

Criterion 5: Maintenance and Appropriate Enhancement of Protective Functions in Forest Management (notably Soil and Water)

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	Qualitative Indicators:	Indicator B7: National reports on Reporting on the pan-European Qualitative Indicators for Sustainable Forest Management

Key findings

Indicator 5.1 Protective forests - soil, water and other ecosystem functions

A considerable number of forests, i.e. about one fifth of the forest and other wooded land area in Europe, are reported as serving the protection of water supplies, the prevention of soil erosion and the provision of other important ecosystem services. Although the mechanisms for ensuring and safeguarding these services may vary, the importance of these functions is clearly recognized. Due to the variability in the interpretation of the indicator, trends over time need to be treated with caution.

Indicator 5.2 Protective forests - infrastructure and managed natural resources

Around 3.3 million hectares, or 1.5% of the European forest area, are designated for the protection of infrastructure and managed natural resources against natural hazards. The protective role of forest often covers a wide range of areas, including infrastructure, managed natural resources, and other services, such as water, soil and ecosystems. Countries that provide data usually have mechanisms in place for identification or designation of forests with these protective

functions. They are especially relevant in countries with mountainous terrain, for example Switzerland, Austria and Poland. The data available for trend analyses are very limited and should be treated with caution as a varying number of countries have been reporting on this indicator over time and changes may have arisen in the survey methodology or policies applied.

Qualitative Indicator

Indicator B7 Protective forests and other wooded lands

The main policy objectives relating to the protective functions of forests, namely the protection of soils, water resources and biodiversity, have remained unchanged since 2007. This is indicative of the long-term commitment to maintaining and enhancing the protective functions of forests. Most of the reporting signatories identified soil protection as a main policy objective, with particular attention being paid to the mitigation and prevention of soil erosion; around one third of the countries identified the protection of water resources as a priority. The existing institutional regulatory frameworks, financial instruments and informational means provide a solid basis for the implementation of the related policies.

Indicator 5.1 Protective forests - soil, water and other ecosystem functions

Area of forest and other wooded land designated to prevent soil erosion, to preserve water resources, or to maintain other forest ecosystem functions, part of MCPFE Class "Protective Functions"

Introduction

Forests can play a vital role in preventing soil erosion, protecting water supplies and maintaining other specific ecosystem functions. Measures are in place in some countries for either recognizing or safeguarding these specific functions. Such measures may include the restriction or enhancement of certain management practices and the zoning of forests. Forest designations are administrative in nature or the result of decisions made in the context of land-use and forest management planning.

Status

In 2015, 35 countries provided information on forests in relation to the prevention of soil erosion, preservation of water resources and maintenance of other ecosystem services. European countries reported that a total of over 25 million hectares, or 11.8%, of forest were designated to fulfil these functions (Table 50). However, only 49% of European countries (47% EU countries) provided specific information on the extent of protective forests and other wooded land for soil, water and other ecosystem functions. The reported share of protective forests - soil and water and other ecosystem functions - ranges from 0 to over 70%. 3 countries reported that 15 to 20% of their forests are considered protective while 6 indicated a share exceeding 20%. Protective forest area is highest in Italy (87%) followed by Romania (above 35%). South-West Europe has the most extensive relative protective forest cover (Table 50) while North Europe

appears to have very little relative cover. However, this is because several countries do not distinguish between forest designated for the protection of soil, water and ecosystem functions (Indicator 5.1) and that primarily designated for the protection of infrastructure and managed natural resources (Indicator 5.2). Figure 84 shows that if this undifferentiated area is taken into account, it would appear that Central-West Europe is the region with the smallest area of designated protective forest. Explanatory information provided by the countries shows that the assessment guidelines were not interpreted consistently as the definitions of protective forest applied can vary widely. It appears that some countries are increasingly reluctant to define a proportion of national forest area as specifically designated for environmental protection, possibly because this could imply that the remaining areas fail to provide the associated services. While the guidelines require a legal basis or designated management plans that ensure a long-term commitment to protective functions, these are often implemented in conjunction with other functions (e.g. production, recreation). The explanatory information provided by the countries reveals that protective forests were identified as having clearly distinguishable protective functions based on surveys (e.g. mapping of forest functions/services), given physical characteristics (e.g. slope, being above a certain elevation) or designations of some kind.

Several countries commented that, while forests fulfil protective functions, their primary aim is "multiple use", hence they do not qualify for reporting under Criterion 5. This highlights the fact that while a considerable amount of forest and other wooded land is designated and managed to ensure the protection of water supplies and prevent soil erosion, much of the remaining forest and other wooded land in Europe plays a similar role based on the other ecosystem goods and services that they provide.

Table 50. Forest land reported for the protection of soil, water and other ecosystem services in 2015 by region

Country group	Total forest	Protective forest (Indicator 5.1)	Percentage of forest area
	1,000 hectares		in percent
North Europe	70,832	523	0.7
Central-West Europe	38,582	900	2.3
Central-East Europe	44,494	7,988	18.0
South-West Europe	30,913	13,156	42.6
South-East Europe	30,446	2,837	9.3
Europe	215,267	25,405	11.8
EU 28	161,082	20,946	13.0

Trends

25 countries are included in the presentation of temporal trends for the period 1990-2015. There has been an increment in the area of forest managed for the protection of soil, water and other ecosystem functions. However this is almost certainly an artefact of variations in the country reporting between 2010 and 2015. For example, Germany did not define any protective forest in 2015, referring to “many political discussions that not give a clear picture about the development”. Albania and Serbia reported in a similar vein. The trends in protective forest area (Figure 84) reflect these changes in reporting, which have a

significant impact on the overall trends for Europe and the EU 28 countries. The apparent trend for an increase in area in South-West Europe is probably an artefact of the estimation method used by one country. Thus, due to the variability in the interpretation of the indicator, the presentation of trends over time in Figure 84 should be treated with caution. The observed changes are due to the limited comparability between reference years, modifications in survey methodologies and intensity, and policy decisions about the definition of protection forests. Finally, changes in the composition of country reporting inevitably affects the comparability of the data from the different reporting periods.

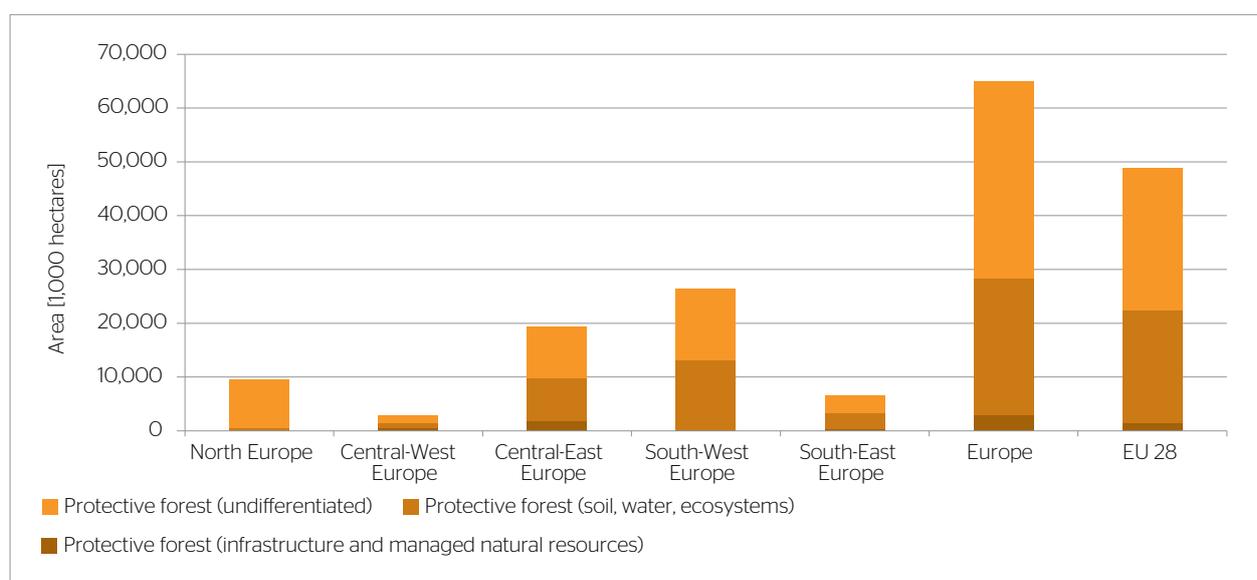


Figure 83. Area of protective forest as assigned by contributing countries to Indicator 5.1 (soil, water and ecosystems), Indicator 5.2 (infrastructure and managed natural resources) or undifferentiated

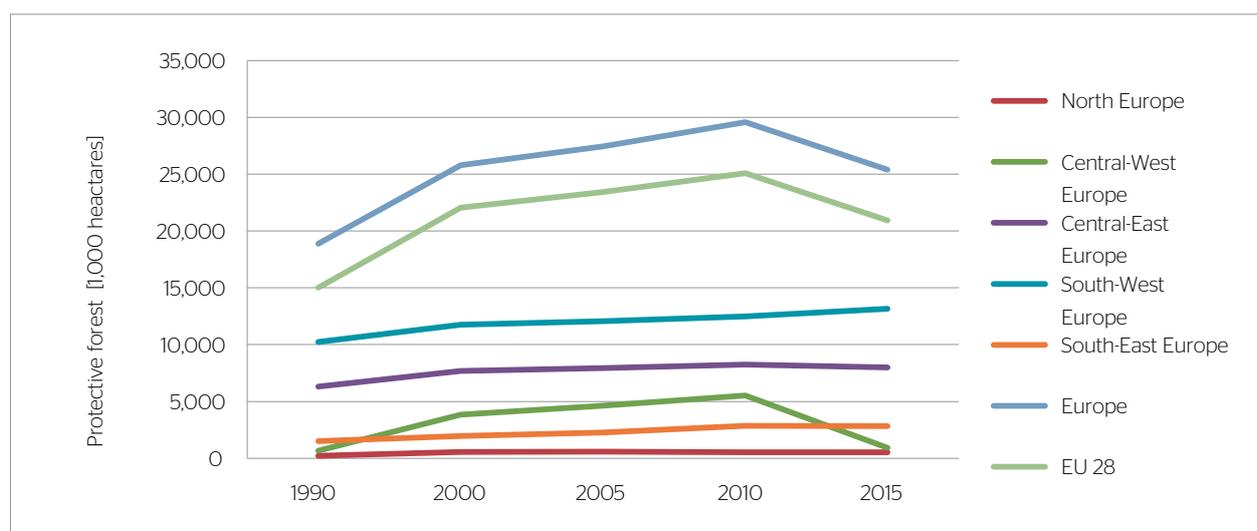


Figure 84. Trends in the area of protective forest from 1990 to 2015 by region

Indicator 5.2 Protective forests - infrastructure and managed natural resources

Area of forest and other wooded land designated for the protection of infrastructure and managed natural resources against natural hazards, part of MCPFE Class "Protective Functions"

Introduction

A wide variety of man-made infrastructure relies on the protection provided by forests. Such protective functions are mostly found in mountainous areas or areas subject to extreme climatic conditions. Countries reported the presence of forests that protect roads and railways, human settlements and other facilities, health resorts, cultivated soils and forest stands of special value, and they can act as shelter belts. Forests offer protection from various impacts, including rock fall, avalanches, wind, noise, emissions and climate. Adapted regimes have been developed for the specific needs of particular types of protective forests.

Status

The data provided for the Indicator 'Protective forest - infrastructure and managed natural resources' in 2015 were rather fragmentary. The countries often found it difficult or impossible to differentiate between the two indicators under Criterion 5. They also noted that functions relating to both indicators are often allocated to the same forest area and thus give rise to overlaps. For this reason not all countries could be included in the analysis and explanations for this are provided below.

Of 45 countries, 23 provided information for 2015. 9 countries allocated forest area to this indicator while 14 reported '0' values. The remaining countries indicated that such data is not available, not separable, or that an overlapping of functions makes it impossible to provide reliable information. Based on the data received from countries, approximately 1.5% of the forest area is allocated to Indicator 5.2. The highest percentages are found in Switzerland (44%), Czech Republic (12%), Austria (10% of forest and other wooded land), Poland (9%) and Ukraine (7%). 4 countries provided data that

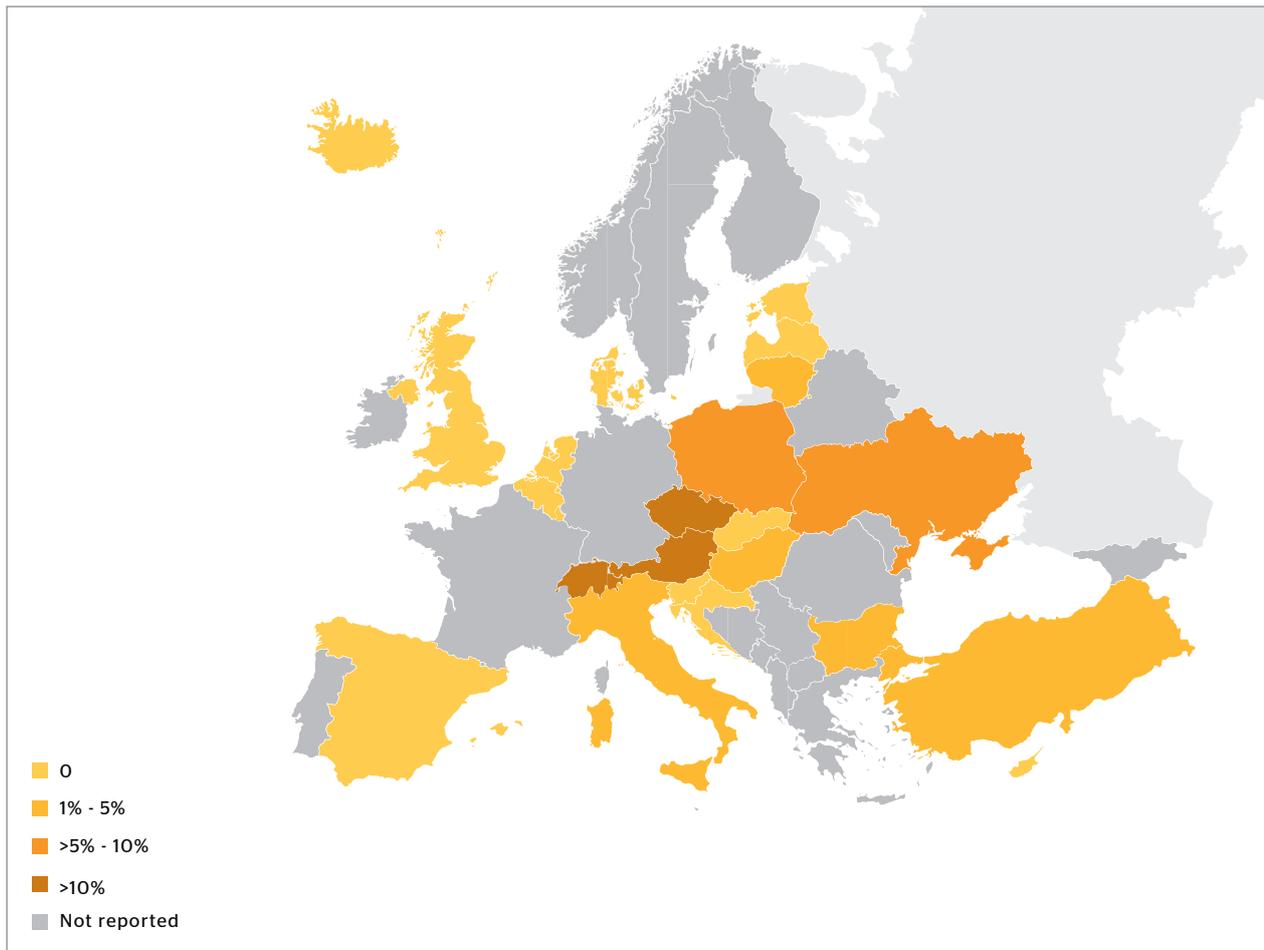


Figure 85. Forest area reported for the protection of infrastructure and managed natural resources in 2015 (percentage of forest area)

Note: Austria provided data for forest and other wooded land combined. Given the lack of data for forest area, this percentage was used for Austria and displayed on the map. Countries reporting combined data for Indicator 5.1 and Indicator 5.2 are not shown in the map.

did not differentiate between Indicator 5.1 and Indicator 5.2. The percentages of forest area accounted for by both indicators are 1% in Finland, 34% in Norway, 14% in Sweden and 7% in Montenegro.

Switzerland noted that its figures are based on a legally binding GIS layer, which is regarded as valid for the coming years. Further comments provided by the reporting countries on the types of forest designation applied under Indicator 5.2 included, e.g., water body and embankment protection, city forests and settlement protection, forest areas surrounding state parks or factories, forest belts along motorways and railroads, forest areas around health resorts, protection against emissions and noise pollution, forests of aesthetic value, and designated military areas. For example, Austria reports so-called 'object-protecting forests' ('Objektschutzwälder') as stated in its Forest Act. These are "forests which protect humans, human settlements or facilities, or cultivated soil in particular against natural hazards or injuring environmental impacts and which require special treatment to gain and ensure their protective or beneficial effect".

Trends

The data available for trend analyses are very limited, thus Table 52 should be approached with caution. Overall, 24 countries provided trend data on forests that protect infrastructure and managed natural resources. Of the 24 countries, 14 specified '0' values for all three reporting years (2005, 2010, 2015). Despite the fact that it only provided trend data for forest and other wooded land combined, Austria is included in the trend analysis. Overall, there were only minor changes in protective forest area in the different European regions and Europe as a whole. An annual increase of around 55,000 ha can be observed for Europe between 2005 and 2015, with the highest reported figure recorded in 2010. A slightly decreasing trend of 5,500 ha per year was reported in the EU 28. It is noted that changes in trends may partly also originate from the provision of information by a varying set of countries, changes in survey methodology and policy developments.

Table 51. Forest reported for the protection of infrastructure and managed natural resources in 2015 by region

Region	Total forest area	Protective forest area	Percentage of total forest area
	1,000 ha		in percent
North Europe	70,832	24	0.03
Central-West Europe*	38,582	933	2.42
Central-East Europe	44,494	1,875	4.21
South-West Europe	30,913	61	0.20
South-East Europe	30,446	404	1.33
Europe	215,267	3,298	1.53
EU 28	160,931	1,802	1.12

*including data for Austria (forest and other wooded land combined)

Table 52. Trends in the area of forest reported for the protection of infrastructure and managed natural resources by region (2005 - 2015)

Region	Total forest area	Protective forest area 2005	Protective forest area 2010	Protective forest area 2015	Annual change (2005-2015)
	1,000 ha				
North Europe	70,832	22	24	24	0.2
Central-West Europe*	38,582	280	918	933	54.8
Central-East Europe	44,494	2,157	2,009	1,875	-28.1
South-West Europe	30,913	61	61	61	0.0
South-East Europe	30,446	232	355	404	17.2
Europe	215,267	2,752	3,366	3,298	54.6
EU 28**	160,931	1,857	1,930	1,802	-5.5

*including data for Austria (forest and other wooded land combined)

**including data from Croatia for 2005 and 2010

Qualitative Indicator

Indicator B7 Protective forests and other wooded land

The protective functions of forests, i.e. the protection of soil, water resources and biodiversity, are constantly high on the political agenda in Europe

Status, trends and main changes in policy objectives since SoEF 2011

The majority of countries state that the main policy objectives are the maintenance and enhancement of the protective functions of forests for preventing soil erosion and improving water quality and quantity

The majority of the reporting signatories (26 of 34) declared specifically formulated policy objectives in relation to protective forests. Most of the reporting signatories (Belgium, Bulgaria, Croatia, Cyprus, Estonia, Finland, Germany, Hungary, Iceland, Italy, Latvia, Norway, Poland, Portugal, Slovak Republic, Slovenia, Sweden, Ukraine, UK) focus on further maintaining and enhancing the protective functions of forests for preventing soil erosion (19 countries) and improving water quality and quantity (16 countries). The third most visible policy objective relates to the protection of biodiversity (10 countries). Several of the reporting signatories also flagged the prevention of natural hazards and floods, climate change, the protection of landscapes and infrastructure, and the enhancement of human health and recreational functions as policy objectives. In addition, the signatories reported other specific objectives in relation to protective forests, for example:

- assessing the protective effects of forests; applying forest land-use planning and area-related planning across sectors (Austria);
- improving quality of life through the protection and enhancement of social and cultural forest functions (Bulgaria);
- acknowledging the importance of forests for the defense of the country and the development of local communities (Croatia);
- converting up to 1,000 hectares of commercial forest to native conservation woodland between 2015 and 2020 in order to protect sensitive water systems (Ireland);
- quantifying the value of protective functions and ecosystem services and providing payments for protective functions (Romania).

25 signatories reported that there had been no significant changes their in main policy objectives since 2011. However, 5 signatories reported changes in their main policy objectives which focused on payments for protective functions (Romania), the inclusion of specific objectives in the national legislation (Iceland), special protection mechanisms under the National Catalogue of Public Utility Forests (Spain), the introduction of melioration through agroforestry (Ukraine) and greater emphasis on tree diseases (United Kingdom).

Almost half of the reporting signatories (15 of 34) mentioned the implementation of key measures on protective forests. The most frequently reported key measures were implemented through national and regional forest programmes, action plans, strategic programmes, guidelines (Austria, Finland, Hungary, Slovak Republic, Spain, Turkey, Ukraine, United Kingdom), and national forest or forest relevant legislation (Bulgaria, Czech Republic, Cyprus, Ireland, Slovenia). The use of research programmes and projects (Finland, Romania) and the mobilization of EU funds through the national rural development programmes were also reported. Ireland identified opportunities for converting and restructuring commercial forests into low intensity native woodland in order to protect sensitive water systems and habitats, Spain maintained the Spanish forest catalogue of protective forests, Slovak Republic initiated investments in flood prevention, Turkey launched a National Afforestation and Combating Erosion Action Plan Campaign, and the European Commission introduced the new EU Forest Strategy for implementing the identified policy objectives.

Only 2 countries provided information on key lessons learned. Slovak Republic highlighted the fact that the lack of financial resources is hampering further progress in relation to the enhancement of protective functions. Spain reported that the 2006 amendment of the basic Forest Law (Ley 43/2003) with Law 10/2006, through which a new kind of protective forests is included in the legislation, has emerged as ineffective and unworkable at national level.

Institutional framework

Around 85 % of signatories report stability in the institutional frameworks

The institutional frameworks relating to the protective functions of forest presented few changes compared to 2011. The responsible institutions are mainly ministries, state forest enterprises, state authorities, forest owners, research institutes, municipalities and regional governments. Only a few signatories (5 of 34, i.e. Bulgaria, Croatia, Finland, Spain, United Kingdom) reported institutional changes. However, these changes were not specifically bound to protective functions and involved institutional structural changes relating to national forestry responsibilities in general.

Legal/regulatory framework and international commitments

Forest and conservation laws are the main legal frameworks and did not change in the majority of the reporting signatories

In most of the reporting signatories, the forest law regulates protective services, often in combination with the nature conservation legislation. Only 5 of 34 signatories reported changes in this area relating to protective forests since 2011. Bulgaria amended its forest legislation in relation to erosion and floods in 2013 to enhance the protection of forest territories against erosion and floods through the construction of erosion prevention systems. Cyprus also amended the national legislation in order to meet national demands and comply with international commitments. The Irish Forestry Act of 2014 updated the legislative framework

governing forestry, which grants the responsible minister a wide range of options for regulating all aspects of forestry, including protective functions. Montenegro introduced a new system for establishing protective forests. Ukraine adopted the concept of melioration through agro-forestry in 2014.

Financial instruments and economic policy

Stability of financial instruments and economic policy as a main trend for 75% of countries

Over three quarters of the reporting countries (28 of 34) reported that there had been no major changes in overall financial instruments and economic policies since 2011. In the other cases, the reported changes do not explicitly affect protective functions. Only Montenegro reported the introduction of a financial scheme for compensating forest owners for related losses of income.

Informational means

No major changes in relation to informational means

The majority of the signatories stated that the informational means reported in 2011 remained unchanged. Only a few (3 of 34) reported on changes in this area. However, most of these changes were not directly linked to protective functions but the raising of awareness about forests in general (Finland). Austria increased the use of social media since the International Year of Forest in order to reach out to younger generations. Slovak Republic introduced an online GIS platform to support forestry practitioners with a free flow of information.

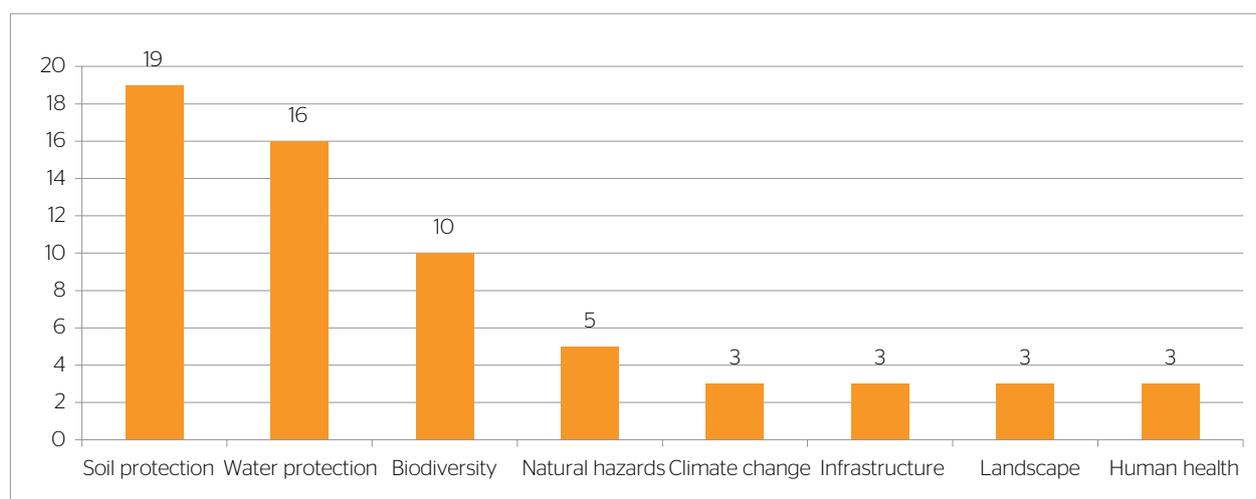


Figure 86. Issues covered by the main policy objectives relating to protective forests and other wooded land for the period of 2011-2014