# National Forest Strategy

**In implementation of art. 6(1),**
**of Legislative Decree No. 34 of April 3, 2018.**

**Translated by**

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**The National Forestry Strategy is a tool adopted for the benefit of Italy's forest heritage, in the collective interest.**

**Its mission is to guide the country towards extensive, resilient forests that are rich in biodiversity and capable of contributing to efforts to mitigate and adapt to the climate crisis, while providing ecological, social and economic benefits for rural and mountain communities, both now and in the future.**

**The Strategy will promote the protection and responsible use of natural resources, encouraging everyone to engage in actions guided by the principles of sustainability, collaboration, and collective action.**

# PREFACE

The **National Forestry Strategy** (NFS) is the strategic national policy document that supports central and regional administrations, as well as the Autonomous Provinces, in the forestry sector and its supply chains. It is provided for in art. 6(1) of Legislative Decree No. 34 of 3 April 2018, the **Unified Text for Forests and Forest Supply Chains** (UTFFSC; in Italian: *Testo Unico per le Foreste e le Filiere Forestali*).

The NFS aims to promote the sustainable management of the national forest heritage, and thus the development of the sector and its productive, environmental and sociocultural resources, with a long-term vision and in implementation of Italy's international and European commitments. Specifically, the NFS aims to effectively contribute to the priorities and commitments signed internationally on climate, environment, biodiversity, energy and sustainable socio-economic development, in line with the **European Green Deal**[1].

The Strategy identifies **three general Objectives** three general objectives that can be traced back to the three guiding principles of the 2013 **EU Forestry Strategy**[2] and maintained in the new EU Forestry Strategy 2030[3] by declining and contextualizing them to the environmental and socioeconomic needs of the national territory.

First and foremost, NFS is based on **Sustainable Forest Management (SFM)**, as defined by the pan-European Forest Europe Process and enshrined in the European Agreement signed in Helsinki in 1993[4]. In Italy, this has been implemented through the UTFFSC, which is **an essential tool for balancing the interests of society and the protection of ecosystems with the responsibilities of owners and operators in the sector.** Secondly, the development of a **sustainable and circular wood economy** is based on the principles of 'cascading use' and 'recycling'.

The NFS is organized into 6 chapters and has 4 levels (Objectives, Actions, Financial Instruments, Monitoring and Evaluation Modalities):

- a summary **Context analysis** (Ch.1);
- the **Objectives** (Ch. 2) which refer to the **Guiding Principles of the EU Forestry Strategy and the international and European policy framework of reference** (Ch. 2.1), with particular attention to issues related to climate, biodiversity and socio-economic development; the **NFS General Objectives** (Ch. 2.2) will be declined and implemented in the regional and Autonomous Provinces' forestry planning instruments, as per art. 6, paragraph 2, of the UTFFSC, based on their specific territorial needs and characteristics;
- **Actions** (Ch. 3) that translate on the operational level the **general Objectives of the National Forestry Strategy** through the Forestry Programs of the Regions and Autonomous Provinces; these actions are categorised as follows: **Operational Actions** (Ch. 3.1) with broad national application; **Specific Actions** (Ch. 3.2) covering themes of strategic importance but of specific territorial relevance; **Instrumental Actions** (Ch. 3.3) relating to the organization of institutions, as well as related policy and governance instruments at the national and local levels;
- **Financial instruments** (Ch. 4) that will be activated for the implementation of **Operational,**

[1] Brussels, 11.12.2019, COM (2019) 0640.

[2] Brussels, 20.9.2013, COM (2013) 659.

[3] Brussels, 16.7.2021, COM(2021) 572 final.

[4] "*The management and use of forests and forest lands in ways and at rates that maintain their biodiversity, productivity and potential to perform, in the present and future, their respective ecological, economic and social functions, locally, nationally and globally, without harming other ecosystems*".

**Specific and Instrumental Actions;**

- the proposed interventions are further specified by referring to the **Coherence** (Ch. 5) with other strategic and planning instruments, and to the **Monitoring and Evaluation Indicators** (Ch. 6) that have been defined for the first five years of NFS implementation.

Since 2016, the Ministry of Agricultural Food and Forestry Policies, under the provisions of the UTFFSC, in collaboration with the relevant ministries, Regions and Autonomous Provinces, and with the support of the National Rural Network, has initiated a major reform process of national forestry policies. This process has led to the approval of the UTFFSC and the establishment of various Technical Working Groups to prepare ministerial decrees to implement the UTFFSC. These groups involve key national stakeholders in the sector, including universities, research institutions, recognised environmental and non-profit associations, trade representatives, and sector professionals. A first important result of the ongoing reform process was the publication of the first **Report on the State of Forests in Italy** (RAF, 2019[5]), an information base created with the collaboration of professionals, scientists, and institutions.

Also for the preparation of this strategy document, an inter-institutional and interdisciplinary working group was established to prepare the first draft of the **NFS**, which was subjected to presentations in many public events and to an online public consultation from April 14 to May 28, 2020, in order to give everyone (economic, environmental, labour associations, public and private entities – profit and non-profit - and institutions, professionals and single citizens) to make comments and proposals. The results of the consultation process have been made public and are available on the website of the Ministry.

**The NFS, which was** approved in consultation with the Minister of Ecological Transition, the Minister of Culture and the Minister of Economic Development, received approval from the Permanent Conference for Relations between the State, the Regions and the Autonomous Provinces of Trento and Bolzano.

The NFS will be valid for 20 years from its publication in the Official Gazette in February 2022 and will need to be updated, following five-year reviews or upon specific institutional requests and in application of new international commitments.

[5] RAF Italy 2017-2018 - National Report on the State of Forests and the Forest Sector in Italy (2019), National Rural Network (RRN 2014-2020), Compagnia delle Foreste, Arezzo.

# 1. CONTEXT ANALISYS

The **national forest heritage**, as a component of **Natural Capital**, an asset of significant public interest and a fundamental part of Italy's historical and cultural landscape, assumes a strategic role for our country's development policies, representing **a cultural and environmental legacy of our past**, a relevant component of our identity and remains the protagonist of the future we are building.

It consists of more than **9 million hectares of forests and nearly 2 million hectares of other forested lands** (INFC, 2015; RAF, 2019) composed mainly of shrublands, neo-formations and scrubland. Overall, forested areas cover 36.7% of the national territory. In some Regions and Autonomous Provinces, forests reach about 50% or more of the regional area (RAF, 2019).

Forest area has increased steadily over the last century, but with a slight slowdown in the last decade, mainly due to spontaneous colonization of marginal, open or former cropland areas (RAF, 2019; ISPRA, 2019[6]). According to data from INFC 2015, forest area, total volume, and epigeal tree biomass increased by 5.5%, 18.4%, and 19.4%, respectively, compared to values estimated by INFC 2005.

In an increasingly global socioeconomic and environmental context, policies to protect and conserve the national forest heritage and to develop and grow its productive, environmental, and sociocultural supply chains must converge, in line with the guidelines of the **European Green Deal[7]**, to the pursuit of **international commitments and European obligations signed by the Italian government,** and be built in an integrated long-term vision, based on solid and timely knowledge that will enable a better understanding of the system's weaknesses and threats, and thus effectively calibrate policies, actions and resources.

The main challenges to which the national forestry sector must and can make a concrete contribution today are related to the ongoing **climate crisis[8]**, and consequently to the needs to **decarbonize the economy**[9] and develop renewable energy, **to protect the environment**[10], conserve biodiversity[11] and functionally and structurally restore ecosystems, to **protect the landscape**, to use resources efficiently and to **support sustainable development**[12] aiming increasingly at a circular economy[13], **to ensure the preservation of rural areas and uplands** through the marketing and processing of forest products of legal origin and, therefore, to contribute to **international cooperation for the protection of forests** and the restoration of degraded territories[14].

These challenges require extensive local governance and communication efforts, including those related to the biological timing of forest growth.

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[6] Land Use, Spatial Dynamics and Ecosystem Services (2019). Report edited by Munafò, M., SNPA 08/19 ISBN 978-88-448- 0964-5, SNPA Report, 08/19 September 2019.

[7] COM (2019) 0640.

[8] European Parliament resolution of November 28, 2019 on the climate and environmental emergency (2019/2930(RSP)); IPCC Fifth Assessment Report "Climate Change and Land" (2019).

[9] European Commission (2018), A clean planet for all - Europe's long- term strategic vision for a prosperous, modern, competitive and climate neutral economy, COM (2018) 773 final; UNFCCC Paris Agreement, 2015.

[10] Council of the European Union (2019), The 8th Environment Action Programme - Turning the Trends Together - Council conclusions. 12795/19.

[11] Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy 2030, COM(2020) 380 final.

[12] Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions, The European Green Deal, COM/2019/640 final.

[13] United Nations (2015), Transforming our world: the Agenda 2030 for Sustainable Development.

[14] United Nations Decade on Ecosystem Restoration.

Therefore, **a forward-looking strategic vision of sector policies, and coordination between environmental protection and socioeconomic development policies cannot be ignored.**

Common denominator to all challenges remains the overall provision of **Ecosystem Services**[15] related to forest territories[16] (Table 1), which, as "*multiple benefits provided by ecosystems to humankind*"[17] represent a unifying reference to promote the integrity of natural heritage, SFM and the provision of material goods and services to the whole society, as highlighted by the National Natural Capital Reports[18].

**T**

**able 1 -** Ecosystem services

| | |
|---|---|
| **LIFE SUPPORT SEVICES**<br>• Nutrient cycle<br>• Soil formation<br>• Primary production<br>• Absorption of carbon, particulate pollutants, and other airborne pollutants<br>• ... | **PROVISIONING SERVICES**<br>• Food<br>• Drinking water<br>• Timber and fibres<br>• Wild and semi-wild products<br>• Energy<br>• ...<br>**REGULATING SERVICES**<br>• Conservation biological diversity<br>• Climate mitigation<br>• Erosion control<br>• Water purification<br>• Pollination<br>• ...<br>**CULTURAL SERVICES**<br>• Landscape services<br>• Educational services<br>• Recreational services<br>• Spiritual services<br>• Therapeutic services<br>• ... |

Source: Millennium Ecosystem Assessment (MEA), 2005.

Due to the ability to perform multiple and diverse functions, the demands of Ecosystem Services provided by the forests are often generating conflicts. Therefore, forest ecosystems need careful and widespread planning, based on balancing different interests (public/private, local/global, short/long-term), enhancing and protecting their local vocations, and in this way, ensuring their preservation for the future generations.

For various reasons, there is **significant growth in demand for forest-related ecosystem services in all advanced societies**. These services directly or indirectly influence and sustain human life and well-being. Notably, the demand for ecosystem services is increasing in relation to the provision of raw materials (see the decarbonisation process in the economy), biodiversity and soil protection (also as a consequence of climate change), and the provision of cultural services. These trends demonstrate the growing importance of enhancing forest-related Natural Capital.

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[15] In Europe in recent years, there has been work directed toward both classification and mapping of ecosystem services by the Millennium Ecosystem Assessment with the Mapping and Assessment of Ecosystem Services (MAES) program of the Joint Research Centre (JRC) and a proposed shared classification scheme (Common International Classification of Ecosystem Services - CICES), according to which ecosystem services are divided into four broad categories (Table 1).

[16] UN Decade on Ecosystem Restoration (2021-30), Natural Capital Coalition (2016), Natural Capital Protocol.

[17] Millennium Ecosystem Assessment, 2005.

[18] Art 67 of Law No. 221 of December 28, 2015, Environmental Provisions to Promote Green Economy Measures Curb Excessive Use of Natural Resources.

**Of special importance among the provisioning services is that of the supply of wood products** whose demand is constantly growing. In particular, the growth in wood consumption is related to three international trends:

- an increase in consumption of products in the construction, furniture, packaging, and other traditional industrial sectors;
- an increase, starting with the most highly developed countries, in bio-energy consumption mainly for thermal production and advanced bio-fuels for the transport sector;
- an increase related to the consumption of woody biomass resulting from de-carbonization policies and thus the emergence of new uses of renewable raw materials in the bio-economy: bio-plastics, bio-textiles, bio-medicines, engineered building products, and all other new materials that can replace products made from non-renewable sources.

The size of the projected supply-demand gap is significant: current levels of global industrial wood consumption are over 3 billion cubic meters per year; by 2030 the projections are 8.5 billion and by 2050 13 billion[19].

The gap between supply and demand for wood products on a domestic scale is set to grow posing to Italy, a traditional large net importer of industrial wood, increasing problems of resource degradation in the partner countries. The dependence from foreign suppliers of forest-based raw materials is a problem that makes even more acute the problem of the failure to exploit the underutilized domestic resources, particularly those of the inner and mountain areas that are suffering for problems of economic and social marginalization.

Of particular importance are also the **regulating Ecosystem Services**, the constant and effective provision of which is a pre-condition to ensure the supply of cultural Ecosystem Services[20]. Recognized since time immemorial is the natural function played by trees and forests in **regulating water flow**, in the **combating and controlling soil erosion and hydrogeological disruption** by promoting the stabilization of surface and deep soil layers, both on steep slopes and riparian banks, protecting mountain territories from landslides, avalanches and other natural hazards, and lowland territories from flooding.

Fundamental and priority is the conservation of **biological diversity** granted by Italian forests, biodiversity that has no equal in Europe, thanks to the geographical, geomorphological, geological, pedological and climatic characteristics of the Italian territory that have led with the passage of centuries and in the human-environment coexistence, to the coexistence of a high ecological, structural and functional diversity that is reflected in the extraordinary bio-cultural historical, landscape and rural diversity of our country. In the preservation and protection of this heritage, reaffirmed by the new European Biodiversity Strategy 2030, protection, integral reserve and park-like areas assume an important role, which collectively create a diverse environmental system.

The current Italian **forest landscape** is the result of profound territorial and socioeconomic transformations that have taken place over the centuries, to obtain specific products and services, including the protection of the areas for agricultural activities, as well as urban systems.

[19] Data from WWF (2012). Living Forests Report Chapter 4: Forests and Wood Products on FAO and IIASA sources.

[20] III Natural Capital Report, 2019.

Centuries-old silvicultural activities have often modified the structure, composition, complexity diversity of forest ecosystems, accelerated the natural evolutionary dynamics of the treated stands, leading in some cases to new ecological balances, subject to increased conditions of vulnerability, also because of climate change.

The forests of Italy are, therefore, the custodians of an environmental heritage, in terms of biological[21], ecosystem and cultural diversity of immense value for our country and the entire planet, and at the same time they have been a primary source renewable resource for centuries.

Forests and forestry activities are now widely recognized as playing a strategic role in the fight against **global climate change** and, in the context of international and European policies to reduce greenhouse gas emissions[22], are an indispensable tool for achieving a carbon-neutral circular economy by 2050.

The contribution of forests to climate change mitigation is recognized by all current European Union (EU) policy instruments. The Land Use, Land Use Change and Forests (LULUCF) Regulation[23] emphasizes, in addition to the role of forests and forest soils in sequestering and storing atmospheric carbon, also the role of wood and its derivatives as a renewable resource for the long-term storage of carbon in certain products and for the replacement of fossil sources. Therefore, **forests and forestry activities will be able to contribute to meeting the reduction targets by offsetting part of the emissions generated by the Effort Sharing Regulation** (ESR)[24] sectors: transportation, waste, not $CO_2$ emissions from agriculture[25]. The LULUCF Regulation, has defined, in addition, for a "no debit rule" in which the balance of emissions from forests-agriculture-grazing and wetlands shall not generate emissions. Any removals, and consequent carbon credits generated, can be used to offset emissions from the ESR sector within the flexibility provided by the ESR Regulation. Italy has been allocated 11.5 million tons of $CO_2$ that can be generated by the LULUCF sector and used in the 2020-2030 period to offset emissions from the ESR sectors by the European Commission. If the LULUCF sector is emission source, these emissions will have to be offset with allocations from the ESR Regulation.

In addition, the LULUCF Regulation provided for each Member State to establish a **National Forest Accounting Plan**[26] that includes, for the period from 2021 to 2025, a proposed reference level for forests. The **reference level for forests** is based on the maintenance of sustainable forest management practices, as documented in the period from 2000 to 2009, which consider the future impact of age-related dynamic characteristics of forests. Indeed, this element is considered fundamental to the development of sustainable forest management practices and thus to the maintenance or enhancement of long-term carbon sink capacity. The reference level presented with the National Forest Accounting Plan by Italy envisions the storage of 19,656

[21] Mite (2010), National Biodiversity Strategy and its mid-term review.

[22] Energy-climate framework 2030, COM (2014) 15 final.

[23] EU Reg. 842/2018.

[24] EU Reg. No. 842/2018.

[25] Non-$CO_2$ emissions from agricultural activities are connected to the enteric fermentation, manure management, rice paddies, changes in soil characteristics, with reference to direct emissions (e.g., use of synthetic fertilizers and animal manure) or indirect emissions (e.g., atmospheric nitrogen deposition, leaching), voluntary burning of stubble/agricultural residues.

[26] On December 31, 2019, the National Forest Accounting Plan was submitted, as required by Regulation (EU) 2018/841, which includes the proposed forest reference level for the period 2021 to 2025 that considers the technical recommendations made by the Commission on June 18, 2019 (SWD (2019) 213 final).

million tons of $CO_2$eq per year (2020-2025 period).

In order not to generate debts with respect to the expected reference level, and considering the current national wood harvesting rate, estimated at 33% of the annual increment (RAF, 2019), with forest management in Italy, **harvesting activities could reach a maximum of 40-45% of the annual increment of forests under forest planning** (art. 6 com. 3, UTFFSC).

However, these figures will need to be verified considering the forthcoming National Forest and Carbon Inventory and data on actual wood removals. In meeting the national target, to offset emissions from the ESR sectors, there is also the possibility of accounting for carbon removals and emissions from carbon stored in wood products, a significant opportunity for long-lived products, like construction timber. In addition, as far as LULUCF policies are concerned, forests have been included by Italy in the **Long-Term Decarbonization Strategy**, which identifies possible pathways to climate neutrality by 2050, in line with EU and national policy guidelines. The Long-Term Decarbonization Strategy, currently being finalized, will be forwarded by Italy to the European Commission.

Taking into consideration that the Mediterranean is an area particularly vulnerable to climate change, for Italian forests takes on a particular role the theme of adaptation to the climate change. These issues find specific attention in the **new EU Climate Change Adaptation Strategy**[27], which updates the Strategy approved by the European Commission on April 16, 2013, in Brussels. Deliberations on this topic, with a specific focus on the issue of assisted migration of forest species, were discussed at the Forest Europe Ministerial Conference in Bratislava in April 2021.

The **increased frequency of extreme weather events** (IPCC, 2012)[28] has been **extraordinarily visible in Italy in the last years** (the 2017 wildfires, the 2018 storm Vaia, the 2019 and 2020 floods) but, although in forms less easily perceived by the public, the evident climate variability and progressive global warming require action to redirect the governance of forests, the country's largest green infrastructure, while also taking into account the importance of the richness of tree species in the composition of each forest.

As such, the national forest system is affected by several sectoral policies (biodiversity and natural capital conservation, climate-energy, spatial development, international trade regulations, etc.) that must be coordinated in a coherent framework of strategic profile and made operational through a strong integration of responsibilities at different levels, international, state, regional, and local (see. Ch. 5).

In addition to the **Regulatory Services**, the **Cultural Services** provided by the forest, which are indispensable to individual and social well-being, the demand for tourist-recreational activities, as well as a central element of landscape and environmental diversity and employment for the inland and mountainous areas of the country, are becoming increasingly important for society. Alongside the traditional demands for tourism-recreational services and landscape conservation, new fields of development are opening for cultural, sports, educational, therapeutic, and social

[27] EU Climate Change Adaptation Strategy, Brussels, 2/24/2021 COM(2021) 82 final.

[28] IPCC (2012). Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

inclusion activities for the well-being of all society, but which can also create important opportunities for value creation and employment for local economies.

In this context, urban and peri-urban forestry activities are important in addressing issues related to quality of life and health, particularly with regard to air quality and reducing the concentration of mineral and organic contaminants in water and soil[29]. An important role of urban and peri-urban forests associated with these services is the restoration of degraded environments and brownfield sites, such as uncultivated and abandoned land in suburban areas, landfill sites, and contaminated areas.

**Urban and peri-urban forests** are recognized by the National Urban Green Strategy[30] as a structural and functional reference of urban green spaces, by virtue of their heterogeneity and continuity with urban forest patches, tree-lined avenues, large parks, gardens, historic villas, etc. Their role as providers of Ecosystem Services essential for climate change mitigation and the well-being of citizens is also recognized within the Sustainable Energy and Climate Action Plans (SEAPs), which give to increasing urban forest investments a significant role in terms of mitigation of climate change impacts, supporting the implementation of international climate change policies as defined by the Paris Agreement.

Considering the problems and opportunities outlined above, **Table 2** presents through a SWOT (Strength, Weakness, Opportunities, Threats) analysis the **main characteristics of the Italian forestry sector taken into consideration in NFS formulation.**

**Table 2 -** SWOT analysis of the main characteristics of the Italian forestry sector

| **Strengths** |
|---|
| • Italian forest area currently over one-third of the land area and has been increasing in recent decades, mainly due to the spontaneous expansion of forest on abandoned crops, meadows and pastures resulting in the provision of many Ecosystem Services offered by the forest.<br>• Forest multifunctionality, an aspect consolidated in international strategic lines and recognized as an opportunity for development and protection in European, national and regional planning instruments.<br>• High diversity of forest species, habitats and ecosystems (type, structure, functionality, biodiversity, etc.), is an expression of ecoregional, biogeographic, soil and climate, historical, management and cultural varieties.<br>• High presence of environmentally protected forests and forests in areas with landscape protection constraints, with a particular focus on State forest reserves.<br>• National and regional forestry legislation, among the most protective and restrictive in Europe in relation to erosion control, landscape maintenance and environmental protection.<br>• The role and functions of forests are increasingly recognized elements in the pursuit of international commitments related to climate action, environmental protection and local development.<br>• Active role of local authorities, including their associations, in territorial governance processes, in constant synergy and comparison with State institutions where there are institutional tables for consultation and collaboration between the administrations themselves and stakeholders in the sector.<br>• Presence of innovative regulatory tools for overcoming land parcelization through associated forest management and interim management.<br>• Widespread presence of viable local realities and communities, particularly forms of collective ownership, management of civic domains, and new associative arrangements between owners and managers (Land Associations, Forest Communities, social and community cooperatives, ...).<br>• Well-established national and local silvicultural traditional management practices, based on close-to-nature criteria (natural regeneration, continuous forest cover, prevalence of mixed formations with native species and limited presence of exotic species, reduced clear harvesting areas) ensuring rational and balanced management.<br>• Strategic role of wood arboriculture, with a focus on highly productive poplar plantations and good experience with permanent and temporary polyspecific and polycyclic plantations. |

[29] Mite - Platform of knowledge and good practices for environment and climate. The Ecoremed project.

[30] Mite (2028), National Urban Green Strategy environment and climate. The Ecoremed project.

- An industrial sector specialized in woodworking machineries of great economic significance and with an important role in international markets.
- A well-established industry producing bio-energy plants and equipment with a turnover of 4 billion € and 14,000 companies. Solid biomass for thermal energy production is the first Italian renewable consumed with 6.45 Mtoe, second is hydro with 3.98 Mtoe, Italian photovoltaic is only fourth with 2.04 Mtoe (GSE statistical reports).
- Leading international role of Italian industries producing furniture.
- Excellent recycling capabilities of end-of-life wood and paper products, enabling the domestic reuse and the export of the recycled materials, increasingly developing the circular economy.
- Numerous research facilities and scientists with high scientific quality (in terms of publications and participation in international projects and networks)
- Advanced technical and scientific knowledge in forestry to support forest planning and management.
- High professional competence and widespread presence of professionals in forest and agriculture sciences and of qualified chartered consultants involved in continuing education systems.
- The economy of chestnut, mushroom, truffle, cork and other wild and semi-wild products plays an important environmental, socioeconomic and cultural role.

**Weaknesses**

- Poor uptake of corporate and territorial forest planning, for private and public properties (even in forests for which plans would be mandatory under Royal Decree 3267/1923), resulting in poor sustainable land and forest management.
- Lied public knowledge and awareness of the role and functions of forests, as well as the contribution of forest managers and operators in sustainable silvicultural management as a key element in the protection, growth and development of forests and related ecosystem services.
- High fragmentation of forest propertieś and small farm size with low propensity to associated management and management, structural and production adjustment.
- Poor coordination between international and national strategic instruments and implementation programs and plans even at detailed spatial scales.
- Complexity of the regulatory and binding system and uncertainty in administrative processes related to silvicultural interventions and investments in forest management.
- Poor knowledge of environmental vulnerability to the risks and impacts of climate change on forestry.
- Fragmentation of woody biomass supply, the low and inconsistent quality of Italian forestry production and the resulting heavy dependence foreign supply
- Scarcity of investment in monitoring, protection, restoration and enhancement of forest areas to increase their resilience.
- Poor attention to the state of conservation of different forest ecosystems in relation to different physiognomic and structural types, resulting in little appreciation of the role of coppice forests and little attention to the 'naturalistic and ecological importance of different old-growth forests in terms of individual formations and national and regional networks, especially in the Apennine area.
- Little interest and lack of conservation actions for areas with high fragmentation of marginal populations, with high adaptive potential, of widespread European species (such as white spruce, beech, lodgepole pine, spruce, aspen, oaks).
- Poor knowledge of forest soils, particularly in mountainous environments, on which in many contexts the high hydrological vulnerability depends, leading to poor prevention, management and maintenance of the country's hydrogeological structure.
- Scarcity of actions and investments aimed at characterization and enhancement of forest biodiversity and germplasm including through innovative approaches.
- Insufficient dissemination and knowledge about the role of forest certification and low level of cultural and technological innovation of forest enterprises also due to the lied presence of tools, initiatives and bodies for technology transfer and dissemination.
- Technical and management training deficiencies for forestry workers, operators and owners, as well as forestry managers and civil servants, and poor integration of scientific and professional skills among foresters, ecologists, geneticists and naturalists.
- Need for wood products in the industrial and residential sectors met through high supply from abroad due to fragmented, discontinuous domestic supply and, above all, less than the real potential of the Italian forestry sector.
- Low density of first-processing enterprises (e.g., sawmills) especially in mountainous areas, poorly coordinated and connected with the segments of the production chain and the different actors in the sector, starting with utilization and processing enterprises.
- High incidence of the shadow economy in Italian forestry supply chains, especially at the level of the marketing of firewood for domestic use.
- Poor industrial market development for assortments that can find uses from opera and a more durable function with greater added value than energy use.
- Poor policy attention to the forestry sector and the development of local forestry supply chains even public resource supports.
- Difficulty and inexperience on the part of the forestry sector to activate participatory processes in sharing policy choices related to forest management.

- Lack of investments in projects aimed to improve the wood supply chain and increase the value added of wood products.
- Insufficient road network and the difficulty of access to properties, partly due to poor dissemination of forestry land-use plans.
- Insufficient recognition and quantification in economic terms of the ecosystem services provided by forest resources forestry and their sustainable management, and the poor development of voluntary markets between those who produce and those who use of ecosystem services.
- Poor use of "green purchasing" criteria in public procurement that can encourage the use of wood products local such as sustainable forest management certifications, transport emissions accounting and emission footprint certifications.
- Poor public technical assistance to the forestry sector with high complexity and cost of bureaucratic and authorization.
- Scarcity of financial and banking instruments and services to support investments on forest assets and to enterprises.
- Lack of recognition of the specific field of expertise of the forestry doctor as a technician, both as a freelance professional and as an entity supporting public administrations.
- Fragmentation of the Italian forestry research system and the lack of awareness of wood issues in the forestry research programs.
- Lied, uneven and poorly accessible sector information, both statistical and cartographic, of a structural, functional, genetic and pedological at each spatial scale, resulting in poor integration of sectoral data and knowledge (hydrological, climatic, pedological, forestry, zoological) to develop more precise analysis more precise at the different scales of reference

Opportunities

- Natural expansion of the national forest area, especially on abandoned crops, meadows, and pastures in hilly and mountainous areas, and in lowland peri-urban areas, which can be enhanced as a resource
- Increasing the structural, genetic, functional, and ecological diversity of the national forest stock.
- Growing need for Sustainable Forest Management as a tool for responsible land-use planning that both protects, environmentally and scenically conserves the forest heritage, and simultaneously enhances natural capital by ensuring the provision of all Ecosystem Services (supply, regulation and socio-cultural) generated by forests.
- Forest, business and land-use planning is the best tool to ensure the management and protection of the forest heritage and to identify the specific balance of each area as an interdisciplinary synthesis of analysis and discussion among residents, forest owners and managers and stakeholders.
- Prevention of extreme climatic events with actions aimed at the consequent reduction of risks to public safety, to ensure the full functionality of forests, to contain/reduce the rate of erosion and desertification in the areas most at risk, and to improve the country's hydrogeological structure.
- Restoration and rehabilitation of damaged forests and degraded forest land for enhancing their provision of ecosystem services
- Research on Italian forest genetic resources and promotion of assisted migration practices with high adaptive potential properties.
- Promotion, in urban and peri-urban areas, of Forest-Based Solutions for the provision of ecosystem services and the enhancement of well-being of inhabitants through improved air quality, water infiltration, phytoremediation, migation of local climate conditions, increased recreational areas, …
- Growing political and social awareness of the role and functions of forests and the forestry sector in the processes climate change mitigation and adaptation, biodiversity protection and conservation, and socioeconomic and sustainable development in national and local contexts.
- Development of integration and coordination between sectoral policies and planning tools and implementation, to improve effectiveness of actions and efficiency in the use of resources.
- Multidisciplinary approach of agro-silvo-pastoral land with a look also at agroforestry as a key issue for increasing biodiversity and soil fertility.
- Development of associative and consortium forms of property management, through the amalgamation of adjacent forest areas for unified and forward-looking management of large areas in homogeneous territorial areas.
- Improved dialogue and discussion between administrations and stakeholders in the forestry sector and the promotion of multi-level governance tools and processes for the management of forest resources and the recognition and coordination of interventions on the ground.
- Expansion of forestry supply chains related to the production of socio-cultural and tourism-recreational services from the important employment spin-offs on the economies of inland areas.
- Potential for supply of woody and wild forest products, with significant presence of forests with high woody provisions and low utilization rates. Evolving forests in need of timely/specific management directions.
- Increased coordination of forestry training, upgrading and technical innovation initiatives aimed at businesses, forest owners and the various actors in the timber supply chain.
- Modernization of structural and infrastructural endowments in forest uses and transformation processes.
- Increased demand for certification of forest management and production processes resulting in growth of European and national projects and funding for technical and process innovation for the development high value-added supply chains of both wood and non-wood products.
- Widespread interest including investments aimed at forest management and protection investment portfolios.
- Possibility of emergence, development and expansion of supply chains of non-timber forest products, especially those

whose domestic demand is very high and requires foreign import.

- Growing demand for wood raw material for the wood and paper industry, wood products and local, tracked and certified wild forest products, and possible reduction of imports of wood products and derivatives so as to avoid the risk of deforestation in third countries.
- Increased carbon sinks and stocks in forest management and woody materials and products durable, as well as also with progressive replacement of fossil-derived materials (generating significant environmental impact) with biomaterials.
- Consolidation of bio-energy supply chains properly sized in relation to the actual local supply potentialities, thought technological progress to improve the energy performance and reduce emissions of biomass energy plants, with special focus on inefficient residential heating plants.
- Increasing and developing the bioeconomy and circular economy in the forestry sector as well, with supply chains with high added value, and creation of new employment in the local area and in the industrial supply chain.
- Strategic role of wood arboriculture and specifically dedicated forest cultivation.
- Implementation of a National Forestry Information System (SIFOR) and the elaboration of the georeferenced National Forest Map georeferenced national forest map, for the launch of a new shared path between Mipaaf, ISTAT, research centres, universities trade associations to develop innovative survey methodologies, implement the collection and systematization of sector information and statistical data that can be updated over time.
- International challenges and goals, taken up and supported by Italy, that stimulate cascading use and recycling of wood, transformation into durable products and the replacement of fossil-derived materials with biomaterials.

**Threats**

- Climate crisis with an increase in the frequency and intensity of extreme weather events and temperatures with the related of biotic and abiotic disturbances, in particular, fires, droughts and pest attacks, with negative impacts on biodiversitỳ, stability and efficiency of forest ecosystems as well as with economic and social consequences on local communities.
- Particulate matter (PM) air pollution and land consumption related to improper land use planning.
- Depopulation of rural mountainous and hilly areas, with progressive loss of agro-silvo-pastoral cultivation activities, ecotones and open areas that in some contexts result in the reduction of floristic and faunal biodiversity and habitats of European interest, as well as increased risk of hydrogeological disruption.
- Progressive abandonment of agro-silvo-pastoral activities, especially in the hills and mountains, which leads not only to a progressive loss of landscape identities and local knowledge, but also to an increase in vulnerabilitỳ to natural and anthropogenic disturbances of stands, with possible risks to public safety.
- High vulnerability to natural and anthropogenic hazards, and poor attention to the conservation status of forest ecosystems.
- Increased area without management guidelines, i.e., areas without planning that selects areas to be protected (letting them evolve according to natural dynamics) and possible areas intended for forest use for non-timber production than for woody production, possibly resulting in increased degradation phenomena and risks to public safety.
- Conversion of areas to be used for tall trees, lengthening of shifts, and matriculation of coppice forests, often based on outdated aesthetic, ecological, and physiological notions and with the risk of increasing the phenomena of hydrogeological disruption and loss of biodiversity.
- Loss of profitability normal forest management practices and commercial value of productive forests.
- Loss, in forestry uses, of local skilled workers, traditional knowledge, artisanal and industrial employment, including through the increase of informal, unskilled and/or irregular labour resulting in the further abandonment of typical villages and hamlets in inland areas.
- Lack of adequate integration and convergence of intentions on resources, both at the national and regional levels, among policies and implementation instruments on environment and forestry, climate change, biodiversity conservation, natural capital enhancement, landscape rehabilitation and redevelopment, development of sustainable local supply chains, and use of renewable energy sources.
- Lack of an overall spatial vision: ecological, economic and social, resulting from a multidisciplinary comparison that identifies the prevailing potentials and the existence of objective criticalities to prepare and adopt medium- to long-term planning.
- Growing foreign import of wood raw materials, particularly for illegally sourced wood products and other non- wood (food) raw materials, untracked products that increase the risk of deforestation globally.
- Poor coordination among institutional actors, municipal, regional and national, with respect to supply chains and lack of unified territorial strategies.
- Failure to regulate the market for carbon and sustainability credits generated by unplanned silvicultural interventions.

# 2. FOREST STRATEGY OBJECTIVES

**Forests are a mixed public-private asset,** guardian of biodiversity and source of countless **Ecosystem Services** on which rural, mountain and urban communities depend. The Paris Agreement, the 2030 Agenda Sustainable Development, the EU's climate, biodiversity and energy policies, and the EU Bioeconomy Strategy, in posing important and unavoidable challenges, have confirmed the growing importance of forest resources.

National **forests and the forestry sector** contribute and will contribute strategically to providing sustainable solutions to current and future challenges facing our country. To ensure this role, it is now necessary not only to have up-to-date, good-quality data and information but also to improve coordination between sector policies and the actions envisaged by the various national, European and international strategic instruments. **And it is precisely in this perspective that the NFS is moving, defining objectives and identifying actions aimed at remedying the shortcomings of the past and building the foundations of the near future.**

In the global climatic and socioeconomic context, consistent with international commitments and EU policies, there is an urgent need in Italy to activate policies aimed at increasing the strategic role that the forest heritage and its supply chains can play, policies that must be aimed **primarily at increasing the resilience of forests, their capacity to adapt and mitigate to change climate**, and thus carbon storage in soils, standing tree biomass, and long-lived wood products. At the same time, it is necessary to promote **forest protection and conservation** through improved prevention and adaptation to forest fires, hydrogeological disruption, pest attacks, and other extreme events, supporting coordinated rapid response mechanisms to such events, and promoting assisted natural restoration and regeneration actions of damaged and degraded areas.

Considering the invaluable environmental and landscape role of Italy's forests, there is a **need to act on the conservation of biological, ecological and biocultural diversity,** with appropriate management methods to ensure the protection of habitats and ecosystems of special interest and value and to safeguard our agro-silvo-pastoral landscapes.

Thus, starting from the knowledge of the state of conservation and health of our forests, as also highlighted in the Natural Capital Annual Reports, there is a need ensure the greatest possible complexity of forest types and ecosystems, compatible with their intrinsic characteristics, the cultivation patterns adopted and the characteristics of landscapes.

Consistent with European strategies for the bioeconomy and sustainable development, the role of **forest products as a substitute for non-renewable materials for construction**, furniture, paper, and other innovative industrial uses (bio-plastics, bio-textiles, bio-medicines, etc.) must now be further enhanced to provide renewable energy (and in particular biomass for thermal use) as a substitute for fossil fuels, especially in "short" supply chains closely linked to local territorial resources and making the most of processing waste and secondary raw materials, favouring "cascade" approaches and thus the circularity of the economy.

In a highly urbanized society such as Italy's, the constant and continuous provision of tangible and intangible Ecosystem Services plays an increasingly important role in the country's economy. These services require coordinated action across policies to promote the sustainable management of the national heritage, which is essential not only for the further development and maintenance of rural and inland economies, but also for hydrogeological protection, regulating the water cycle, conserving landscapes and biodiversity, mitigating climate change, combatting deforestation and forest degradation worldwide, and promoting legal and restorative production and international trade activities.

**NFS's task will therefore be, to increase the value of forests and its products and services, safeguarding the forest heritage and its biodiversity,** which are the driving force for the development of different production chains of an economic, environmental and social nature.

The common denominator underlying these strategic lines is **Sustainable Forest Management**, as defined internationally within the Ministerial Conferences for the Protection of Forests in Europe (Forest Europe) and implemented by the EU and Italy as an essential tool for **balancing interests and responsibilities of society, owners and operators in the sector** with the aim protecting and conserving ecosystems, structural and functional diversity of forests, curbing the process of cultivation and cultural abandonment, and enhancing the role of the forest and the function of the forestry sector and its supply chains in the socioeconomic development of the country.

Consistent with international commitments, in art. 3 com. 2(b) of UTFFSC, SFM or active management is defined as: "*the set of silvicultural actions aimed at enhancing the multiplicity of forest functions, ensuring the sustainable production of ecosystem goods and services, and the management and use of forests and forest land in the forms and at a rate of use maintains their biodiversity, productivity, regeneration, vitality and potential to fulfil, now and in the future, relevant ecological, economic and social functions at local, national and global levels, without causing harm to other ecosystems*."

Satisfying the demands and aspirations of current society and future generations and defining the optimal ways to manage Italy's forests involves finding synergies but also **mediating between sometimes conflicting demands**, seeking the best solutions through a **process of collaborative consultation** and choice of the most appropriate social, financial, technical and scientific solutions in order to improve the conservation status of forest systems and the landscape quality of our territory.

Moreover, given the dynamic nature of the situation due to the climate crisis and changing socioeconomic conditions, the courses of action for SFM must be continuously reviewed and adapted while maintaining the general framework of guiding principles. It is these motivations that, in line with the international and European frame of reference (see Chapter 2.1), led to the definition of the NFS General Objectives (see Chapter 2.2).

## 2.1 International and European frame of reference

At the international and European level, there are numerous acts that directly and indirectly affect the national forestry sector, defining guidelines for the management, protection and enhancement of forest resources.

Considering the **European Green Deal** target to achieve climate neutrality in Europe by 2050, of particular importance to the forestry sector are the strategic and programmatic directions set forth in the United Nations Strategic Forest Plan for 2017- 2030 and the 2030 Agenda for Sustainable Development.

- **United Nations Forest Strategic Plan for 2017- 2030**, adopted by the United Nations **Forum on Forests** (UNFF), with a comprehensive framework to ensure sustainable management and halt deforestation and forest degradation. The Plan identifies **6 Global Goals** and **26 associated voluntary and universal Goals** to be achieved by 2030;
- **Agenda 2030 for Sustainable Development**, which defined the new strategic framework of the United Nations and identifies 17 global Sustainable Development Goals (SDGs) and 169 targets. The main targets of interest to the national forestry sector and defining targets

relevant to forest management recognizing the close link between human well-being and the health of natural systems, are: Life on Earth (O.15), Health and Welfare (O.3), Water (O.6), Energy (O.7), Jobs and Economic Growth (O.8), Responsible Production and Consumption (O.12) and Climate (O.13).

Also of particular interest and importance to the national forestry sector are the United Nations World Conferences to which are added the proceedings of the Pan-European Process of Ministerial Conferences for the Protection of Forests in Europe: the United Nations **Conference on Environment and Development** (UNCED), held in Rio de Janeiro in 1992, which, with the **Principles on Forests**, gave substance to the concept of SFM, defining its three main dimensions: ecological (conservation of forest resources), social (positive social impacts and economic (efficiency in organizing the supply of forest products or services). Under the United Nation umbrella the most relevant policy initiative related to the forestry sector are the following.

- The **Convention on Biodiversity** (CBD), signed in Rio de Janeiro on June 5, 1992, ratified by Italy with Law No. 124/1994, which with its Protocols and the **Strategic Plan for Biodiversity 2011- 2020** and the 20 **Aichi *Targets*** committed countries to "*take effective and urgent action to halt the loss of biodiversity*."
- The **UN Framework Convention on Climate Change** (UNFCCC), adopted in New York on May 9, 1992, ratified by Italy by Law No. 65/1994; implemented by the **Kyoto Protocol** (1997), ratified by Italy by Law No. 120/2002, and the **Paris Agreement** (2015), ratified by Italy by Law No. 204/2016, which recognize forests a significant role in mitigation and adaptation policies to climate change due to their ability to fix and store carbon in wood products and soil, to produce renewable and alternative energy to fossil fuels, and to store carbon in wood products.
- The **UN Convention to Combat Desertification** (UNCCD) of June 17, 1994, ratified by Law No. 170/1997, which recognizes a major role for forestry measures as a tool to combat desertification.
- The **Convention on International Trade in Endangered Species, Flora and Fauna** (CITES), signed in Washington on March 3, 1973, and ratified by Law No. 874/1975.
- **the Pan-European Process of Ministerial Conferences for the Protection of Forests in Europe** (MCPFE, now ***Forest Europe***) launched in 1990 with the aim of promoting protection and SFM throughout the European continent, with the **Ministerial Conferences in Strasbourg** (1990), **Helsinki** (1993), and **Lisbon** (1998), **Vienna** (2003), **Warsaw** (2007), **Oslo** (2011), **Madrid** (2015), and the recent **Bratislava** Conference (2021) that have led and will lead to the development and signing of Declarations and Resolutions, some of which have been transposed into national legislation. Forest Europe decisions commit to the use of a set of pan-European criteria and indicators for monitoring forest policies, with a focus on way to promote SFM: climate change adaptation and mitigation role of forests, supply of timber and other wild forest products, conservation of biological and cultural diversity, mitigation of hydrogeological risk and regulation of the water cycle.
- the **Green Infrastructures Strategy** and the recent **World Forum for Urban Forests**, which identify green infrastructure and urban forests as a significant opportunity to improve the well-being and quality of life of citizens. Strategies that facilitated Mite's drafting of the National Urban Forest Strategy.
- the **Alpine Convention** and the **Mountain Forest Protocol**, which has been committed to promoting sustainable development and ensuring a common policy for the Alps since 1991,

with an international agreement signed between the Alpine countries and the European Union.

Forests represent a resource of territorial and economic importance for Europe and are a fundamental part of the European natural capital subject to protection, falling with a relevant role in climate, environmental and biodiversity conservation, socioeconomic development, energy and international cooperation policies. Forests and forest products are not explicitly mentioned in the founding treaties and, therefore, **in accordance with the principle of vertical subsidiarity, European forestry policy remains primarily the responsibility of member countries**.

However, the EU has, over the years, implemented several important actions aimed at forestry and the forestry sector (Table 3), recognizing their cross-cutting value and thus including them, in other policies, primarily agricultural and rural development, but also in environmental, climate and renewable energy policies, of research, of cohesion, of industry, of trade and of the international cooperation. The various European policies compose a **rich and composite framework of regulations, directives and guidelines of great relevance to the management of forest resources in individual Member States**. Regulatory framework not always easy to recompose into a coherent and coordinated set of actions.

**Table 3 -** Main European Union policy documents affecting the forestry sector

| EUROPEAN FORESTRY STRATEGY |
|---|
| • European Forestry Strategy 2030, COM (2021) n 572 final, July 16, 2021<br>• Report of the Committee on Agriculture and Rural Development 2019/2157(INI), September 11, 2020, on "European Forestry Strategy - The Way Forward"<br>• Commission Communication, COM (2019) 352 final, July 23, 2019, "Strengthening EU Action to Protect and Rebuild the World's Forests<br>• Communication from the Commission, COM (2018) 811 of December 7, 2018, "Progress in implementing the EU Forestry Strategy: A new EU Forestry Strategy: for forests and the forest-based sector"<br>• Commission Staff Working Paper, SWD (2015) 164 final, September 3, 2015, "Multiannual Implementation Plan for the EU Forestry Strategy"<br>• Communication from the Commission, COM (2013)<br>• 659 final, Sept. 20, 2013, "A new EU Forestry Strategy: for forests and the forestry sector" |
| **COMMON AGRICULTURAL POLICY** |
| • Regulation (EU) No. 289 of February 19, 2019 (amending Regulation (EU) No. 702/2014) on "Compatibility with the internal market of certain categories of aid in agriculture and forestry and rural areas"<br>• Commission Communication COM (2017) 713 of November 29, 2017 "The Future of Food and Agriculture<br>• Communication "The Future of Food and Agriculture," COM(2017)713, published on November 29, 2017, and subsequent Regulations (EU) for Rural Development Support, EAFRD Fund and on the direct payments to farmers |

**ENVIRONMENT**

- Commission communication COM (2020) 380 final of May 25, 2020, "EU Biodiversity Strategy Biodiversity - Bringing nature back into our lives"
- Commission Communication COM (2019) 0640 of December 11, 2019, Green Deal
- Conclusions adopted by the European Council on 12 December 2019, n 12795, concerning "8th Environment Action Programme (EAP) on the environment and climate change 2021 - 2030
- Communication from the Commission COM (2017) 198 of March 27, 2017, "An action plan for the nature, citizens and the economy"
- Commission Communication COM (2015) 478 of October 2, 2015, "Mid-term review of the EU Biodiversity Strategy to 2020"
- EU Environment Action Programme to 2020 and its vision for 2050, dated April 29, 2014
- Regulation (EU) No. 1143 of October 22, 2014, "Provisions to prevent and manage the introduction and spread of exotic species invasive species"
- Decision (EU) No. 1386 of November 20, 2013, "Living well within the limits of our planet" 7th Environment Action Programme 2013/2020
- Regulation (EU) No. 1293 of December 11, 2013, "Establishment of the LIFE Program"
- Directive 2008/50/EC of May 21, 2008, "The ambient air quality and for cleaner air"
- Directive 2009/147/EC of April 2, 1979, "The Conservation of Wild Birds"
- Directive 92/43/EEC "Habitats" of May 21, 1992 "Conservation of natural habitats and semi-natural habitats, wild flora and fauna"

**ENERGY**

- Directive (EU) 2018/2001 of December 11, 2018, "Promotion of the use of energy from renewable sources renewables. Article 29 also establishes criteria for sustainability and reduction of greenhouse gas emissions greenhouse gas emissions for biofuels, bioliquids and biomass fuels"

**CLIMATE**

- Communication from the Commission COM(2021) 82 final - Shaping a Europe resilient to climate change - The new EU Strategy for adaptation to climate change (24.2.2021)
- European Parliament resolution of 28 November 2019 on the climate and environment (2019/2930(RSP))
- IPCC Fifth Assessment Report "Climate Change and Land" (2019)
- Regulation (EU) No. 841 of May 30, 2018, "Inclusion of emissions and removals of greenhouse gases resulting from land use, land use change and forestry in the 2030 climate and energy framework, amendment of Regulation (EU) No. 525/2013 and Decision No. 529/2013/EU"
- Commission Communication COM (2018) 773, A clean planet for all - Strategic vision European long-term vision for a prosperous, modern, competitive and climate neutral, final
- Regulation (EU) No. 842/2018 of May 30, 2018, "Binding annual reductions of greenhouse gas emissions greenhouse gas emissions by Member States in the period 2021-2030 as a contribution to climate action to meet their commitments under the Paris Agreement and amending Regulation (EU) no. 525/2013 (Text with EEA relevance)"
- Commission Communication COM (2018) 0773 of November 28, 2018, "A clean planet for All - Europe's long-term strategic vision for a prosperous, modern, competitive and climate neutral"

**NATURAL CATASTROPHIES AND CIVIL PROTECTION**

- Regulation (EC) No. 2012 of November 11, 2002, "European Union Solidarity Fund to cope with cope with major natural disasters, such as storms and forest fires." Decision No. 1313/2013/EU of December 17, 2013, "Union Civil Protection Mechanism"

**BIO-ECONOMY**

- Commission staff paper (SWD/2018/431 final) - A Sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment
- Commission staff paper. {SWD/2012/0011 final} - Innovating for Sustainable Growth: A Bioeconomy for EU
- Commission Communication COM/2011/0571 final, Roadmap to a Resource resource-efficient
- Commission staff paper {COM (2008) 645 final}, {SEC (2008) 2619}, {SEC (2008) 2620}, {SEC/2008/2618} - Addressing the challenges of deforestation and forest degradation to address climate change and the loss of biodiversity

| TRADE |
| --- |
| • Communication from the Commission COM (2019) 352 final of December 16, 2019, “Stepping up action of the EU to protect and restore the world's forests. Planet (July 23, 2019) and Council Conclusions related to the communication”<br>• Declarations Partnership Amsterdam (2015) and related Implementation Strategy agreed upon between Denmark, France, Germany, Italy, the Netherlands, Norway United Kingdom<br>• Regulation (EU) No. 652 of May 15, 2014, "Provisions for the management of expenditure on plant health and plant reproductive material"<br>• Regulation (EU) No. 607 of July 6, 2012, "Detailed provisions regarding the due diligence system and the frequency and nature of checks on control bodies in accordance Regulation (EU) No. 995/2010"<br>• Regulation (EU) No. 995 of October 20, 2010, "Obligations of operators who place timber and timber products on the market"<br>• Regulation (EC) No. 2173/2005 of December 20, 2005, "FLEGT licenses for imports of timber into the European Community"<br>• Regulation (EC) No. 1602 of September 9, 2002, "Detailed rules for the implementation of Directive 1999/105/EC"<br>• Directive 1999/105/EC of December 22, 1999, "Marketing and End User of Materials forestry of multiplication (1), in Article 17(3) in particular" |

The first European guidelines on forests and forest supply chains (see Table 3) were proposed in 1998 with **first EU Forestry Strategy**, made operational in 2005 with the **Forest Action Plan 2007-2011**. These guidelines were updated and better specified in the **second EU Forestry Strategy** approved in 2013. This instrument was revised in 2015 with the publication in 2018 of the Communication Commission's "**A new EU Forestry Strategy: for forests and the forestry sector**." This work was followed by the Commission's discussion of the new "**European Forestry Strategy - The Way Forward,"** which in the context increasing pressure on forest ecosystems due to climate change, and in line the European **Green Deal**, discussions to prepare the Biodiversity Strategy for 2030, and in coordination with the “Farm to Fork Strategy”, emphasizes the crucial role of forests and forestry in achieving European goals, in continuity with the 2013 “EU Forestry Strategy: for Forests and the Forest Sector.”

Specifically, afforestation, conservation, and forest restoration are promoted to increase $CO_2$ sink and storage potential, improve resilience, promote the circular bioeconomy, and protect biodiversity. This targets the entire forest cycle and promotes all the many Ecosystem Services provided by forests. This path led to the publication on July 16$^{th}$, 2021, of the **New European Forest Strategy 2030**.

Forests and the forestry sector were defined here as an "essential part" of Europe's transition to a climate-neutral, resource- efficient and competitive economy. The commitments and actions proposed in the new strategy document will promote growing, healthy, resilient and biodiversity-rich European forests, thriving livelihoods in rural areas and beyond, and a sustainable forest bioeconomy. This **National Forest Strategy** was drafted based on the outline of the second EU Forestry Strategy (published in 2013 and updated in 2018) and made consistent with both the Biodiversity Strategy 2030 published in 2020 and the New European Forest Strategy 2030.

Pending a precise definition of the **EU Biodiversity Strategy 2030 t**arget of 30% of land area under "effective management regime," out of which 10% of EU land should be put under strict legal protection, it is necessary to emphasize the unique situation of Italian forests among all EU Member States. Since 1985 every Italian forest has been subject to a landscape-protection constraint, backed by criminal sanctions. Consequently, no land use change is permitted without prior authorisation that assesses its impact on the landscape and any potential environmental damage (art. 8, D.Lgs. 34/2018). Even when authorisation is granted, forest compensation is

compulsory. Regional laws further regulate all forest uses, banning clear-cutting except in exceptional cases.

Additional restrictions apply to forested areas designated by special administrative acts under art. 136 of the Cultural Heritage and Landscape Code (D.Lgs. 42/2004); depending on the region, these zones cover between 20% and 50% of total forest area. Moreover, forest land is often an essential component of Italy's protected-area network. The National Forest Inventory (INFC 2015) estimates that 3.5 million hectares of forest lie within protected areas - 31.8% of the national forest estate - of which 2.8 million hectares are classified as "Forest" and almost 700,000 hectares as "Other Wooded Land."

Italy has anticipated with **D.Lgs. 34/2018** some of the provisions of the **EU Biodiversity Strategy 2030**, which has among its objectives to establish a definition for old-growth and primary forests (a requirement set also by this National Forest Strategy), and to provide management guidelines for to the protection of these important ecosystems.

As early as 2019, by supplementing the list of definitions contained in art. 3, D.Lgs. 34/2018, a specific definition of old-growth forest was legally established. Criteria for the identification of old-growth forests and broad management guidelines were then established by subsequent Ministerial Decrees, with the commitment to further specify management indication given the high variability of forest types that Italy enjoys. In addition, D.Lgs. 34/2018 contains specific provisions to promote schemes for Payment for Ecosystem Services to forest owners and managers, and to update the specifications required to forest nurseries for producing reproductive material suitable for future climatic conditions, Further work of a dedicated Technical Commission identified 19 source regions based on Italian ecoregions.

In advance of forthcoming EU requirements, the Ministry has invoked art. 15 of D.Lgs. 34/2018 to sign a dedicated cooperation agreement with CREA, financed by the 2020 Forest Fund, to produce the new **Italian Forest Map** and launch a national forest portal. The portal will aggregate, update and disseminate real-time data on Italy's forest system, closing a long-standing information gap.

Thanks to these initiatives, the National Forest Strategy now offers state-of-the-art guidance and serves as a pivotal reference for steering, coordinating and supporting both the ecological-transition measures embedded in the **National Recovery and Resilience Plan** and the **2023-2027 EAFRD programming phase.**

The **New European Forestry Strategy 2030** takes up what was proposed in the previous EU Forestry Strategy (2013), which was drafted after long consultation between Member States and Commission Services. In fact, **three Guiding Principles** were identified**,** taken up in full by the new EU Forestry Strategy, which are a mandatory reference for the definition of national forestry strategies of Member States:

1. **Sustainable forest management and the multifunctional role of forests,** providing multiple products and services in a balanced way and ensure forest conservation;
2. **Efficiency in resource use**, optimizing of the contribution of forests and the forestry sector to rural development, growth and job creation;
3. **Global forest responsibility**, promoting the sustainable production and consumption of forest products.

For the national context, the 3 guiding principles of the European Strategy have been declined **into 8 Priority Areas of Intervention** that inspire the contents of the **NFS**.

1. **Supporting rural and urban communities**. A sustainable and competitive forestry sector can play an important role in the development of rural and mountainous areas benefitting the country's economy, while providing priceless benefits to society.
2. **Improving the competitiveness and sustainability of the forestry, bioenergy and green economy industrial sectors.** Forests and the raw materials derived from them can offer job opportunities and diversify income in a low-carbon green economy.
3. **Forests and climate change**. Forests help mitigate climate change and associated extreme weather events. We must preserve and strengthen their resilience and adaptive capacity, qualities that hinge on conserving biodiversity and maintaining species assemblages that match the site's potential natural vegetation under both ecological and biogeographical perspectives.
4. **Protect Forests and Improve Ecosystem Services. Forests** supply indispensable ecosystem services to rural and urban communities alike and harbour an extraordinary breadth of biodiversity.
5. **Forest information and monitoring.** Strengthening the forest knowledge base will enable a better understanding of the complex environmental and social challenges that the forestry sector is facing.
6. **New and innovative value-added forest products.** A well-integrated and forward-looking European forestry research area would catalyse innovation across the entire sector.
7. **Working together to learn more about our forests and manage them consistently**. Coordination, cooperation and communication between different disciplinary and professional areas will help achieve policy coherence and complementarity.
8. **Forests in a global perspective.** It is necessary to ensure consistency between the policies and objectives of the EU and Member States, and commitments related to forest-related issues at the international level.

The Communication from the Commission on a **European Green Deal** (11th December 2019) laid the foundation to address the climate and environmental challenges of the coming decades, and build a new growth strategy aimed at transforming the EU into a just and prosperous society, with a modern, resource-efficient and competitive economy, under the goal of achieving zero net greenhouse gas emissions in 2050. The framework brought together fresh policy initiatives and stronger commitments to existing instruments within a single, coherent strategy.

As an important part of the European Green Deal, the Commission also presented the **Farm to Fork Strategy**, aimed at transforming the European agri-food system, making it more sustainable, and reducing its impact on third countries. The Strategy touches on many aspects of the forestry supply chain as well.

To pursue the objectives of the European Green Deal, a key role will be played by forest and forestry value chains that have strong economic, social, territorial and environmental connotations. As the Communication from the Commission points out, **farmers and foresters are the primary custodians of the natural environment**, as they take care of natural resources such as soil, water, air and biodiversity on 48% of the EU's territory, assisting essential functions such as carbon sink and supply of renewable resources for industry and energy.

The European Green Deal also supported the development of the new **European Forest Strategy – A way forward,** which advocates a holistic approach to sustainable forest management and underscores the **indispensable role of the Common Agricultural Policy in funding forestry**

measures.

The EU has thus committed to ambitious new climate, energy and environmental goals to which forests and the forestry sector can make a significant contribution. While sensitive to climate change, forests are also part of the solutions, as they absorb and store carbon in the form of biomass. Forests can mitigate the impact of extreme weather events by moderating temperatures, wind speed and water runoff, provide numerous Ecosystem Services, regulate the water cycle, protect biodiversity and reduce erosion. By providing a renewable source of raw materials, they can play an important role in the circular bioeconomy. Moreover, the forestry sector is still an **important source of jobs and income diversification in most rural areas** of the EU.

## 2.2 Overall objectives of the National Forest Strategy

As required by art. 6.1 of UTFFSC (D.Lgs 34/2018), this NFS, in continuity with the **2008 Forestry Sector Framework Program** (FSPP)[31], defines priorities for the conservation, improvement, and sustainable management of national forests, and for the development of sustainable forestry supply chains under an environmental, productive and sociocultural point of view. This is consistent with principles and aims set out by art. 1 and 2 of UTFFSC (D.Lgs. 34/2018) and with the commitments made at the international and European level, with specific reference to the **EU Forestry Strategy.**

This NFS also encompasses **poplar plantations and other short-rotation woody crops**, as well as the **chestnut and cork industries**, recognizing their substantial economic weight and environmental significance within the broader forestry sector. This inclusion reflects a dual context: first, Italy's forests, and the territories that depend on them, are highly vulnerable to natural and human-induced disturbances, with direct repercussions for production chains and socio-economic development in rural, mountain and inner areas; second, the nation's forest are its foremost green infrastructure, and meeting the rising demand for their goods and services depends on their protection and sustainable management.

Italy's **institutional landscape for forestry**, spanning policy design, coordination, governance, on-the-ground management, territorial oversight and enforcement, is highly intricate and fragmented, **characterized by dense cross-sector linkages and frequent overlaps in jurisdiction**. This has long been an obstacle to the establishment of a coherent and shared forest policy. This would help overcome structural issues related to the **cultural and silvicultural abandonment** of forests, in inner and mountain areas, **move forestry out of its lack of political representativeness** and **low propensity for innovation**, reverse the ongoing loss of economic value of forest products, both woody and non-woody, and increase awareness of the Ecosystem Services offered to the community.

While fully adhering to principles of fairness and inter-institutional cooperation, it is essential to establish a systematic linkage among the nation's institutional tiers in the forest sector. This begins with **sustained dialogue and collaboration between central and regional authorities** (and, in turn, **between regions and local governments**), to maximize synergies through shared objectives and clearly allocated responsibilities.

In setting sectoral policies, cooperation must also actively involve in the decision-making processes stakeholders with various interests and capacities in the forestry sector: forest owners

[31] *Programma quadro per il settore forestale* (clasue 1082, art.1 della legge 27 dicembre 2006, n. 296); https://www.masaf.gov.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/755

and managers, local communities, social and economic organizations, representatives of wood-based industries, professional associations, and environmental and civil society organizations. In this context, the NFS:

- **Recognizes forests as a fundamental component of natural capital for the welfare of the country**, and sets out a plan, with clear objectives and actions, that not only enhances resource organization and management efficiency, but also preserves and rebuilds, through integrated policies, an identity-aware and responsible relationship between forests and society, grounded in the inseparable economic, conservation and ecological dimensions.
- **Endorses sustainable forest management, or "active management"** as defined by art. 3.2b, D.Lgs. 34/2018, as both a strategic and operational instrument for responsible decision-making, aligning economic, environmental and social needs to secure forest conservation and the sustained supply of productive, regulatory and cultural ecosystem services.
- **Recognizes the contribution played by the forest sector and forestry supply chains in the pursuit of international commitments undertaken by the Italian government** and the compliance to European and national strategies and policies in the areas of climate, biodiversity protection and conservation, bioeconomy, energy, and employment in rural areas.
- **Identifies a shared and participatory roadmap** that unites national and regional institutions, local governments, socio-economic organizations, environmental and trade associations, industry actors, professional bodies and the scientific community, advancing a new paradigm for understanding the role of forest-based value chains within the society.

Based on these assumptions and referring to the **three Guiding Principles of the EU Forestry Strategy**, this NFS identifies **three General Objectives** that implement European priorities on a national scale and define the strategic policy framework to support national and regional forest administrations. Contributing to the pursuit of the **11 goals of UTFFSC (D.Lgs. 34/2018) reported in Table 4**, the General Objectives of the NFS mark the way towards a coherent and targeted action for forest protection and the sustainable development of the forestry sector and its supply chains, consistent with the guidelines and commitments defined in the international and European arena.

For each of the **three General Objectives, the NFS identifies Operational Actions,** complemented by **Specific Actions** and **Instrumental Actions**[32]**. Figure 1** is presenting a **summary view of the planning steps** that have brought to the approval and the implementation of the NFS.

Competencies and responsibilities are allocated along a tiered governance chain: from national ministries to Autonomous Regions and Provinces, local authorities, and socio-economic stakeholders. All interventions are calibrated to yield tangible outcomes through context-specific measures that reflect territorial, ecological and socio-economic conditions, as well as local priorities.

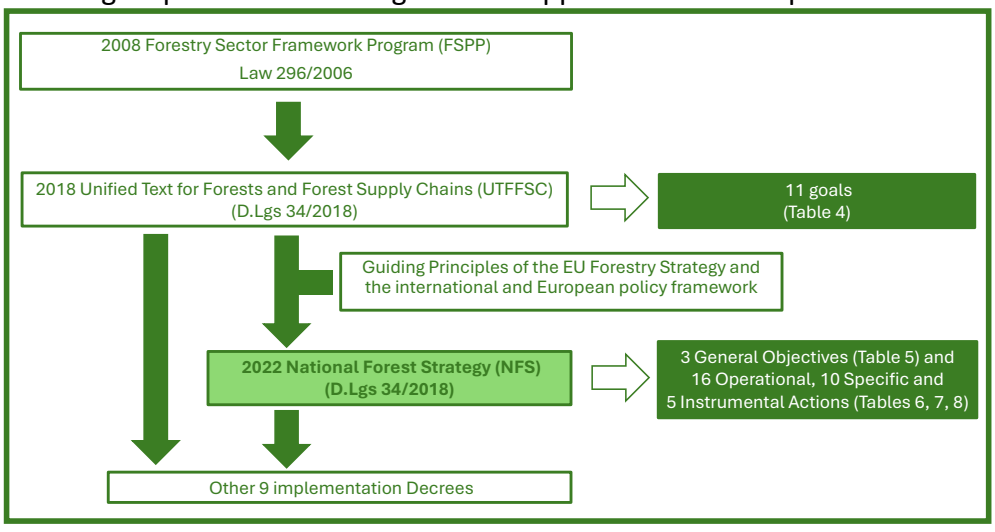
[32] In the Italian version of the NFS the three group of Actions (Operational, Specific, and Institutional) and sub-Actions are described in their respective contents, expected results with reference to the time horizon, indicators that can be used in monitoring and valuation, actors, with some references to the regulatory framework and financial sources.

**Table 4** – Goals of the Italian forest plan defined by the UTFFSC (art. 1 and 2, D.Lgs. 34/2018)

| | |
|---|---|
| **a.** | **Ensure the conservation of forests** in their extent, distribution, geographical distribution, ecological and bio-cultural diversity |
| **b.** | Promote **the active and rational management** of national forests to provide environmental, economic and sociocultural benefits |
| **c.** | Promote and protect the **forest economy**, **mountain economy** and their respective **value chains,** and develop agro-silvo-pastoral activities through the protection and rational use of land and the productive restoration of fragmented land holdings and abandoned land, supporting the development of associated forms of management of public and private forests |
| **d.** | Protect the forest by promoting actions to prevent of **natural and anthropogenic hazards**, hydrological risks, forest fire and biotic and abiotic disturbances, promote adaptation to climate change, restoration of degraded or damaged areas, carbon sequestration, and delivery of other Ecosystem Services generated by Sustainable Forest Management |
| **e.** | Promote the **programming** and **planning** of forest management interventions while respecting the responsibilities of regional and local governments |
| **f.** | Encourage the **development of principles and guidelines** for the protection and improvement of forests and rural landscapes, also including action tools provided by the EU **Common Agricultural Policy** |
| **g.** | Encourage the **active participation** of the Italian forestry sector in defining, implementing and developing the EU Forestry Strategy and related policies |
| **h.** | Ensure and promote **knowledge** and **monitoring** of national forest ecosystems, also to support policymaking and strategic guidance in the forestry and environmental sectors |
| **i.** | Promote and coordinate the **training** and **continuous education** of forest operators and the professional qualification of forest companies |
| **l.** | Promote **research, experimentation and technical dissemination** in the forestry sector |
| **m.** | Promote forest **culture and environmental education** among the large public |

The **General Objectives of this NFS** must inform **Regional Forest Programs** pursuant to art. 6.2, D.Lgs. 34/2018, which will cross-link areas of intervention under different sectoral and territorial programs, co-funded by European Union, national and/or regional financial resources. The pursuit of General Objectives takes place through the implementation of the Actions, consistent with the principles and aims set out by art. 1 and 2 of D.Lgs. 34/2018. Forestry actions financed under existing financing instruments such as the EAFRD, and any forthcoming measures, all directly contribute to achieving the NFS's General Objectives.

**Figure 1** - Planning steps that have brought to the approval and the implementation of the NFS



General Objectives and their associated actions stem from a multi-year consultation process that began with the Forest-Wood Roundtable and continued through the drafting of the White Paper and the development and adoption of D.Lgs. 34/2018.

**Table 5** - NFS General Objectives

| **Sustainable management and the multifunctional role of forests** |
|---|
| Foster SFM and the multifunctional role of forests to ensure, at national, ecoregional, regional and local scales, the balanced supply of goods and Ecosystem Services and the steady and continuous supply of all Ecosystem Services. |
| **Key-concepts:** Life-supporting ecosystem services, provisioning, regulation, and sociocultural values; biodiversity, protection and active conservation; ecological networks, phyto-restoration; risk reduction: adaptation (reducing vulnerability and increasing resilience); assisted migration; climate mitigation; prevention of hydrogeological disruption; forest landscape restoration; environmental certifications. |

| **B. Efficiency in the use of forest resources for sustainable development of the economic systems in rural, inland and urban areas of the country** |
|---|
| Improve resource use efficiency by optimizing the multifunctional contribution of forests to the development of the bioeconomy and forest economies in rural and inland areas of the country, while also promoting the expansion and enhancement of forests in urban and suburban settings to improve well-being and environmental quality. |
| **Key-concepts:** entrepreneurial and employment growth; bio-economy and circular economy; sustainable intensification; nature-based solutions; growth of the role of business and civil society in environmental resource management; horizontal subsidiarity for the enhancement of<br>(a) provisioning services: enhancement of timber and wild forest products within the strategies of bio-economy and circular economy, "cascading" use of wood products;<br>(b) regulatory services: improvement of air quality, climate mitigation at the local level;<br>(c) cultural services: educational-cultural, tourism-recreational-sports, social inclusion. |

| **C. Global responsibility and knowledge of forests** |
|---|
| Monitor and develop multidisciplinary knowledge and global responsibility in forest protection, including through multidisciplinary scientific research, technical assistance, vocational training and promotion of forest products and sustainable practices, production and consumption. |
| **Key-concepts:** continuous monitoring, including environmental accounting systems and Natural Capital Assessment; Research and Development (R&D) and knowledge transfer; professional and specialized training; responsible purchasing policies and attention to deforestation embedded in products; international cooperation. |

# 3. ACTIONS

## 3.1 Operational Actions

The **Operational Actions** (Table 6) directly contribute to the pursuit of the **3 General Objectives of the NFS** (Table 5) and make specific reference to the goals (Table 4) set out in Art. 1 and 2 of the UTFFSC (D.Lgs. 34/2018).

In their concrete implementation, the individual Actions are not solely and strictly aimed at one overall Goal but may be functional for more than one Goal. The **Operational Actions** are to be declined in terms of competencies and responsibilities from the ministerial level, to that of the Regions and Autonomous Provinces, and are directly implemented in the Regional Forest Programs, where they will be aimed at the pursuit of concrete results with interventions contextualized to the institutional, territorial, ecological, socioeconomic and landscape needs of specific local situations.

**Table 6 -** Operational Actions related to the 3 General Objectives of the NFS and the 11 UTFFSC goals

| **Objective A.**<br>**Sustainable management and the multifunctional role of forests** | | **UTFFSC Goals (art.2)*** |
|---|---|---|
| **A.1** | **Forestry programming and planning and landscape and land management and conservation policies** | **e)** |
| **A.2** | **Ecosystem services and payments** | **b), c)** |
| **A.3** | **Land and water protection functions** | **d)** |
| **A.4** | **Biodiversity of forest ecosystems** | **a), d)** |
| **A.5** | **Damaged forest resources and prevention of natural and man-caused hazards** | **b), d)** |
| **A.6** | **Climate change mitigation and adaptation** | **d), h)** |
| **A.7** | **Management of reforestation interventions** | **a), b), d)** |

| **Objective B.**<br>**Efficiency in the use of forest resources for sustainable development of the economic systems in rural, inland and urban areas of the country** | | **UTFFSC Goals (Table 4)** |
|---|---|---|
| **B.1** | **Sustainable Forest Management** | **b)** |
| **B.2** | **Qualification of forestry workers and operational capacity of the forest enterprises** | **c), i)** |
| **B.3** | **Local forestry supply chains** | **b), c), f)** |
| **B.4** | **Forest sociocultural services** | **b), c), m)** |
| **B.5** | **Traceability of forest products** | **c)** |
| **B.6** | **Responsible consumption and purchasing** | **c), m)** |

| Objective C.<br>Global responsibility and knowledge of forests | | UTFFSC Goals (Table 4) |
|---|---|---|
| C.1 | Information and social and environmental responsibility of citizens | m) |
| C.2 | Research, experimentation and technological transfer | i), l) |
| C.3 | International dimension of forest policies | f), g) |

## 3.2 Specific Actions

The **Specific Actions** represent lines of action that address strategic for *governance* action, defining insights, guidelines and best practices for central State authorities, Regions and Autonomous Provinces aimed at the joint and coordinated pursuit of national objectives, as well as international and European commitments.

Table 7 shows the list of **Specific Actions**, again with reference to the UTFFSC goals (see Table 4). For each specific Action.

**Table 7** - The Specific Actions related to the 11 UTFFSC goals

| Specific Actions | | UTFFSC Goals (Table 4) |
|---|---|---|
| A.S.1 | Management of extreme events | d), e) |
| A.S.2 | Coordination of forest fire fighting and prevention | d), e) |
| A.S.3 | Genetic resources and forest propagation material | a), d) |
| A.S.4 | Poplar cultivation and other investments in productive tree plantations. | a), b), c) |
| A.S.5 | Monumental trees and old-growth forests | a), d), i) |
| A.S.6 | Urban and peri-urban trees and forests | a), m) |
| A.S.7 | Riparian and lowland forests | a), d), i) |
| A.S.8 | Conservation status and Red List of forest ecosystems. | d), i) |
| A.S.9 | Agroforestry, agroforestry systems and cork farming | a), b), c) |
| A.S.10 | Management of wildfire impacts on forests | d), i) |

## 3.3 Instrumental actions

The following Instrumental Actions (Table 8) are identified for the pursuit of the general **Objectives** of the NFS, which are understood to be the leading and fundamental actions to ensure the implementation of the Operational Actions and Specific Actions. They constitute in fact, a kind of "direct support measures" to the necessary adjustments in organization of institutions.

The **Instrumental Actions** are pivotal elements in the implementation of **NFS** and forest policies at the national and local levels in pursuit of the commitments of international agreements signed by the Italian government, for organizing and harmonizing institutional competencies, for an adjustment of regulatory instruments and planning acts, for the effective use of financial resources, and for obtaining the widest possible involvement of all the social stakeholders.

Instrumental Actions contain elements specification of the contents of **Operational Actions** and **Specific Actions**, constituting accompanying measures regarding the arrangement of institutions and stakeholders in the operational implementation of NFS.

**Table 8 -** The Instrumental Actions related to the 11 UTFFSC goals

| Instrumental Actions | | UTFFSC Goals (Table 4) |
|---|---|---|
| A.St.1. | Monitoring of socioeconomic and environmental variables, coordination and dissemination of information and statistical data | h) |
| A.St.2. | Adjustment of the regulatory framework of forestry interest | f) |
| A.St.3. | Inter-institutional coordination and co-programming | e), f) |
| A.St.4. | Stakeholder consultation | g), m) |
| A.St.5. | Wood Cluster | c) |

# 4. FINANCIAL INSTRUMENTS

The main financial sources available today for the achievement of the **General Objectives** of the NFS and indirectly of the objectives of the main national and European strategic instruments of forestry interest, as well as for the pursuit of the international commitments signed by the Italian government that involve and envisage an active role for the forestry sector, can be traced to the following types:

- Post-2020 European Structural Funds;
- Fund for agricultural and rural development post 2020;
- Recovery Fund Next Generation;
- European programs: LIFE+, INTERREG, HORIZON EUROPE;
- Instruments pertaining to ordinary resources of the budgets of central and regional governments;
- Development and Cohesion Fund;
- Additional resources for mountain and inland areas, enterprises, natural disasters and extreme events, etc.;
- Research Framework Program;
- Funds from private individuals (companies, Foundations, trade associations, etc.);
- *Fondo Foreste* (Forest Fund, Mipaaf).

**The Operational, Specific and Instrumental Actions**, (Ch. 3) assume a strategic and prodromal role for the development of the forestry sector, but currently they are not adequately supported financially or are only partially covered through measures and interventions found in different regional and national programmatic instruments. Annex 1 summarizes the potential financial sources activated today or that can be activated for individual Actions under the NFS.

In addition to the Public Financial Resources present in the existing legislation of European, national and regional origin and the resources provided by the annual Budget Laws (new national Forest Fund), it is necessary, guaranteed compliance with Union rules on State Aid, to provide dedicated support schemes, which can be summarized in the following three areas of application:

- **Actions that require the activation of a State Aid scheme** with the availability of specific financial resources;
- **Actions that do not qualify as State Aid** but require the availability of specific public financial resources and can be implemented directly by public bodies;
- **Actions that require to extremely limited availability of specific financial resources**, but which must be activated through legislative or regulatory acts (Instrumental Actions).

The Conference for State-Regions and Autonomous Provinces Relations, having heard the Wood Sector Table and the State-Regions Forestry Consultation Table of Ministry of Agricultural and Forest Policies, will identify which **Operational, Specific and Instrumental Actions** to prioritize in the pursuit of the three **general Objectives**, identifying as a complement to the interventions currently provided for by the programming tools in force, possible additional support tools, in a framework of accompaniment and coordination of national/regional policies.

# 5. COHERENCE WITH OTHER SECTORAL POLICIES

The Objectives and Actions of the NFS directly contribute to the pursuit of the different international commitments inherent to forestry matters signed by the Italian Government. At the same time, they also contribute indirectly to the goals for the circular bioeconomy, sustainable local development, biodiversity conservation, provision of Ecosystem Services, energy production, as well as maintaining employment in rural and mountainous areas. **NFS Actions fall directly or indirectly under different levels and instruments of policy, strategy and sectoral and territorial programming,** with international, European and national significance, which operationally influence the local management of the forest resources.

As NFS is a strategic document, which assumes a time horizon of 20 years, it is essential to clarify what are the **elements of coherence and convergence between the NFS and the other strategic, programming and planning tools** in order to efficiently achieve the set objectives of protection, conservation and management of forest resources, as well as for the sustainable local development and supply chains related to these resources.

**Table 9** highlights the **level of consistency of the NFS Actions with the main national strategic policy instruments** of interest to the forestry sector.

| | |
|---|---|
|  | High consistency |
|  | Low coherence |
|  | No consistency |

**Table 9 -** Consistency of the NFS Actions with the main national strategic policy instruments of interest to the forestry sector

| OPERATIONAL ACTIONS | Agenda 2030 Sustainable Development | Climate Energy Strategy | Energy Strategy | Climate Change Adaptation Strategy | Biodiversity Strategy | Bioeconomy Strategy |
|---|---|---|---|---|---|---|
| **General Objective A** | | | | | | |
| **Operational Action A.1 - Forest planning and programming and policies for landscape, land management and conservation** | | | | | | |
| **A.1.1** - Promote integrated, multidisciplinary and inter-territorial forestry planning | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.1.2** - Promote wide-area, integrated, multidisciplinary and inter-territorial forestry planning | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.1.3 -** Promote forest planning of public, private and collective properties in line with the principles and criteria of the SFM | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **Operational Action A.2 - Ecosystem services and payments** | | | | | | |
| **A.2.1 -** Recognize and remunerate services of public, environmental and social interest provided by the forests and maintained and increased by the SFM | ☺ | 😐 | 😐 | ☺ | ☺ | 😐 |
| **Operational Action A.3 - Land protection and water protection functions** | | | | | | |
| **A.3.1** - Maintain, increase and monitor the protective functions of forests in defending property, infrastructure and people | 😐 | ☺ | 😐 | ☺ | ☺ | ☺ |
| **A.3.2** - Strengthen the role of forests and SFM for land-use. Hydrogeological and water protection | 😐 | ☺ | 😐 | ☺ | 😐 | 😐 |
| **Operational Action A.4 - Biodiversity in Forest Ecosystems** | | | | | | |
| **A.4.1 -** Protect and monitor forest biodiversity at the national, regional and ecoregional levels | 😐 | 😐 | 😐 | 😐 | ☺ | 😐 |
| **A.4.2 -** Reduce and/or halt the loss and improve biodiversity in forest ecosystems | 😐 | 😐 | 😐 | 😐 | ☺ | 😐 |
| **A.4.3 -** Conserve and enhance the structural, functional, ecological, biogeographic and landscape diversity and complexity of the silvo-pastoral heritage | 😐 | 😐 | 😐 | 😐 | ☺ | 😐 |

| OPERATIONAL ACTIONS | Agenda 2030 Sustainable Development | Climate Energy Strategy | Energy Strategy | Climate Change Adaptation Strategy | Biodiversity Strategy | Bioeconomy Strategy |
|---|---|---|---|---|---|---|
| **Operational Action A.5 – Damaged forest resources and prevention of natural and man-caused hazards** | | | | | | |
| **A.5.1** - Provide for active prevention actions against natural and man-caused hazards, plant diseases, fire, pollution, and biotic and abiotic adversities | 😐 | ☺ | 😐 | ☺ | ☺ | 😐 |
| **A.5.2** - Reconstitute forest potential damaged by natural or anthropogenic disturbances, fire, natural disasters, and catastrophic events and restore degraded forests in line with ecological and biogeographical potential | 😐 | ☺ | 😐 | ☺ | ☺ | 😐 |
| **Operational Action A.6 - Climate Change Mitigation and Adaptation** | | | | | | |
| **A.6.1** - Reduce the negative impacts of climate change on forest systems and on the related socio-economic sectors | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.6.2** -Protect public safety, health and welfare and protect the society and citizens assets | 😐 | ☺ | 😐 | ☺ | ☺ | 😐 |
| **Operational Action A.7 - Management of reforestation** | | | | | | |
| **A.7.1** - Enhance the value of forest recolonized land | 😐 | ☺ | 😐 | ☺ | ☺ | ☺ |
| **A.7.2** - Increase forest area | 😐 | ☺ | 😐 | ☺ | ☺ | 😐 |
| Manage and naturalize, where appropriate, artificial afforestation and reforestation plantations | ☺ | ☺ | 😐 | ☺ | ☺ | ☺ |

| OPERATIONAL ACTIONS | Agenda 2030 Sustainable Development | Climate Energy Strategy | Energy Strategy | Climate Change Adaptation Strategy | Biodiversity Strategy | Bioeconomy Strategy |
|---|---|---|---|---|---|---|
| **General Objective B** | | | | | | |
| **Operational Action B.1 - Sustainable Forest Management** | | | | | | |
| **B.1.1 -** Improve and increase SFM in existing forests. | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **B.1.2 -** Recognizing the role of SFM as a tool for a new forest bioeconomy | ☺ | 😐 | ☺ | ☺ | 😐 | ☺ |
| **B.1.3 -** Promoting forest certification | ☺ | 😐 | 😐 | ☺ | ☺ | 😐 |
| **Operational Action B.2 - Qualification of forest workers and operational capacity of forest enterprises** | | | | | | |
| **B.2.1 -** Competence, training and qualification of forestry workers and economic actors in forestry supply chains | ☺ | ☺ | 😐 | ☺ | ☺ | ☺ |
| **Operational Action B.3- Local Forestry Chains** | | | | | | |
| **B.3.1 -** Develop sustainable markets for regional and national wood forest products | ☺ | ☺ | ☺ | ☺ | 😐 | ☺ |
| **B.3.2 -** Promote and enhance local handcraft and industrial processing of wood forest products | ☺ | ☺ | ☺ | ☺ | 😐 | ☺ |
| **B.3.3 -** Qualifying the forest-wood-energy supply chain at the local scale. | ☺ | 😐 | ☺ | 😐 | ☺ | ☺ |
| **B.3.4 -** Promoting wild forest non-wood products (art.3, com.2, let. d) of UTFFSC) | ☺ | 😐 | 😐 | 😐 | ☺ | ☺ |
| **Operational Action B.4 - Socio-cultural services of forests** | | | | | | |
| **B.4.1 -** Promote the development and provision of forest sociocultural services. | ☺ | 😐 | 😐 | 😐 | 😐 | ☺ |
| **Operational Action B.5 - Traceability of forest products** | | | | | | |
| **B.5.1**: Support effective traceability and control systems and detailed information on the origin of wood and wild forest products | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **Operational Action B.6 - Responsible Consumption and Procurement** | | | | | | |
| **B.6.1:** Promote domestically sourced forest products and support policies to purchase products from sustainably managed forests | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **B.6.2:** Promote the culture of "cascading" use and recycling in the use of the forestry raw materials | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |

| OPERATIONAL ACTIONS | Agenda 2030 Sustainable Development | Climate Energy Strategy | Energy Strategy | Climate Change Adaptation Strategy | Biodiversity Strategy | Bioeconomy Strategy |
|---|---|---|---|---|---|---|
| **General Objective C** | | | | | | |
| **Operational Action C.1- Information and the social and environmental responsibility of citizens** | | | | | | |
| **C.1.1 -** Promote public information and awareness interventions | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **Operational Action C.2- Research, experimentation and transfer** | | | | | | |
| **C. 2.1 -** Increase coordination and consultation between research and innovation and promote experimentation, technology transfer, dissemination and technical assistance forestry | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **Operational Action C.3. - International dimension of forestry policies** | | | | | | |
| **C. 3.1 -** Give concrete implementation to international commitments by intensifying coordination and cooperation activities and strengthening the presence and Italy's role in international institutions | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |

| SPECIFIC ACTIONS | Agenda 2030 Sustainable Development | Climate Energy Strategy | Energy Strategy | Climate Change Adaptation Strategy | Biodiversity Strategy | Bioeconomy Strategy |
|---|---|---|---|---|---|---|
| **Specific Action 1 - Management of extreme events** | | | | | | |
| **A.S.1.1 -** National Plan for the Management of Extreme Events | 😐 | 🙂 | 😐 | 🙂 | 🙂 | 😐 |
| **Specific Action 2 - Coordination of forest fire fighting and prevention** | | | | | | |
| **A.S.2.1 -** Governance, planning and management of fire and Inter-institutional coordination | 😐 | 🙂 | 😐 | 🙂 | 🙂 | 😐 |
| **A.S.2.2 -** Coordination and convergence of forestry, agro-pastoral and environmental policies and interventions with fire governance strategies | 😐 | 🙂 | 😐 | 🙂 | 🙂 | 😐 |
| **A.S.2.3 -** Regulatory update and post-fire recovery planning | 😐 | 🙂 | 😐 | 🙂 | 🙂 | 😐 |
| **A.S.2.4 -** Fire Statistics and Fire Registry | 😐 | 🙂 | 😐 | 🙂 | 😐 | 😐 |
| **Specific Action 3 - Genetic resources and forest propagation.** | | | | | | |
| **A.S.3.1** - Forest nursery, genetic resources and forest propagation material | 😐 | 😐 | 😐 | 😐 | 🙂 | 😐 |
| **A.S.3.2 -** Oriented silvicultural management and assisted migration or guided colonization | 😐 | 😐 | 😐 | 😐 | 🙂 | 😐 |
| **Specific Action 4 - Poplar cultivation and other investments in productive tree plantations** | | | | | | |
| **A.S.4.1-** Traditional arboriculture and poplar cultivation. | 🙂 | 😐 | 🙂 | 😐 | 😐 | 🙂 |
| **A.S.4.2 -** Promote permanent or temporary polycyclic and polyspecific plantations | 🙂 | 🙂 | 😐 | 🙂 | 🙂 | 🙂 |
| **A.S.4.3 -** Promote monitoring and support interregional market and supply chain agreements | 😐 | 😐 | 😐 | 😐 | 😐 | 🙂 |
| **Specific Action 5 - Monumental trees and ancient forests** | | | | | | |
| **A.S.5.1 -** Monumental trees | 😐 | 🙂 | 😐 | 🙂 | 🙂 | 😐 |
| **A.S.5.2 -** Old-growth forests | 😐 | 🙂 | 😐 | 🙂 | 🙂 | 😐 |

| SPECIFIC ACTIONS | Agenda 2030 Sustainable Development | Climate Energy Strategy | Energy Strategy | Climate Change Adaptation Strategy | Biodiversity Strategy | Bioeconomy Strategy |
|---|---|---|---|---|---|---|
| **Specific Action 6 - Urban and peri-urban trees and forests** | | | | | | |
| **A.S.6.1 -** City Trees | ☺ | ☺ | 😐 | ☺ | ☺ | 😐 |
| **A.S.6.2 -** Urban and peri-urban forests | ☺ | ☺ | 😐 | ☺ | ☺ | 😐 |
| **Specific Action 7 - Riparian and lowland forests** | | | | | | |
| **A.S.7.1 -** Protect and restore riparian forests | ☺ | ☺ | 😐 | ☺ | ☺ | 😐 |
| **A.S.7.2 -** Protecting and restoring lowland forests | 😐 | ☺ | 😐 | ☺ | ☺ | 😐 |
| **A.S.7.3 -** Protection and management of coastal forests and coastal pine forests | | | | | | |
| **Specific Action 8 - Conservation Status and Red List of Forest Ecosystems** | | | | | | |
| **A.S.8.1 -** Red list of Italian forest species, habitats and ecosystems | 😐 | 😐 | 😐 | ☺ | ☺ | 😐 |
| **A.S. 8.2 -** Conservation status of ecosystems at national and regional scales | 😐 | ☺ | 😐 | ☺ | ☺ | 😐 |
| **Specific Action 9 - Agroforestry, agroforestry systems and cork farming** | | | | | | |
| **A.S. 9.1 -** Agroforestry and agroforestry systems | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.S. 9.2 -** Enhancement of cork farming and agro-silvo-pastoral systems with cork presence | ☺ | 😐 | 😐 | ☺ | ☺ | ☺ |
| **Specific Action 10 - Management of wildlife impacts in forests** | | | | | | |
| **A.S. 10.1 -** Forest management and habitat protection of priority species | ☺ | 😐 | 😐 | ☺ | ☺ | ☺ |
| **A.S. 10.2 -** Planning and management in forests with high densities of ungulates | ☺ | 😐 | 😐 | ☺ | ☺ | ☺ |

| INSTRUMENTAL ACTIONS | Agenda 2030 Sustainable Development | Climate Energy Strategy | Energy Strategy | Climate Change Adaptation Strategy | Biodiversity Strategy | Bioeconomy Strategy |
|---|---|---|---|---|---|---|
| **Instrumental Action 1 - Monitoring of variables, coordination and dissemination of information and statistical data** | | | | | | |
| **A.St.1.1 -** Coordination and integration in forestry data and information collection | ☺ | ☺ | 😐 | ☺ | ☺ | ☺ |
| **A.St.1.2 -** Public and periodic report on the state of forestry, the sector and its supply chains | ☺ | ☺ | ☺ | ☺ | 😐 | ☺ |
| **A.St.1.3 -** National Inventory of Forests and Forest Carbon Sinks. | ☺ | ☺ | 😐 | ☺ | ☺ | ☺ |
| **A.St.1.4 -** Forest information system (SIFOR) and georeferenced national forest map | ☺ | ☺ | ☺ | ☺ | 😐 | ☺ |
| **Instrumental Action 2 - Adjustment of the regulatory framework of forestry interest** | | | | | | |
| **A.St.2.1** - Synthesis and harmonization of regulatory processes and provisions of forestry interest | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.St.2.2 -** Regulatory simplification in forestry | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **Instrumental Action 3 - Inter-institutional coordination and co-programming.** | | | | | | |
| **A.St.3.1 -** Continuous process of coordination of national and regional forestry policies | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **Instrumental Action 4 - Consultation and coordination of stakeholders.** | | | | | | |
| **A.St.4.1 -** Consultation and coordination actions. | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.St.4.2 -** Involvement of local stakeholders. | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.St.4.3:** Strengthen the advisory role of the Wood Supply Chain Table and the Table of Forestry consultation between ministry and autonomous regions and provinces | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **A.St.4.4:** Promote public society's awareness of the role of forest activities | ☺ | ☺ | ☺ | ☺ | ☺ | ☺ |
| **Instrumental Action 5 - Wood Cluster** | | | | | | |
| **A.St.5.1:** Establishment of a National Wood Cluster | ☺ | ☺ | ☺ | 😐 | ☺ | ☺ |

# 6. MONITORING AND EVALUATION

The systematic evaluation of the strategy's progress is essential for its effective implementation.

**For each Action, a set of Indicators is proposed** to collect information continuously and systematically, not only to improve the quality and effectiveness of the Strategy itself but also to guide and support forestry policy choices and directions at the national and local levels.

The **monitoring process** will be conducted throughout the implementation phase of the Strategy, with **five-yearly intervals.** These assessments will aim to analyse the effectiveness and efficiency of the Strategy's Actions over time, focusing on tangible products and physical achievements, as well as their direct impacts on beneficiaries. This approach will facilitate drawing meaningful conclusions regarding the attainment of the intended objectives and may lead to the reorientation of the Actions based on the results obtained, the evolving socio-economic needs and requirements, and the relevant European and international strategic contexts.

**Monitoring and evaluation** exhibit several shared characteristics: both processes rely on the systematic collection of timely, detailed, and credible data.

The current **national forestry statistics and information** sources are notably deficient and inadequate. They frequently present data that appears inconsistent and is challenging to interpret at first glance. In order to adequately address the information requirements of the forestry sector and fulfil policy monitoring and evaluation obligations, the national forestry statistics system must be substantially revised. Strong support and a resolute commitment from the relevant institutions and administrations are required to ensure the successful implementation and effectiveness of this endeavour. In this regard, the Strategy outlines **Instrumental Action 1**, which focuses on fostering collaboration among public institutions, universities, research entities and public and private organisations. The initiative aims to ensure a consistent and unified approach to collecting statistical data on forests and forestry supply chains. Furthermore, it emphasises the importance of making these databases and information freely accessible to the public to promote transparency and support informed decision-making.

The **NFS monitoring and evaluation system** is designed to survey the status of forest ecosystems along with the production, environmental, and sociocultural supply chains connected to them. It will utilize diverse information sources and engage a range of stakeholders. Moreover, this system aligns with the monitoring and evaluation standards set by the pan-European Forest Europe process for the SFM and adheres to guidelines from European Union and United Nations organizations. It has been developed in close coordination with the monitoring and evaluation frameworks of major European and national programs focusing on climate change, biodiversity, energy, sustainable development, and rural development, among others.

The data collected and processed through the monitoring process will provide a critical knowledge base to address existing gaps in socio-economic and environmental variables related to forest resources and their supply chains. This will enable the development of efficient policies for the sustainable development, protection, conservation, and management of forests, while

also ensuring timely responses to national and international reporting requirements, including RAF Italy, Natural Capital Ecosystem Conservation Status, National LULUCF Reporting (EU/UNFCCC/Kyoto Protocol UNFF Forest Goals), FAO Reports, EUROSTAT, EU frameworks, and other international reporting obligations.

The information bases currently available and useful for supporting the monitoring activities of the Strategy are:

- Map of the Ecosystems of Italy;
- Map of the Ecoregions of Italy;
- Map of Vegetation Series in Italy;
- INFC for quantitative characters;
- INFC for surface estimates;
- ISTAT databases;
- Rural Development Evaluation and Monitoring Framework;
- Red List of Ecosystems of Italy;
- Red list fauna;
- Red List flora;
- Red list habitat;
- National Network of Monumental Trees and Ancient Woods;
- National Biodiversity Strategy; Alpine Climate Target System;
- EUTR National Operator Register;
- GSE database;
- Chambers of Commerce databases;
- Other national and regional georeferenced digital databases and mappings;
- Point studies and analyses.

The first " **Report on the state of Forests and the Forest Sector in Italy**" (RAF, 2019), compiles, summarizes, and elaborates for the first time in Italy all available sector-specific information and statistical data on the subject, in accordance with Article 14, paragraph 3 of the UTFFSC.

**Monitoring and evaluation activities** will involve active participation of beneficiaries and key stakeholders with the aim of developing their sense of ownership of the **National Forest Strategy.**

**Tables 10.a, 10.b and 10.c** present the indicators identified for each **Action and Sub-Action**. Once appropriately integrated to address missing areas, these indicators will serve as the starting point for defining targets to be achieved and their adaptation to individual regional contexts, while ensuring national information consistency.

**Table 10.a -** Indicators for the Operational Actions related NFS Objective A

| Objective A - Sustainable management and multifunctional role of forests | | | |
|---|---|---|---|
| **Action A.1 - Forestry planning and programming, and policies for landscape and land management and conservation** | | | |
| **A.1.1 - Promote integrated, multidisciplinary, and inter-territorial forestry planning** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of Regions and Autonomous Provinces with a current Regional Forestry Program | no. | periodical | Regions, Mipaaf-RAF |
| 2. Number of Regions and Autonomous Provinces with a regional landscape plan in force | no. | periodical | Regions, Mipaaf-RAF, Mic |
| 3. Number of actions, broken down by Region and Autonomous Province, aimed at implementing integrated and multidisciplinary planning tools that connect the forestry sector with other sectors (agricultural, environmental, ecological, wildlife, floral, recreational tourism, landscape, basin, urban infrastructure, risk prevention, and socioeconomic development) | no. | periodical | Regions, Mipaaf-RAF |
| 4. Number of actions, broken down by Region and Autonomous Province, aimed at implementing decision support systems | no. | periodical | Regions, Mipaaf-RAF |
| 5. Public financial resources, distinguished by State, Region, and Autonomous Province, allocated to the forestry sector and categorized by financial instruments | euro | annual | Regions, Mipaaf-RAF |
| **A.1.2 - Promote wide-area, integrated, multidisciplinary and inter-territorial forestry planning** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area, broken down by Regions and Autonomous Province, covered by PFIT | hectare | periodical | Regions, CUFA-INFC |
| 2. Area, broken down by Regions and Autonomous Province, subject to Forest Management Plans and equivalent instruments | hectare | periodical | Regions, CUFA-INFC |
| 3. Number of actions, broken down by Regions and Autonomous Province, aimed at implementing integrated and multidisciplinary forestry planning tools between the forestry sector and other sectors (agricultural, environmental, ecological, wildlife, floral, recreational tourism and landscape, basin, urban Infrastructure, risk prevention and socioeconomic development) | no. | periodical | Regions, Mipaaf-RAF |
| 4. Public financial resources allocated to forest planning, separated by State, Region, and Autonomous Province, and broken down by financial instruments | euro | annual | Regions, Mipaaf-RAF |
| **A.1.3 -Promote forest planning of public, private and collective properties in line with the principles and criteria of the SFM** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of Regions and Autonomous Provinces with integrated and multidisciplinary geospatial databases and platforms for forest planning | no. | periodical | Regions, Mipaaf-RAF |
| 2. Public land area, broken down by Region and Autonomous Province, subject to Forest Management Plans and equivalent instruments | hectare | periodical | Regions, Mipaaf-RAF, CUFA-INFC |
| 3. Private land area, broken down by Region and Autonomous Province, subject to Forest Management Plans and equivalent instruments | hectare | periodical | Regions, Mipaaf-RAF, CUFA-INFC |

| Action A.2 - Ecosystem services and payments | | | |
|---|---|---|---|
| **A.2.1 -Recognize and remunerate the services of public, environmental, and social interest provided by forests and maintained and enhanced by SFM** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of public and private projects, broken down by Region and Autonomous Province, aimed at recognizing and remunerating the Ecosystem Services of public and social interest generated by SFM | no. | periodical | Regions, Mipaaf-RAF |
| 2. Forest area, broken down by Region and Autonomous Province, subject to voluntary agreements for the provision of Ecosystem Services generated by sustainable forest management | hectare | periodical | Regions, Mipaaf-RAF |
| 3. Number of institutional actions (regulations), separated by State, Region, and Autonomous Province, aimed at recognizing and remunerating Ecosystem Services | no. | periodical | Mipaaf, Mite, Regions |

| Action A.3 - Land defence and water protection functions | | | |
|---|---|---|---|
| **A.3.1 - Maintain, increase and monitor the direct protective functions forest formations, defense of property, infrastructure and people** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area, by Region and Autonomous Province, of direct protection forests | hectare | periodical | CUFA-INFC and Regions |
| 2. Public financial resources allocated for interventions in direct protection forests, broken down by State, Region and Autonomous Province, and categorized by financial instruments | euro | annual | Mipaaf, Mite, Regions |
| **A.3.2 - Enhance the role of protection forests and SFM for the defence of hydrogeological and for water protection** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area, by Region and Autonomous Province, of direct protection forests for hydrogeological and water protection | hectare | annual | Mipaaf, Mite, Regions |
| 2. Public financial resources allocated for interventions in protective forests for hydrogeological and water protection, broken down by State, Region, and Autonomous Province, and categorized by financial instruments | euro | annual | Mipaaf, Mite, Regions |
| 3. Area, by Region and Autonomous Province, of forests subject to SFM interventions for hydrogeological planning and water protection defence | hectare | annual | Mipaaf, Mite, Regions |
| 4. Public financial resources allocated to SFM interventions for hydrogeological and water protection defence, broken down by State, Region, and Autonomous Province, and separated by financial instruments | euro | annual | Mipaaf, Mite, Regions |

| Action A.4 - Biological Diversity of Forest Ecosystems | | | |
|---|---|---|---|
| **A.4.1 - Protect and monitor forest biodiversity at national, regional, and ecoregional levels** | **Unit of measure** | **Frequency** | **Source** |
| 1. Conservation status of forest ecosystems (indicators Natural Capital Report) | various units | periodical | Mite, Mipaaf, ISPRA, Regions |
| 2. Diversity of forest types at regional and ecoregional levels (cartography of vegetation series) | various units | periodical | Mite, Mipaaf, ISPRA, Regions |
| 3. Number of recognized old-growth forests, distinguished by Region and Autonomous Province, in the National Network of the Mipaaf | no. | periodical | Mipaaf, Regions |
| 4. Area, distinguished by Region and Autonomous Province, of recognized old-growth forests, in the National Network of Mipaaf | hectare | periodical | Mipaaf, Regions |
| 5. Number of plant and animal species endemic or of conservation interest found in forests at the regional scale | no. | periodical | Mite, Mipaaf, ISPRA, Regions |
| 6. Development of the "Interdisciplinary National Forest Biodiversity Monitoring Program" | yes/no | within 2 years | Interministerial coordination |
| 7. Public financial resources allocated to the protection and monitoring of forest biodiversity at the national, regional and ecoregional levels, broken down by State, Region and Autonomous Province | euro | annual | Mipaaf, Mite, Regions |
| **A.4.2 - Reduce and/or stop the loss and improve the biological diversity of forest ecosystems** | **Unit of measure** | **Frequency** | **Source** |
| 1. Diversity of flora, fauna and tree species (Forest Europe indicators) | various units | periodical | Mite, Mipaaf, ISPRA, Regions |
| 2. Conservation status of forest habitats (consistency potential heterogeneity, actual cover compared to potential cover, etc.) (Forest Europe indicators-from Habitats Directive-characteristic floristic combination, dynamics and taxonomy) | various units | periodical | Mite, Mipaaf, ISPRA, Regions |
| 3. Forest fragmentation and land consumption (Forest Europe indicators). | various units | periodical | Mite, Mipaaf, ISPRA, Regions |
| 4. Number and types of threatened forest species by Regions and Autonomous Province (Forest Europe indicators) | no. | periodical | Mite, Mipaaf, ISPRA, Regions |
| 5. Ad hoc scientific studies (flora, fauna, soil, coenosis, ecosystems, etc.) (Forest Europe indicators) | n.a. | periodical | Mite, Mipaaf, ISPRA, Regions, R&D |
| 6. Public financial resources aimed at reducing and/or halting loss and improving biological diversity of forest ecosystems, broken down by State, Region and Autonomous Province, and by financial instruments | euro | annual | Mite, Mipaaf, Regions |

| A.4.3 - Conserve and enhance the structural and functional ecological, biogeographic and landscape diversity and complexity of the silvo-pastoral heritage | Unit of measure | Frequency | Source |
|---|---|---|---|
| 1. Area of protected or environmentally constrained forests, broken down by State, Region and Autonomous Province, and by degree of protection (Forest Europe indicators) | hectare | periodical | Mite, Regions, Managing Authorities |
| 2. Area of protected or environmentally constrained forests managed by forest management plans, broken down by State, Region, and Autonomous Province, and by degree of protection | hectare | periodical | Mite, Regions, Managing Authorities |
| 3. Number and area of forest habitats at regional scale, with reporting of priority habitats (Forest Europe indicators) | hectare | periodical | Mite, Regions, Managing Authorities |
| 4. Conservation status of forest ecosystems (structural, physiognomic, functional conservation and in relation to the territorial landscape context) (Habitats Directive indicators) | hectare | periodical | Mite, Regions, Managing Authorities |
| 5. Forest area subjected to projects aimed at increasing ecological, structural, and functional biogeographic complexity | hectare | periodical | Mite, Regions, Managing Authorities |
| 6. Forest area subject to projects aimed at increasing the landscape value of forests, including in relation to spatial complexity and heterogeneity | hectare | periodical | Mic, Regions, Managing Authorities |
| 7. Forest area subject to protection under Article 136 of Legislative Decree No. 42/2004 | hectare | periodical | Mic, Regions |
| 8. Forest area encumbered by civic and collective uses | hectare | periodical | Regions |
| 9. Number of non-native species eradication interventions at regional scale | no. | periodical | Mite, Mipaaf, Regions |
| 10. Public financial resources aimed conserving and improving the structural and functional ecological, biogeographical and landscape diversity and complexity of the forestry and pastoral heritage, broken down by State, Region and Autonomous Province and by financial instruments | euro | annual | Mipaaf, Mite, Mic, Regions |
| 11. *Ad hoc* scientific studies (flora, fauna, soil, coenosis, ecosystems, ecotones, etc.) | n.a. | n.a. | Mite, Mipaaf, ISPRA, Regions, R&D |

| Action A.5 - Damaged forest resources and prevention of natural and human-made hazards | | | |
|---|---|---|---|
| **A.5.1 - Provide for active prevention actions against natural and anthropogenic hazards, plant disease, fire, pollution and biotic and abiotic adversities** | **Unit of measure** | **Frequency** | **Source** |
| 1. Forest area, distinguished by Region and Autonomous Province, damaged by natural disturbances and anthropogenic causes, and by types of disturbances (fire, wind, plant disease, other biotic and abiotic adversitieś, and anthropogenic causes ("Forest damage" indicators by Forest Europe) | various units | annual | Mipaaf, Mite, Regions |
| 2. Forest area, distinguished by Region and Autonomous Province, subjected to prevention interventions against natural and anthropogenic disturbances, categorized by type of disturbance (abiotic—fire, wind, etc.; biotic—phytopathologies, etc.) and anthropogenic causes | hectare | annual | Mipaaf, Mite, Regions |
| 3. Public financial resources allocated to natural and anthropogenic risk prevention interventions, broken down by State, Region, and Autonomous Provincs, and categorized by financial instruments and types of disturbance (fire, wind, plant diseases, other biotic and abiotic adversities, and anthropogenic causes) | euro | annual | Mipaaf, Mite, VVFF, Civil Protection, Regions |
| **Sub-Action A.5.2 – Reconstitute Forest potential damaged by natural or anthropogenic disturbances, fires, natural disasters and catastrophic events, and restore degraded forests in line with local ecological and biogeographical potential** | **Unit of measure** | **Frequency** | **Source** |
| 1. Forest area reconstructed and/or restored following natural disturbances and anthropogenic causes, categorized by type of disturbance (fire, wind, plant diseases, other biotic and abiotic adversities, and anthropogenic causes) | hectare | annual | Mipaaf, Mite, Regions |
| 2. Public financial resources allocated for reconstruction and restoration interventions following natural disturbances and anthropogenic causes, broken down by State, Region, and Autonomous Province, and categorized by financial instruments and types of disturbance (fire, wind, plant diseases, other biotic and abiotic adversities, and anthropogenic causes) | euro | annual | Mipaaf, Mite, Mic, VVFF, Civil Protection, Regions |

| Action A.6 - Climate Change Mitigation and Adaptation | | | |
|---|---|---|---|
| **A.6.1 - Reduce the negative impacts of climate change on forest systems and related socio-economic sectors** | **Unit of measure** | **Frequency** | **Source** |
| 1. Forest area involved in forestry interventions for climate change mitigation and adaptation, separated by State, Region, and Autonomous Province, and categorized by financial instruments | hectare | annual | Mipaaf, Mite, Regions |
| 2. Public financial resources allocated to forestry interventions for climate change mitigation and adaptation, broken down by State, Region, and Autonomous Province, and categorized by financial instruments | euro | annual | Mipaaf, Mite, Regions |
| 3. Soil condition (Forest Europe's "Soil condition" indicators) | various units | periodical | CUFA-INFC |
| 4. Forest carbon stock - soil and stand Forest Europe's "Forest carbon" indicators) | $CO_2$eq | periodical | CUFA-INFC, ISPRA, |
| 5. Forest age structure ("Age structure of Forest Europe" indicators) | hectare | periodical | CUFA-INFC |
| 6. Forest diameters distribution (Forest Europe's "Diameter distribution" indicators) | hectare | periodical | CUFA-INFC |

| | | | |
|---|---|---|---|
| 7. Growing stock (Forest Europe's "Growing stock" indicators) | cm | periodical | CUFA-INFC |
| 8. Defoliation (Forest Europe's "Defoliation" indicators) | hectare | annual | State, Forest Europe |
| **A.6.2 - Protect public safety, health and welfare and protect the assets of society and citizens** | **Unit of measure** | **Frequency** | **Source** |
| 1. Concentration and deposition of air pollutants, broken down by type: particulate matter, nitrogen oxides, ammonia, volatile organic compounds, sulphur dioxide, and heavy metals (Forest Europe indicators) | various units | annual | ISPRA |
| 2. Number of institutional initiatives, separated by State, Region, and Autonomous Province, aimed at increasing social and political awareness of the vulnerability of forest ecosystems and the role of the forestry sector and related supply chains | no. | annual | Mipaaf, Mite, Mic, Regions |

| **Action A.7 - Reforestation management** | | | |
|---|---|---|---|
| **A.7.1 - Enhance the value of new forest resources** | **Unit of measure** | **Frequency** | **Source** |
| 1. Newly formed area, by Region and Autonomous Province classified forest | hectare | periodical | CUFA-INFC, Mipaaf-RAF, ISPRA, Mite, Regions |
| 2. Public financial resources allocated to forest neoformation enhancement interventions distinguished by State, Region and Autonomous Province distinguished by financial instruments | euro | annual | Mipaaf, Mite, Mic, Regions |
| 3. *Ad hoc* scientific studies | n.a. | periodical | Mite, Mipaaf, ISPRA, Regions, R&D |
| **A.7.2 - Increase forest area** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area of afforestation and reforestation, distinguishing between agricultural land, forested areas temporarily devoid of stand, other land uses, peri-urban and urban areas, as well as by forest macro-typology (broadleaf, coniferous), broken down by Region and Autonomous Province | hectare | annual | CUFA-INFC, Mipaaf-RAF, ISPRA, Mite, Regions |
| 2. Public financial resources allocated to afforestation and reforestation interventions, broken down by State, Region, and Autonomous Province, and categorized by financial instruments, distinguishing between agricultural land, forested areas temporarily devoid of topsoil, other land uses, peri-urban, and urban areas | euro | annual | Mipaaf, Mic, Mite, Regions |
| **A.7.3 - Manage and naturalize, where appropriate, artificial afforestation and reforestation** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area of afforestation and artificial reforestation distinguished by Region and Autonomous Province, subjected to naturalization projects | hectare | periodical | Mipaaf, Mic, Mite, Regions |
| 2. Public financial resources allocated to management and naturalization interventions of afforestation and artificial reforestation distinguished by State, Regions and Autonomous Province and by financial instruments | euro | annual | Mipaaf, Mite, Regions |

| | | | |
|---|---|---|---|
| 3. Area of afforestation and artificial reforestation distinguished by Region and Autonomous Province, subject to forest management plans | hectare | periodical | Mipaaf, Mic, Mite, Regions |
| 4. Public financial resources allocated to afforestation and artificial reforestation management interventions broken down by State, Region and Autonomous Province and by financial instruments | hectare | annual | Mipaaf, Mite, Regions |
| 5. *Ad hoc* scientific studies | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |

**Table 10.b -** Indicators for the Operational Actions related to NFS Objective B

| Objective B - Efficient Use of Forest Resources for the Sustainable Development of Economies in Rural, Inland, and Urban Areas | | | |
|---|---|---|---|
| **Action B.1 - Sustainable Forest Management** | | | |
| **B.1.1 - Improve and increase SFM in existing forests** | **Unit of measure** | **Frequency** | **Source** |
| 1. Forest area, broken down by categories, forest types and form of government by Region and Autonomous Province (Forest Europe indicators) | no. | periodical | CUFA-INFC, Mipaaf-RAF, Regions |
| 2. Area under SFM distinguished by Regions and Autonomous Province (Forest Europe indicators) | no. | periodical | CUFA-INFC, Mipaaf-RAF, Mild Regions |
| 3. Annual ratio of forest increase to utilization, broken down by Region and Autonomous Province (Forest Europe indicators) | % | annual | Mipaaf-RAF, CUFA-INFC, ISTAT Regions |
| 4. Public financial resources allocated to sustainable forest management interventions broken down by State, Region and Autonomous Province and by financial instruments (Forest Europe's "Investment in forests and forestry" indicators) | euro | annual | Mipaaf-RAF, CUFA-INFC, ISTAT, Regions |
| 5. Average size of forest area broken down by Region and Autonomous Province | hectare | annual | Mipaaf-RAF, ISTAT, Regions |
| 6. Forest area encumbered by collective domains under Law no. 168 of November 20, 2017, broken down by Region and Autonomous Province | hectare | periodical | Regions, Mipaaf |
| 7. *Ad hoc* scientific studies | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |
| **B.1.2 - Recognize the role of SFM as a tool for the development of a new forest bioeconomy** | **Unit of measure** | **Frequency** | **Source** |
| 1. Public financial resources allocated to interventions aimed at the development of sustainable production systems and supply chains by State, Region and Autonomous Province and by financial instruments | euro | annual | Mipaaf-RAF, Regions |
| 2. Volumes of wood and paper recycling | sqm | annual | ISTAT, RELATED. |
| 3. Certified volumes of timber and timber products marketed | sqm | annual | ISTAT FEDERLEGNO, PEFC, FSC |
| 4. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |
| **B.1.3 – Promote the forest certification** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area, broken down by Region and Autonomous Province, subject to forest certification | hectare | annual | Mipaaf-RAF, CUFA-INFC, Regions, PEFC, FSC |
| 2. Public financial resources allocated to forest product and service traceability interventions separated by State, Region and Autonomous Province and by financial instruments | euro | annual | Mipaaf-RAF, Regions |
| 3. Volumes of certified timber marketed | sqm | annual | Mipaaf-RAF, CUFA-INFC, Regions, PEFC, FSC |

| Action B.2 - Qualification of forest workers and operational capacity of forest enterprises | | | |
|---|---|---|---|
| **B.2.1 - Competence, training and qualification of forestry workers and economic actors in forestry supply chains** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of Regions and Autonomous Province with a forestry training system (Forest Europe indicators) | no. | periodical | Mipaaf-RAF, Regions |
| 2. Number of forestry operators distinguished by Region and Autonomous Province (Forest Europe indicators) | no. | annual | Mipaaf-RAF, Regions |
| 3. Number of training events for certified forestry trainers by Region and Autonomous Province (indicators Forest Europe) | no. | annual | Mipaaf-RAF, Regions |
| 4. Number of training events for forest practitioners and recognition of professional requirements by Region and Autonomous Province (Forest Europe indicators) | no. | annual | Mipaaf-RAF, Regions |
| 5 Number of participants by training events, broken down by age and gender in different professional levels by MD for Region and Autonomous Province (Forest Europe indicators) | no. | annual | Mipaaf-RAF, Regions |
| 6. Public financial resources allocated to forestry training interventions broken down by State, Region and Autonomous Province and by financial instruments (Forest Europe indicators) | no. | annual | Mipaaf-RAF, Regions |

| Action B.3 - Local forestry supply chains | | | |
|---|---|---|---|
| **B.3.1 -Develop sustainable markets for regional and national wood forest products** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of regions with a register of forestry enterprises. | no. | annual | Mipaaf-RAF, Regions |
| 2. Number of registered enterprises, broken down by State, Region and Autonomous Province and by legal nature | no. | annual | Mipaaf-RAF, Regions |
| 3. Number of enterprises registered in the National Register of Operators Marketing Wood and Wood Products (Mipaaf Decree 9/02/2021), broken down by operators marketing wood or wood products import derivatives and for operators who market only domestically sourced wood | no. | annual | Mipaaf - RAF |
| 4. Annual marketed quantity of wood and wood by enterprises registered in National Register of Operators (Forest Europe indicators) | cm or ton | annual | Mipaaf - RAF |
| 5. Number of employees in first and second processing enterprises for wood, broken down by State, Regions, and Autonomous Provinces, and categorized by ATECO codes (Forest Europe indicators). | euro | periodical | ISTAT, Mipaaf-RAF, Regions |
| 6. Contribution of the forestry sector to GDP (Forest Europe indicators). | euro | periodical | ISTAT, Mipaaf-RAF, Regions |
| 7. Number of criminal offenses and associated penalties in the forestry sector, broken down by type and by Region and Autonomous Province | no. | periodical | CUFA |

| B.3.2 -Promote and enhance local artisanal and industrial processing of wood forest products | Unit of measure | Frequency | Source |
|---|---|---|---|
| 1. Volume of wood used by type and assortment ("Wood consumption" indicators, Forest Europe) | volumes | annual | ISTAT, Mipaaf-RAF, Regions |
| 2. Wood trade by type and assortment ("Wood consumption" indicators, Forest Europe) | volumes | annual | ISTAT, Mipaaf-RAF, Regions |
| 3. Import/export volumes by type and assortment ("Wood consumption" indicators, Forest Europe) | volumes | annual | ISTAT, Mipaaf-RAF, Regions |
| 4. Development of roundwood and sawnwood prices ("Wood consumption" indicators, Forest Europe) | euros/volumes | annual | ISTAT, Mipaaf-RAF, Regions |
| **B.3.3 - Improving the forest-wood-energy supply chain at the local scale** | **Unit of measure** | **Frequency** | **Source** |
| 1. Energy produced from wood ("Wood energy" indicators, Forest Europe) | kWh | periodical | Mipaaf-RAF, GSE |
| 2. Domestic, civil and industrial consumption of woody biomass for energy purposes by Region and Autonomous Province | volumes | periodical | ISTAT |
| 3. Volumes of timber destined for power plants used in electricity generation (capacity > 1 MW), classified by origin (forest, arboriculture, agricultural and artisanal waste) and disaggregated by Region and Autonomous Province | volumes | periodical | Mipaaf-RAF, GSE |
| 4. Number of interventions for the replacement of generator technologies, categorized by State, Regions, and Autonomous Provinces | no. | periodical | RAF, GSE, Mite, Regions |
| 5. Public financial resources allocated to interventions for the replacement of generator technologies, broken down by State, Regions, and Autonomous Provinces, and categorized by financial instruments | euro | periodical | To be completed |
| 6. Adoption of incentive systems such as Energy Efficiency (EE) certificates or thermal account mechanisms | no. | periodical | GSE |
| 7. Trends in biofuel price fluctuations | euro | periodical | Mipaaf-RAF, GSE |
| 8. Public financial resources allocated to biomass-based energy production initiatives, disaggregated by State, Regions, and Autonomous Provinces, and classified by financial instruments | euro | periodical | Mipaaf-RAF, Regions, GSE |
| 9. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |
| **B.3.4 - Promote wild forest products (art.3, com.2, let. d) of UTFFSC)** | **Unit of measure** | **Frequency** | **Source** |
| 1. Volumes of trade for wild forest products, by type and Region and Autonomous Province | ton | periodical | ISTAT, Regions |
| 2. Public financial resources allocated to wild forest product interventions, by distinct type for State, Region and Autonomous Province, for financial instruments | euro | periodical | Regions |
| 3. *Ad hoc* scientific studies and surveys | no. | periodical | Mite, Mipaaf, Miur, Regions, R&D |

| Action B.4 -Sociocultural services of forests | | | |
|---|---|---|---|
| **B.4.1 - Promote the development and provision of forest-related sociocultural services** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of events in forests for specific purposes, categorized by type (cultural, tourism and recreation, sports), and broken down by Region and Autonomous Province | no. | periodical | Mipaaf-RAF, Regions |
| 2. Public financial resources allocated to interventions for wild forest products, classified by type and disaggregated by State, Regions, and Autonomous Provinces, and categorized by financial instruments. | euro | periodical | Regions |
| 3. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |

| B.5 - Traceability of forest products | | | |
|---|---|---|---|
| **B.5.1 - Support effective traceability and control systems and detailed information on origin of woody and wild forest products** | **Unit of measure** | **Frequency** | **Source** |
| 1. Volume of forest products registered in traceability systems, categorized by type and assortment, and disaggregated by Region and Autonomous Province | ton | periodical | Mipaaf-RAF, Regions |
| 2. Number and volume of inspections conducted on forest products, classified by type and assortment, and broken down by Region and Autonomous Province | no. | periodical | Mipaaf-RAF, Regions |
| 3. Public financial resources allocated to forest product traceability initiatives, categorized by type, with allocations separated by State, Regions, and Autonomous Provinces, and classified by financial instruments, contributing to the combat of illegal timber trade | euro | periodical | Mipaaf-RAF, Regions |
| 4. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |

| Action B.6 - Responsible Consumption and Procurement. | | | |
|---|---|---|---|
| **B.6.1 -Promote domestically sourced forest products and support policies to purchase products from sustainably managed forests** | **Unit of measure** | **Frequency** | **Source** |
| 1. Marketed volumes of certified timber and timber products, by Region and Autonomous Province | cm | periodical | Mipaaf, ISTAT, Regions |
| 2. Number of public initiatives aimed at promoting the procurement of wood and wood-based products, broken down by Region and Autonomous Province | no. | periodical | Mipaaf, Regions |
| 3. Public financial resources allocated for economic and fiscal support and facilitation interventions in wood and paper recycling and reuse | euro | periodical | Mipaaf, Regions |
| 4. Public financial resources allocated to interventions aimed at promoting the purchase of forest products derived from sustainably managed forests, broken down by State, Regions, and Autonomous Provinces, and categorized by financial instruments | euro | periodical | Mipaaf, Regions |
| 5. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |
| **B.6.2 - Promote the culture of "cascading" use and recycling in the use of raw materials foresters** | **Unit of measure** | **Frequency** | **Source** |
| 1. Volumes of recycled wood, by Region and Autonomous Province | mc or ton | periodical | Mipaaf, ISTAT, Regions |
| 2. Volumes of recycled by-products, by Region and Autonomous Province | mc it ton | periodical | Mipaaf, ISTAT, Regions |
| 3. Number of public initiatives to promote the culture of wood and paper and reuse, by Region and Autonomous Province | no. | periodical | Mipaaf, Regions |
| 4. Public financial resources allocated for interventions to support the purchase of wood and wood-based products, by Region and Autonomous Province | euro | periodical | Mipaaf, Regions |
| 5. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |

**Table 10.c -** Indicators for the Operational Actions related to NFS General Objective C

| Objective C - Global forest responsibility and knowledge | | | |
|---|---|---|---|
| **Operational Action C.1 - Information and social and environmental responsibility of citizens** | | | |
| **C.1.1 - Promote public information and awareness interventions.** | **Unit of measure** | **Frequency** | **Source** |
| 1. Public participation and public awareness (indicators "Public awareness and participation of the public" Forest Europe) | no. | periodical | Mipaaf - RAF, Mite, Miur, Regions, R&D, associations |
| 2. Number of public information and awareness events by Region and Autonomous Province, on forestry topics, distinguishing between the following topics:<br>• Forest-related ecosystem services<br>• Sustainable forest management<br>• Biodiversity and the environment<br>• Landscape protection<br>• Forest policies<br>• more | no. | periodical | Mipaaf - RAF, Mic, Mite, Miur, Regions, R&D, associations |
| 3. Number of participants in public information and awareness events by Region and Autonomous Province, on forestry topics, distinguishing between the following topics:<br>• Forest-related ecosystem services<br>• Sustainable forest management<br>• Biodiversity and the environment<br>• Landscape protection<br>• Forest policies<br>• more | no. | periodical | Mipaaf - RAF, Mic, Mite, Miur, Regions, R&D, associations |
| 4. Public financial resources allocated for public information and awareness events for Region and Autonomous Province, on forestry topics, distinguishing between the following topics:<br>• Forest-related ecosystem services<br>• Sustainable forest management<br>• Biodiversity and the environment<br>• Landscape protection<br>• Forest policies<br>• more | euro | periodical | Mipaaf, Mic, Mite, Miur, Regions, R&D, associations |
| 5. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions R&D |

| Operational Action C.2 - Research, experimentation and transfer | | | |
|---|---|---|---|
| **C. 2.1 - Increase coordination and consultation between research and innovation and promote the Experimentation, technology transfer, extension and technical assistance in forestry** | **Unit of measure** | **Frequency** | **Source** |
| 1 Number of Research, training and further training (indicators "Research, training and further training," Forest Europe) | no. | annual | Mipaaf, Mite, Miur, Regions |
| 2. Number of technology transfer, dissemination and technical assistance events, in forestry for Region and Autonomous Province | no. | annual | Mipaaf, Mite, Miur, Regions |
| 3. Number of participants by type of event (of technology transfer, dissemination and assistance technique in forestry) for Region and Autonomous Province | no. | annual | Mipaaf, Mite, Miur, Regions |
| 4. Volume of public resources allocated to technology transfer, dissemination and technical assistance interventions in forestry by Region and Autonomous Province and by type of financial instrument | euro | annual | Mipaaf, Mite, Miur, Regions |
| 5. Number of Italian patents and peer reviewed publications | no. | annual | Mipaaf, Mite, Miur, R&D |
| 6. Number of national and regional forestry research calls distinguished by public funding, private funding | no. | annual | Mipaaf, Mite, Miur, Regions |
| 7. Number of international projects with Italian partners distinguished by type of financial instrument | no. | annual | Mipaaf, Mite, Miur, R&D |
| 8. Volume of public resources allocated to international projects with Italian partners broken down type of financial instrument | euro | annual | Mipaaf, Mite, Miur, R&D |
| 9. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |

| Operational Action C.3 - International Dimension of Forest Policies | | | |
|---|---|---|---|
| **C.3.1 - Give concrete implementation to international commitments by intensifying coordination activities and of cooperation and strengthening Italy's presence and role in international institutions** | **Unit of measure** | **Frequency** | **Source** |
| 1. Volume public financial resources committed to the setting and monitoring and evaluation of the National policies for implementation of international commitments | euro | annual | Mipaaf, Mite, Miur, R&D |
| 2. Number and funding for international cooperation projects aimed at the protection and sustainable development of forests | euro | annual | Mipaaf, Mite, Miur, R&D |
| 3. Forest-related public funds for international organizations and for the participation of Italian experts in international bodies related to the protection and sustainable development of forests | euro | annual | Mipaaf, Mic, Mite, Miur, R&D |
| 4. *Ad hoc* scientific studies and surveys | n.a. | periodical | Mite, Mipaaf, Miur, Regions, R&D |

**Table 11 -** Indicators for the NFS Specific Actions

| Specific Action 1 - Management of extreme events | | | |
|---|---|---|---|
| **A.S.1.1 - National Plan for the Management of Extreme Events** | **Unit of measure** | **Frequency** | **Source** |
| 1. Implementation of the National Plan for the management of extreme events | YES/NO | Within 5 years | Council of Ministers |
| 2. Resources committed to the implementation of the National Plan for the management of extreme events | euro | Within 5 years | Council of Ministers |

| Specific Action 2 - Coordination of forest fire fighting and prevention | | | |
|---|---|---|---|
| **A.S.2.1 - Inter-institutional coordination for fire governance, planning and management** | **Unit of measure** | **Frequency** | **Source** |
| 1. Implementation of the Interinstitutional Coordination for Fire Governance, Planning and Management | YES/NO | Within 5 years | Council of Ministers |
| 2. Resources committed to Interinstitutional Coordination for Fire Governance, Planning and Management | euro | Within 5 years | Council of Ministers |
| **2.2 - Coordination and convergence of forestry, agro-pastoral and environmental policies and interventions with fire governance strategies** | **Unit of measure** | **Frequency** | **Source** |
| 1. Implementation of the Interinstitutional Coordination for Fire Governance, Planning and Management | YES/NO | Within 5 years | Council of Ministers |
| 2. Resources committed to Interinstitutional Coordination for Governance, Planning and Management. fires | euro | Within 5 years | Council of Ministers |
| **2.3 - Regulatory update and post-fire recovery planning** | **Unit of measure** | **Frequency** | **Source** |
| 1. Implementation of regulatory update and post-fire recovery planning | YES/NO | Within 5 years | Council of Ministers |
| **2.4 - Fire Statistics and Fire Registry** | | | |
| 1. Reform of Statistics and Fire Cadastre | YES/NO | Within 5 years | Council of Ministers |

| Specific Action 3 - Genetic resources and forest propagation material | | | |
|---|---|---|---|
| **3.1 -Forestry nursery, genetic resources and forest propagation material** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of forest nurseries broken down by Region and Autonomous Province | n | periodical | Mipaaf, Regions |
| 2. Public resources committed for forest nursery, genetic resources and forest propagation material interventions distinguished by Region and Autonomous Province and financial instrument | euro | periodical | Mipaaf, Regions |
| 3 Number of certified forest nurseries broken down by Region and Autonomous Province | no. | periodical | Mipaaf, Regions |
| 4. *Ad hoc* studies and surveys | n.a. | periodicals | Mipaaf, Regions, R&D |
| **3.2 - Oriented silvicultural management and assisted migration or guided colonization** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of oriented silvicultural interventions and assisted migration or guided colonization | no. | periodical | Mipaaf, Mite, Regions |
| 2. Public resources committed to oriented silviculture and assisted migration or guided colonization interventions broken down by Region and Autonomous Province and financial instrument | euro | periodical | Mipaaf, Mite, Regions, |
| 4. *Ad hoc* studies and surveys | n.a. | periodicals | Mipaaf, Mite, Regions, R&D |

| Specific Action 4 - Arboriculture for wood and poplar cultivation | | | |
|---|---|---|---|
| **4.1 - traditional arboriculture and poplar cultivation** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area under wood arboriculture of which poplar trees distinguished by Region and Autonomous Province | hectares | periodical | Mipaaf, Mite, Regions |
| 2. Public resources committed to support traditional arboriculture and poplar cultivation distinguished by Region and Autonomous Province and financial instrument | euro | periodical | Mipaaf, Mite, Regions |
| **4.2 - Promoting permanent or temporary polycyclic and polyspecific plantations** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area committed to permanent or temporary polycyclic and polyspecific plantations distinguished by Region and Autonomous Province | hectares | periodical | Mipaaf, Mite, Regions |
| 2. Public resources committed to new facilities broken down by Region and Autonomous Province and financial instrument | euro | periodical | Mipaaf, Mite, Regions |

| 4.3 - Promote monitoring and support interregional market and supply chain agreements | Unit of measure | Frequency | Source |
|---|---|---|---|
| 1. Number of monitoring interventions of the timber arboriculture sector | no. | periodical | Mipaaf, Mite, Regions |
| 2. Public resources committed to wood arboriculture sector monitoring interventions broken down by Region and Autonomous Province and financial instrument | euro | periodical | Mipaaf, Mite, Regions |
| 3 Number of interregional market and supply chain agreements | no. | periodical | Mipaaf, Mite, Regions |
| 4. Public resources committed to interregional market and supply chain agreements broken down by Region and Autonomous Province and financial instrument | euro | periodical | Mipaaf, Mite, Regions |

| Specific Action 5 - Monumental trees and old-growth forests | | | |
|---|---|---|---|
| **5.1 - Monumental trees** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of monument trees listed in the national register | no. | annual | Mipaaf, Regions |
| 2. Public resources committed to monument trees distinguished by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| **5.2 - Old-growth forests** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of old-growth forests recognized in the national network distinguished by Region and Autonomous Province | no. | annual | Mipaaf, Regions |
| 2. Public resources committed to old-growth forests broken down by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |

| Specific Action 6 - Urban and peri-urban trees and forests | | | |
|---|---|---|---|
| **6.1 – Urban trees** | **Unit of measure** | **Frequency** | **Source** |
| 1. Linear meters of trees in urban areas distinguished by Region and Autonomous Province | m | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed to City Trees distinguished by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| **6.2 - Urban and peri-urban forests** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area of urban and peri-urban forests by Region and Autonomous Province | hectares | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed to urban and peri-urban forests separated by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |

| Specific Action 7- Riparian and lowland forests | | | |
|---|---|---|---|
| **7.1 - Protecting and restoring riparian forests** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area Riparian forests distinguished by Region and Autonomous Province | hectares | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed to protect and restore riparian forests separated by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| **7.2 - Protecting and restoring lowland forests** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area of lowland forests distinguished by Region and Autonomous Province | hectares | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed to protect and recover lowland forests separated by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| **7.3 - Protection and management of coastal forests and coastal pine forests.** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area Coastal forests and coastal pine forests distinguished by Region and Autonomous Province. | hectare | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed to protect and manage Coastal Forests and Coastal Pine Forests separated by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |

| Specific Action 8 - Conservation Status and Red List of Ecosystems | | | |
|---|---|---|---|
| **8.1 - Red List of Italian forest species, habitats and ecosystems** | **Unit of measure** | **Frequency** | **Source** |
| 1. Red List Monitoring | no. | periodical | Mite, Mipaaf, Regions |
| 2. Public resources committed for the protection of the forest species in the Italian Red List, habitats and ecosystems and financial instrument | euro | annual | Mite, Mipaaf, Regions |
| 3. Studies, censuses and *ad hoc* surveys | n.a. | periodical | Mipaaf, Mite, Regions, R&D |
| **8.2 - Conservation status of ecosystems at national and regional scales** | **Unit of measure** | **Frequency** | **Source** |
| 1. Biodiversity monitoring | various units | periodical | Mite, Mipaaf, Regions |
| 2. Studies, censuses and *ad hoc* surveys | n.a. | periodical | Mipaaf, Mite, Regions, R&D |

| Specific Action 9 - Agroforestry, agroforestry systems and cork farming | | | |
|---|---|---|---|
| **9.1 - Agroforestry and agroforestry systems** | **Unit of measure** | **Frequency** | **Source** |
| 1. Area under agroforestry and agroforestry systems distinguished by Region and Autonomous Province | hectares | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed to agroforestry and agroforestry systems broken down by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| **9.2 - Enhancement of cork farming and agro-silvo-pastoral systems with cork presence** | **Unit of measure** | **Frequency** | **Source** |
| 1. Cork area and agro-silvo-pastoral systems with cork presence distinguished by Region and Autonomous Province | hectares | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed by cork sector and agro-silvo-pastoral systems with cork presence distinguished by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| 3. Public resources committed by cork sector broken down by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |

| Specific Action 10 - Management of impacts between forests and wildlife | | | |
|---|---|---|---|
| **10.1 - Forest management and habitat protection of priority species** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number and Area of forest habitats with priority species distinguished by Region and Autonomous Province | hectares | annual | Mipaaf, Mite, Regions |
| 2. Public resources committed to Forest Management and Habitat Protection of Distinct Priority Species. By State, autonomous region and province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| 3. Studies, censuses and *ad hoc* surveys | | periodical | Mipaaf, Mite, Regions, R&D |
| **10.2 - Planning and management in forests with high densities of ungulates** | **Unit of measure** | **Frequency** | **Source** |
| 1. Ungulate load per forest area broken down by Region and Autonomous Province | no. and hectares | periodical | Mipaaf, Mite, Regions |
| 2. Number of management interventions in forests with high ungulate density | no. | periodical | Mipaaf, Mite, Regions |
| 3. Public resources committed for planning and management interventions in forests high ungulate density distinguished by State, Region and Autonomous Province and financial instrument | euro | annual | Mipaaf, Mite, Regions |
| 4. Studies, censuses and *ad hoc* surveys | n.a. | periodical | Mipaaf, Mite, Regions, R&D |

**Table 10 -** Indicators for NFS Instrumental Actions

| Instrumental Action 1 - Monitoring of socioeconomic and environmental variables, coordination and dissemination of information and statistical data | | | |
|---|---|---|---|
| **A.St.1.1 - Coordination and integration in forestry data and information collection** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of coordination and integration initiatives in forestry data and information collection | YES/NO | Within 5 years | Mipaaf, Mite, Mic, Regions, R&D |
| 2. Volume of public resources committed to coordination and integration actions in the collection of forestry data and information | euro | Within 5 years | Mipaaf, Mite, Mic, Regions, R&D |
| **A.St.1.2 - Public and periodic report on the status of the national forestry sector heritage and its production chains** | **Unit of measure** | **Frequency** | **Source** |
| 1. Realization of the second public report on the State of the national forestry sector its production chains | YES/NO | Within 5 years | Mipaaf |
| 2. Volume of public resources committed to the implementation of RAF2 | euro | Within 5 years | Mipaaf |
| 3. Number and type of stakeholders involved for RAF2 implementation | no. | Within 5 years | Mipaaf |
| **A.St.1.3 - National inventory of forests and forest carbon sinks** | **Unit of measure** | **Frequency** | **Source** |
| 1. Implementation of the new National Inventory of Forests and Forest Carbon Sinks | YES/NO | Within 5 years | Mipaaf, CUFA |
| 2. Volume of public resources committed to INFC implementation | euro | Within 5 years | Mipaaf, CUFA |
| 3. Number and type of stakeholders involved for INFC implementation | no. | Within 5 years | Mipaaf, CUFA |
| **A.St.1.4 - National forest information system (SIFOR) and georeferenced national forest map.** | **Unit of measure** | **Frequency** | **Source** |
| 1. Implementation of the National Forestry Information System | YES/NO | Within 5 years | Mipaaf |
| 2. Volume of public resources committed to SIFOR implementation | euro | Within 5 years | Mipaaf, |
| 3. Number and type of stakeholders involved in the implementation SIFOR | no. | Within 5 years | Mipaaf |
| 4. Realization of the georeferenced national forest map | YES/NO | Within 5 years | Mipaaf |
| 5. Volume of public resources committed to the implementation of the georeferenced National Forest Map | euro | Within 5 years | Mipaaf |
| 6. Number and type of stakeholders involved in the implementation of the georeferenced National Forest Map | no. | Within 5 years | Mipaaf |

| Instrumental Action 2 - Adjustment of the regulatory framework of forestry interest | | | |
|---|---|---|---|
| **A.St.2.1 - Synthesis and harmonization of regulatory processes and provisions of forestry interest** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of interventions aimed at achieving synthesis and harmonization of processes and regulatory provisions of forestry interest | YES/NO | Within 5 years | Mipaaf, Mite, Mic, Regions |
| 2. Number and type of stakeholders involved in the implementation of the georeferenced National Forest Map | no. | Within 5 years | Mipaaf, Mite, Mic, Regions |
| **A.St.2.2 - Regulatory simplification in forestry** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of interventions aimed at achieving regulatory simplification in forestry | YES/NO | Within 5 years | Mipaaf, Mite, Mic, Regions |
| 2. Number and type of stakeholders involved in the implementation of the georeferenced National Forest Map | no. | Within 5 years | Mipaaf, Mite, Mic, Regions |

| Instrumental Action 3 - Inter-institutional coordination and co-programming | | | |
|---|---|---|---|
| **A.St.3.1 - Continuous process of coordination of national and regional forestry policies** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of interventions to achieve a Continuous Process of Coordination of National and Regional Forestry Policies | YES/NO | Within 5 years | Mipaaf, Mite, Mic, Regions |
| 2. Number and type of actors involved in the implementation of Continuous process of coordination national and regional forestry policies | no. | Within 5 years | Mipaaf, Mite, Mic, Regions |

| Instrumental Action 4 - Consultation and coordination of stakeholders | | | |
|---|---|---|---|
| **A.St.4.1 - Promote actions to consult and coordinate most representative stakeholder organizations in decision-making and planning processes related to forests and forestry supply chains** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of actions for consultation and coordination of the most representative stakeholder organizations in decision-making and planning processes on forests and forestry supply chains, broken down by State, Region and Autonomous Province | YES/NO | Within 5 years | Mipaaf, Mite, Mic, Regions |
| 2. Number and type of actors involved for consultation and coordination actions of the most representative stakeholder organizations in decision-making and planning processes on forestry and Forestry supply chains, broken down by State, Region and Autonomous Province | no. | Within 5 years | Mipaaf, Mite, Mic, Regions |
| **A.St.4.2 - Involve local stakeholders in spatial planning of forest resources by implementing participatory governance models to define interactions and minimize conflicts** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number actions aimed involving local stakeholders in spatial planning of forest resources, implementing participatory governance models to define interactions and minimize conflicts | YES/NO | Within 5 years | Mipaaf, Mite, Mic, Regions |
| 2. Number and type of stakeholders involved for actions to involve local stakeholders in spatial planning of forest resources, implementing participatory governance models to define the interactions and minimize conflicts, broken down by Region and Autonomous Province | no. | Within 5 years | Mipaaf, Mite, Mic, Regions |
| **A.St.4.3 - Strengthen the advisory role of the Wood Supply Chain Table and the Forestry Consultation Table between the ministry and the Region and Autonomous Province** | **Unit of measure** | **Frequency** | **Source** |
| 1. Components of the Mipaaf Wood Supply Chain Table | no. | annual | Mipaaf, |
| 2. Number of annual meetings of the Mipaaf Wood Supply Chain Table | no. | annual | Mipaaf |
| 3. Number of annual meetings of the Mipaaf-Regions Forestry Coordination Table | no. | annual | Mipaaf, Regions |
| 4. Availability of a permanent forum on forests | YES/NO | annual | Regions |
| 5. Regional Chain Tables (number, components and annual meetings) | no. | annual | Regions |
| **A.St.4.4 - Promote public society's awareness of the role of forest activities** | **Unit of measure** | **Frequency** | **Source** |
| 1. Number of actions to promote public awareness of the role of activities in forest distinguished by State, Region and Autonomous Province | YES/NO | annual | Mipaaf, Mite, Mic, Regions, R&D, Associations |
| 2. Number and type of actors involved in actions to promote public awareness of the role of forest activities distinguished by State, Region and Autonomous Province | no. | annual | Mipaaf, Mite, Mic, Regions, R&D, Associations |
| 3. Volume of public resources committed to the implementation of actions to promote public awareness of the role of activities in forest distinguished by State, Region and Autonomous Province and type of financial instrument | euro | annual | Mipaaf, Mite, Mic, Regions, R&D, Associations |

| Instrumental Action 5 - Wood Cluster | | | |
|---|---|---|---|
| **A.St.5.1 - Establishment of a National Wood Cluster** | **Unit of measure** | **Frequency** | **Source** |
| 1. Realization of the **National Wood Cluster** | YES/NO | Within 5 years | Council of Ministers |
| 2. Volume of public resources committed to the National Wood Cluster broken down by State, Region and Autonomous Province and type of financial instrument | euro | annual | Mipaaf, Mite, Mic, Regions, R&D, Associations |

## Abbreviations

| | |
|---|---|
| AIB | Forest firefighting (*Anti Incendi Boschivi*) |
| AICS | Italian Agency for Development Cooperation (*Agenzia Italiana Cooperazione allo Sviluppo*) |
| art. | Article |
| ASCI | Areas of Special Conservation Interest |
| CAP | Common Agricultural Policy |
| CBD | Rio de Janeiro Convention on Biological Diversity |
| CCD | Convention to Combat Desertification |
| Ch. | Chapter |
| CIFOR | Center for International Forestry Research |
| CIPE | Interministerial Committee for Economic Planning (*Comitato Interministeriale per la Programmazione Economica e lo Sviluppo Sostenibile*) |
| CITES | Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| cm | cubic metre |
| CNR | National Research Council |
| $CO_2$eq | Carbon dioxide equivalent |
| COM | Communication from the European Commission |
| COP | Conference of the Parties |
| CREA | Council for Agricultural Research and Analysis of Agricultural Economics |
| CUFA | Forestry, Environmental and Agri-Food Unit Command of Carabinieri Armed Force |
| D.Lgs | Legislative Decree |
| DPR | Presidential Decree |
| EAFRD | European Agricultural Fund for Rural Development |
| EEA | European Environmental Agency |
| EFI | European Forest Institute |
| ESR | Effort Sharing Regulation |
| EU | European Unio |
| EUDR | Regulation on Deforestation-free Products |
| FE | Forest Europe |
| FLEGT | Forest Law Enforcement, Governance and Trade |
| FSC | Forest Stewardship Council |
| FSPP | Forestry Sector Framework Program |
| GSE | Italian Energy Services Operator (Gestore dei Servizi Elettrici) |
| kWh | kilowattora |
| IFNC | National Forest and Carbon Sink Inventory (*Inventario Forestale Nazionale e del Carbonio*) |
| IPCC | Intergovernmental Panel on Climate Change |
| ISPRA | Italian Institute for Environmental Protection and Research |
| ISTAT | Italian National Institute of Statistics |
| ITTO | International Tropical Timber Organization |
| IUCN | International Union Conservation of Nature |
| JRC | Joint Research Centre of the European Commission |
| LD | Legislative Decree |
| LULUCF | Land Use, Land Use Change and Forests |
| m | metre |
| MCPFE | Ministerial Conferences on the Protection of Forests in Europe |
| MD | Ministerial Decree |
| Mic | Ministry of Culture |

| | |
|---|---|
| Mipaaf | Ministry of Agriculture, Food and Forestry Policies |
| Mite | Ministry of ecological transition |
| Miur | Ministry of Education, University and Research |
| Mtoe | million tonnes of oil equivalent |
| n.a. | not available |
| no. | number |
| PEFC | Programme for Endorsement of Forest Certification schemes |
| RAF | Report on the state of Forests and the Forest Sector in Italy (*Rapporto sullo stato delle foreste e del settore forestale in Italia*) |
| RDP | Rural Development Program |
| R&D | Research and Development (institutions) |
| SFM | Sustainable Forest Management |
| SIFOR | National Forestry Information System |
| sqm | square metre |
| ton | tonnes |
| UN | United Nations |
| UN/ECE | United Nations Economic Commission Europe |
| UNCCD | United Nations Convention to Combat Desertification |
| UNCED | United Nations Conference on Environment and Development |
| UNFF | The United Nations Forum on Forests |
| UTFFSC | Unified Text for Forests and Forest Supply Chains (*Testo Unico per le Foreste e le Filiere Forestali*) |
| VVFF | Fire Department (*Vigili del Fuoco)* |

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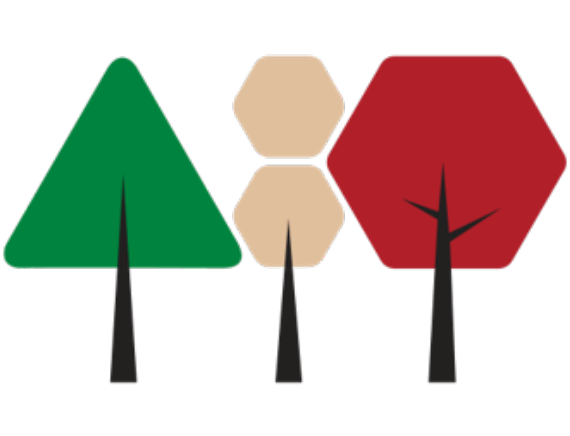

Strategia Forestale Nazionale

mipaaf
ministero delle politiche agricole alimentari e forestali