 1999, half the total area forested in Europe under this scheme.

The main function of 88% of Spanish forests is protection against soil erosion and desertification, and regulation of the hydrological cycle, both important functions in a country with steep slopes and scant, irregular rainfall.

The Atlantic forests of Spain are used mainly for timber and firewood production, growing mostly maritime and Monterey pines and eucalyptus, although some mixed natural forests of pedunculate and sessile oak and beech are still found. In the Pyrenees, there are silver fir, beech and pine, depending on altitude. In contrast Mediterranean forest lands have multiple uses, and also a wealth of biological diversity, including some pure stands of oak in wooded pastures or mixed with pines and a wide variety of shrubs. Non-wood forest products include hunting, grazing, hay, fodder acorns for pigs, cork, gum, medicinal and aromatic plants, nuts, fruit and truffles. Tourism and recreation are increasingly important, mainly in Mediterranean zones. About 25% of Spain's forests have protected area status.

Forest fires are a major problem, although there are large variations from year to year. On average, between 60 000 and 150 000 ha are burned each year.

Two-thirds of Spain's forest lands are privately owned, by about two million owners, while the remainder are mostly managed as public service forests by the 17 autonomous communities (regional governments) who are also responsible for legislation and planning.

3.10 Sweden

Forests cover 60% of the country and are one of Sweden's most important natural resources, with a central role in the Swedish economy. The forestry and forest products sector accounts for 11% of the value of all Swedish exports and 4% of GDP, and employs more than 100 000 people.

Sweden has more than 22 million ha of productive forest land with a total standing volume of about 3 000 million m³, of which 38% is Scots pine, 41% is Norway spruce and 12% is birch. The mean annual volume increment of forest land is 5.3 m³ per hectare. Clear-cutting is the prevalent harvesting system, with regeneration by planting. Some seed tree regeneration is also used for pine. An increasing share of Sweden's harvest comes from commercial thinning.

The area of natural forest is small, because of earlier pressures on the forest, but more than 700 000 ha of forest land is legally protected or in habitat protection areas and nature conservation agreements. There are nearly 4 000 red-listed species in Sweden, of which roughly half are forest dwellers. As of 2007, around 380 000 ha of key habitats were registered with the Swedish Forest Agency. During 2008, a total of €10 million was awarded to forest owners in grants for habitat protection, along with €2.5 million for nature conservation agreements. The main threats to forest health are storms and game, but the threat of fire has been largely eliminated since the nineteenth century.

In 2008 there were 329 300 forest owners in Sweden, of whom 38% were women. Half of Sweden's forests are private, small-scale, 'family forestry' units, with an average forest area of 47 ha, and 70% of the owners live on their properties. Other private owners have 6% of the forests, 25% are owned by private-sector corporations, 14% by state-owned corporations and only 4% owned by the state or other public bodies. The percentage of private forest owners varies and is higher in the south than in the north of the country.

Swedish forest industries produce sawn conifer timber, wood pulp (chemical and mechanical), paper and paperboard, and energy for industry, including electricity generation. Wood fuel was used to generate 21 TWh for district heating during 2007, and it is estimated that around 7 million m³ of wood is used each year to heat detached houses.

3.11 United Kingdom

The UK is one of the least densely forested countries in Europe, with a total forest cover of 2.8 million ha, around 12% of the total area. Prehistoric and historic clearance of woodland brought the proportion of wooded land down to just 5% of the UK at the beginning of the 20th century. This rose to 9% by 1980, driven largely by the commercial planting of conifers. This has changed and, as a result of recent incentives for planting native trees and creating new woodland on former agricultural land, 80% of new planting is now of broadleaves, and 6 000 ha of new woodland were created in the UK in 2008-09. The area of farm woodland in the UK has increased significantly in the last decade from 500 000 ha in 1999 to 700 000 ha in 2008. Almost half (45%) of all farm woodland is in England, with a further 45% in Scotland.

Over one half (53%) of the total woodland area in Great Britain is made up of conifers although this proportion ranges from 31% in England to 72% in Scotland. Sitka spruce is the

most commonly used conifer followed by Scots pine and Lodgepole pine, and with a relatively short rotation the majority of these trees (87%) have been planted since 1950. Amongst broadleaf species, oaks are the most frequent species, followed by birch and ash.

The majority of UK woodland is in private ownership, with 44% owned by private individuals, and a further 13% by private businesses. Almost all of the remainder is owned by the state or other public authorities⁵.

Almost half of UK forests are accessible to the public, and are a very important recreational resource for walking, cycling and other outdoor activities. In the UK there is little hunting in forests or gathering of fruit and fungi, compared to other European countries.

Woodlands are an important resource for biodiversity, with around 500 000 ha of ancient semi-natural woodland, 150 000 ha designated as Natura 2000 areas and a total of 600 000 ha (21% of the total) with some form of landscape or nature protection. Almost half (45%) of the total UK woodland is certified to Forest Stewardship Council (FSC) standard, although the proportion is lower in privately owned woodland. The main threats to UK woodlands are from damage by mammals (deer and grey squirrels) and forest pathogens, although severe weather events can also cause significant damage such as the 1987 storm in south eastern England.

Although 2.4 million ha of forest is available for wood supply, but only half the annual increment is currently harvested, and the UK is a net importer. In 2008 a total of 8.2 million green tonnes of UK grown softwood was delivered to UK industries, mainly sawmills, plus 0.4 million green tonnes of UK grown hardwood. An estimated 1 million oven dry tonnes of woodfuel were also supplied, mostly as wood chips but also logs and wood pellets. A further 45 million m³ of wood and wood products were imported to the UK, much of it from Sweden, Finland and Latvia. The main wood product export from the UK is paper.

⁵ Data from 1995-1999, but since then 68 000 ha of state owned forest land has been sold.

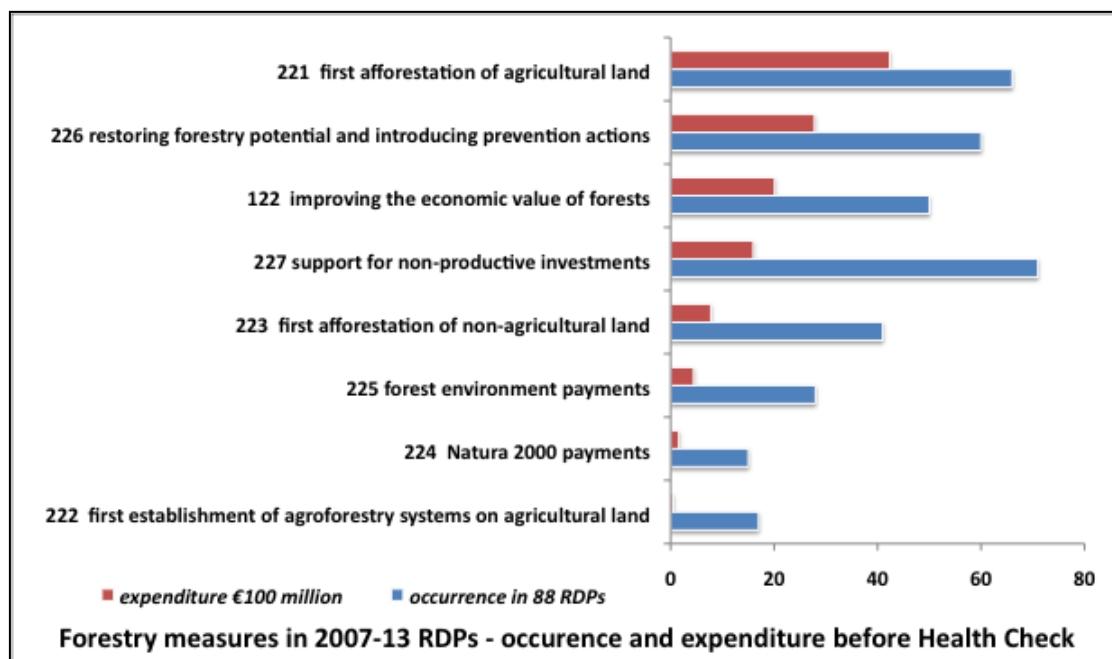
4 Forestry Measures - an EU overview

The EAFRD Regulation is the main instrument for the implementation of the EU Forestry Strategy and the EU Forest Action Plan (2007-2011), which Member States have to take into account in defining their national rural development strategies. Compared to earlier rural development programmes the EAFRD Regulation provides a more coherent and structured set of measures supporting forestry with a strong emphasis on sustainable forest management – although Member States are free to choose measures and allocate budgets according to their specific needs.

There are 88 Rural Development Programmes (RDPs), which are a mixture of national and regional programmes – the latter are in Belgium (2), Finland (2), France (5), Germany (14), Italy (21), Portugal (13), Spain (17), and the United Kingdom (4). All the new Member States have national RDPs. Of the forty EAFRD measures available for Member States a total of twenty are relevant to forestry and of these 8 are specific forestry measures, all but one of them in axis 2, where all actions must be designed to support the objective of environmental land management. All RDPs, except those of Malta and Ireland, include at least some forestry measures or forestry-related actions.

The total amount of financial resources allocated to the eight forestry-specific measures is €12 billion, and together with the other forestry-related measures the available resources are up to €16 billion in total. This corresponds to 7-8% of the total amount of financial resources devoted to rural development programmes during the programming period 2007-2013. The relative frequency of occurrence and levels of expenditure on these twenty measures is illustrated in Figure 1 and Table 2, but it is worth noting that the most frequently used measures are not necessarily those allocated the largest shares of funding.

Figure 1 Forestry measures in all 2007-13 RDPs – occurrence and expenditure before the Health Check



Source: Elaborated from data supplied by the European Commission (2009)

Table 2 Forestry measures in all 2007-13 RDPs – occurrence and expenditure before the post Health Check revisions

Axis	Measure		Frequency of occurrence in 88 RDPs	Total foreseen expenditure ⁶ €million
1	122	improving the economic value of forests	50	2.011
2	221	first afforestation of agricultural land	66	4.235
	222	first establishment of agroforestry systems on agricultural land	17	47
	223	first afforestation of non-agricultural land	41	778
	224	Natura 2000 payments	15	159
	225	forest environment payments	28	445
	226	restoring forestry potential and introducing prevention actions	60	2.781
	227	support for non-productive investments	71	1.597
1	111	vocational training, information actions, including diffusion of scientific knowledge and innovative practices for persons engaged in the agricultural, food and forestry sectors	69	For these measures, which apply also to farmers or other beneficiaries, it is not possible to separate the forestry component of the budget allocations
	114	use by farmers and forest holders of advisory services	43	
	115	setting up of farm management, farm relief and farm advisory services, as well as forestry advisory services	17	
	121	farm modernisation	41	
	123	adding value to agricultural and forestry products	69	
	124	cooperation for development of new products, processes and technologies in the agricultural and food sector	41	
	125	improving and developing infrastructure related to the development and adaptation of agriculture and forestry	64	
3	311	diversification into non-agricultural activities	35	
	312	support for the creation and development of micro-enterprises	23	
	313	encouragement of tourism activities	9	
	321	basic services for the economy and rural population	23	
	323	conservation and upgrading of the rural heritage	8	
4		Leader	5	

⁶ Includes EU EAFRD contribution, national co-financing and private; does NOT include additional funds allocated as a result of the Health Check (source: European Commission (2009) *Report on implementation of forestry measures under the Rural Development Regulation 1698/2005 for the period 2007-2013* DG Agri)

5 Use of Forestry Measures in Selected RDPs

Axis 1 contains one forestry-specific measure, for improving the economic value of forests, and seven other relevant measures which can be used to improve the competitiveness of agriculture or forestry.

In axis 2 seven measures are targeted at the environmentally sustainable use of land through forestry activities. There are specific definitions of 'forest' and of 'wooded areas'⁷, and Member States are requested to explain how they use these definitions. Five Member States (HU, PT, RO, ES and SE) use different definitions taking into account their special conditions for forests or their traditions. For the measure which supports the establishment of agroforestry systems, where extensive farming and forestry are combined on the same land, Member States decide the maximum number of trees per hectare, taking account of the local conditions, type of trees and the agricultural use⁸.

In axis 3 there are five measures aimed at promoting the quality of life and the diversification of activities in rural areas which are of relevance to forestry, reflecting the significance of forestry as a land use in many rural areas and its growing importance in the diversification of economic activities (energy, tourism, etc). Support for bioenergy production may indirectly have effect on forestry e.g. markets for low value wood coming from thinning or pruning or for woody residues (wood mobilisation).

Table 3 illustrates the occurrence of these measures in the RDPs of the Member States and regions participating in the NRN Forestry thematic initiative, and the rest of this section describes each of the relevant measures in turn, with examples, starting with the eight measures specifically targeted at forestry.

5.1 Improving the Economic Value of Forests (122)

This measure can provide support for investments for actions such as thinning, pruning and improving the species composition or structure of the forest stand, in forests owned by private owners or municipalities or their associations. For forest holdings above a certain size a management plan is required. This size limit is defined by Member States and varies according to regional characteristics, type of forests and forestry practices, but is mostly between 50 and 100 ha. Support is up to 60% of eligible costs in natural handicap or Natura 2000 areas, 85% in outermost areas and 50% in other areas.

The purchase of equipment (or use of contractors) can qualify for support if it is to carry out operations e.g. thinning and pruning which improve the economic value of forests (but are not maintenance operations), and it is up to the Member States to define the specific conditions (for example, only the first thinning operation or only actions during a certain number of years after planting would be eligible). Simply restocking (replacing the harvested trees) is not eligible, but changing the forest structure or species composition, with a demonstrable improvement in the economic value, could be eligible. Small forest nurseries can also qualify for support if they are a well-established part of the forest holding. The cost of preparation of the management plan might be supported as an economic investment, under this measure or as an environment/public amenity investment under measure 227. The administrative/operating costs for certification schemes could also be considered as eligible, but only the forest owners can be the beneficiaries, not the certification body. There is no support for general studies, mapping or research activities under this measure.

This measure has been planned in 50 programmes (AT, BG, CZ, EE, EL, ES(7), FR(5), DE(1), HU, IT(20), LV, LT, LX, PT(3), RO, SK, SI, UK(2)). It is expected that more than 88 000 private or municipal forest owners will benefit.

⁷ Article 30 of Commission Regulation 1974/2006

⁸ Article 32 of Commission Regulation 1974/2006

Table 3 RDP forestry measures in countries participating in the NRN Forestry Initiative

COUNTRY	REGION	122	221	222	223	224	225	226	227
Austria									
Belgium	Wallonia								
Estonia									
Finland									
Germany	Baden-Württemberg Bavaria (Bayern) Brandenburg + Berlin Hamburg Hessen Mecklenburg-Vorpommern Niedersachsen + Bremen Nordrhein-Westfalen Rhineland-Pfalz Saarland Sachsen Sachsen-Anhalt Schleswig-Holstein Thüringen								
Italy	Abruzzo Basilicata Bolzano Calabria Campania Emilia Romagna Friuli Venezia Giulia Lazio Liguria Lombardia Marche Molise Piemonte Puglia Sardegna Sicilia Toscana Trento Umbria Valle d'Aosta Veneto								
Latvia									
Romania									
Spain	Andalucia Aragon Asturias Balears Canarias Cantabria Castilla la Mancha Castilla y León Catalonia (Cataluña) Extremadura Galicia La Rioja Madrid Murcia Navarra Pays Basque (País Vasco) Valencia								
Sweden									
UK	England Northern Ireland Scotland Wales								

In **Latvia** the measure supports purchase of appropriate machinery, accessories, equipment and devices designed for pre-commercial thinning and replacement of low value forest stands and substitution with productive stands. The support will be based on management plans and available to applicants owning forests of at least 3 ha. Pre-commercial thinning may be performed twice over the programming period. Areas in which activities are planned should not exceed 50 ha a year. A management plan for the forest areas supported under the measure is a compulsory requirement for forest owners, together with an inventory of the forest; this is the main source of information on the forest and a pre-condition for engaging in any business activity in the forest. Targets: number of forest holdings receiving investment support: 7 966; number of holdings introducing new products or techniques: 5 000; change in gross value added per full time equivalent €200 /employee; total area of forests belonging to supported forest holders 80 000 ha.

5.2 Afforestation of Agricultural Land (221)

Each afforestation project must contribute to environmental objectives such as biodiversity, climate change mitigation, protection against soil erosion and floods or protection of water resources. Areas suitable for afforestation have to be selected by Member States on the basis of environmental objectives, using appropriate criteria. Support can cover establishment costs, an annual premium per hectare towards maintenance costs for a maximum of five years, and an annual premium per hectare towards loss of farm income for a maximum of 15 years. For agricultural land owned by public authorities, or for planting fast-growing species for short-term cultivation, only the cost of establishment is eligible. Farmers benefiting from early retirement support are not eligible, nor is the planting of Christmas trees. Support to farmers for establishment costs is up to 70% outside the LFA; 80% in the LFA and 85% in the outermost regions; and annual premiums to cover loss of income for up to 15 years are a maximum of €700 per ha for farmers, and €150 per ha for other persons or private-law bodies.

This is the most significant measure in axis 2 in terms of total expenditure although in some cases these are 'old' payments from long term commitments under earlier programmes⁹ and offer no support for new afforestation. It is present in 66 programmes in AT, BE, CY, CZ, DK, EE, EL, ES(11+5 old), FI(old), FR(2), DE(8+1 old), HU, IT(16+2 old), LT, NL, PO, PT(3), RO, SK, UK(4). Support for establishment of new forests will involve more than 127 000 land owners and cover of 650 000 ha of forests.

The eligible costs for establishment and maintenance works differ widely throughout the EU and even within the same region or Member State the cost level can vary considerably, due for example to geographical and climatic factors. In addition, afforestation and maintenance expenses are usually very sensitive to labour costs. On the available information it seems that in north-eastern Europe, with lower temperature and appropriate precipitation (e.g. EE, LT), establishment costs vary from around €1 000/ha for coniferous stands and up to €3 600/ha for broadleaves. In the case of oak a minimum of about 2 500 trees/ha accounts for the higher establishment cost. The maintenance cost varies around €300-500/ha/year. In the central part of the EU establishment costs can vary from €810/ha for conifers to €2 500/ha for broadleaves, with €200-650/ha maintenance costs. In Central Europe site conditions may be very variable, and often in this region the required minimum number of seedlings is around 8 000/ha. This high density improves the diversity of species or varieties, and can improve the adaptive capacity of the new stand. In the Atlantic region (e.g. BE, DK, DE, NL and UK) establishment costs vary from €750 to €2 150/ha for conifers and from €2 100 to €3 700 /ha for broadleaves, but may be as high as €7 000/ha. The maintenance costs here are more similar to other regions, around €400/ha, but the required density is lower than in the central region, varying between 1 100 and 3 500 trees/ha depending on local conditions and species. In the Mediterranean area the geographical and climatic conditions make afforestation particularly challenging and may involve extra costs, for example irrigation. The

⁹ e.g. payments for income foregone continue for 20 years based on article 31 of Regulation 1257/1999.

establishment costs can vary from €1 500 to €5 200/ha for conifers and from €1 100 to €9 000/ha for broadleaves. Maintenance costs depend on the additional costs of protection against fire or grazing animals and the need for irrigation, and varies between €200 and €1 000/ha/year.

In **Extremadura (Spain)** the objective is afforestation of agricultural land contributing to environmental protection, the prevention of forest fires and other natural risks and to the mitigation of climate change. Priority is given to areas threatened by desertification and with poor tree cover; holdings within Natura 2000 areas; professional farmers and areas within priority holdings. All the species used belong to the ecosystems of Extremadura, and >90% of the planting will be *Quercus ilex* and *Quercus suber*, the species that characterise the *dehesa*¹⁰. Afforestation in a Natura 2000 site will only be permitted in accordance with the management objectives for the site. Eligible actions include establishment costs (seedlings, planting work, and other direct costs associated with planting); costs of maintaining the wooded area (an annual premium per ha during a maximum of five years); and compensation for agricultural income foregone that results from afforestation (an annual premium for a maximum of 15 years). Targets: 2 000 recipients supported and 70 612 ha land afforested.

5.3 Afforestation of Non-agricultural Land (223)

This measure provides support for afforestation of land not eligible under measure 221. Establishment costs are eligible and, in the case of abandoned farmland, support can also cover maintenance costs for up to 5 years.

The geographical distribution of this measure is almost the same as for the afforestation of agricultural land (measure 221) but the level of the application is much lower, only 41 programmes (BG, CY, EL, ES(8), FR(old), DE(5), HU, IT(13), LV, LT, PO, PT(3), UK(4)), and the planned expenditure is much smaller than for measure 221 (see Figure 1 and Table 2). One reason may be that maintenance costs can only be financed in the case of abandoned farmland. It is expected that more than 40 000 land owners will establish 240 000 ha of new forests.

5.4 Agro-forestry on Agricultural Land (222)

This new measure has been introduced for 2007-13 to support extensive agricultural activities combined with extensive forestry systems. The uptake seems rather limited so far, even if in some areas it could be considered as a promising opportunity for farmers to get involved in forestry activities.

Farmers can receive support for the establishment costs of creating agro-forestry systems which combine extensive agriculture and forestry on the same land. The land remains under agricultural classification, and continues to be farmed. For example, arable crops can be combined with high quality timber production (wheat and walnut trees) or grazing can be combined with timber or nut production. Member States, taking account of local conditions, forestry species and the need to ensure continuation of the agricultural use of the land, determine the maximum number of trees planted per hectare. Christmas trees and fast-growing species for short-term cultivation are not eligible. Support can be provided for

¹⁰ These are savanna like grasslands with scattered oak trees, where extensive livestock and crop cultivation maintain high levels of biodiversity. This farming system originated centuries ago when oak forests were gradually thinned out and the land used for livestock production. Acorns from the remaining oaks provided additional food for the grazing animals, and prunings were also used as fodder. *Dehesas* are made up of a tree layer of oaks, grasslands, crops, and livestock. The annual grasslands are used primarily for livestock grazing, although the land is also used for cereal crops require a long fallow period (4 to 10 years), but with very few inputs of fertilizer or pesticides.

establishment costs only, at a rate of up to 70% outside the LFA, 80% in the LFA and 85% in the outermost regions.

Altogether 17 programmes include this measure, mainly in the Mediterranean regions plus Hungary and part of the UK (CY, ES(6), FR(2), HU, IT(5), PT(2), UK(1)); more than 3 000 beneficiaries will establish new agro-forestry systems on 60 000 ha.

In **Extremadura (Spain)** the measure is targeted at supporting *dehesa* types of agro-forestry systems where grazing or rotational crops are combined with tree cover ranging from 5% to 60%, yielding various high quality wood products (cork, fruits) and timber. The density of planting must not exceed 200 plants/ha and the agrarian use is the extensive grazing or dry crops. Priorities include restoring tree density in *dehesa* where the tree cover is <5%, restoration along river banks to fight erosion, and on boundaries between farmed areas.

Targets: 12 000 ha new agro-forestry systems involving 600 beneficiaries.

5.5 Natura 2000 (224)

This new measure has the lowest uptake among the forestry measures and is included in only 15 of the 88 RDPs (AT, BE, CZ, EE, EL, DE(3), IT(2), LV, LT, PT(2), SK). The reason may be that there is still some uncertainty concerning its practical application since the Natura 2000 management plans are still in the process of being established. During the programme negotiations several Member States or regions indicated that this measure will be introduced in a later phase as a modification.

The purpose of this measure is to provide support for the successful implementation of the Natura 2000 Directives by compensating private forest owners or their associations for costs incurred and income foregone resulting from the restrictions on the use of their forest land. Support is paid annually per ha at a flat rate set between €40 and €200 per ha. In the 15 programmes using this measure 60 000 private forest owners and 400 000 ha of Natura 2000 forest will receive support.

In **Latvia** forest land totalling 427 000 ha covers 55% of the Natura 2000 territories and represents approximately 14.5% of the total forest area in Latvia. Restrictions on economic activities have been imposed on 320 000 ha of forest land, including 62 000 ha of private and municipal land (8% of the Natura 2000 territories and 2% of the total forests of Latvia); 54 000 ha of this area is privately owned. To be eligible the land must have been subject to a forest inventory. Four types of restrictions are defined, with different compensation rates:

- without reference to the type of restriction of management activity: €60/ha;
- forestry activities forbidden: €120/ha;
- final felling + thinning forbidden: €80/ha; final felling forbidden: €80/ha;
- clear-cut forbidden: €40/ha.

The measure is being implemented from 2008 onwards with targets of 10 000 forest owners supported covering 54 173 ha of Natura 2000 territory.

In **North Rhine-Westphalia (Germany)** this measure aims to protect species and biotopes in forest areas designated as nature protection or landscape conservation areas. Management plans must exist, payments are limited to deciduous areas, and publicly owned forests are not eligible. Compensation payments are differentiated between two types of area:

Areas with high protection requirements classified as nature protection areas (possible area: 28 000 ha). €50/ha/year, the following requirements apply:

- development towards deciduous forests typical of the habitat concerned;
- habitat-specific measures to develop biotopes of endangered species;
- restriction of clear-felling;
- abstaining from use of synthetic chemical plant protection products;
- time limits on wood harvesting.

Areas with medium requirements classified as landscape conservation areas (possible area: 7 000 ha) €40/ha/year.

This programme is the only funding instrument in North Rhine-Westphalia which offers area-based compensation payments. Targets: 35 500 ha forests in Natura 2000 areas and 5 000 beneficiaries supported.

5.6 Forest-environment (225)

This is another new measure, comparable to the well-established agri-environment measure for farmed land. Forest environment payments are more widely available than Natura 2000 payments, with 28 programmes including this measure (AT, CY, CZ, DK, ES(4), FR(1), DE(6), HU, IT(4), LT, LV, PT(2), SK, UK(3)), but the total budget is low. More than 75 000 forest holdings and 2 million ha of forest are likely to be supported.

Support is in the form of annual payments per ha granted for defined forest-environment management (beyond mandatory requirements) for 5-7 years, or another period where justified. Payments are based on additional costs and income foregone between a minimum of €40 per ha and maximum €200 per ha annually. Beneficiaries can be private or municipal owners or their associations.

5.7 Restoring Forestry Potential and Prevention (226)

This measure supports the restoration of forestry potential in forests damaged by natural disasters and fire and the introduction of appropriate prevention actions in forests of high or medium forest-fire risk.

Preventive actions against fire may cover: establishment of protective infrastructures such as forest paths, tracks, water supply points, firebreaks, cleared and felled areas, launching of operations to maintain firebreaks and cleared and felled areas; preventive forestry practices such as vegetation control, thinning, diversification of vegetation structure; setting-up or improvement of fixed forest fire monitoring facilities and communication equipment. Insect/pests or diseases as such are not considered as 'natural disasters', but actions related to pest management can be considered eligible under this measure, if linked to e.g. windfall, floods or forest fires. When a legal declaration is provided at national level that a particular drought period has been a natural disaster, prevention and restoration actions may be supported.

This is the second largest axis 2 measure in terms of planned budget and the third as regards frequency in the programmes. Altogether 60 programmes (AT, BG, CY, CZ, DK, EE, EL, ES(17), FR(3), DE(5), HU, IT(20), LV, LT, PO, PT(3), SK,) contain prevention or restoration measures related to forests. This measure is used mainly for restoration of forests

damaged by storms or floods in the northern or western regions, but the main reason for its application in the central and Mediterranean regions is related to forest fires (prevention and restoration actions). It is also applicable for the protection of forests against biotic agents if the reason for such a risk is related to natural disasters. It seems that the application of this measure for the latter reason has increased, and may be expected to increase in the future in connection with climate change effects. According to the available indicators, more than 120 000 actions on more than 2 million ha will be supported.

5.8 Non-productive Investments (227)

The purpose of this measure is to provide support for environmental investments which do not lead to any significant increase in the value or profitability of forestry holdings. These investments are usually linked to forest–environment payments or intended to enhance the public amenity value of the area concerned. Maintenance or running costs are not supported through this measure. Thinning and pruning may be eligible if the main purpose of the investment is to improve the ecological value of forests, e.g. improving the species composition for environmental reasons. This can also be applied to recreational interests. Regeneration of forests is not eligible as such but if the purpose of the measure is to change the structure of the forests primarily for ecological interest, and it is duly justified, it can be supported.

This is the most widely used measure for forestry in rural development programmes for the current programming period. The total number of application is 71 (BE, CY, CZ, DK, EL, ES(17), FR(6), DE(13), HU, IT(19), LT, LX, PT(3), SE, UK(4)). The reasons for applying this measure vary widely and can aim at increasing the environmental/ecological or social value of forests. The measure provides a range of possibilities for promoting multifunctional forestry. The measure is now open both for privately and publicly owned forests and almost 120 000 forest owners will be supported.

In **Sweden** the measure includes two sub-activities:

Preserving and developing the biodiversity and cultural heritage of forests, targeted at 65 000 ha of the most environmentally valuable forest and woodland. Eligible actions include setting objectives for the forest, setting up a management plan and implementing the activities of that plan, e.g. selected cutting, burning and increasing dead wood.

Promoting biodiversity of broad-leaved deciduous forest by creating habitats of broad-leaved forests to halt biodiversity losses. This will be done by planting 2 500 ha of broad-leaved deciduous forest during the programme period. Eligible species are the domestic varieties of elm, ash, hornbeam, beech, oak, wild cherry, lime and sycamore. Support is only available for areas in southern and central Sweden, and may cover soil conditioning, plants and planting, and fencing. The minimum area is 2 ha with a minimum of 3000 trees/ha (or a combination of 1500 broad leaved trees and 2500 non-broad leaved trees). Deer should to be kept away.

Targets: 1 000 forest owners supported.

In **Brandenburg-Berlin (Germany)** the objective is to transform semi-natural forests into forests with natural conditions and species suited to the specific habitats, in order to change the mono-structural type of Brandenburg's forests and to preserve and develop Natura 2000 sites and protected areas. Eligible actions include preparatory work; conversion of pure stocks and stocks not suited to the location into sustainable broadleaf and mixed stocks; development and re-establishment of semi-natural forests (possibly as follow-up measure to wind damage or other natural disasters); adapting the stocking density; liming; designing and taking care of forest edges; and promoting forest protection without the use of insecticides. Eligibility depends on environmental justification (with statistical data); beneficiaries can be owners of the land or forestry associations in agreements with the owner; for liming, an appraisal must confirm that it is appropriate and harmless.

Targets: 3 500 projects involving 14 000 ha of forests.

Figure 2 on the following page illustrates the relative expenditure of different groups of Member States on the forestry specific measures, after the post Health Check revisions to RDPs in 2009.

5.9 Other Measures Applicable to Agriculture and Forestry

In addition to the eight forestry measures described above, there are several other forestry-related measures that may be important sources of support for forest owners. Because these apply also to farmers (and sometimes to other rural actors) it is not always possible to distinguish the specific actions, budgets and targets for the forestry sector within these measures but, as the following examples show, there is a wide range of potential support available under axes 1, 3 and 4.

Vocational training and information actions (111)

The purpose of this measure is to increase the competitiveness of the primary sector by providing support for vocational training and information, including the diffusion of scientific knowledge and innovative practices. (Instruction or training which forms part of normal forestry education at secondary or higher levels is not supported). The regulation sets no limit for the percentage rate of support.

Forestry-related training, information or target audiences are explicitly mentioned in 69 programmes (AT, BE(1), BG, CY, CZ, DK, EE, EL, SP(9), FI(2), FR(6), DE(9), HU, IT(19), LV, LT, LX, NL, PL, PT(3), RO, SK, SL, SE, UK(3)).

In **Austria** the main objective is to improve the qualifications of foresters and forestry workers, in relation to the optimisation of production techniques, exploitation of renewable energy, environmental obligations and nature protection, etc. The providers of vocational training and information actions are required to have minimum qualifications and an operating plan. Beneficiaries can be foresters and forest workers, and licensed organisations and institutions in the forestry sector.

Targets: 3 500 training days for forestry.

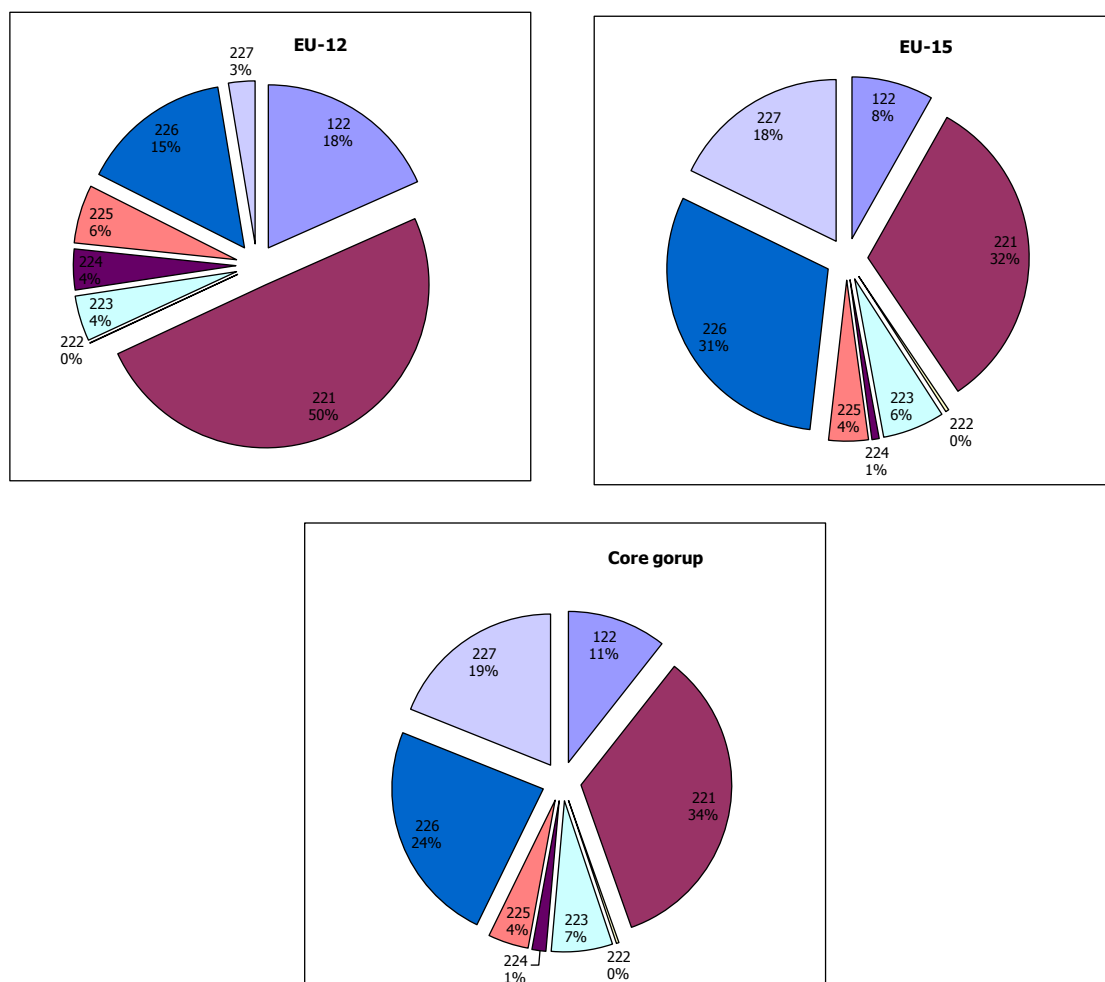
In **Basilicata (Italy)** agro-forestry farmers can use training vouchers to cover 90% of the costs of training courses, which the farmers themselves choose from a specific list of officially recognised providers in the Regional Plan for Training and Information activities (*Piano regionale per la formazione e l'informazione*). Priority is given to young farmers on their first farm.

Table 4 Allocation of Total Public expenditure (million EUR) to forestry specific measures after the 2009 modifications following the Health Check

Measure	EU-15	EU-12	EU-27	Core group*
Million EUR				
122 axis 1	569.8	406.2	976.0	610.7
221	2 264.3	1 100.2	3 364.5	1 957.8
222	23.3	0.9	24.3	15.9
223	433.9	99.7	533.6	376.7
224 axis 2	50.5	89.8	140.4	85.5
225	277.0	128.3	405.3	250.2
226	2 125.1	330.6	2 455.8	1 373.3
227	1 242.2	58.0	1 300.2	1 090.9
TOTAL	6 986.3	2 213.8	9 200.1	5 761.1
% of TOTAL RDP	6.6%	4.6%	6.0%	9%
Total RDP measures	105,883.2	47,697.0	153,580.1	64,072.9

* the core group consists of the Member States participating in the NRN Forestry Thematic Initiative – Austria, Belgium, Estonia, Germany, Finland, Italy, Latvia, Romania, Spain, Sweden, UK

Figure 2 Allocation of total public expenditure (million EUR) to forestry specific measures in RDPs after the 2009 modifications following the Health Check



Use of advisory services (114)

This measure can help forest holders to meet costs arising from the use of advisory services for the improvement of the overall performance of their holding. Support for the use of advisory services is limited to the maximum of 80% of the cost up to €1 500 per service.

In total 43 programmes clearly indicate that the use of forestry related advisory services will be supported (in CY, CZ, EE, EL, ES(8), DE(3 regions), HU, IT(16), LV, LT, LX, PL, PT(2), RO, SK, SE, UK(2)).

In **Basilicata (Italy)** the aim is to encourage and support farmers' and foresters' participation in at least the cross-compliance (GAEC and SMR) and work safety elements of the advisory system, but the measure also supports the use of advisory services concerned with forestry development and the improvement of the overall performance of the holding.

Targets: 9 800 farmers and 200 forestry holders; 3.9% increase in value added and 6.9% in labour productivity.

Setting up of management, relief and advisory services as well as forestry advisory services (115)

This measure offers a degressive rate of support over five years towards the costs of setting up of forestry advisory services. The support is reduced by equal amounts each year and completely phased out by the sixth year at the latest.

A total of 17 programmes refer to forest advisory services. New forestry advisory services will be established in 7 Italian, 6 Spanish and 2 Portuguese regions; Estonia and England also plan to support this activity.

Modernisation of agricultural holdings (121)

Although this measure is targeted at agricultural holdings, not forests, it can include support for the establishment of short rotation coppice (SRC)¹¹ on farms. In principle, this could also be covered by axis 2 measure 221 (first afforestation of agricultural land), but during the programming phase all interested Member States or regions were asked to use this axis 1 measure because SRC is considered to be more like an agricultural crop and it provides a higher and more immediate economic return than forestry. Supporting SRC under this measure results in SRC being treated like other multi-annual energy crops such as *Miscanthus*, and also has the advantage that the land remains eligible for CAP Pillar 1 payments. This measure can also support on-site production of bioenergy for own consumption. Support is provided for 40% to 50% of the eligible costs, but this rises to 60% for young farmers in the LFA and 75% in the outermost regions.

In the context of this measure 21 programmes mention SRC production as a target area, and altogether 40 programmes have clear reference to bioenergy production (BG, CZ, EE, ES, FI, HU, IT, LV, LT, LUX, RO, SK, SI, SE, UK) but because support is primarily for farm investments, SRC and other bioenergy related actions constitute only a minor part of the allocated amounts. One programme (Basque Country, ES) includes forest nurseries under this measure.

¹¹ SRC (short rotation coppice): consists of densely planted, high-yielding varieties of either willow, poplar or other fast growing species, harvested on a 2 – 5 year cycle, although commonly every 3 years.

Adding value to agricultural and forestry products (123)

Support for forestry can only be provided for micro-enterprises, with <10 employees and a turnover of no more than €2 million. The measure can also support bioenergy production facilities of <1 MW capacity, for consumption on the holding. Timber harvesting machinery is supported through a different measure (122 improving the economic value of forests) and this measure supports the next stages of using wood as a raw material (but only for micro-enterprises). Eligible activities include all working operations after felling and prior to industrial processing, for example woodchip and pellet production, and small scale sawing carried out by micro-enterprise (in particular using mobile sawmills). Support rates are up to 50% in convergence regions, 75% and 65% in the outermost and Aegean regions, and 40% in other areas.

Altogether 69 programmes indicate that forestry investments will be supported under this measure (AT, BE, BG, CY, CZ, DK, EE, EL, ES(12), FI, FR(6), DE(8), HU, IT(21), NL, PT(3), RO, SK, SI, SE, UK(4)). Eight of these are related to bioenergy production, including two which specifically refer to biomass of forestry origin.

In **Bolzano (Italy)** the measure is targeted at adding value to forestry products by investing in modernisation, diversification of output, integration of production chains, utilisation of wood for energy production and innovation. Eligible investments include the creation and modernization of structures and equipment for the collection and first processing of wood and biomass, plus intangible investments directly linked to these investments (up to 20% of the total investment). The overall performance of the enterprise should be improved and relevant Community standards respected.

Cooperation for development of new products, processes and technologies in the agriculture and food sector and in the forestry sector (124)

This is a new measure introduced for the current period to encourage cooperation between primary producers in agriculture and forestry, the processing industry and/or third parties. The measure contributes to costs concerned with preparatory operations, such as design; developing and testing products, processes or technology; and tangible and/or intangible investments related to cooperation prior to the use of the newly developed products, processes and technologies for commercial purposes. At least two actors must be involved, of which at least one is either a primary producer or involved in the processing sector. No rates of support are specified.

Reference is made to support for forest related cooperation in 41 programmes (AT, CZ, DK, EE, ES(5), FI(2), FR(1), DE(3), IT(17), NL, PT(3), SE, UK(4)).

Infrastructure related to the development and adaptation of agriculture and forestry (125)

This measure is the third most frequently chosen forestry measure in axis 1. Support covers improvements to forest infrastructure such as access, land consolidation and improvement, provision or improvement of energy supplies (e.g. electricity or heat) and water management. No ownership requirements or support rates are specified.

The measure for forestry infrastructure has been included in 64 programmes (AT, CZ, EE, EL, ES(12), FR(6), DE(11), HU, IT(18), LV,LT, PO, PT(3), RO, SK, SI, SE, UK(2)).

In **Thüringen (Germany)** a sub-measure to support the construction of forest tracks is aimed at:

- reducing travel distances and transportation costs;
- bringing untapped forest resources into economic production (particularly small parts of private and community owned forests);
- developing potential income from the use of wood as a renewable raw material in rural areas;
- fostering employment opportunities in the forestry service sector through increased use of wood;
- securing the raw material base for the domestic wood and paper industry; and
- supporting non-forestry services by developing tourism in rural areas.

The measure is applied in accordance with the National Framework Regulation, with the exception that investments in plant and equipment for wood preservation treatments are not funded.

Targets: 130 projects and 105 km of tracks funded per year, and 7 020 ha of forest made accessible per year.

Diversification to non-agricultural activities (311)

This axis 3 measure applies only to farmers or members of the farm household diversifying into non-agricultural activities. Support may cover actions related to forestry, wood and non-wood product processing and/or bioenergy production, and is limited to small-scale projects (to avoid overlap with structural funds). Forest nurseries may also receive support.

Of the 35 programmes that will use this measure (BE, BG, CZ, EE, ES(1), FI, DE(6), HU, IT(17), PO, SI, SE, UK(2)), 22 mention bioenergy production as one of the possible actions, and in 7 cases the production or use of forest biomass is specifically mentioned.

In **Finland** the measure is used to grant payments to members of farm households who diversify into non-traditional agricultural production, such as services, arts and crafts and the marketing of products manufactured on the farm. This may include investments in and development of enterprises that:

- engage in the manufacture of handicrafts; the production of bioenergy; environmental management and forestry services;
- provide tourism and recreational services.

In **Lombardia (Italy)** this measure supports renewable energy production through the installation of power plants and the purchase of machinery and equipment connected to harvesting or collecting of biomass, residues or by-products and the production of energy on farms. The technologies supported are cogeneration and heat from biomasses (pellet), biogas and solar energy, pellet and woodchip production in power plants <1 MW. Support will focus on farms and members of the farm household.

Targets: 700 beneficiaries and 250 jobs created.

Support for micro-enterprises (312)

This axis 3 measure is designed to help the creation of new businesses (only micro-enterprises) including forestry-related ones. This may include processing of forest products (wood and non-wood products and services) and bioenergy production for the market. Forest nurseries may also receive support.

Support for forestry or bioenergy related actions through this measure is planned in 23 programmes (BE, CZ, DE(2), ES(2), IT(9), LV, PO, RO, SI, SE, UK(3)).

In **Liguria (Italy)** this measure supports improvements to fixed property, purchase of new equipment and machinery and general costs related to:

- processing and marketing of agricultural and forestry products;
- installing power plants for production of renewable energy from biomass (maximum 0.5 MW);
- setting up and improvement of gardens/parks management services; road safety services and services for protected areas; environmental tourism and environmental education activities;
- creation and development of craft activities.

Targets: 70 beneficiaries and 80 jobs created.

Encouragement of tourism activities (313)

This measure supports the development of small-scale tourism infrastructure such as information centres, signposting of tourist sites in forestry areas, access to natural areas including those in forestry areas, and the development and/or marketing of tourism services relating to rural tourism (e.g. hiking and other ecotourism services related to forestry).

Several programmes intend to support 'green' or 'rural' tourism, and forestry is mentioned in 10 programmes (A, CZ, ES(1), FR(2), IT(2), IR, UK(1)). Taking into account the importance of forests in the rural countryside it is likely that some other programmes may also support tourism linked to forestry.

In **Trento (Italy)** the measure targets only forest areas and covers the development of:

- educational routes, information centres and the production of explanatory documentation;
- itineraries for access on-foot to natural areas, and associated small infrastructure including traditional wooden fences.

Targets: 30 new tourist activities supported; €1.5 million total investment; 12 learning centres, 20 km of equipped paths and 10 jobs created.

Basic services for the economy and rural population (321)

This measure supports investments in small-scale infrastructure (roads, sewerage systems, broadband, renewable energy and energy supply, energy networks etc.) as well as investments in the development of services (social, economic, medical, etc.) and the buildings where they are located, and the setting up of other basic services, including cultural and leisure activities, for a village or group of villages. In this context some services may relate to forestry, e.g. the development of bio-energy which offers market opportunities for woody biomass.

Altogether 23 programmes (AT, BG, DE(6), IT(12), LV, UK(2)) plan to use this measure in connection with bioenergy purposes.

In **Hessen (Germany)** a sub-measure aims to increase the share of local energy produced from biomass, supporting:

- facilities to recycle biomass for energy production;
- bio-gas plants, combined heat and power plants (30% of eligible costs, maximum €75 000 per plant);
- wood fired heating systems for central supply, at least 50 kW (30% of eligible costs, maximum €10 000 per system (up to 100 kW), maximum €200 000 per system (at least 101 kW);
- local heat supply systems (a grant of €100 per metre route, plus €250 per building connected to the system);
- research and development projects, pilot schemes and feasibility studies.

Support is given exclusively on the basis of area-related local development strategies.

Targets: 420 units and 105 pilot projects.

Conservation and upgrading of the rural heritage (323)

This measure supports the drawing-up of plans for the protection and management of Natura 2000 and other high nature value sites, including those in forests; and environmental awareness actions and investments associated with maintaining, restoring and upgrading the natural heritage and the development of high nature value sites. It also supports studies and investments associated with maintaining, restoring and upgrading the cultural heritage such as the cultural features of villages and the rural landscape.

A total of 8 programmes (A, BE, FR(1), DE(1), ES(2), IT(1), LV) specifically indicate that forestry is among the issues covered.

In **Austria** a sub-measure for forestry is aimed at both natural habitats and the cultural heritage of forests, supporting:

- the design of protection and management plans for Natura 2000 areas and/or areas designated under section 32a of the National Forestry Law of 1975;
- studies and investments connected with the maintenance, re-construction and improvement of the cultural heritage of forests;
- safeguarding the cultural heritage of forests (public relations and information activities, project planning and management).

Beneficiaries are the managers of agricultural and forestry enterprises, cooperatives of forest owners, agrarian communities, municipalities, water cooperatives and associations. Habitat management plans must be agreed between the owner of the forest and the authorities responsible for forests and environment; for measures to safeguard the cultural heritage of forests all necessary authorisations by the relevant authorities must be provided and followed. Projects must be designed and implemented in agreement with the regional water management authorities.

Target: 2 000 actions.

Skills acquisition and animation in view to implement a local development strategy (341)

This measure could support the preparation and implementation of local development strategies for the forestry and wood sector by local public private partnerships as for example in the RDP for the Hexagon (mainland France).

Figure 3 below illustrates the planned expenditure on forestry related measures by different groups of Member States following the post Health Check revisions to their RDPs in 2009.

5.10 The Leader approach

The Leader approach offers support for a 'bottom up' approach to rural development based on public-private partnerships preparing and implementing local development strategies. Each Local Action Group (LAG) has the opportunity to opt either for a thematic focus or for a strategy based on broader activities. The choice depends on their local needs and priorities, the budgetary resources available and the capacity of local partnerships to involve new categories of partners, including especially farmers, foresters and environmental groups. The population at large is involved, including economic and social interest groups and representatives of public and private institutions. Local actors are enabled to participate in decision-making about the most suitable development strategy and in the selection of the priorities to be pursued in their local area.

At least 5% (EU-15) or 2.5% (EU-12) of the EAFRD contribution to each RDP must be allocated to the Leader approach and this can be used to integrate measures from the other 3 axes.

Figure 3 Allocation of total public expenditure (million EUR) to forestry related measures in RDPs after the 2009 modifications following the Health Check

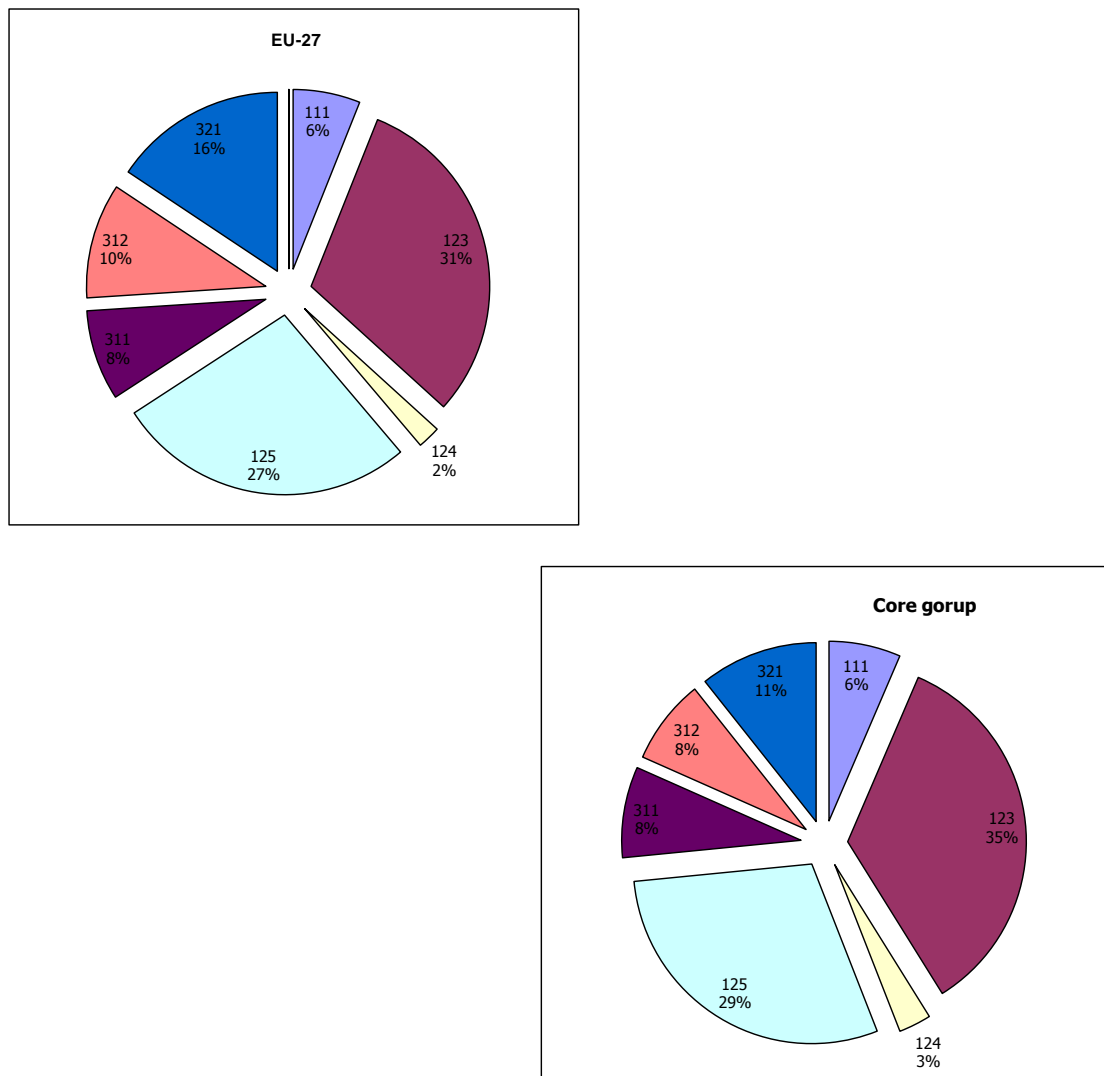


Table 5 Allocation of Total Public expenditure (million EUR) to forestry related measures after the 2009 modifications following the Health Check

Measure	EU-15	EU-12	EU-27	core group*
Million EUR				
111	1,325.1	448.4	1,773.5	1014.3
123	5,811.6	3,179.9	8,991.5	5434.5
124	541.9	63.3	605.2	460.4
125	6,121.8	1,800.1	7,921.9	4609.5
311	1,524.2	863.0	2,387.1	1284.4
312	773.9	2,262.6	3,036.5	1205.3
321	2,124.4	2,467.0	4,591.4	1675.2
TOTAL	18,222.9	11,084.2	29,307.1	15683.7
% of TOTAL RDP	17.2%	23.2%	19.1%	24.5%
Total RDP measures	105883.2	47697.0	153580.1	64072.9

* the core group consists of the Member States participating in the NRN Forestry Thematic Initiative – Austria, Belgium, Estonia, Germany, Finland, Italy, Latvia, Romania, Spain, Sweden, UK

At least 5 programmes (LV, ES(3), UK(1)) mention forestry as one of the particular areas for Leader projects and activities, but in practice this will depend on the choices made by individual LAGs. For example the strategy of the local action group *Fédération Châtaigneraie Limousine* (Haute-Vienne, France) is on sustainable tourism in chestnut groves.

In **Latvia** implementation of measure 323 is through the Leader approach, and facilitates the preservation, renovation and improvement of rural cultural heritage sites associated with agricultural, forestry and processing activities, making them accessible and attractive to the general public and tourists. In this context support is provided for:

- the development of museum activities, when the activity is related to agriculture, forestry or processing industry and the museum is/will be accredited in line with the procedure stipulated by the Cabinet of Ministers;
- the improvement of agriculture and forestry vocational premises forming part of cultural and historical architectural heritage sites of national or local significance, which are included in the list of the state protected cultural monuments and have adjacent land open to public.

58 projects compliant with local development strategies prepared by Local Action Groups are eligible for support.

In **Andalucía (Spain)** the Leader approach will be used to improve the competitiveness of the agricultural and forestry sector through support for restructuring, development and innovation. Local Action Groups will offer support for investments or activities to increase the economic value of the forests through diversification of production; increasing marketing capacity; and increasing the social and economic value of natural resources with an emphasis on management plans and cooperation.

Investments or activities will be based on forestry management plans for forestry holdings which exceed a certain size. Support will cover, for example, acquisition of machinery and equipment, projects for forestry development, preparing integrated management plans and plans for the management of Andalusian pastures, support for the forestry groups, tree growers' associations, etc.

In **Wales (United Kingdom)** Leader aims to strengthen effective and inclusive partnership working within local communities, both spatially and within communities of interest.

Actions will seek to deliver local priorities in a co-ordinated manner and to improve local governance and development potential through capacity building and needs audits. Key actions will include improving local governance by fostering innovative approaches to linking agriculture, forestry and the local economy, thereby helping to diversify the economic base and strengthen the socio-economic fabric of rural areas.

Integrating measures from different axes

Leader is not the only means of linking measures from different axes, and some RDPs aim to achieve the benefits of synergy between different measures, for example in Estonia where measure 226 (prevention/protection) has been integrated with measure 122 (improving the economic value of forests).

Other possible synergies between measures, which could benefit the forest sector, might include:

- Investments in the economic value of forests could generate higher income for forest owners, and also encourage others start to manage their forests in a sustainable way to produce wood and non-wood services. Low value wood from these forests could be used in the local energy plants in combination with other biomass of agricultural origin.
- Investments related to the first processing of wood as raw material could be supported under axis 1 and micro-enterprises supported under axis 3 to take processing a stage further, for example by producing traditional furniture from local wood.
- As the number of the snow covered days decreases in the Alpine region the shrinking season in ski resorts has led to the development of new services such as mountain biking and hiking. Signposting of forest footpaths, building of look out towers, and establishing thematic paths are eligible under measure 227 (non-productive investments), while other rural actors could use measure 313 (encouragement of tourism) to support tourism activities, in some cases through Leader.

6 Forestry Measures after the Health Check

The 2008 Health Check of the Common Agricultural Policy and the European Economic Recovery Plan have provided significant additional EAFRD funding for all RDPs during the 2010-13 period. This must be used to meet the new challenges of climate change, renewable energy, water management and biodiversity, innovation linked to these four challenges, or for accompanying measures in the dairy sector. Other helpful changes are the possibility of using higher payment rates per hectare or higher percentage rates for investment support for activities related to the new challenges (these higher rates must be justified). Forestry measures are particularly relevant to the challenge of both mitigating and adapting to climate change, and the RDP measures which can be used to enhance the adaptive capacity of forests are summarised in Annex 1.

All Member States have now submitted revisions to their RDPs indicating how they intend to use this additional funding, and the following examples illustrate how it will be used for forest-related measures or to encourage the production of renewable energy:

Finland (mainland) has allocated 4% of its additional EAFRD co-financing to climate change and 5% to renewable energy. Measure 124 will be used to finance innovative operations relating to renewable energy for processing biomass produced in agriculture/forestry, as well as contributing to the substitution of fossil fuels and reduction of GHG by using other sources of renewable energy. Leader groups will promote the use of renewable energy and support a variety of actions including: installations and infrastructure using biomass and other renewable energy sources (solar and wind power, geothermal power); and information and dissemination of knowledge related to renewable energies, water management and biodiversity so as to increase awareness and knowledge and thus, indirectly, improve the efficiency of other operations related to renewable energies. The **Åland Islands** decided not to target the additional funding at renewable energy, as energy efficiency and renewable energy is already one of the six priorities of the ERDF programme for Åland, and is currently funding the building of the first biogas plant on the Islands. Instead €7 455 of the additional EAFRD funding for Åland will be used to maintain wooded meadows for biodiversity benefits.

Sweden also proposes to use measures 124 and 125 for the development of renewable energy.

Compared to other **Italian** regions, **Basilicata** lags behind in renewable energy, in spite of its high potential in this sector. Therefore, Basilicata has decided to 'use' its bioenergetics potential, choosing to increase the RDP contribution to measures 121 and 311 to assist investments concerned with the production of renewable energy from agricultural and forestry biomass.

In **Puglia** production of bio-energy will be supported by measure 311 and implemented through Leader, promoting the production and use of renewable energy, particularly from biomass.

In **Calabria**, where water erosion is a particular problem, the region will allocate additional resources to the afforestation of agricultural lands (measure 221) and preventative actions against forest fires and climate-related natural disasters (measure 226).

In **Emilia Romagna** additional funds will be used under measure 311 (diversification into non-agricultural activities) for local renewable energy installations <1 MW fuelled by materials which may include forestry biomass (e.g. poplar for short rotation forestry).

Liguria will allocate additional funds to measure 226 (protection and prevention) and 227 (non-productive investments) including the development of environmental aspects of forest structure (for example the replacement of coniferous trees with local indigenous broadleaved species).

In **Toscana** and **Sicilia** additional resources will go to the restoration/reforestation of forests damaged by fires (226), in the case of Sicilia using species more resistant to forest fires.

In **Umbria** additional funds are allocated to afforestation of farmland (measure 221) with priority given to intensively farmed areas. Farmers will also be offered 100% of the costs of fire restoration and prevention measures (226), especially the construction/maintenance of the forest roads, installation/improvement of water reservoirs for fire fighting, and clearing firebreaks; in this case priority is given to park areas and Natura 2000 sites.

In **Valle d'Aosta** there is a need to promote renewable energy use, and an extra €1.8 million of the additional EAFRD contribution will be used to finance renewable energy production, in particular through diversification into non-agricultural activities (311).

In **Veneto** additional allocations will be used to improve the processing of forestry biomass (122) by private forest owners, communes and associations, and a new action to support thermo installations burning forestry biomass to provide energy for use in the forestry sector (123).

In Spain **Andalucia** the budget for restoration and prevention measures (226) is increased (this is a horizontal measure for all Spanish regions) in order to reinforce actions addressing soil erosion and climate change mitigation.

In **Castilla la-Mancha** new sub-measures have been created, including information and knowledge dissemination about wild fauna and flora and their sustainable use (111); the use of advisory services for sustainable forestry management (114) with priority given to natural protected areas, Natura 2000 sites and land at high risk of forest fires; and the cultivation of short rotation coppice, mainly poplar and willow species at high densities in a rotation of 2 to 5 years (121).

In **País Vasco** additional funds for measure 226 will support the extraction of fallen trees and branches in the territory of Alava following a severe sudden storm, thus enhancing forest fire preventative measures.

Latvia proposes a reduction of €4 million in EAFRD financing for measure 226 (restoring forestry potential and introducing prevention actions) because demand has been lower than expected and the reduced funding will cover the identified needs. Renewable energy is already targeted in the current Latvian RDP through support for energy production from biomass of agricultural and forestry origins, where investment of €50 million is expected.

Romania proposes to use funds from the European Economic Recovery Plan (EERP) to stimulate the cultivation of perennial energy crops to provide agricultural and forestry biomass for the production of renewable energy.

7 State Aids for Forestry

Forestry is not considered an agricultural activity in Community law, and the state aid rules for agriculture are not applicable. Multi-sectoral rules have been applied to forestry in the past and the established Commission practice based on decided state aid cases over the past 20 years had evolved and become complex. The rules adopted in 2006 for state aids for forestry¹² codify and define previous Commission practice.

General state aid rules applying to forestry axis 1 measures dealing with economic activities are not affected by the 2006 state aid rules and apply as before. The new rules do not apply to commercial extraction and transportation of timber, or to wood processing or energy generation. These activities are covered by the general rules applying to the industry and trade. However, it is not a problem if state aid granted in conformity with the rules also brings economic benefits, e.g. in form of healthier trees and better quality of wood or the possibility of using roads for recreational purposes.

The new rules are limited to state aid which promotes sustainable forest management in general and multi-functional aspects of forests, including measures favouring the ecological, protective and recreational functions of forests and wooded land, similar to the axis 2 measures 221-227 described above.

Three types of measures are allowed under the state aid rules:

- measures where 100% aid is allowed for measures directly contributing to maintaining or restoring ecological, protective and recreational functions of forests, biodiversity and a healthy forest ecosystem¹³;
- measures where the type and amount of aid are the same as for axis 2 measures for afforestation of agricultural or non-agricultural land, establishment of agroforestry systems on agricultural land, Natura 2000 payments, forest-environment payments, restoring forestry potential and introducing prevention actions as well as non-productive investments; and
- measures in common with the agriculture sector.

Several Member States make use of state aids for forestry and although state aids were not screened for this paper it is an area that may possibly be of further interest to the group.

The experience with the new state aid guidelines in rural development measures would seem to indicate that due to the complexity and multifunctional nature of forestry some rural development measures do not correspond to specific provisions in the state aid rules for forestry, and in some cases more than one state aid rule could be used as a legal basis to approve a measure.

¹² Chapter VII of the Community Guidelines for State aid in agriculture and forestry sector 2007 to 2013 (OJ C 319, 27.12.2006).

¹³ For example: planting, pruning and felling trees, restoring damaged forests, afforestation to increase long-term forest cover or biodiversity and to combat erosion and desertification (excludes aid to commercial extraction of timber and simple restocking); maintaining and improving soil quality and ensuring healthy tree growth; includes fertilisation, water retention, drainage and reducing excessive vegetation, combating diseases, pests and forest fires and compensating for the loss of stock due to such measures if ordered by the authorities; restoration and maintenance of natural pathways and landscape features, constructing roads and visitors' infrastructures (these must be open to public at no charge for recreational purposes); information material and PR-events disseminating general information about forests (advertising excluded); purchase of forestry land for permanent nature protection use.

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Sections 5 and 6 of this paper, plus Annex 1, draw extensively on the following recent report:

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Annex 1: Measures Enhancing the Adaptive Capacity of Forests in the Context of Climate Change¹⁴

The following sections provide a summary of rural development measures that can be applied to enhancing the adaptive capacity of forests in the context of climate change.

Improving Human Potential

Socio-economic factors are important for adaptation, and adaptive capacity is generally higher in regions with active forest management. Forest ownership structures, availability or shortage of forest sector work force, and educational level of forest workers are other factors influencing the adaptive capacity in the forest sector. Rural development programmes for 2007-2013 may provide responses for some climate change related challenges. For instance, training and information actions (measure 111), use of advisory services (measure 114) and setting up of advisory services (measure 115) can contribute to the improvement of the adaptive capacity of forestry and these measures may improve the quality and the quantity of active forest management.

Concerning forestry associations, they may receive support indirectly through rural development programmes if they offer training or advisory services to their members. Forest owner associations can also establish advisory services and forest owners may receive support for use of these advisory services. Advisory services and training can be important tools for enhancing adaptation and mitigation capacity of the forest sector.

Developing Physical Potential

Measures related to forest stand management can also be important climate policy tools. Improvement of the economic value of forest (measure 122), which should be based on forest management plans above a certain limit, can serve economic and environmental interests at the same time. For example a well-planned and implemented thinning or pruning can improve the economic value of the forests and the stand stability while also increasing its resilience against extreme events. The species composition can be modified by encouraging those species or varieties which are likely to adapt better to the future climate conditions. Introducing drought or shadow tolerant species can also improve the value of the existing forest stand, protect forest soil and contribute to other functions of the forest stand, e.g. protection against erosion or providing habitats.

Harvesting activities enhancing adaptive capacity should take place at smaller scales and where possible according to the principles of natural regeneration, enhancing structural as well as species and genetic diversity via long regeneration periods. Attention should be paid to avoiding disturbances by harvesting operations such as producing open stand edges exposed to prevailing winds and strong direct sunlight. Development of machinery is one important adaptation measure in the boreal zone to cope with less favourable conditions for winter harvesting. At the same time the use of the right kind of machinery could contribute to mitigation with fewer disturbances of the forest soil which may decrease CO₂ emissions from soil.

Forestry measures of rural development programmes can provide due responses to these aspects, e.g. properly planned and implemented forest road and track network (e.g. through measure 125) can contribute to the successful implementation of the required smaller scale harvesting operations. Cooperation for development of new processes and technologies in the forest sector (measure 124) may further contribute to the above mentioned efforts.

¹⁴ Source; European Commission (2009), based on the results of the Study 'Impacts of climate change on European Forests and options for adaptation' prepared by European Forestry Institute, commissioned by the European Commission

Forest management planning is becoming more challenging in the perspective of climate change. New planning and decision tools have to be developed and applied to deal with uncertainty and risk in long-term forest planning. Flexible adaptive planning, which takes into account all conceivable scenarios and allows to consider multiple options for future development, may be the best suited alternative. The increased use of science-based decision support systems in forest management planning could foster such activities.

Some rural development programmes have already underlined the importance of forest management planning and the existence of forest management plans is a prerequisite of several forestry activities. The existence of forest management plans or equivalent documents is a requirement for example for the measure investments in the economic value of forests (measure 122).

Sustainable Use of Forestry Land

Adaptation to climate change implies forest protection against the increasing hazards of abiotic and biotic disturbances. Given the heterogeneity of management goals from nature protection to intensive wood production, the multitude of forest ecosystems and potential damaging agents throughout Europe must be taken into account. Adaptive measures are to be targeted on the full scale of silvicultural options from site selection to harvesting. In general, establishing and sustaining forest ecosystems with highly diverse tree composition, age and structure is recommended by the study.

There are several possibilities through axis 2 forestry measures to improve the adaptation capacity of existing and future forests. Species selection and implementation techniques in afforestation measures (221, 222 and 223) can be adjusted to the future site conditions, which may improve at the same time the mitigation (carbon sequestration or water management related) potential of the new forest stand. Voluntary commitments, concerning the climate change challenges, can be supported through the forest-environmental measure (225). Prevention and restoration actions against natural disasters and fires and their eligibility criteria can be better fine-tuned with predicted climate extremities (measure 226), and non-productive investments (measure 227) can also contribute to adaptation efforts.