

Pan-European Indicators for Sustainable Forest Management

Terms and definitions

(Sorted in order of SFM indicators, not in alphabetical order)

Criterion I

Indicator 1.1

Forest

Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

Explanatory notes

1. Forest is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 meters.
2. Includes areas with young trees that have not yet reached but which are expected to reach a canopy cover of at least 10 percent and tree height of 5 meters or more. It also includes areas that are temporarily unstocked due to clear-cutting as part of a forest management practice or natural disasters, and which are expected to be regenerated within 5 years. Local conditions may, in exceptional cases, justify that a longer time frame is used.
3. Includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific environmental, scientific, historical, cultural or spiritual interest.
4. Includes windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters.
5. Includes abandoned shifting cultivation land with a regeneration of trees that have, or are expected to reach, a canopy cover of at least 10 percent and tree height of at least 5 meters.
6. Includes areas with mangroves in tidal zones, regardless whether this area is classified as land area or not.
7. Includes rubberwood, cork oak and Christmas tree plantations.
8. Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.
9. Includes areas outside the legally designated forest land which meet the definition of “forest”.
10. Excludes tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations, olive orchards and agroforestry systems when crops are grown under tree cover. Note: Some agroforestry systems such as the “Taungya” system where crops are grown only during the first years of the forest rotation should be classified as forest.

(Source: FRA 2020)

Forest available for wood supply

Forests where there are no environmental, social or economic restrictions that could have a significant impact on the current or potential supply of wood. These restrictions could be based on legal acts, managerial owners' decisions or other reasons.

Explanatory notes

1. Environmental restrictions should consider: protected areas, protected habitats or species, and also those protective forests meeting the above requirements. Age or diameter class restriction should not be taken into account (except in the case of protected ancient forest).
2. Social restrictions include restrictions to protect aesthetic, historical, cultural, spiritual, or recreational values as well as areas where the owner has made the decision to cease wood harvesting in order to focus on other goods and services (e.g. leisure, landscape, aesthetic value).
3. The economic restrictions are considered as those affecting the economic value of wood utilisation (profitability). These includes: accessibility, slope and soil condition. Short-term market fluctuations should not be considered.
4. A significant impact occurs when harvesting is totally prohibited or when restrictions severely limit the feasibility of cuttings for commercial purposes.
5. When restrictions do not severely limit commercial utilisation of wood in an area, it should be considered available for wood supply even if current harvesting is for auto-consumption or no harvest at all is taking place. Conversely, when restrictions limit the feasibility of commercial wood utilisation, even if there is occasional cuttings for auto-consumption or other small-scale interventions of a non-commercial nature, the forest should be considered as FNAWS.

6. Regarding the assessment of availability for wood supply, the following recommendations were proposed for reporting: (i) the three different categories should be accounted for separately if possible (environmental, social, and economic); (ii) restrictions considered for each category should be detailed if possible (e.g. protected areas, protected species).

(Source: I. Alberdi et al. / Forest Policy and Economics 70 (2016) 20–29, based on TBFRA 2000, modified MCPFE 2003)

Other wooded land

Land not defined as “Forest”, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.

Explanatory notes

1. The definition above has two options:

a. The canopy cover of trees is between 5 and 10 percent; trees should be higher than 5 meters or able to reach 5 meters, or

b. The canopy cover of trees is less than 5 percent but the combined cover of shrubs, bushes and trees is more than 10 percent. Includes areas of shrubs and bushes where no trees are present.

2. Includes areas with trees that will not reach a height of at least 5 meters and with a canopy cover of 10 percent or more, e.g. some alpine tree vegetation types, arid zone mangroves, etc.

(Source: FRA 2020)

Other land

All land that is not classified as "Forest" or "Other wooded land".

Explanatory notes

1. For the purpose of reporting to FRA, the “Other land” is calculated by subtracting the area of forest and other wooded land from the total land area (as maintained by FAOSTAT).

2. Includes agricultural land, meadows and pastures, built-up areas, barren land, land under permanent ice, etc.

3. Includes all areas classified under the sub-category “Other land with tree cover”.

(Source: FRA 2020)

Other land with tree cover (sub-category)

Land classified as “other land”, spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.

Explanatory notes

1. Land use is the key criteria for distinguishing between forest and other land with tree cover.

2. Specifically includes: palms (oil, coconut, dates, etc), tree orchards (fruit, nuts, olive, etc), agroforestry and trees in urban settings.

3. Includes groups of trees and scattered trees (e.g. trees outside forest) in agricultural landscapes, parks, gardens and around buildings, provided that area, height and canopy cover criteria are met.

4. Includes tree stands in agricultural production systems, such as fruit tree plantations/orchards. In these cases the height threshold can be lower than 5 meters.

5. Includes agroforestry systems when crops are grown under tree cover and tree plantations established mainly for other purposes than wood, such as oil palm plantations.

6. The different sub-categories of “other land with tree cover” are exclusive and area reported under one sub-category should not be reported for any other sub-categories.

7. Excludes scattered trees with a canopy cover less than 10 percent, small groups of trees covering less than 0.5 hectares and tree lines less than 20 meters wide.

(Source: FRA 2020)

Forest types

Forest types are classified as follows, based on EUNIS Top Level and TBFRA 2000:

- predominantly broadleaved woodland: Forest on which more than 75 percent of the tree crown cover consists of broadleaved species

- predominantly coniferous woodland: Forest on which more than 75 percent of the tree crown cover consists of coniferous species

- mixed broadleaved and coniferous woodland: Forest on which neither coniferous, nor broadleaved species account for more than 75 percent of the tree crown cover.

(Source: SoEF 2003, modified)

Indicator 1.2

Growing stock

Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.

Explanatory notes

1. Diameter breast height refers to diameter over bark measured at a height of 1.3 m above ground level, or above buttresses, if these are higher.
2. Includes laying living trees.
3. Excludes branches, twigs, foliage, flowers, seeds, and roots.

(Source: FRA 2020)

Broadleaved

All trees classified botanically as Angiospermae. They are sometimes referred to as “non-coniferous” or “hardwoods”.

(Source: TBFRA 2000)

Coniferous

All trees classified botanically as Gymnospermae. They are sometimes referred to as “softwoods”.

(Source: TBFRA 2000)

Indicator 1.3

Stand

A community of trees possessing sufficient uniformity in composition, age, arrangement or condition to be distinguishable from the forest or other growth on adjoining areas, thus forming a temporary silvicultural or management entity.

(Source: IUFRO, 2000)

Even-aged stand

A stand, in which no or relatively small age differences exist among individual trees within it (usually less than 20% of rotation length) and defining average stand age is meaningful.

(Source: IUFRO, 2000, modified)

Development phase – regeneration phase

Even-aged stand where the mean diameter of the growing stock is below industrial roundwood size and the age of which lower than 20% of the recommended rotation length on the site.

Explanatory notes

1. Includes temporarily unstocked forest areas.

Development phase – mature phase

Even-aged stand with a growing stock mature enough for immediate final felling and of an age that is at least 90% of the recommended rotation length on the site.

Explanatory notes

1. Includes stands classified as over-mature.
2. Underproductive forests (i.e. commercial forest lands not meeting minimum stocking standards) where the recommended operation is immediate regeneration should be classified as mature only if the growing stock is mature for final felling with respect to age and/or mean diameter. Otherwise underproductive forests should be classified as regeneration or intermediate phase.

Development phase – intermediate phase

Even-aged stand that is beyond the “regeneration phase” and has not reached the “mature phase” yet.

Development phase – unspecified

Stands, that are classified as even-aged, for which the concept of development classes is irrelevant, e.g. energy or Christmas tree plantations.

Uneven-aged stand

A stand or forest type, consisting of trees of a range of age classes, with age differences which are significant in relation to the stand structure management and rotation length. Defining average stand age is not meaningful. Practiced or expected stand management, if any, is continuous forest cover management - selective cuttings, shelter tree cutting, regeneration with small openings etc.

Explanatory notes

1. Includes:

- a. protected forests, recreation areas etc. undergoing a process of formation of uneven-aged structure, where forest management activities are abandoned or support this process,
- b. previously even-aged stands, in which active management was (intentionally or unintentionally) abandoned and as a result a process of formation of uneven aged structure has started, conditions of site and structure of stand allow for a continuation of that process, and the managerial goal is to continue this process or is not known.

2. Excludes even-aged stands under regeneration, with both mature and young trees present.

(Source: IUFRO, 2000, modified)

Indicator 1.4

Carbon in above-ground biomass

Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.

Explanatory notes

1. In cases where forest understory is a relatively small component of the aboveground biomass carbon pool, it is acceptable to exclude it, provided this is done in a consistent manner throughout the time series.

(Source: FRA 2020)

Carbon in below-ground biomass

Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.

Explanatory notes

1. Includes the below-ground part of the stump.

2. The country may use another threshold value than 2 mm for fine roots, but in such a case the threshold value used must be documented.

(Source: FRA 2020)

Carbon in dead wood

Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter.

Explanatory notes

1. The country may use another threshold value, but in such a case the threshold value used must be documented.

(Source: FRA 2020)

Carbon in litter

Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm), lying dead in various states of decomposition above the mineral or organic soil.

Explanatory notes

1. Fine roots of less than 2 mm (or other value chosen by the country as diameter limit for below-ground biomass) above the mineral or organic soil are included in the litter where they cannot be distinguished from it empirically.

(Source: FRA 2020)

Soil carbon

Organic carbon in mineral and organic soils (including peat) to a soil a specified depth chosen by the country and applied consistently through the time series.

Explanatory notes

1. Fine roots of less than 2 mm (or other value chosen by the country as diameter limit for below-ground biomass) are included with soil organic matter where they cannot be distinguished from it empirically. (Source: FRA 2020)

Carbon stock in harvested wood products (HWP)

Harvested wood products (HWP) according to the IPCC good practice guidance (2003) include wood and paper products. It does not include carbon in harvested trees that are left at harvest sites. Methodologies and good practice for the estimating and reporting of emissions and removals from HWP can be found in Appendix 3a.1 in the IPCC good practice guidance for LULUCF (2003).

(Source: IPCC 2003)

Criterion II

Indicators 2.1 - 2.3

Definitions for these indicators are in the Technical Specifications for reporting by IDP, which is available in separate document prepared for your information.

Indicator 2.4

Damage to forest

Disturbance to the forest which may be caused by biotic or abiotic agents, resulting in death, or a significant loss of vitality, productivity or value of trees and other components of the forest ecosystem.

(Source: MCPFE 2003, TBFRA 2000)

Primarily damaged by insects and disease

Forest and other wooded land where insect attack or disease has been identified as the primary cause of damage.

(Source: MCPFE 2003, TBFRA 2000)

Primarily damaged by wildlife and grazing

Forest and other wooded land where damage has been caused by wildlife or grazing by domestic animals.

Includes: Grazing or browsing of young plants, preventing or delaying the establishment or regeneration of the stand.

(Source: MCPFE 2003, TBFRA 2000)

Primarily damaged by storm, wind, snow or other identifiable abiotic factors

Forest and other wooded land on which the trees have been felled or damaged by storm, wind, snow or other abiotic factors such as avalanches, landslides or flooding.

(Source: MCPFE 2003, TBFRA 2000)

Primarily damaged by fire

Forest and other wooded land, the vegetation on which, including the trees, has been wholly or largely destroyed by fire.

(Source: MCPFE 2003, TBFRA 2000)

Primarily human induced

Damage primarily human induced – Forest operations: these include damages incurred in the process of the road building and landings setting, or harvesting damage, incl. through skidding tracks, hauling and transport.

Damage primarily human induced - Other: these include e.g. damages caused by pollution from known local sources, damage from visitors to forests; vandalism, etc. Note that human induced fire is not to be reported in this class.

(Source: MCPFE 2003, TBFRA 2000)

Unspecified / Mixed damage

Forest or other wooded land damaged by more than one group of causing agents (e.g. both biotic and abiotic) and/or identification of primary cause not possible. Note: if the causing agent is unidentified but known to belong to insects or diseases, area should be reported in that category.

Indicator 2.5

Degraded forest land

Forest land severely damaged by e.g. the desertification, fires, grazing, air pollution, erosion, unsustainable management, etc. that lost tree cover and with soil damaged to a degree, that severely hampers or delays the re-establishment of stocking. Note: After stocking is re-established, the area can be still considered degraded forest, but not degraded forest land.

Source: Definition is still in development

Criterion III

Indicator 3.1

Fellings (annual)

Average standing volume of all trees, living or dead, measured overbark to minimum diameters as defined for “Growing stock” that are felled during the given reference period, including the volume of trees or parts of trees that are not removed from the forest, other wooded land or other felling site. Includes: silvicultural and pre-commercial thinnings and cleanings left in the forest; and natural losses that are recovered (harvested).

(Source: MCPFE 2003, from TBFRA 2000, modified)

Gross (annual) increment

Average annual volume of increment over the reference period of all trees measured to minimum diameters as defined for “Growing stock”.

Explanatory notes

1. Includes the increment on trees which have been felled or die during the reference period.

(Source: TBFRA 2000, modified)

Natural (annual) losses

Average annual losses to the growing stock during the given reference period, measured to minimum diameters as defined for “Growing stock”, due to mortality from causes other than cutting by man, e.g. natural mortality, diseases, insects attacks, fire, windthrow or other physical damage.

(Source: TBFRA 2000, modified)

Net (annual) increment

Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for “Growing stock”.

(Source: TBFRA 2000, modified, FRA 2015)

Indicator 3.2

Total wood removals

The total of industrial round wood removals and woodfuel removals.

(Source: FRA 2015, Working paper 180, page 12)

Industrial round wood removals (Sub-category)

The wood removed for production of goods and services other than energy production (woodfuel).

Explanatory notes

1. The term “removal” differs from “felling” as it excludes harvesting losses (stemwood) and trees that were felled but not removed.

2. It includes removals from fellings in earlier period and from trees dead due to or damaged by natural causes.

(Source: FRA 2015, Working paper 180, page 12, modified)

Woodfuel removals (Sub-category)

The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

Explanatory notes

1. Includes all wood collected or removed for energy purposes, such as fuelwood, wood for charcoal production, harvesting residues, stumps, etc.
2. Includes removals from fellings in an earlier period and from trees killed or damaged by natural causes.
3. Excludes woodfuel which is produced as a by-product or residual matter from industrial processing of roundwood.

(Source: FRA 2015, Working paper 180, page 13)

Roundwood

All roundwood felled or otherwise harvested and removed. It comprises all wood obtained from removals, i.e. the quantities removed from forests and from trees outside the forest, including wood recovered from natural, felling and logging losses during the period, calendar year or forest year. It includes all wood removed with or without bark, including wood removed in its round form, or split, roughly squared or in other form (e.g. branches, roots, stumps and burls (where these are harvested) and wood that is roughly shaped or pointed. It is an aggregate comprising wood fuel (including wood for charcoal) and industrial roundwood (wood in the rough). It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Explanatory notes

1. Includes roundwood directly chipped in the forest, but not industry by-products. (Source: Joint UNECE/FAO/Eurostat/ITTO Forest Sector Questionnaire, 2001, modified).
2. For the purpose of this table, value (of both marketed and non-marketed wood) is defined as the market value at the site of harvest, road side or forest border. If values are obtained from a point further down the production chain, transport costs and possible handling and/or processing costs should be subtracted whenever possible. (Source: FRA 2010 - Non-wood forest products, working paper 180, page 12, modified)

Indicator 3.3

Non-wood goods (NWG)

Goods derived from forests and other wooded land that are tangible and physical objects of biological origin other than wood.

Explanatory notes

1. Generally includes non-wood plant and animal products collected from areas defined as forest (see definition of forest).
2. Specifically includes the following regardless of whether from natural forests or plantations:
 - gum arabic, rubber/latex and resin;
 - Christmas trees, cork, bamboo and rattan.
3. Generally excludes products collected in tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover.
4. Specifically excludes the following:
 - woody raw materials and products, such as chips, charcoal, fuelwood and wood used for tools, household equipment and carvings;
 - grazing in the forest;
 - fish and shellfish.

(Source: FRA 2020)

Value of non-wood forest products

For the purpose of reporting on this variable, value is defined as the commercial market value at the forest gate.

Explanatory notes

1. If values are obtained from a point further down the production chain, transport costs and possible handling and/or processing costs should be subtracted whenever possible.
2. Commercial value refers to actual market value and potential value of both marketed and non-marketed products.

(Source: FRA 2020)

Indicator 3.4

Marketed forest services

Marketed forest services comprise recreational, environmental and protective services that are forest-dependent or mainly forest-related but are not necessarily marketed by forest owners.

Ecological services

Marketed ecological services include those related to indicators 5.1 and 5.2 (soil, water and other environmental functions as well as infrastructure and managed natural resources) on a voluntary contractual basis with compensation or other payments from private or public bodies. "Water protection, Soil protection, Health protection, Infrastructure protection"

Biospheric services

Marketed biospheric services include services related to indicator 4.6 (in-situ or ex-situ gene conservation of genetic resources) as well as indicator 4.9 (protected forest area) e.g. nature protection on a voluntary contractual basis with compensation or other payments from private or public bodies (this includes Natura 2000). This class also includes carbon-sequestration related afforestation projects in the context of the Kyoto Protocol – should such projects be included, please specify the amount under “country comments”. "Biodiversity protection, Climate regulation"

Social services

Marketed social services include e.g. hunting or fishing licences, renting of huts and houses as well as forest-based leisure, sport and outdoor adventure activities and educational services that are not free of cost to consumers (the public, schools, ...). "Tourism, Recreation, Sport activities"

Amenity services

Amenity services include those related to spiritual, cultural and historical functions, e.g. sacred, religious, or other forms of spiritual inspiration, sites of worship, landscape features (mountains and waterfalls), “memories” in the landscape from past cultural ties, aesthetic enjoyment and inspiration, historic artefacts. "Spiritual services Cultural services, Historical services"

Other marketed services

Other marketed services include e.g. payments to woodland owners for licences for gravel extraction, telecommunication masts, wind farms and electricity distribution.

Note: the above terms & definitions were formulated in the process of the elaboration of the SoEF 2007 Enquiry on the basis of existing definitions in different processes.

(Source: Study on the Development and Marketing of Non-Market Forest Products and Services, European Commission 2008)

Criteria IV-V

Indicator 4.1

Tree

A woody perennial with a single main stem or, in the case of coppice, with several stems, having a more or less definite crown.

Includes: Bamboos, palms and other woody plants meeting the above criterion.

(Source: TBFRA 2000)

Indicator 4.2

Forest expansion

Expansion of forest on land that, until then, was under a different land use, implies a transformation of land use from non-forest to forest.

(Source: FRA 2020)

Afforestation (Sub-category)

Establishment of forest through planting and/or deliberate seeding on land that, until then, was under a different land use, implies a transformation of land use from non-forest to forest.

(Source: FRA 2020)

Natural expansion of forest (Sub-category)

Expansion of forest through natural succession on land that, until then, was under another land use, implies a transformation of land use from non-forest to forest (e.g. forest succession on land previously used for agriculture).

(Source: FRA 2020)

Regeneration (natural, by planting and/or seeding, coppice sprouting)

Regeneration

Re-establishment of a forest stand by natural or artificial means on land classified as forest, following the removal of the previous stand by felling or as a result of natural causes (e.g. fire or storm).

Explanatory notes

1. Implies no change of land use.
2. Includes planting/seeding of temporarily unstocked forest areas as well as planting/seeding of areas with forest cover.
3. Includes coppice from trees that were originally planted or seeded.

(Source: TBFRA 2000, FRA 2015, Reforestation, working paper 180, page 5, modified).

Natural regeneration

Re-establishment of a forest stand by natural means, i.e. by natural seeding or vegetative regeneration. It may be assisted by human intervention, e.g. by preparatory cutting, scarification or fencing to protect against wildlife damage or domestic animal grazing.

(Source: TBFRA 2000, modified)

Regeneration by planting and/or seeding

The act of re-establishing a forest stand by artificial means, either by planting of seedlings or by scattering seed on land already in forest land use. The material used may be of indigenous or introduced origin.

Explanatory notes

1. Implies no change of land use.
2. Includes planting/seeding of temporarily unstocked forest areas as well as planting/seeding of areas with forest cover.
3. Excludes natural regeneration of forest.

(Source: FRA 2020, Reforestation)

Coppice sprouting

The re-growth from coppice stools after the previous stand has been cut.

(Source: TBFRA 2000)

Indicator 4.3

Naturalness

Naturalness is specified in the following classes:

Undisturbed by man (forest/other wooded land)

Naturally regenerated forest of native tree species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Explanatory notes

1. Includes both pristine and managed forests that meet the definition.
2. Includes forests where indigenous peoples engage in traditional forest stewardship activities that meet the definition.
3. Includes forest with visible signs of abiotic damages (such as storm, snow, drought, fire) and biotic damages (such as insects, pests and diseases).
4. Excludes forests where hunting, poaching, trapping or gathering have caused significant native species loss or disturbance to ecological processes.

"5. Some key characteristics of primary forests are:

-they show natural forest dynamics, such as natural tree species composition, occurrence of dead wood, natural age structure and natural regeneration processes;

-the area is large enough to maintain its natural ecological processes;

-there has been no known significant human intervention, or the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established."

(Source: FRA 2020, Primary forest)

Semi-natural forest/other wooded land

Forest/other wooded land which is neither “forest/other wooded land undisturbed by man” nor “plantation” as defined separately.

(Source: MCPFE 2003, from TBFRA 2000)

Plantation

Planted Forest that is intensively managed and meets ALL the following criteria at planting and stand maturity: one or two species, even age class, and regular spacing.

Explanatory notes

1. Specifically includes: short rotation plantation for wood, fibre and energy.
2. Specifically excludes: forest planted for protection or ecosystem restoration.
3. Specifically excludes: Forest established through planting or seeding which at stand maturity resembles or will resemble naturally regenerating forest.

(Source: FRA 2020, Plantation forest)

Indicator 4.4

Introduced tree species

A tree species occurring outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).

Explanatory notes

- "1. If the species occurs naturally within the country borders it is considered native for the entire country.
2. Naturally regenerated forest of introduced tree species should be considered as “introduced” up to 250 years from the date of original introduction. Beyond 250 years, the species can be considered naturalized."

(Source: FRA 2020)

Invasive introduced tree species

‘Invasive introduced tree’ refers to an alien tree species whose introduction and spread threaten ecosystems, habitats or species with socio-cultural, economic and/or environmental harm, and/or harm to human health.

(Source: MCPFE 2003, definition of invasive alien species from UNEP/CBD/COP/6/18/Add.1/Rev.1; 2002.

The word “tree” was added)

Alien or alien species refers to a species, subspecies or lower taxon, introduced outside its normal past or present normal distribution; includes any part, gametes, seeds, eggs, or propagates of such species that might survive and subsequently reproduce.

(Source: UNEP/CBD/COP/6/18/Add.1/Rev.1; 2002)

Indicator 4.5

Deadwood

Non-living woody biomass either standing or lying on the ground, exceeding specified thresholds.

Explanatory notes

1. Excludes woody biomass contained in the litter, stumps or dead roots.

Indicators 4.6, 4.7

Definitions for these indicators are in the Technical Specifications for reporting by IDP, which is available in a separate document prepared for your information.

Indicator 4.8

Forest species

A forest species is a species that is dependent on a forest for part or all of its day to day living requirements, or for its reproductive requirements. Therefore, an animal species may be considered a forest species even if it does not live most of its life in a forest.

(Source: MCPFE 2003, from AD HOC Technical Expert Group on Forest Biological Diversity, convened by the Secretariat of the CBD to prepare a report for SBSTTA-7, 2001)

Vulnerable

A taxon is vulnerable when it is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium-near future, as defined by any of the criteria A to E of IUCN (1998).
(Source: MCPFE 2003, from IUCN, 1998)

Endangered

A taxon is endangered when it is not critically endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the criteria A to E of IUCN (1998).
(Source: MCPFE 2003, from IUCN, 1998)

Critically endangered

A taxon is critically endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E of IUCN (1998).
(Source: MCPFE 2003, from IUCN, 1998)

Extinct in the wild

A taxon is extinct in the wild when it is known only to survive in cultivation, in captivity or as a naturalised population (or populations) well outside the past range. A taxon is presumed extinct in the wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
(Source: MCPFE 2003, from IUCN, 1998)

Indicators 4.9, 5.1

MCPFE Class

as defined by the MCPFE Assessment Guidelines for Protected and Protective Forest and Other Wooded Land in Europe

MCPFE Class 1.1: Main Management Objective Biodiversity “No Active Intervention”

- The main management objective is biodiversity
- No active, direct human intervention is taking place
- Activities other than limited public access and non-destructive research not detrimental to the management objective are prevented in the protected area

MCPFE Class 1.2: Main Management Objective Biodiversity “Minimum Intervention”

- The main management objective is biodiversity
- Human intervention is limited to a minimum
- Activities other than listed below are prevented in the protected area:
 - Ungulate/game control
 - Control of diseases/insect outbreaks
 - Public access
 - Fire intervention
 - Non-destructive research not detrimental to the management objective
 - Subsistence resource use

MCPFE Class 1.3: Main Management Objective Biodiversity “Conservation Through Active Management”

- The main management objective is biodiversity
- A management with active interventions directed to achieve the specific conservation goal of the protected area is taking place
- Any resource extraction, harvesting, silvicultural measures detrimental to the management objective as well as other activities negatively affecting the conservation goal are prevented in the protected area

MCPFE Class 2: Main Management Objective “Protection of Landscapes and Specific Natural Elements”

- Interventions are clearly directed to achieve the management goals landscape diversity, cultural, aesthetic, spiritual and historical values, recreation, specific natural elements
- The use of forest resources is restricted
- A clear long-term commitment and an explicit designation as specific protection regime defining a limited area is existing
- Activities negatively affecting characteristics of landscapes or/and specific natural elements mentioned are prevented in the protected area

MCPFE Class 3: Main Management Objective “Protective Functions”

- The management is clearly directed to protect soil and its properties or water quality and quantity or other forest ecosystem functions, or to protect infrastructure and managed natural resources against natural hazards
 - Forests and other wooded lands are explicitly designated to fulfil protective functions in management plans or other legally authorised equivalents
 - Any operation negatively affecting soil or water or the ability to protect other ecosystem functions, or the ability to protect infrastructure and managed natural resources against natural hazards is prevented
- (Source: MCPFE 2003)

Indicator 4.10

Common forest bird species

Species dependent exclusively on forest habitats during their lives that are listed at <http://www.ebcc.info/index.php?ID=612> or (for sub-regions) at <http://www.ebcc.info/index.php?ID=632>.

Criterion VI

Indicator 6.1

Forest ownership

Generally, refers to the legal right to freely and exclusively use, control, transfer, or otherwise benefit from a forest. Ownership can be acquired through transfers such as sales, donations, and inheritance.

Explanatory notes

1. For this reporting table, forest ownership refers to the ownership of the trees growing on land classified as forest, regardless of whether or not the ownership of these trees coincides with the ownership of the land itself. (Source: FRA 2020)

Public ownership

Forest owned by the State; or administrative units of the Public Administration; or by institutions or corporations owned by the Public Administration.

Explanatory notes

1. Includes all the hierarchical levels of Public Administration within a country, e.g. State, Province and Municipality.
2. Shareholder corporations that are partially State-owned, are considered as under public ownership when the State holds a majority of the shares.
3. Public ownership may exclude the possibility to transfer.

(Source: FRA 2020)

Private ownership

Forest owned by individuals, families, communities, private cooperatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.

(Source: FRA 2020)

Other types of ownership/unknown

Other kinds of ownership arrangements not covered by public or private ownership or forest area where ownership is unknown.

Explanatory notes

1. Includes areas where ownership is unclear or disputed.

(Source: FRA 2020)

Forest holding

One or more parcels of forest and other wooded land which constitute a single unit from the point of view of management or utilization. For State-owned forest and other wooded land, a holding may be defined as the area forming a major management unit administered by a senior official, e.g. a Regional Forestry Officer. For forest and other wooded land that is owned publicly, other than by the State, or owned by large-scale forest owners, e.g. forest industries, a holding may constitute a number of separated properties which are, however, managed

according to one corporate strategy. Under any category of ownership, other than State-owned, one holding may be the property of one or several owners.
(Source: TBFRA 2000, definition as published in SoEF 2007).

Indicator 6.2

Gross Domestic Product

Gross Domestic Product (GDP) is the total market value of all final goods and services produced in a country in a given year. It is equal to total consumer, investment and government spending, plus the value of exports, minus the value of imports. For the estimation of an industry's contribution to GDP, data on Gross Value Added (GVA) should be used. The link between GVA and GDP can be defined as: $GVA + \text{taxes on products} - \text{subsidies on products} = GDP$.

Gross Value Added

Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the country, measured at basic prices. Data on GVA for each industrial sector should be available from the National Accounts prepared by the country's national statistical authority.

ISIC/NACE

ISIC is the International Standard Industrial Classification of All Economic Activities. NACE is the equivalent Statistical Classification of Economic Activities in the European Community.

In ISIC Rev 4 (2008) and NACE Rev 2 (2008), the following categories cover forest industries:

02: Forestry and logging.

16: Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials.

17: Manufacture of paper and paper products.

In the previously used ISIC Rev 3.1 (2004) and NACE Rev 1.1 (2002), the corresponding categories were: 02, 20 and 21 (with some minor additions / subtractions). For the reporting years 1990, 2000 and 2005 the corresponding former NACE/ISIC categories 02, 20, 21 can be used. Adjustments from the old to the new NACE/ISIC are not needed.

Forestry and logging (ISIC/NACE 02)

This division includes the production of roundwood for the forest-based manufacturing industries (ISIC divisions 16 and 17) as well as the extraction and gathering of wild growing non-wood forest products. Besides the production of timber, forestry activities result in products that undergo little processing, such as fire wood, charcoal, wood chips and roundwood used in an unprocessed form (e.g. pit-props, pulpwood etc.). These activities can be carried out in natural or planted forests.

The major categories covered by this class are:

- 021 Silviculture and other forestry activities
- 022 Logging
- 023 Gathering of non-wood forest products
- 024 Support services to forestry

(Source: International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, Department of Economic and Social Affairs, Statistical Division, United Nations, New York, 2008, page 75)

Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (ISIC/NACE 16)

This division includes the manufacture of wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, and prefabricated wood buildings. The production processes include sawing, planning, shaping, laminating, and assembling of wood products starting from logs that are cut into bolts, or lumber that may then be cut further, or shaped by lathes or other shaping tools. The lumber or other transformed wood shapes may also be subsequently planed or smoothed, and assembled into finished products, such as wood containers.

With the exception of sawmilling, this division is subdivided mainly based on the specific products manufactured.

This division does not include the manufacture of furniture (3100), or the installation of wooden fittings and the like (4330).

The major categories covered by this class are:

- 161 Sawmilling and planning of wood,

· 162 Manufacture of products of wood, cork, straw and plaiting materials.
(Source: International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, Department of Economic and Social Affairs, Statistical Division, United Nations, New York, 2008, page 102)

Manufacture of paper and paper products (ISIC/NACE 17)

This division includes the manufacture of pulp, paper and converted paper products. The manufacture of these products is grouped together because they constitute a series of vertically connected processes. More than one activity is often carried out in a single unit. There are essentially three activities: The manufacture of pulp involves separating the cellulose fibers from other impurities in wood or used paper. The manufacture of paper involves matting these fibers into a sheet. Converted paper products are made from paper and other materials by various cutting and shaping techniques, including coating and laminating activities. The paper articles may be printed (e.g. wallpaper, gift wrap etc.), as long as the printing of information is not the main purpose. The production of pulp, paper and paperboard in bulk is included in class 1701, while the remaining classes include the production of further-processed paper and paper products.

(Source: International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, Department of Economic and Social Affairs, Statistical Division, United Nations, New York, 2008, page 105)

Indicator 6.3

Factor income

Factor income measures the remuneration of all factors of production (land, capital, labour) and represents all the value generated by a unit engaged in a production activity. It can be derived from Gross Value Added (GVA) by deducting fixed capital consumption (depreciation) to get net value added, and then adjusting from basic prices to factor cost by subtracting any taxes on production and adding any subsidies on production.

Net operating surplus

Net operating surplus can be derived from factor income by subtracting compensation of employees.

Net entrepreneurial income

Net entrepreneurial income measures the return to the forestry business owner, and consists of the compensation of unpaid labour, remuneration from land belonging to units and the yield arising from the use of capital. It can be derived from factor income by subtracting compensation of employees to get operating surplus, and then adding any interest received by forestry units organized as companies and deducting any rent and interest payments.

Indicator 6.4

Capital transfers

“Capital transfers” include all receivable capital transfers, i.e. investment grants and other capital transfers. Investments grants are capital transfers, in cash or kind, effected by general government or the rest of the world to other resident or non-resident institutional units with the aim of financing, in part or in full, the cost of acquiring fixed capital goods. Investments grants from the rest of the world comprise those granted directly by the institutions of the European Union. Interest subsidies are not included under investments grants, even if they are intended to facilitate investments transactions. Other capital transfers cover transfers which redistribute saving or wealth among the different sectors of the economy. Other capital transfers may take the form of compensation to owners of capital goods that had been destroyed by acts of war or natural disasters, such as floods, etc. Other capital transfers also include compensation for exceptional losses of fixed capital goods used in the production of forestry goods and grants to compensate for reduction in the value of assets or to reduce debts. Investments grants, and other capital transfers should be recorded when payment is due.

Fixed capital consumption

“Fixed capital consumption” is the value of the depreciation of fixed capital goods as a result of normal wear and tear in the course of production process. “Fixed capital consumption” is reported within three subcategories: “Planting of trees to provide regular income”, “Equipment and buildings” and “Other fixed capital consumption”.

Gross fixed capital formation

“Gross fixed capital formation” is defined as part of the national accounts system and reflects trends in investment. It is defined as resident producers’ acquisitions less disposals of fixed assets during the accounting period plus certain additions to the value of non-produced assets (such as improvements in the quality or

productivity of land) realised by the productive activity of producer or institutional units. Fixed assets are produced assets used in the production for more than one year. For this purpose, gross fixed capital formation include: investments in accordance with the national tax laws (construction and maintenance of forest roads, buildings; investments to equipment, tools, vehicles, machinery and technologies and other investments e.g. IT and/or intangible investments etc.). Gross fixed capital formation is valued at purchasers' prices, including installation charges and other costs of ownership transfer. "Gross fixed capital formation" is reported within three subcategories: "Gross fixed capital formation in planting of trees to provide regular income", "Gross fixed capital formation in equipment and buildings" and "Other gross fixed capital formation". "Gross fixed capital formation in planting of trees to provide regular income" includes cultivation of land to create new forest plantations as mean of production of forest products (e.g. cork, natural gum and similar products). Fixed assets must provide annual income. "Gross fixed capital formation in equipment and buildings" includes machinery and other equipment, transport equipment, non-residential forestry buildings, forest roads and paths. "Other gross fixed capital formation" includes software, management plans, major improvements to forest land (drainage, preparing soil, protection structure etc.) and other.

Indicator 6.5

Labour Force Survey

The Labour Force Survey (LFS) is a sample survey carried out in many European countries by interviewing individuals about their personal circumstances and work. Because the LFS is a sample survey, results are subject to sampling error, i.e. the actual proportion of the population in private households with a particular characteristic may differ from the proportion of the LFS sample with that characteristic.

The LFS provides information about people in unemployment and employment. The LFS defines employment as those people aged 16 and over who did at least one hour's paid work in the reference week (either as an employee or self-employed); those who had a job which they were temporarily away from (on holiday for example); those participating in government training and employment programmes; and those doing unpaid family work.

Education

The main levels of the International Standard Classification of Education (Source: ISCED 1997), applied from 1998 data onwards, are:

ISCED 0 – pre-primary education

ISCED 1 – primary education or first stage of basic education

ISCED 2 – lower secondary education or second stage of basic education

ISCED 3 - (upper) secondary education

ISCED 4 – post-secondary non-tertiary education

ISCED 5 – first stage of tertiary education (not leading directly to an advanced research qualification)

ISCED 6 – second stage of tertiary education (leading to and advanced research qualification)

For further information visit <http://www.unescobkk.org/fileadmin/user_upload/aims/ISCED_A.pdf>

Job characteristics

Those who own and operate their own business or professional practice, sometimes in conjunction with a partner, are considered as self-employed. The Labour Force Survey (LFS) asks a number of questions to establish a person's employment status; this is based on a respondent's own opinion of whether they are an employee or self-employed. If a different source is used, a relevant distinction is that employees work for wage or salary (in cash or kind) while the self-employed work for profit or family gain (in cash or kind). Family workers are persons doing unpaid work for a business they own or for a business that a relative owns.

Explanatory notes

1. For the purpose of this reporting unpaid family workers should be included in self-employed.

Indicator 6.6

Occupational accident

An occurrence arising out of or in the course of work which results in:

- (a) fatal occupational injury;
- (b) non-fatal occupational injury.

(Source: ILO, 1998).

Occupational disease

A disease contracted as a result of an exposure to risk factors arising from work activity
(Source: ILO, 1998).

Indicators 6.7, 6.8

Definitions for these indicators are in the Technical Specifications for reporting by IDP, which is available in a separate document prepared for your information.

Indicator 6.9

Total (national) Primary Energy Supply

Represents domestic demand only and is broken down into power generation, other energy sector and total final consumption. This represents inland demand only and (...) excludes international marine and aviation bunkers.

Source: Adapted from International Energy Agency http://www.iea.org/glossary/glossary_T.asp

Renewable energy

Energy that is derived from natural processes (e.g. sunlight and wind) that are replenished at a higher rate than they are consumed. Solar, wind, geothermal, hydro, and biomass are common sources of renewable energy.

Source: International Energy Agency http://www.iea.org/glossary/glossary_R.asp

Direct wood fibre sources

(...) any wood fibre that enters the energy production without any further treatment or conversion. It comprises removals from forests and outside. This comprises also any wood (...) from “Other Wooded Land” (OWL) and “Trees Outside Forests” (...). It comprises any woody biomass from any land use and covers amongst others infrastructure maintenance (roads, railway, power transmission lines, pipelines, etc.), hedgerows, agricultural residues from fruit tree orchards, wood from gardens and parks, etc. It comprises any form of woody biomass, such as green chips, roundwood or split, stacked or loose from any part of the trees such as roots, stemwood and branches, fruits and shells.

Source: http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and

http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf)

Chips and particles

Wood that has been reduced to small pieces and is suitable for pulping, for particle board and/or fibreboard production, for use as a fuel, or for other purposes. It excludes wood chips made directly in the forest from roundwood (i.e. already counted as pulpwood, round and split). It is reported in cubic metres solid volume excluding bark.

Source: UNECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire

(<http://timber.unece.org/fileadmin/DAM/other/definitions-e-2008a.doc>)

Wood residues

The volume of roundwood that is left over after the production of forest products in the forest processing industry (i.e. forest processing residues) and that has not been reduced to chips or particles. It includes sawmill rejects, slabs, edgings and trimmings, veneer log cores, veneer rejects, sawdust, residues from carpentry and joinery production, etc. It excludes wood chips made either directly in the forest from roundwood or made from residues (i.e. already counted as pulpwood, round and split or wood chips and particles). It is reported in cubic metres solid volume excluding bark.

Source: UNECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire

(<http://timber.unece.org/fileadmin/DAM/other/definitions-e-2008a.doc>)

Black liquor

Alkaline spent liquor obtained from digesters in the production of sulphate or soda pulp during the process of paper production, in which the energy content is mainly originating from the content of lignin removed from the wood in the pulping process.

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology

(http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and

http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf).

Energy from processed wood-based fuels

Secondary (processed) biofuels in the form of solids (e. g. charcoal), liquids (e. g. alcohol, vegetable oil), or gases (e. g. biogas as a mixture of methane and carbon dioxide), can be used for a wider range of applications with higher efficiency rates on average, including transport and high-temperature industrial processes.

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology (http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf)

Wood pellets

Cylindrical products which have been agglomerated either directly by compression or by the addition of a small quantity of binder, having a diameter not exceeding 25 mm and a length not exceeding 45 mm.

Source: Combined Nomenclature 2009, subheading 4401 20 30; Commission regulation (EC) No 1031/2008 of 19 September 2008 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:291:0001:0894:EN:PDF>)

Briquettes

Densified biofuel made with or without pressing aids in the form of cubiform or cylindrical units, produced by compressing pulverized biomass. The raw material for briquettes can be woody biomass (...) are usually manufactured in a piston press. The total moisture of the biofuel briquette is usually less than 15 % of mass. (The JWEE 2011 assumes water content of 8 %).

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology (http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf)

Charcoal

Wood carbonized by partial combustion or the application of heat from external sources. It includes charcoal used as a fuel or for other uses, e.g. as a reduction agent in metallurgy or as an absorption or filtration medium. It is reported in metric tonnes.”

Source: UNECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire (<http://timber.unece.org/fileadmin/DAM/other/definitions-e-2008a.doc>)

Post consumer recovered wood

Used wood arising from construction of buildings or from civil engineering works.

Recovered wood from transport (pallets), private households, as well as used wood arising from construction or demolition of buildings or from civil engineering works.

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology (http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf).

Indicator 6.10:

Area available for public recreation

The area in category “Area available for the public recreation” comprises area with a legal right of access, as well as areas with no formal legal right, but with customary rights or other de-facto forms of access available to the public. Areas to be excluded are those where access is legally forbidden, and areas with no formal legal right that are also not accessible in practice.

(Source: FRA 2015, Public recreation, Working paper 180, page 14)

Area primarily designated or managed for public recreation

Forest area designated or managed for public recreation.

Explanatory notes

1. Includes forest areas where recreational hunting or collection of (edible) non-timber forest products are allowed, but specifically excludes areas where these are collected for sale or subsistence.
2. Includes forest areas designated in management plans or be provided for in national legislation that allows free access of the public to land for recreation, on public, private or communal lands.

(Source: FRA 2015, Public recreation, Working paper 180, page 14)

Visit

A “Visit” is a visit for recreational purposes to any area of forest or other wooded land. There is no minimum duration and it is not necessary to undertake any specific activities. Visits for work purposes and travel through the forest for purposes other than recreation are excluded. Each individual participant, including children, counts as one visit. If several different forests are visited on one trip, then the trip only counts as one visit, but if an individual makes two or more separate trips to forests during one day, then each count as a separate visit. (Source: SoEF 2011).