MINISTRY OF ENVIRONMENT & ENERGY

NATIONAL FORESTRY ACCOUNTING PLAN (NFAP)

GREECE

NCESD
NATIONAL CENTRE for the ENVIRONMENT
& Sustainable Development

MARCH 2020

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Introduction

The Greek National Forestry Accounting Plan (NFAP) is prepared in the framework of Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework (LULUCF Regulation), and amending Regulation (EU) 525/2013 and Decision 529/2013/EU. The Plan contains the Greek Forest Reference Level (FRL), for the period from 2021 to 2025, in accordance with paragraph 3 of article 8 of the LULUCF Regulation.

The NFAP has been prepared by the Ministry of Environment and Energy/ National Centre for the Environment and Sustainable Development, with the contribution of YLORIKI Co.

The Ministry of Environment and Energy is the governmental body responsible for the development and implementation of forest and environmental policy in Greece, as well as for the provision of information concerning the state of the environment in Greece in compliance with relevant requirements defined in international conventions, protocols and agreements. It has the overall responsibility for the NFAP and the official consideration and approval of the plan prior to its submission. Moreover it is responsible for the co-ordination of all involved ministries, as well as any relevant public or private organization, in relation to the implementation of the provisions of the Kyoto Protocol, according to the Law 3017/2002 with which Greece ratified the Kyoto Protocol.

Yloriki Co is responsible to contribute in data collection and analysis, calculation of FRL, composition of NFAP and supporting the Ministry of Environment and Energy after the submission of the NFAP.

The NFAP is organized into four chapters, accompanied by three Appendixes. Chapter 1 provides a general introduction of the forest reference level and how it addresses the criteria set out in Annex IV of the LULUCF Regulation. Chapter 2 provides general information on the FRL, including the description of carbon pools and greenhouse gases included and its consistency with the GHG Inventory, and the description of the long-term forest strategy. Chapter 3 describes the modeling approach applied for estimating the FRL, including background data sources, equations and assumptions, and its consistency with the GHG Inventory. Chapter 4 provides a detailed analysis of the calculation of the FRL.

Greek FRL for the period 2021-2025 is equal to -3,038.67 kt CO_2 eq. yr-1. This corresponds to the annual average value of the aggregated CO_2 , CH_4 and N_2O emissions and removals in Forest Land (FL: Managed).

Chapter 1: General Introduction

1.1 General description of the forest reference level for GREECE

Greek FRL for the period 2021-2025 is equal to -3,038.67 kt CO_2 eq. yr-1. This corresponds to the annual average value of the aggregated CO_2, CH_4 and N_2O emissions and removals in Forest Land (FL: Managed) as reported in Table 1 below

Kt CO_2 eq.	2021	2022	2023	2024	2025	Average
CO_2 (living biomass)	-2,780.59	-2,910.79	-2,826.88	-2,928.15	-2,884.75	-2,866.23
CO_2 (HWP_FOD)	-161.01	-187.11	-165.99	-183.84	-170.02	-173.59
CH_4	1.15	1.15	1.15	1.15	1.15	1.15
N_2O	0.01	0.01	0.01	0.01	0.01	0.01
Total CO_2 eq. (HWP_FOD)	-2,940.44	-3,096.74	-2,991.71	-3,110.83	-3,053.61	**-3,038.67**
Total CO_2 eq. (HWP_IO)	-2,779.43	-2,909.63	-2,825.72	-2,926.99	-2,883.59	-2,865.07

Table 1: Forest Reference Level (FRL)

1.2 Consideration to the criteria as set in Annex IV of the LULUCF Regulation

Criterion (a): the reference level shall be consistent with the goal of achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, including enhancing the potential removals by ageing forest stocks that may otherwise show progressively declining sinks.

According to the above the average C stock of Greece should be increased across time. This is assured by the sustainability principals that forest management is using in Greece. Protection of forests and a sustainable ratio between increment and harvest contribute to this goal. It is depicted by the negative flux of CO_2 reported.

Criterion (b): the reference level shall ensure that the mere presence of carbon stocks is excluded from accounting.

According to this criterion the Business As Usual (BAU) scenario should not be modified in order not to have neither CO_2 removals nor CO_2 reductions. In Greek FRL no assumptions of changing the BAU scenario have been taken. This is ensured by the continuation of sustainable forest management or protection of the areas.

Criterion (c): the reference level should ensure a robust and credible accounting system that ensures that emissions and removals resulting from biomass use are properly accounted for.

In forests and other wooded land areas (where harvest is being made) industrial round wood and fuelwood is accounted as a whole. Later and according to forest service archives there is separation of the usage. In FRL, and when the increment is calculated, harvest as a whole is taken into account (see chapter 3.3). harvest also is disaggregated between non-energy and energy wood. In the calculation of C pools Harvested Wood Products (HWPs) contain the production associated with industrial round wood. The ratio of how much biomass is allocated as fuelwood is based in actual data from Reporting Period (RP). Criterion “c” aims to ensure that any net permanent transfer of carbon from the biomass pool to the atmosphere is accounted for as a net emission since it determines a long-term change in the

CO_2 atmospheric concentration, while temporary GHG fluxes (e.g. harvest followed by forest regrowth) should not be accounted for as debits/credits. In Greek FRL the annual net biomass increment in total is larger than the projected C stock losses (i.e. harvest, disturbances and mortality) for the same year, therefore the biomass C stock is projected to increase across time. Further, this criterion aims to exclude emissions and subsequent removals in forest land that are not associated with the human activities and should therefore not be accounted i.e. emissions and removals associated with the natural disturbances (ND). Greek FRL takes ND into account directly as no Background Level (BL) value has been estimated yet, according to article 10 EU 841/2018.

Criterion (d): the reference level shall include the carbon pool of HWPS, thereby providing a comparison between assuming instantaneous oxidation and applying the first-order decay function and half-life values.

The Greek FRL includes the HWP pool, and estimates have been provided in Table 1 applying either the first order decay function, HWP_FOD, or the instantaneous oxidation, HWP_IO, meaning that there is no change in the HWP pool.

Criterion (e): a constant ratio between solid and energy use of forest biomass as documented in the period from 2000 to 2009 shall be assumed.

In Greece industrial round wood is harvested from all sustainably managed areas (only by selective cutting), (permanently or periodically) and not from Other Wooded Land (OWL). Fuelwood is harvested also from sustainably managed areas by “selective” or “clear” cutting. Considering that the harvesting ratio is more or less constant and related to increment, the ratio between material use and energy use has not been modified.

Criterion (f): the reference level should be consistent with the objective of contributing to the conservation of biodiversity and the sustainable use of natural resources, as set out in the EU forest strategy, Member States’ national forest policies, and the EU biodiversity strategy.

Forest management in Greece is implemented under the scope of sustainability and multifunctionality of forest ecosystems. Sustainability is a binding principle in managing forests and natural ecosystems in general, for the forest ecosystem services (material goods that can be produced by forests, as well as their non-material goods and services). The quantity of timber removed annually from Greek forests is far less than their net annual increment. This depicts the effort undertaken to rehabilitate and increase the density of Greek forests and constitutes a proof that they are sustainable managed. FRL is calculated under the same laws and principals that are used by forest management, protection of ecosystems e.tc. either national or European (e.g. Forest Europe)

Criterion (g): the reference level shall be consistent with the national projections of anthropogenic greenhouse gas emissions by sources and removals by sinks reported under Regulation (EU) n. 525/2013.

The national projections reported under Regulation (EU) No 525/2013 are referred to the whole LULUCF sector. The LULUCF sector comprises six land use categories.

In terms of the contribution of the different land categories in the GHG emissions/removals, forest land (mainly forest land remaining forest land) plays the prominent role in the whole sector.

According to the national report on projections submitted in 2019, net removals from the Forest land show an upward trend that is attributed mainly to the reduction in fellings and the afforestation programs started in 1994. The upward trend is projected to continue until 2035, with a lower rate however. The share of the forest land category to the total emissions/removals of the sector is projected to fluctuate between 55% and 70% approximately during the period 2020-2035.

The level and the trend of the net removals from the forest land are the same for the proposed FRL and the national projections.

Criterion (h): the reference level shall be consistent with greenhouse gas inventories and relevant historical data and shall be based on transparent, complete, consistent, comparable and accurate information. In particular, the model used to construct the reference level shall be able to reproduce historical data from the National Greenhouse Gas Inventory.

The FRL is ensuring consistency among the GHG inventory and the FRL estimates in the ways that are presented in detail in chapter 4.2. and it is able to reproduce the historical data from GHG inventory of Greece, as it is shown in the relevant Figures 11,12,15 and 16.

Chapter 2: Preamble for the Forest Reference Level

2.1 Carbon pools and greenhouse gases included in the forest reference level

The FRL includes the following C pools:

- Aboveground biomass,
- Belowground biomass,
- Harvested wood products.

The FRL excludes the following C pools:

- Soil organic matter pool (SOM).
- Dead wood and litter pools (DOM)

They are estimated under IPCC Tier 1, which means that their contribution has been set to 0 (zero).

Detailed reasons for excluding C pools from FRL's calculation

CO_2 emissions / removals from soils are associated with changes in the amount of organic carbon stored in soils. These changes are a function of the balance between inputs to soil of photosynthetically fixed carbon and losses of soil carbon via decomposition. In general, changes in forest type, management intensity and disturbance regime alter the carbon dynamics of forest soils. Under Tier 1, it is assumed that when forest remains forest the carbon stock in soil organic matter of mineral soils does not change, regardless of changes in forest management, forest types, and disturbance regimes, i.e. the carbon stock in mineral soil remains constant so long as the land remains forest. In Greece, forest type and management activities, such as silvicultural system, rotation length, harvest practices, site preparation activities do not change significantly over time, and therefore Tier 1 assumption can be used without introducing significant error in the calculations (Greek NIR, National Inventory Report 2018, for years 1990-2016).

Also, changes in carbon stocks of organic soils are associated with drainage and management perturbations of these soils. In Greece, areas of organic soils covered by forest are negligible, remain in a natural state and therefore greenhouse gas emissions/removals have not been considered (Greek NIR 2018, for years 1990-2016).

The time average value of these pools will remain constant, with inputs to dead matter pools balanced by outputs. This Tier1 approach was followed for dead organic matter carbon stocks in all forest land, and is considered as true-to-life since these lands do not experience significant changes in forest types or management regimes. Prescribed fires and post logging burning of harvest residues are usually not practiced in Greece (Greek NIR 2018, for years 1990-2016).

Consequently, the dead organic matter pool and mineral soils in soil organic matter pools in Greece cannot be a net source of carbon.

All GHG relevant for the LULUCF sector have been included in the FRL, namely:

- Carbon dioxide (CO_2),
- Methane (CH_4),
- Nitrous oxide (N_2O).

2.2 Demonstration of consistency between the carbon pools included in the Forest Reference Level

Consistency between C stock changes in the aboveground biomass and in the belowground biomass pools is ensured by the application of the root-to-shoot ratios to derive the belowground biomass from the aboveground biomass. Accordingly, projected changes in the belowground biomass are directly proportional to the projected changes of aboveground biomass.

(aboveground biomass: All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage. the belowground biomass: All living biomass of live roots. Fine roots of less than (suggested) 2mm diameter are often excluded because these often cannot be distinguished empirically from soil organic matter or litter. IPCC.)

Three wooden product categories (sawn wood, wood-based panels, paper and paperboard) were taken into account in calculations. HWP harvested for energy purposes were accounted for on the basis of instantaneous oxidation.

Consistency between C stock changes in the aboveground pool and in the HWP pool has been ensured by deriving a HWP-specific inflow ratio from the annual HWP inflow (t C) in the period 2000-2009 to the total harvest (m^3) in forest stands and plantations. The average value of the ratios calculated across the reference period has been applied during the projection period to the projected amount of harvest, ensuring consistency between the two C pools.

2.3 Description of the long-term forest strategy

2.3.1 Overall description of the forests and forest management in GREECE and the adopted national policies

Forests & Management

Forest Management in Greece

Due to the great range of climatic and geomorphologic conditions, species and ecosystems diversity is high. Greece entirely lies in the Mediterranean biogeographical region, with ecosystems ranging from semi-desert and maquis, to cold climate mountain forests of birch, scots pine and spruce. Wetlands (rivers, estuaties, deltas, lagoons, shallow lakes, shallow marine formations, and marshes) cover a relatively wide area (210,000 hectares) and forests cover nearly 30% of the country's territory.

About two-thirds of the Greek territory is covered by a hilly or mountainous terrain, with the typical landscape being rugged and steep. Greece has a very extensive coastline of about

15.000 kilometers and about 3.000 islands, which represent 20% of the land area. The coastline is mainly rocky and sandy with about 5% wetlands.

Greek flora and fauna are among the richest in Europe: more than 5.500 plant species have been recorded, with a large number of endemic species, due to the isolation of mountains and islands. Nearly all mammal species recorded are indigenous, as well as 85% of freshwater fish species.

Greece hosts a large variety of Mediterranean habitats included in the reference list of the Natura 2000 initiative (EU Birds Directive 79/409/EEC and Habitats Directive 92/43/EEC): from open sea, tidal areas and sea dunes, to several types of shrubs and grasslands and Mediterranean mountainous forests of coniferous.

Greece is signatory to the International Biodiversity Convention (IBC) and current laws, as a result of harmonization with European Community legislation and/or international agreements implement and respect the IBC · environmental and ecological services of forests are, thus, considered by the national legislation. High priority is given to the conservation and enhancement of biodiversity and protection of endemic species and their biotopes, since Greece is a region characterized by its high biodiversity (ca. 1600 endemic species) and c. 41,5 % of the country's forest area is included in the Natura 2000 network. Among other issues related to the conservation of biotopes, there is high tolerance of deadwood and biotope protection within stands.

The Greek list of Natura 2000 sites includes since December 2017 446 areas. The total area of the network, when overlapping between the areas of the above types of sites is excluded, rises to 6,624,241.4 ha, of which 3,681,600.3 ha are land (27,9% of terrestrial part of Greece) and 2,942,641.1 ha are marine areas (22.3% of territorial waters). The Natura 2000 sites are mostly wide areas and are scattered throughout the country.

Forest management in Greece is greatly affected by the facts that most forests (a) belong to the State (Table 3) and (b) grow under permanent threats, such as wildfires and grazing. Thus, forest ecosystems' sustainability and restoration, enhanced by increased biodiversity, are traditionally of highest priority for forest managers, rather than intensified wood production. Differences in management policies aroused by different management purposes.

For the sustainable management of forests in Greece certain criteria and indicators have been established by the State authorities. Forest Management is conducted by the State Forest Service, which is responsible for the Management Plans and standards and by Forest Co-operatives, under the supervision of the Forest Service. Management Plans with a horizon of 10 yrs are conducted only for productive forests, while their application may be extended in the form of harvesting tables till the next Management Plan is in action. Furthermore, special Management Plans are being developed for protected areas.

Area type	Area (kHa)	(%)
Forest	3,359	51.6
Other wooded land	3,154	48.4
Total	6,513	100.0

Table 2: Distribution of forests and other wooded land according to its type

Owner	Forest	OWL	Total	(%)
State	2200	2626	4826	74.1
Municipalities	403	183	587	9.0
Private owners	269	154	423	6.5
Other (monasteries & joint forest properties)	487	190	677	10.4
Total	3359	3154	6513	100

Table 3: Distribution of forests and other wooded land by ownership status

More than half of the total forest area in Greece is covered by forests managed and regenerated as coppice forests and coppice with standards which are even-aged. These include mainly oak forests with a 15-30-yr-rotation period and Castanea sativa forests with a 20-25-yr-rotation period, except from the case of Mt Athos where longer rotation periods may be applied. Oak forests in Greece are partly under conversion to high forests by application of selective negative thinning. High uneven-aged forests comprise the second mostly applied management practice (Table 4), where natural regeneration takes place. Planting and seeding are used only for reforestation and afforestation purposes and seeds are collected by natural forest stands neighboring the reforested areas.

Management type	Area (kHa)	(%)
High forest	1,166	34.7
Coppice forest	1,612	48.0
Coppice forest with standards	581	17.3
Total	3,359	100.0

Table 4: Distribution of forests according to their management type

Vegetation type	Area (kHa)	(%)
Coniferous	1,430	21.9
Broadleaves	1,929	29.7
Evergreen Broadleaves	3,153	48.4
Total	6,513	100.0

Table 5: Distribution of forests and other wooded land according to their vegetation type

Forest management plans

The Forest Service is responsible for managing the state forests while it supervises the management of the non-state forests.

A 10-year forest Management Plan, drawn up according to the specifications in force, defines and organizes the types and the time of all the activities that have to take place in the forest. This plan constitutes the basic instrument of inventorying the state of forest and its socio-economic and natural environment, of analyzing forest factors and planning future interventions and planning of silvicultural activities such as fellings, prohibitions of grazing etc. of registering and inventorying the state of forest and its socio-economic and natural environment, of analyzing forest phenomena and planning future interventions in order to create the special arrangements and planning of fellings in the forest. The elaboration of a Management Plan is mandatory for all forests over 100 ha and of annual felling 200 m^3. Forest and other wooded land of less than 100 ha are managed according to a cutting table that applies for one year. The percentage of forests, state and non-state, managed according

to a management plan has increased comparing the 1975-1985 period with the 1986-1995 period, but it is still quite low. This is mainly due to administrative reasons. Thus, forest Management Plans are not implemented in all Greek forests. Moreover, the appearance of fir tree mortality years ago, was the cause firstly for the suspension of a considerable number of Management Plans, because no one could predict the evolution of this phenomenon and secondly, for the absence of new Management Plans for many fir forests managed regularly before the tree mortality phenomenon. The phenomenon, however, receded almost totally from all areas and thus the management of forests can continue as it was in the past.

The permanent forestry plans may be revised or amended within the time of validity, unless extremely and unforeseen events take place (natural disaster, fire partial or total). In case of an expired management plan the logging can be done by logging tables compiled and approved for a period of up to five years, as long as they are compiled on the basis of a plan or forestry report, otherwise they are validated and applied for one year.

The silvicultural system used in the high forests in Greece is the selection system. This system is regarded as most ecologically and physically stable and requires constant skilled management. There is no clear cutting and only single trees are removed. On the contrary, in the coppice forests the clear cutting system with remainings in each stump is applied.

Nowadays new guidelines for the forest management plans are developed by the Ministry of Environment and Energy in Greece. The old ones were updated in 2018, with the basic changes being:

- the obligation to develop management plans solely on computer and the delivery of texts, tables and geospatial data in hard copy but also electronically editable form.
- the division of the forest, its parts and clusters based on natural elements (e.g. streams, ridges, watercourses) and other important technical data (e.g. roads, institutionalized boundaries of settlements), while their area has to be measured only through Geographical Information Systems (GIS)
- the introduction of specific management practices for mitigation and adaptation of forests to climate change
- the emphasis on the ecosystem services of the forest and the particular management that can arise from them
- enhancing the production of non-wood products (e.g. fruits, bark, mushrooms, aromatic and medicinal plants, honey, etc.)
- the development of management plans in accordance with the requirements of national and European legislation and on the basis of the information and data of the Natura 2000 sites
- the integration of the already ratified forest maps and the Management plans for grazing with forest management plans

Final harvest system

Generally in Greek forestry the continuous forest cover is being applied. The final harvest system depends on the species characteristics and the management priorities of each site, as below:

In pine forests, regeneration usually occurs after fire. Moreover, the natural regeneration may be promoted if needed by means of selective thinning.

Most of the broadleaf forests consisting of oaks, beech and to a lesser extend chestnut are managed as coppice and coppice with standards. Until 1992 c. 65% of the country's forests belonged to this category. Nowadays, most of the coppice forests are under conversion, apart from the privately-owned ones. Almost all beech forests, apart from the limited privately-owned ones, are regarded as being fully converted to high forests. There is no updated information available on the progress of conversion of the other broadleaf species.

In high forests, group selection with shelter wood is applied. Particularly in the limited high forests of Picea abies and Abies sp. individual selection with shelter wood is applied.

Short rotation is being applied only in poplar plantations and afforestation of degraded rural areas with certain forest species.

In forest areas included in the Natura 2000 network (c.41.5 % of the country's forest area management has to be based on Special Environmental Studies, where priority should be given to the protection of Habitats and Sites of Community Interest of Annexes I and II of the Habitats' Directive 92/43/EEC and Annex I of the Birds' Directive 2009/147/EC. The required Special Environmental Studies are currently being completed for Natura 2000 areas in Greece and Presidential Decrees are expected in the following few years. However, the requirements of the respective Directives are already taken under consideration by managers of the local forest services and the organizations responsible for the protection of the Natura 2000 areas.

Policies

National Forest Strategy

In 2018 the Ministry of Environment and Energy in Greece adopted a National Forest Strategy, valid for 20 years (2018-2038). It is the first forest strategy developed in the country.

It was a joint initiative of the Ministry of Environment and Energy and the Parliamentary Committee for the Environment. A group of 30 members (forestry experts, climate change experts etc.) worked for the development of the strategy, based on the results of several meetings, workshops and public consultation that took place during a five month period.

On November 2018 the Ministerial Decision of the Strategy was issued (Government Gazette B' 5351) and the first action plans was issued on July 5th, 2019.

The vision of the Strategy is as follows:

"Ensure sustainability and increase the forest contribution to the national economy through multifunctionality, adaptability, socio-economic role enhancement and taking into consideration climate change".

Some of the priorities of the National Forest Strategy are summed up on the following issues:

- Systematic forest management of all ecosystems for the reduction of forest fires, taking into consideration sustainability & multiple forest ecosystem services
- Recognition of forest value and enhancement of forest contribution to bio-economy and circular economy
- Forest management aiming to adapt - mitigate climate change
- Conservation, restoration & enhancement of provided forest ecosystem services
- Coherence of national forest policy with forest international & European policies, targets and commitments

The Strategy contains seven thematic axes, divided to horizontal and vertical:

Horizontal axes:

- Forestry Governance
- Inventory – Monitoring
- Research – Innovation

Vertical axes

- Forest Economy
- Climate Change
- Forest Ecosystems Protection and ecosystem services optimization
- International and European Policies

Climate change is seriously considered in the National Forest Strategy. This is reflected in the "Inventory – Monitoring" horizontal axe and in the "Climate Change" vertical axe.

The general objective of the Inventory-Monitoring axe is to establish a permanent and flexible mechanism for National Forest Inventories and Monitoring, which will be able to record various variables, LULUCF demanded included. On the other hand, Climate Change vertical axe's general objectives are:

- The assessment of forest ecosystems viability to climate change.
- Forest management for the adaptation of forest ecosystems to climate change.
- Contribution to the mitigation of climate change by increasing carbon capture and storage in forest ecosystems.

The direction for the actions for achieving the general objectives of this axe are:

- Assessment of forest ecosystems' vulnerability based on the Regional Plans for Climate Change Adaptation (National Climate Change Adaptation Strategy)
- Suitable policy and measures for the LULUCF sector
- Forest land conservation and forest ecosystems' quality increase
- Restoration of low quality forest land and afforestation on marginal agricultural land
- Evaluation and exploitation of the genetic diversity of Greek forest ecosystems and selection of genetic material resistant to climate change
- Reduction of forest management carbon footprint
- Promotion of the use of wood as a substitute for materials with negative environmental footprint.

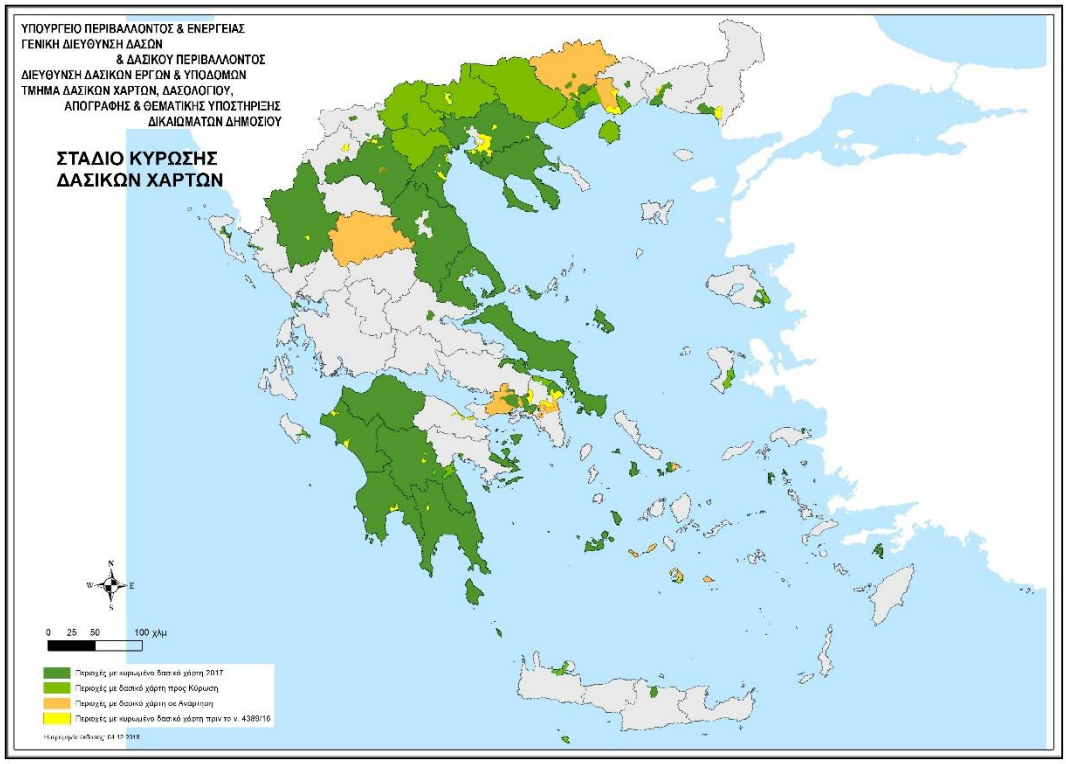
The abovementioned Regional Plans for Climate Change Adaptation are foreseen in the National Climate Change Adaptation Strategy, which was ratified in 2016 in Greece. The 13

Plans, one for every region, are developed nowadays, based on the climate conditions and vulnerability of these regions. Additionally a National Council for the Adaptation to Climate Change has been formed in Greece since 2017. The National Council for Adaptation to Climate Change is the central advisory body of the State to coordinate, monitor and evaluate Climate Change Adaptation Policies.

Forest maps in Greece

Although Greek constitution in Greece has since 1975 demanded the development of forest maps for the whole territory, it is only lately (2017-2018) that this work is in progress. These last two years Greece has ratified forest maps for the 44.32% of its territory, while for the rest of the area almost 10.5% are being suspended and the 45% are being developed nowadays for suspension on the last days of 2019.

The ratification of the forest maps has showed that almost 62% of the Greek land is forests and other wooded land.



First Greek Forest Inventory (1992)

The contribution of the National Inventory of Forests to the evaluation of forest resources, formulation of forestry policy and planning of forest development is significant. Up to now in Greece only one National Inventory of Forests has been carried out, published in 1992. Another inventory, an empirical, one preceded it in 1964 entitled "Distribution of Forests in Greece". It includes data on the distribution of forest and other wooded land areas by type of ownership, management type, forest species, i.e. it is an area inventory and not one of growing stock and increment. The collection of inventory data was carried out by head foresters for each community, based on inventory cards entitled "General Forest Statistical

data". They were supplemented with approved forestry plans and documents as well as maps drawn at a scale of 1:100 000 (Distribution of Forest in Greece 1994).

The carrying out of the National Inventory of Forests started in 1963 and due to scientific, administrational and financial procedures, field work was finished in 1985. Its results were published in 1992. The inventory planning was based on a double sampling system. In the first stage of sampling, a number of sampling areas of forest on aerial photographs of proper scale (photo-plots) was designated in a systematic way. Then a stereoscopic examination of photo-plots was implemented and the information, relating to forest species, crown density, mean height of trees, wood volume etc. was registered. The information collected so far, was used as basic criteria for stratification. In the second stage, by applying the statistical method of optimum sample distribution, the necessary number of sampling areas of forests for carrying out measurements on the ground (ground plots) was selected from the already classified photo-plots per stratum in a random way. In the inventory, aerial photographs at a mean scale of 1:20,000, 1:30,000 and 1:42,000, were used. 95,220 photo-plots were examined stereoscopically on Greece's total area, classified according to land use, forest species, crown density, tree height, volume stratum, erosion class, aspect class etc. 2,744 sampling areas were selected to cover the country' s total area, of which 647 were "non-forest", 361 "forest without volume" and 1,736 "forest with volume".

The National Inventory of Forests provides, accurate data in relation to the area of forests, volume, increment, mortality, quality and category of harvested timber. The work of developing and analyzing quantitative indicators became difficult due to the absence of at least a second inventory. Thus, the shortage of comparable data did not allow forest parameters to be analyzed over the time. The need to carry out a new inventory and to repeat it every ten years, as it happens in Mid European countries, is absolutely necessary. It is pointed out however, that the next inventory should be planned and organized differently than the previous one, according to the specific needs of Greece in order to accurate record of forests.

Nowadays a call is prepared for the second National Forest Inventory, which is combined with the country’s obligations to LULUCF Regulation and the NFAP and FRL reporting for the second period.

2.3.2 Description of future harvesting rates under different policy scenarios

The quantity of timber removed annually from Greek forests is far less than their net annual increment (based on directives from Greek Forest Service in order to assure sustainability). This depicts the effort undertaken to rehabilitate and increase the density of Greek forests and constitutes a proof that they are sustainable managed. A rate of approximately less than 35% of annual increment is being harvested, depending on clusters condition and vitality.

According to the National Forest Strategy, issued in November 2018, which will be valid until 2038, the Forest ecosystems in Greece should enhance their contribution to the National Gross Domestic Product, both from wood and non-wood products, and help to the direction of the climate change mitigation.

Since the Strategy is in its initial stages, two scenarios are suggested for the future harvesting rates in Greece.

Scenario 1: No differentiation will take place on the harvesting rates

This scenario is taken into consideration because it is still unsure if and when the intentions expressed in the National Forest Strategy text will take place. Although the first action plan was issued on July 5th, 2019, it has not yet been implemented (as of March 2020), so it is a safe scenario that the harvesting rates will remain the same in the next years.

Scenario 2: The harvesting rates will be increased in the next years

In the Forest Economy axe of the National Forest Strategy, an intension is expressed for the use of all available forest ecosystems for timber production. In this direction an action is expressed as: "Investigation of the possibilities of increasing sustainable harvesting at the level of the annual increment in forest ecosystems". Additionally, the first action plan nowadays, as mentioned above the harvesting rate is 30-40% in Greece. So, in this scenario it is considered that in the next years the harvesting rate will increase to the levels of the sustainable yield.

Chapter 3: Description of the modelling approach

3.1 Description of the general approach as applied for estimating the Forest Reference Level

The FRL is estimated by a general model that calculates the living biomass pool C stock by adding the annual increment and subtracting annual losses due to harvest (industrial roundwood and fuelwood), forest fires (directly) and mortality, as described in detail in chapter 3.3.

For the calculation of FRL three strata have been delineated, regarding: Prefectures – Forest Management – Vegetation Types.

Forest land has been stratified within the regional administrative boundaries of 52 prefectures of Greece. These areas where separated in two categories of forest land:

i. Forests, Permanently sustainably managed
ii. Forests, Periodically sustainably managed

The above areas where separated also by vegetation types that referred to them:

i. Conifers and Broadleaves - (Forests, Permanently sustainably managed)

Forests (Sustainably managed permanently or periodically):

It includes both closed forest formations where trees of various stores and undergrowth cover a high proportion of the ground and open forest formations with a continuous grass layer in which tree canopy cover at least 10% of the ground. These areas are used for wood production (industrial, technical, fuelwood e.tc.) and other environmental services (multifunctional).

The forest definition applied for the FRL is the same used for Greek GHG inventory and in the previous inventories, which was also adopted in the framework of the Kyoto Protocol. The threshold values for tree crown cover, land area and tree height are:

ii. 25% minimum tree crown.
iii. 0.3 hectares minimum land area.
iv. 2 meters tree height, or the potential to achieve it.

In the forest area there may be parcels of conifers, broad-leaved and evergreen broad-leaved. Separation in permanent or periodic management refers to the fact that the areas under permanent management are subject to continuous composition of Forest Management Plans, while other areas have intermittent composition of FMPs (Forest Management Plans), with the periodic importation - use of cutting tables, for management needs.

At the same time, there are areas outside delimited forests and outside FMPs' that are subject to protective management, such as non-harvesting, reforestation, protective cuttings, etc.

In accordance to Greek NIR , the forest areas that will be used to calculate the Greek FRL will only be those under Permanent Management.

3.2 Documentation of data sources as applied for estimating the Forest Reference Level

All the areas that are used in calculations are derived from the Greek Forest Inventory of 1992 and are considered to be the same across time periods. No area changes are projected. The area of each stratum is taken as constant and its value is presented for year 2009.

Data for increment and harvest are derived from the archives of Forest Service (from forest management plans, harvest inventories e.tc.). Depending on areas (availability of data or not), values from general estimations reported in Greece and used for forest land calculation (e.g. Estimated Value of Forest Land in Greece, 2980/11-2014. Ministry of Environment & Energy) have been taken into account. No age related data were available.

For burnt areas, all available data from forest service and fire department, that have been previously reported (for LULUCF), has been used.

No gap filling of data is implemented, for missing values, in order to calculate the FRL.

3.2.1 Documentation of stratification of the managed forest land

The total forestland area of Greece is stratified in 52 prefectures, (categorized by forest management) as it is presented on the following table.

PREFECTURE	PERMANENTLY SUSTAINABLY MANAGED FORESTS (kHa)	PERIODICALLY SUSTAINABLY MANAGED FORESTS (kHa)
AETOLIA-ACARNANIA	0.431	138.521
MOUNT ATHOS		15.927
ARGOLIS		6.751
ARCADIA	22.477	71.703
ARTA	18.108	19.195
ATTICA		74.234
ACHAEA	0.578	83.298
BOEOTIA	4.323	32.119
GREVENA	39.719	37.558
DRAMA	152.987	77.446
DODECANESE		64.379
EVROS	137.121	0.00
EUBOEA	38.961	74.915
EVRYTANIA	37.188	79.609
ZAKYNTHOS		6.042
HLEIAS	10.244	52.278
IMATHIA	38.048	14.372
HERAKLION		10.418
THESPROTIA	1.458	19.941
THESSALONIKI	30.137	16.450
IOANNINA	70.963	139.770
KAVALA	4.257	78.861

KARDITSA	35.512	19.806
KASTORIA	40.772	23.488
KERKYRA		4.167
KEFALONIA		11.460
KILKIS	51.696	7.115
KOZANI	15.882	55.980
CORINTHIA	10.366	59.894
CYCLADES		5.834
LACONIA	12.519	24.010
LARISSA	27.968	32.444
LASITHI		10.625
LESBOS	0.722	48.446
LEFKADA		0.208
MAGNESIA	21.139	25.781
MESSENIA	8.147	35.773
XANTHI	78.029	32.279
PELLA	38.675	46.765
PIERIA	20.323	25.785
PREVEZA		16.328
RETHYMNO		5.000
RHODOPE	45.462	47.717
SAMOS		17.710
SERRES	68.167	40.941
TRIKALA	69.261	67.662
PHTHIOTIS	39.878	93.458
FLORINA	35.107	26.915
PHOCIS	9.283	94.917
CHALKIDIKI	11.780	86.788
CHANIA		19.166
CHIOS		11.251
TOTAL	**1,247.687**	**2,111.499**

Table 6: Area of forestland in Greece by management type

The total forestland area of Greece is presented by vegetation type on the following table.

PREFECTURE	PERMANENTLY SUSTAINABLY MANAGED FORESTS (kHa)	Conifers (kHa)	Broadleaves (kHa)
AETOLIA-ACARNANIA	0.431	0.241	0.190
ARCADIA	22.477	0.450	22.028
ARTA	18.108	7.243	10.865
ACHAEA	0.578	0.087	0.491
BOEOTIA	4.323	4.323	0.000
GREVENA	39.719	15.888	23.831
DRAMA	152.987	107.091	45.896
EVROS	137.121	95.985	41.136
EUBOEA	38.961	1.948	37.013
EVRYTANIA	37.188	33.470	3.719
HLEIAS	10.244	7.683	2.561

IMATHIA	38.048	22.829	15.219
THESPROTIA	1.458	0.539	0.918
THESSALONIKI	30.137	22.301	7.836
IOANNINA	70.963	28.385	42.578
KAVALA	4.257	2.341	1.916
KARDITSA	35.512	14.205	21.307
KASTORIA	40.772	23.240	17.532
KILKIS	51.696	49.112	2.585
KOZANI	15.882	8.735	7.147
CORINTHIA	10.366	0.104	10.262
LACONIA	12.519	0.250	12.268
LARISSA	27.968	19.578	8.390
LESBOS	0.722	0.534	0.188
MAGNESIA	21.139	18.602	2.537
MESSENIA	8.147	0.407	7.740
XANTHI	78.029	74.127	3.901
PELLA	38.675	37.515	1.160
PIERIA	20.323	8.129	12.194
RHODOPE	45.462	40.916	4.546
SERRES	68.167	54.533	13.633
TRIKALA	69.261	19.393	49.868
PHTHIOTIS	39.878	30.706	9.172
FLORINA	35.107	3.511	31.596
PHOCIS	9.283	8.354	0.928
CHALKIDIKI	11.780	5.301	6.479
TOTAL	**1247.687**	**768.056**	**479.631**

Table 7: Area of permanently sustainably managed forestland in Greece by vegetation type

The forest areas and their characteristics in Greece, as presented in the tables, may be reviewed in the future, as new data about forest areas are expected to be collected the upcoming years (mainly from the New Forest Inventory), leading to a technical correction in the GHG inventory, therefore to a technical correction in the calculated FRL. This is probably due to a number of factors such as:

- The change (increase) in the area of forests and woodlands (after the ratification of Forest Maps)
- The introduction of additional areas to permanent sustainable management
- The diversification of management practices in Greece
- The influx of data from the second Forest Inventory (that is to be implemented in the coming years)
- Implementation of a new national forest strategy (change of priorities in forest sector, etc.)
- Changes in Greek legislation (both on forest mapping and management)

3.2.2 Documentation of sustainable forest management practices as applied in the estimation of the Forest Reference Level

Sustainability is a binding principle in managing forests and natural ecosystems in general, for the material goods that can be produced by forests, as well as their non-material goods and services. The attempt to ascertain if sustainability is implemented in forest

management, led to the development of evaluation tools. Such tools are the criteria and indicators for sustainable forest management. Six (6) criteria, sixty (62) quantitative and twenty four (24) descriptive indicators have been developed.

Criterion 1: Maintenance and appropriate encashment of forest resources and their contribution to global carbon cycles

Criterion 2: Maintenance of forest's ecosystem health and vitality

Criterion 3: Maintenance and encouragement of productive functions of forests

Criterion 4: Maintenance, conservation and appropriate encashment of biological diversity

Criterion 5: Maintenance and appropriate encashment of protective functions in forest

Criterion 6: Maintenance of other socio-economic functions and conditions

In the near future (at least until 2030), there is no predicted deviation from the principles of sustainability

3.3 Detailed description of the modelling framework as applied in the estimation of the Forest Reference Level

The model that is used for the estimation of Greek FRL calculates the C stock of the living biomass pool by adding the annual net increment and subtracting annual losses associated with harvest (industrial roundwood and fuelwood), and mortality, which includes all other disturbances(i.e. drought, grazing, wind). Forest fires are excluded from the FRL directly in the final calculation (also see chapter 4.1)

Figure 1: Growth Flowchart

For the estimation of the total carbon in biomass, in total three (3) equations were used. The IPCC one, and two equations which help for the estimation of the annual volume of growing stock, a variable which is necessary for the application of the IPCC equation.

For estimating the annual volume of growing stock the following equation was used:

$V_i = G_i – H_i – M_i$ (1)

where V_i: volume of growing stock in year i (m^3/ha)

G_i: total current increment of growing stock in year i (m^3/ha)

H_i: total amount of harvest in year i (m^3/ha)

M_i: rate of mortality in year i (m^3/ha)

The annual average rate of mortality allows to calculate all losses due to natural mortality and all disturbances other than fires. It has been estimated at 5.5% based on findings from the Greek inventory (1992) that relate mortality to increment.

Biomass losses from timber harvest and fuel wood collection are calculated on the basis of official data from the Greek Forest Service (FMPs' for RP), based on the relationship between increment and harvest.

In equation (1) the Gi variable is unknown. Thus, we had to find a way to estimate it. Therefore, we modeled the annual growing stock (Vi) of the Greek forests and its relationship to the average total annual increment (AGi) using real data from the Public Forest Service.

The Forest Service data included the field measurement of the above variables from 939 public forests in whole Greece as they were available in the corresponding FMP. All the FMPs were valid for the period 2000-2009.

The data of the two variables from the 939 forests was imported into IBM SPSS software and was handled as follows:

1. All cases for which there was missing values either in one or both the two variables were removed. This method was preferred compared to replacing the missing values with a statistical method, i.e. linear interpolation.
2. The extreme values of the distribution of the two variables were removed. The objective was to achieve normality of the distributions, but also to avoid the possibility of incorrect typing of values during the construction of the Excel file by the Forest Service.

The previous two steps resulted in two variables that each consisted of 735 cases.

The two variables were transformed into their natural logs, since they could not be used in the regression model due to the non-normality of the original variables.

Linear regression analysis was performed on the logarithmic variables.

Normality test	**V**	**AG**
N	735	735
Kolmogorov Smirnov	0.341	0.392
Sig	0.000	0.000
Model fit	**Ln(AG)-Ln(V)**	
Correlation	0.937	
R square	0.877	
Linear Regression	**Coefficients**	**Std Error**
Constant	-2.51 (0.000)	0.138
Ln(V)	0.924 (0.000)	0.013

Table 8: Summary results of the modeling approach

As it is shown, the appropriate model for the estimation of the natural log of the average total annual increment was a linear one, where the independent variable was the natural log of annual growing stock. The R^2 coefficient was 0.877. The linear relationship is expressed as follows

Ln(AG) = -2.51+0.924Ln(V) (2)

and is presented in the following figure

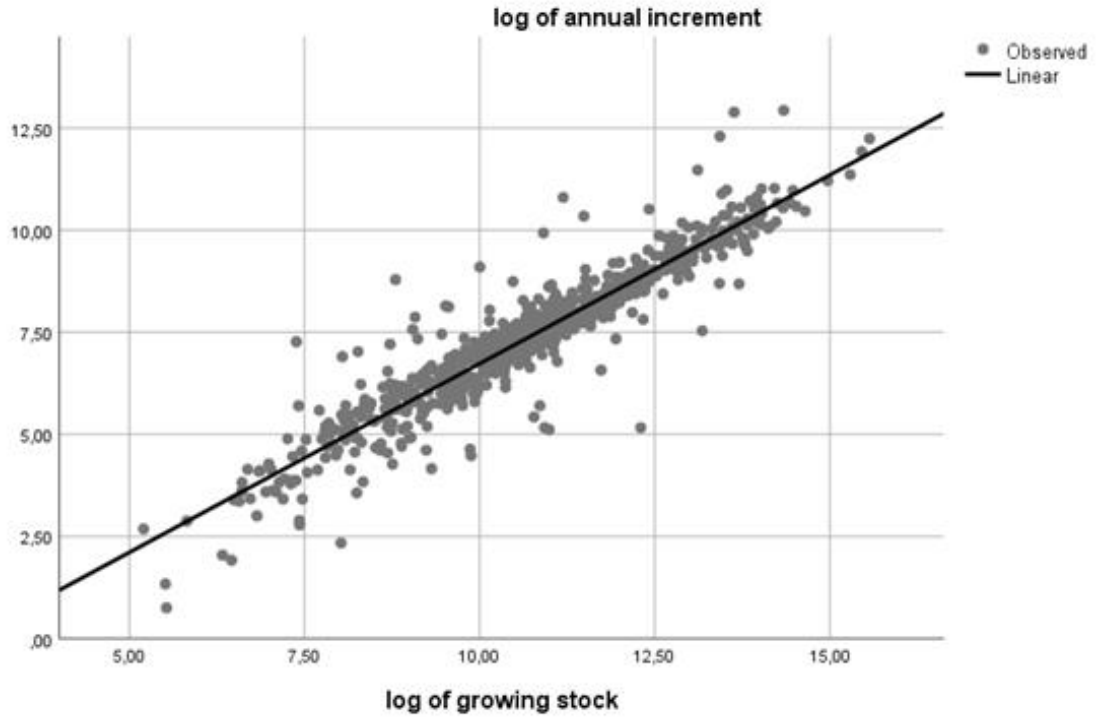


Figure 2: Relationship model of growing stock and increment

From equations (1) and (2) we estimate the Vi variable and use it in IPCC equation (3) which estimates the total carbon in biomass:

C = [V * D * BEF] * (1 + R) * CF (3)

C = total carbon in biomass, tones C

V = volume of growing stock, m^3/ha

D = basic wood density, tones d.m. m-3 volume

BEF = biomass expansion factor for conversion of volume to aboveground tree biomass, dimensionless.

R = root-to-shoot ratio, dimensionless.

CF = carbon fraction of dry matter (default = 0.5), tones C (tone d.m.)-1

The BEF*D is estimated by the following table.

Code	Types of forest vegetation	**BEF•D** (t/m^3)
A	Forests of *Acer* sp.	0.80
	Hydrophilous riparian forests	
	High forests of *Quercus*sp. in low altitude	
	High forests of *Fagus*sp. or *Betula*sp.	
B	High forests of *Quercus*sp.*(Q.petreae, Q. pubescens, Q. cerris)*	0.95
	Evergreen high forests of *Quercus*sp.	
C	Forests of *Picea abies* or *Abies* sp.	0.60
	Mixed forests of Abies sp. and *Picea abies*	
	Forests of *Pinus silvestris* or *Pinus nigra*	
D	Hilly and flat forests of *Pinus silvestris*	0.70
	Forests of *Pinus brutia* and *Pinus heldreichii*	
	Hilly forests of *Pinus nigra*	
	Mediterranean forests of *Pinus sp.*	
	Other coniferous forests	
E	Coppice forests of *Fagus*sp.or *Castanea*sp.or *Carpinus*sp.	0.80
F	Coppice forests of *Quercus* sp. (*Q. petreae, Q. pubescens, Q. aegilops, Q. frainetto, Q. trojana)*	0.90
	Coppice forests of *Ostria*sp.	
	Coppice evergreen forests of *Quercus*sp.	
G	Mediterranean broad-leaved evergreen forests	1.00
H	Broad-leaved forests with mean height <3,5 m	0.90
I	Coniferous forests with mean height <3,5 m	0.60

Table 9: coefficient BEF*D according to Greek vegetation (Source: estimated value of forest land in Greek Law 2980/4-11-2014, adjustment from Ciancio et al., 2007)

The R coefficient is estimated by the following table.

Vegetation type	R (Root/shoot ratio)
Conifers	0.46
Broadleaves	0.43
Evergreen broadleaves	2.83

Table 10: coefficient R according to vegetation (Source: estimated value of forest land in Greek Law 2980/4-11-2014)

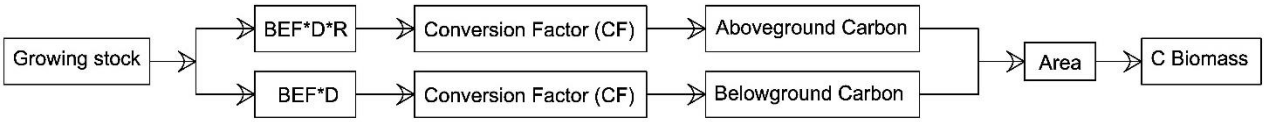


Figure 3: Biomass Flowchart

Chapter 4: Forest Reference Level

4.1 Forest reference level and detailed description of the development of the carbon pools

The projection starts in the year 2010. This starting date is consistent with the requirement to use the historical period until 2009 to define the current forest management practices to be projected.

As mentioned above, the management of Greek forests is being implemented in scope of sustainability. In the near future (at least until 2030), there is no predicted deviation from the principles of sustainability. However, small differences in the objectives of forest management in order to better adapt to Greek forests (based on data after the completion of the Forest Maps and the second Forest Inventory), may arise. These changes (if occurred e.g. until 2020) are going to be accounted in the period 2021-2025, similarly to all other sectors for which the impact of any change occurred since the base year is going to be accounted for.

So, for the period 2010-2030 the default assumption defined in the EU Regulation is adopted, which is the continuation of the current forest management practices occurred in the reference period 2000-2009.

FMPs have been characterized by an FMP-specific annual harvesting ratio, i.e. amount of harvest (m3/ha) to increment (m3/ha), derived from data collected in the period 2000-2009.

Biomass increment rate is the same applied to the RP estimates.

Harvesting rate for period 2010-2030 is based on actual production from RP.

The treatment of natural disturbances deviates from such approach since actual data on the biomass losses caused by fires have been used from 2000 until 2009. No Background Value has yet been calculated.

Climate variability was not inserted into the calculation of FRL

Biomass mortality rates applied are the same applied to the RP estimates, and constant across time.

The development of carbon pools in living biomass (above + below) is depicted to the following tables 11 and 12. They have been projected (as described in chapter 3.3), for the period 2010 – 2030.

C stocks of HWP ((sawn wood, wood panels, paper and paperboard) pool, are projected as described in following section, in order to be included in the calculations of the FRL for the period 2021-2025.

As reported in previous chapter, The FRL excludes the C pools of Soil organic matter pool (SOM) and Dead wood and litter pools (DOM). They are estimated under Tier 1, which means that their contribution has been set to 0 (zero).

Conifers (kt C)	Broadleaves (kt C)	TOTAL
461.980	327.281	**789.261**

Table 11: Living biomass (above + below) C stock of Greece for 2009

YEAR	Conifers (kt C)	Broadleaves (kt C)
2010	487.851	345.609
2011	475.839	337.100
2012	443.963	314.517
2013	464.613	329.147
2014	451.354	319.754
2015	467.524	331.209
2016	451.354	319.754
2017	463.366	328.263
2018	491.546	348.227
2019	487.851	345.609
2020	475.839	337.100
2021	443.963	314.517
2022	464.752	329.245
2023	451.354	319.754
2024	467.524	331.209
2025	460.594	326.299
2026	463.366	328.263
2027	491.546	348.227
2028	487.851	345.609
2029	475.839	337.100
2030	443.963	314.517

Table 12: Living biomass (above + below) C stock of Greece for period 2010-2030

4.1.1 Documentation of forest characteristics at the beginning of the FRL projection

The following table presents the living biomass C stock, above and below, by vegetation type and area of prefecture for year 2009.

PREFECTURE	Conifers (kHa)	Broadleaves (kHa)	Above + Below (kt C)
AETOLIA-ACARNANIA	0.241	0.190	0.214
ARCADIA	0.450	22.028	29.958
ARTA	7.243	10.865	12.105
ACHAEA	0.087	0.491	0.334
BOEOTIA	4.323	0.000	3.067
GREVENA	15.888	23.831	23.616
DRAMA	107.091	45.896	29.533
EVROS	95.985	41.136	193.157
EUBOEA	1.948	37.013	18.274
EVRYTANIA	33.470	3.719	44.234
HLEIAS	7.683	2.561	0.122
IMATHIA	22.829	15.219	8.648
THESPROTIA	0.539	0.918	0.604

THESSALONIKI	22.301	7.836	19.802
IOANNINA	28.385	42.578	54.355
KAVALA	2.341	1.916	2.147
KARDITSA	14.205	21.307	7.983
KASTORIA	23.240	17.532	13.197
KILKIS	49.112	2.585	1.839
KOZANI	8.735	7.147	0.631
CORINTHIA	0.104	10.262	3.370
LACONIA	0.250	12.268	14.754
LARISSA	19.578	8.390	9.225
LESBOS	0.534	0.188	0.431
MAGNESIA	18.602	2.537	0.773
MESSENIA	0.407	7.740	6.687
XANTHI	74.127	3.901	39.145
PELLA	37.515	1.160	46.875
PIERIA	8.129	12.194	8.853
RHODOPE	40.916	4.546	19.243
SERRES	54.533	13.633	27.613
TRIKALA	19.393	49.868	44.344
PHTHIOTIS	30.706	9.172	22.679
FLORINA	3.511	31.596	68.607
PHOCIS	8.354	0.928	8.431
CHALKIDIKI	5.301	6.479	4.413
TOTAL	**329.828**	**917.858**	**789.261**

Table 13: Living biomass (above + below) C stock of Greece for 2009 by prefecture

The following tables present the living biomass C stock, above and below for the period 2010-2030.

PREFECTURE	Above + Below (kt C)						
	2010	2011	2012	2013	2014	2015	2016
AETOLIA-ACARNANIA	0.225	0.220	0.205	0.215	0.209	0.216	0.209
ARCADIA	31.636	30.857	28.790	30.129	29.269	30.318	29.269
ARTA	12.783	12.468	11.633	12.174	11.826	12.250	11.826
ACHAEA	0.353	0.344	0.321	0.336	0.327	0.338	0.327
BOEOTIA	3.238	3.159	2.947	3.084	2.996	3.103	2.996
GREVENA	24.939	24.325	22.695	23.751	23.073	23.900	23.073
DRAMA	31.187	30.419	28.381	29.702	28.854	29.888	28.854
EVROS	203.974	198.952	185.624	194.258	188.714	195.475	188.714
EUBOEA	19.297	18.822	17.561	18.378	17.854	18.493	17.854
EVRYTANIA	46.711	45.561	42.508	44.486	43.216	44.764	43.216
HLEIAS	0.129	0.126	0.117	0.123	0.119	0.124	0.119
IMATHIA	9.132	8.907	8.311	8.697	8.449	8.752	8.449
THESPROTIA	0.638	0.623	0.581	0.608	0.590	0.612	0.590
THESSALONIKI	20.910	20.396	19.029	19.914	19.346	20.039	19.346
IOANNINA	57.399	55.985	52.235	54.665	53.105	55.007	53.105
KAVALA	2.268	2.212	2.064	2.160	2.098	2.173	2.098
KARDITSA	8.430	8.222	7.671	8.028	7.799	8.079	7.799
KASTORIA	13.936	13.593	12.682	13.272	12.893	13.355	12.893
KILKIS	1.942	1.894	1.767	1.850	1.797	1.861	1.797
KOZANI	0.666	0.650	0.606	0.634	0.616	0.638	0.616
CORINTHIA	3.558	3.471	3.238	3.389	3.292	3.410	3.292
LACONIA	15.580	15.196	14.178	14.838	14.414	14.931	14.414
LARISSA	9.741	9.502	8.865	9.277	9.013	9.335	9.013
LESBOS	0.455	0.444	0.414	0.433	0.421	0.436	0.421
MAGNESIA	0.816	0.796	0.743	0.777	0.755	0.782	0.755
MESSENIA	7.062	6.888	6.426	6.725	6.533	6.767	6.533
XANTHI	41.337	40.319	37.618	39.368	38.244	39.614	38.244
PELLA	49.500	48.281	45.047	47.142	45.797	47.437	45.797
PIERIA	9.349	9.119	8.508	8.903	8.649	8.959	8.649
RHODOPE	20.321	19.821	18.493	19.353	18.801	19.474	18.801
SERRES	29.159	28.441	26.536	27.770	26.978	27.944	26.978
TRIKALA	46.827	45.674	42.614	44.596	43.324	44.876	43.324
PHTHIOTIS	23.949	23.360	21.795	22.808	22.158	22.951	22.158
FLORINA	72.449	70.665	65.931	68.998	67.029	69.430	67.029
PHOCIS	8.903	8.684	8.102	8.479	8.237	8.532	8.237
CHALKIDIKI	4.660	4.545	4.241	4.438	4.312	4.466	4.312

Table 14.1: Living biomass (above + below) C stock of Greece for period 2010-2016 by prefecture.

PREFECTURE	Above + Below (kt C)						
	2017	2018	2019	2020	2021	2022	2023
AETOLIA-ACARNANIA	0.214	0.227	0.225	0.220	0.205	0.215	0.209
ARCADIA	30.048	31.876	31.636	30.857	28.790	30.138	29.269
ARTA	12.141	12.879	12.783	12.468	11.633	12.177	11.826
ACHAEA	0.335	0.356	0.353	0.344	0.321	0.336	0.327

BOEOTIA	3.076	3.263	3.238	3.159	2.947	3.085	2.996
GREVENA	23.687	25.128	24.939	24.325	22.695	23.758	23.073
DRAMA	29.622	31.423	31.187	30.419	28.381	29.710	28.854
EVROS	193.736	205.519	203.974	198.952	185.624	194.316	188.714
EUBOEA	18.329	19.443	19.297	18.822	17.561	18.384	17.854
EVRYTANIA	44.366	47.064	46.711	45.561	42.508	44.499	43.216
HLEIAS	0.123	0.130	0.129	0.126	0.117	0.123	0.119
IMATHIA	8.674	9.202	9.132	8.907	8.311	8.700	8.449
THESPROTIA	0.606	0.643	0.638	0.623	0.581	0.608	0.590
THESSALONIKI	19.861	21.069	20.910	20.396	19.029	19.920	19.346
IOANNINA	54.518	57.833	57.399	55.985	52.235	54.681	53.105
KAVALA	2.154	2.285	2.268	2.212	2.064	2.160	2.098
KARDITSA	8.007	8.494	8.430	8.222	7.671	8.031	7.799
KASTORIA	13.236	14.041	13.936	13.593	12.682	13.276	12.893
KILKIS	1.845	1.957	1.942	1.894	1.767	1.850	1.797
KOZANI	0.633	0.671	0.666	0.650	0.606	0.635	0.616
CORINTHIA	3.380	3.585	3.558	3.471	3.238	3.390	3.292
LACONIA	14.798	15.698	15.580	15.196	14.178	14.842	14.414
LARISSA	9.252	9.815	9.741	9.502	8.865	9.280	9.013
LESBOS	0.432	0.458	0.455	0.444	0.414	0.433	0.421
MAGNESIA	0.775	0.822	0.816	0.796	0.743	0.778	0.755
MESSENIA	6.707	7.115	7.062	6.888	6.426	6.727	6.533
XANTHI	39.262	41.650	41.337	40.319	37.618	39.379	38.244
PELLA	47.015	49.875	49.500	48.281	45.047	47.156	45.797
PIERIA	8.880	9.420	9.349	9.119	8.508	8.906	8.649
RHODOPE	19.301	20.475	20.321	19.821	18.493	19.359	18.801
SERRES	27.696	29.380	29.159	28.441	26.536	27.779	26.978
TRIKALA	44.477	47.182	46.827	45.674	42.614	44.610	43.324
PHTHIOTIS	22.747	24.131	23.949	23.360	21.795	22.815	22.158
FLORINA	68.812	72.997	72.449	70.665	65.931	69.018	67.029
PHOCIS	8.456	8.971	8.903	8.684	8.102	8.482	8.237
CHALKIDIKI	4.426	4.696	4.660	4.545	4.241	4.440	4.312

Table 14.2: Living biomass (above + below) C stock of Greece for period 2017-2023 by prefecture.

PREFECTURE	**Above + Below (kt C)**						
	2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
AETOLIA-ACARNANIA	0.216	0.213	0.214	0.227	0.225	0.220	0.205
ARCADIA	30.318	29.869	30.048	31.876	31.636	30.857	28.790
ARTA	12.250	12.068	12.141	12.879	12.783	12.468	11.633
ACHAEA	0.338	0.333	0.335	0.356	0.353	0.344	0.321
BOEOTIA	3.103	3.057	3.076	3.263	3.238	3.159	2.947
GREVENA	23.900	23.545	23.687	25.128	24.939	24.325	22.695
DRAMA	29.888	29.445	29.622	31.423	31.187	30.419	28.381
EVROS	195.475	192.578	193.736	205.519	203.974	198.952	185.624
EUBOEA	18.493	18.219	18.329	19.443	19.297	18.822	17.561
EVRYTANIA	44.764	44.101	44.366	47.064	46.711	45.561	42.508
HLEIAS	0.124	0.122	0.123	0.130	0.129	0.126	0.117
IMATHIA	8.752	8.622	8.674	9.202	9.132	8.907	8.311
THESPROTIA	0.612	0.603	0.606	0.643	0.638	0.623	0.581

THESSALONIKI	20.039	19.742	19.861	21.069	20.910	20.396	19.029
IOANNINA	55.007	54.192	54.518	57.833	57.399	55.985	52.235
KAVALA	2.173	2.141	2.154	2.285	2.268	2.212	2.064
KARDITSA	8.079	7.959	8.007	8.494	8.430	8.222	7.671
KASTORIA	13.355	13.157	13.236	14.041	13.936	13.593	12.682
KILKIS	1.861	1.834	1.845	1.957	1.942	1.894	1.767
KOZANI	0.638	0.629	0.633	0.671	0.666	0.650	0.606
CORINTHIA	3.410	3.359	3.380	3.585	3.558	3.471	3.238
LACONIA	14.931	14.710	14.798	15.698	15.580	15.196	14.178
LARISSA	9.335	9.197	9.252	9.815	9.741	9.502	8.865
LESBOS	0.436	0.430	0.432	0.458	0.455	0.444	0.414
MAGNESIA	0.782	0.771	0.775	0.822	0.816	0.796	0.743
MESSENIA	6.767	6.667	6.707	7.115	7.062	6.888	6.426
XANTHI	39.614	39.027	39.262	41.650	41.337	40.319	37.618
PELLA	47.437	46.734	47.015	49.875	49.500	48.281	45.047
PIERIA	8.959	8.826	8.880	9.420	9.349	9.119	8.508
RHODOPE	19.474	19.186	19.301	20.475	20.321	19.821	18.493
SERRES	27.944	27.530	27.696	29.380	29.159	28.441	26.536
TRIKALA	44.876	44.211	44.477	47.182	46.827	45.674	42.614
PHTHIOTIS	22.951	22.611	22.747	24.131	23.949	23.360	21.795
FLORINA	69.430	68.401	68.812	72.997	72.449	70.665	65.931
PHOCIS	8.532	8.406	8.456	8.971	8.903	8.684	8.102
CHALKIDIKI	4.466	4.400	4.426	4.696	4.660	4.545	4.241

Table 14.3: Living biomass (above + below) C stock of Greece for period 2024-2030 by prefecture.

The living biomass C stock of above and below is presented in detail for each prefecture in the tables of appendix 1 for 2009, and in appendix 2 for the period 2010-2030.

PREFECTURE	Area (kHa)	Biomass density (tC/ha)		
		Aboveground	Belowground	Total
AETOLIA-ACARNANIA	0.431	0.342	0.153	0.495
ARCADIA	22.477	0.932	0.401	1.333
ARTA	18.108	0.465	0.203	0.668
ACHAEA	0.578	0.404	0.174	0.578
BOEOTIA	4.323	0.486	0.224	0.709
GREVENA	39.719	0.414	0.181	0.595
DRAMA	152.987	0.133	0.060	0.193
EVROS	137.121	0.969	0.440	1.409
EUBOEA	38.961	0.328	0.141	0.469
EVRYTANIA	37.188	0.815	0.374	1.189
HLEIAS	10.244	0.008	0.004	0.012
IMATHIA	38.048	0.157	0.070	0.227
THESPROTIA	1.458	0.289	0.126	0.415
THESSALONIKI	30.137	0.451	0.206	0.657
IOANNINA	70.963	0.533	0.233	0.766
KAVALA	4.257	0.349	0.156	0.504
KARDITSA	35.512	0.156	0.068	0.225
KASTORIA	40.772	0.224	0.100	0.324
KILKIS	51.696	0.024	0.011	0.036
KOZANI	15.882	0.027	0.012	0.040
CORINTHIA	10.366	0.227	0.098	0.325
LACONIA	12.519	0.824	0.354	1.179
LARISSA	27.968	0.227	0.103	0.330
LESBOS	0.722	0.410	0.187	0.597
MAGNESIA	21.139	0.025	0.012	0.037
MESSENIA	8.147	0.574	0.247	0.821
XANTHI	78.029	0.344	0.158	0.502
PELLA	38.675	0.830	0.382	1.212
PIERIA	20.323	0.303	0.133	0.436
RHODOPE	45.462	0.290	0.133	0.423
SERRES	68.167	0.278	0.127	0.405
TRIKALA	69.261	0.447	0.193	0.640
PHTHIOTIS	39.878	0.390	0.178	0.569
FLORINA	35.107	1.366	0.588	1.954
PHOCIS	9.283	0.622	0.286	0.908
CHALKIDIKI	11.780	0.260	0.114	0.375
TOTAL	**1247.687**			

Table 15: Living biomass density (per hectare) of (above + below) C stock of Greece by prefecture (at the beginning of the FRL projection, year 2009)

4.1.2 Documentation on increment

Biomass increment values that are used to estimate the FRL are calculates as it is described in detail in chapter 3.3. They derive from the Forest Service data that include the field measurement of variables from 939 public forests in the whole of Greece as they were available in the corresponding FMP. All the FMPs were valid for the period 2000-2009.

In the following tables it is documented and depicted how increment functions through time.

PREFECTURE	Conifers	Broadleaves
AETOLIA-ACARNANIA	0.56	0.44
ARCADIA	0.02	0.98
ARTA	0.4	0.6
ACHAEA	0.15	0.85
BOEOTIA	1	0
GREVENA	0.4	0.6
DRAMA	0.7	0.3
EVROS	0.7	0.3
EUBOEA	0.05	0.95
EVRYTANIA	0.9	0.1
HLEIAS	0.75	0.25
IMATHIA	0.6	0.4
THESPROTIA	0.37	0.63
THESSALONIKI	0.74	0.26
IOANNINA	0.4	0.6
KAVALA	0.55	0.45
KARDITSA	0.4	0.6
KASTORIA	0.57	0.43
KILKIS	0.95	0.05
KOZANI	0.55	0.45
CORINTHIA	0.01	0.99
LACONIA	0.02	0.98
LARISSA	0.7	0.3
LESBOS	0.74	0.26
MAGNESIA	0.88	0.12
MESSENIA	0.05	0.95
XANTHI	0.95	0.05
PELLA	0.97	0.03
PIERIA	0.4	0.6
RHODOPE	0.9	0.1
SERRES	0.8	0.2
TRIKALA	0.28	0.72
PHTHIOTIS	0.77	0.23
FLORINA	0.1	0.9
PHOCIS	0.9	0.1
CHALKIDIKI	0.45	0.55

Table 16: Contribution factor of increment by vegetation type and by prefecture

PREFECTURE	Conifers (m^3)	Broadleaves (m^3)	TOTAL (m^3)
AETOLIA-ACARNANIA	1,171,092.63	927,554.45	2,098,647.08
ARCADIA	75,500.60	4,038,390.34	4,113,890.94
ARTA	701,595.80	1,029,279.74	1,730,875.54
ACHAEA	99,737.12	585,007.29	684,744.41
BOEOTIA	2,438,512.80	0.00	2,438,512.80
GREVENA	2,229,390.09	3,543,647.05	5,773,037.14
DRAMA	12,870,701.20	5,219,297.19	18,089,998.39
EVROS	3,903,978.27	1,532,752.03	5,436,730.30
EUBOEA	312,696.16	5,398,374.99	5,711,071.15
EVRYTANIA	9,676,800.00	1,099,200.00	10,776,000.00
HLEIAS	748,725.35	247,428.30	996,153.65
IMATHIA	1,677,291.05	1,077,130.84	2,754,421.89
THESPROTIA	178,299.60	297,884.00	476,183.60
THESSALONIKI	1,350,080.53	477,126.16	1,827,206.69
IOANNINA	5,395,490.62	8,530,256.64	13,925,747.26
KAVALA	1,150,146.39	957,997.30	2,108,143.69
KARDITSA	1,814,625.53	2,886,712.47	4,701,338.00
KASTORIA	3,651,047.77	2,767,214.33	6,418,262.10
KILKIS	3,855,678.56	205,059.99	4,060,738.55
KOZANI	1,683,121.45	1,426,902.02	3,110,023.47
CORINTHIA	28,613.30	4,196,551.30	4,225,164.60
LACONIA	41,126.11	1,795,959.88	1,837,085.99
LARISSA	2,219,568.13	1,016,489.24	3,236,057.37
LESBOS	1,479,928.80	532,942.80	2,012,871.60
MAGNESIA	2,221,991.26	296,546.00	2,518,537.26
MESSENIA	79,531.57	1,394,950.60	1,474,482.17
XANTHI	6,690,495.00	398,591.00	7,089,086.00
PELLA	5,827,684.55	168,937.14	5,996,621.69
PIERIA	484,383.00	688,091.00	1,172,474.00
RHODOPE	2,901,377.36	323,783.94	3,225,161.30
SERRES	5,707,253.99	1,338,692.09	7,045,946.08
TRIKALA	3,299,754.99	8,698,752.19	11,998,507.18
PHTHIOTIS	4,660,060.80	1,419,578.40	6,079,639.20
FLORINA	315,008.40	2,831,900.40	3,146,908.80
PHOCIS	7,065,882.00	852,232.80	7,918,114.80
CHALKIDIKI	747,494.17	878,018.93	1,625,513.10

Table 17: Volume of growing stock by vegetation type and by prefecture (at the beginning of the FRL projection, year 2009)

PREFECTURE		(m^3/ha)	
AETOLIA-ACARNANIA	Conifers	1.350	2.410
	Broadleaves	1.060	
ARCADIA	Conifers	0.056	2.786
	Broadleaves	2.730	
ARTA	Conifers	1.030	2.575
	Broadleaves	1.545	
ACHAEA	Conifers	0.284	1.891

	Broadleaves	1.607	
BOEOTIA	Conifers	1.880	1.880
	Broadleaves	0.000	
GREVENA	Conifers	1.430	3.574
	Broadleaves	2.144	
DRAMA	Conifers	1.746	2.494
	Broadleaves	0.748	
EVROS	Conifers	3.903	5.575
	Broadleaves	1.673	
EUBOEA	Conifers	0.106	2.121
	Broadleaves	2.015	
EVRYTANIA	Conifers	3.449	3.832
	Broadleaves	0.383	
HLEIAS	Conifers	0.876	1.168
	Broadleaves	0.292	
IMATHIA	Conifers	1.407	2.345
	Broadleaves	0.938	
THESPROTIA	Conifers	0.895	2.420
	Broadleaves	1.525	
THESSALONIKI	Conifers	2.705	3.655
	Broadleaves	0.950	
IOANNINA	Conifers	1.603	4.008
	Broadleaves	2.405	
KAVALA	Conifers	1.645	2.991
	Broadleaves	1.346	
KARDITSA	Conifers	1.310	3.276
	Broadleaves	1.966	
KASTORIA	Conifers	1.797	3.152
	Broadleaves	1.355	
KILKIS	Conifers	1.131	1.190
	Broadleaves	0.060	
KOZANI	Conifers	0.857	1.559
	Broadleaves	0.702	
CORINTHIA	Conifers	0.010	1.002
	Broadleaves	0.992	
LACONIA	Conifers	0.051	2.527
	Broadleaves	2.476	
LARISSA	Conifers	1.619	2.313
	Broadleaves	0.694	
LESBOS	Conifers	1.843	2.491
	Broadleaves	0.648	
MAGNESIA	Conifers	2.047	2.326
	Broadleaves	0.279	
MESSENIA	Conifers	0.179	3.570
	Broadleaves	3.392	
XANTHI	Conifers	1.882	1.981
	Broadleaves	0.099	
PELLA	Conifers	3.108	3.204
	Broadleaves	0.096	
PIERIA	Conifers	1.520	3.801

	Broadleaves	2.281	
RHODOPE	Conifers	1.718	1.909
	Broadleaves	0.191	
SERRES	Conifers	2.191	2.739
	Broadleaves	0.548	
TRIKALA	Conifers	1.064	3.801
	Broadleaves	2.737	
PHTHIOTIS	Conifers	1.755	2.279
	Broadleaves	0.524	
FLORINA	Conifers	0.514	5.141
	Broadleaves	4.627	
PHOCIS	Conifers	2.633	2.926
	Broadleaves	0.293	
CHALKIDIKI	Conifers	0.985	2.188
	Broadleaves	1.203	

Table 18: Increment by vegetation type and by prefecture (at the beginning of the FRL projection, year 2009)

PREFECTURE	(m^3/ha)						
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
AETOLIA-ACARNANIA	2.545	2.482	2.316	2.424	2.355	2.439	2.403
ARCADIA	2.942	2.870	2.677	2.802	2.722	2.819	2.778
ARTA	2.719	2.652	2.475	2.590	2.516	2.606	2.567
ACHAEA	1.997	1.948	1.817	1.902	1.848	1.914	1.885
BOEOTIA	1.985	1.936	1.807	1.891	1.837	1.903	1.874
GREVENA	3.774	3.681	3.435	3.594	3.492	3.617	3.563
DRAMA	2.634	2.569	2.397	2.508	2.437	2.524	2.487
EVROS	5.887	5.742	5.358	5.607	5.447	5.642	5.558
EUBOEA	2.240	2.185	2.038	2.133	2.072	2.146	2.115
EVRYTANIA	4.047	3.947	3.683	3.854	3.744	3.878	3.821
HLEIAS	1.233	1.203	1.122	1.175	1.141	1.182	1.164
IMATHIA	2.476	2.415	2.254	2.358	2.291	2.373	2.338
THESPROTIA	2.556	2.493	2.326	2.434	2.364	2.449	2.413
THESSALONIKI	3.860	3.765	3.512	3.676	3.571	3.699	3.644
IOANNINA	4.232	4.128	3.852	4.031	3.916	4.056	3.996
KAVALA	3.158	3.081	2.874	3.008	2.922	3.027	2.982
KARDITSA	3.459	3.374	3.148	3.295	3.201	3.315	3.266
KASTORIA	3.329	3.247	3.029	3.170	3.080	3.190	3.143
KILKIS	1.257	1.226	1.144	1.197	1.163	1.204	1.186
KOZANI	1.646	1.606	1.498	1.568	1.523	1.578	1.554
CORINTHIA	1.058	1.032	0.963	1.008	0.979	1.014	0.999
LACONIA	2.669	2.603	2.428	2.541	2.469	2.557	2.519
LARISSA	2.443	2.382	2.223	2.326	2.260	2.341	2.306
LESBOS	2.630	2.566	2.394	2.505	2.434	2.521	2.484
MAGNESIA	2.456	2.396	2.235	2.339	2.273	2.354	2.319
MESSENIA	3.770	3.677	3.431	3.590	3.488	3.613	3.559
XANTHI	2.092	2.040	1.904	1.992	1.935	2.005	1.975
PELLA	3.383	3.300	3.079	3.222	3.130	3.242	3.194

PIERIA	4.014	3.915	3.653	3.823	3.714	3.847	3.790
RHODOPE	2.016	1.966	1.835	1.920	1.865	1.932	1.903
SERRES	2.892	2.821	2.632	2.755	2.676	2.772	2.731
TRIKALA	4.014	3.915	3.653	3.823	3.714	3.847	3.790
PHTHIOTIS	2.407	2.347	2.190	2.292	2.227	2.306	2.272
FLORINA	5.429	5.295	4.941	5.170	5.023	5.203	5.126
PHOCIS	3.090	3.014	2.812	2.943	2.859	2.961	2.917
CHALKIDIKI	2.311	2.254	2.103	2.200	2.138	2.214	2.181

Table 19.1: Aboveground biomass increment for period 2010-2016

PREFECTURE	**(m^3/ha)**						
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
AETOLIA-ACARNANIA	2.417	2.564	2.545	2.482	2.316	2.424	2.355
ARCADIA	2.794	2.964	2.942	2.870	2.677	2.803	2.722
ARTA	2.583	2.740	2.719	2.652	2.475	2.590	2.516
ACHAEA	1.897	2.012	1.997	1.948	1.817	1.902	1.848
BOEOTIA	1.886	2.000	1.985	1.936	1.807	1.891	1.837
GREVENA	3.585	3.803	3.774	3.681	3.435	3.595	3.492
DRAMA	2.501	2.654	2.634	2.569	2.397	2.509	2.437
EVROS	5.592	5.932	5.887	5.742	5.358	5.608	5.447
EUBOEA	2.127	2.257	2.240	2.185	2.038	2.134	2.072
EVRYTANIA	3.843	4.077	4.047	3.947	3.683	3.855	3.744
HLEIAS	1.172	1.243	1.233	1.203	1.122	1.175	1.141
IMATHIA	2.352	2.495	2.476	2.415	2.254	2.359	2.291
THESPROTIA	2.427	2.575	2.556	2.493	2.326	2.435	2.364
THESSALONIKI	3.666	3.889	3.860	3.765	3.512	3.677	3.571
IOANNINA	4.020	4.265	4.232	4.128	3.852	4.032	3.916
KAVALA	3.000	3.182	3.158	3.081	2.874	3.009	2.922
KARDITSA	3.286	3.486	3.459	3.374	3.148	3.296	3.201
KASTORIA	3.161	3.354	3.329	3.247	3.029	3.171	3.080
KILKIS	1.194	1.266	1.257	1.226	1.144	1.197	1.163
KOZANI	1.564	1.659	1.646	1.606	1.498	1.568	1.523
CORINTHIA	1.005	1.066	1.058	1.032	0.963	1.008	0.979
LACONIA	2.535	2.689	2.669	2.603	2.428	2.542	2.469
LARISSA	2.320	2.461	2.443	2.382	2.223	2.327	2.260
LESBOS	2.498	2.650	2.630	2.566	2.394	2.506	2.434
MAGNESIA	2.333	2.475	2.456	2.396	2.235	2.340	2.273
MESSENIA	3.581	3.798	3.770	3.677	3.431	3.591	3.488
XANTHI	1.987	2.108	2.092	2.040	1.904	1.993	1.935
PELLA	3.214	3.409	3.383	3.300	3.079	3.223	3.130
PIERIA	3.812	4.044	4.014	3.915	3.653	3.824	3.714
RHODOPE	1.915	2.031	2.016	1.966	1.835	1.920	1.865
SERRES	2.747	2.914	2.892	2.821	2.632	2.755	2.676
TRIKALA	3.812	4.044	4.014	3.915	3.653	3.824	3.714
PHTHIOTIS	2.286	2.425	2.407	2.347	2.190	2.293	2.227
FLORINA	5.156	5.470	5.429	5.295	4.941	5.172	5.023
PHOCIS	2.935	3.113	3.090	3.014	2.812	2.944	2.859
CHALKIDIKI	2.195	2.328	2.311	2.254	2.103	2.201	2.138

Table 19.2: Aboveground biomass increment for period 2017-2023

PREFECTURE	(m^3/ha)						
	2024	2025	2026	2027	2028	2029	2030
AETOLIA-ACARNANIA	2.439	2.403	2.417	2.564	2.545	2.482	2.316
ARCADIA	2.819	2.778	2.794	2.964	2.942	2.870	2.677
ARTA	2.606	2.567	2.583	2.740	2.719	2.652	2.475
ACHAEA	1.914	1.885	1.897	2.012	1.997	1.948	1.817
BOEOTIA	1.903	1.874	1.886	2.000	1.985	1.936	1.807
GREVENA	3.617	3.563	3.585	3.803	3.774	3.681	3.435
DRAMA	2.524	2.487	2.501	2.654	2.634	2.569	2.397
EVROS	5.642	5.558	5.592	5.932	5.887	5.742	5.358
EUBOEA	2.146	2.115	2.127	2.257	2.240	2.185	2.038
EVRYTANIA	3.878	3.821	3.843	4.077	4.047	3.947	3.683
HLEIAS	1.182	1.164	1.172	1.243	1.233	1.203	1.122
IMATHIA	2.373	2.338	2.352	2.495	2.476	2.415	2.254
THESPROTIA	2.449	2.413	2.427	2.575	2.556	2.493	2.326
THESSALONIKI	3.699	3.644	3.666	3.889	3.860	3.765	3.512
IOANNINA	4.056	3.996	4.020	4.265	4.232	4.128	3.852
KAVALA	3.027	2.982	3.000	3.182	3.158	3.081	2.874
KARDITSA	3.315	3.266	3.286	3.486	3.459	3.374	3.148
KASTORIA	3.190	3.143	3.161	3.354	3.329	3.247	3.029
KILKIS	1.204	1.186	1.194	1.266	1.257	1.226	1.144
KOZANI	1.578	1.554	1.564	1.659	1.646	1.606	1.498
CORINTHIA	1.014	0.999	1.005	1.066	1.058	1.032	0.963
LACONIA	2.557	2.519	2.535	2.689	2.669	2.603	2.428
LARISSA	2.341	2.306	2.320	2.461	2.443	2.382	2.223
LESBOS	2.521	2.484	2.498	2.650	2.630	2.566	2.394
MAGNESIA	2.354	2.319	2.333	2.475	2.456	2.396	2.235
MESSENIA	3.613	3.559	3.581	3.798	3.770	3.677	3.431
XANTHI	2.005	1.975	1.987	2.108	2.092	2.040	1.904
PELLA	3.242	3.194	3.214	3.409	3.383	3.300	3.079
PIERIA	3.847	3.790	3.812	4.044	4.014	3.915	3.653
RHODOPE	1.932	1.903	1.915	2.031	2.016	1.966	1.835
SERRES	2.772	2.731	2.747	2.914	2.892	2.821	2.632
TRIKALA	3.847	3.790	3.812	4.044	4.014	3.915	3.653
PHTHIOTIS	2.306	2.272	2.286	2.425	2.407	2.347	2.190
FLORINA	5.203	5.126	5.156	5.470	5.429	5.295	4.941
PHOCIS	2.961	2.917	2.935	3.113	3.090	3.014	2.812
CHALKIDIKI	2.214	2.181	2.195	2.328	2.311	2.254	2.103

Table 19.3: Aboveground biomass increment for period 2024-2030

The Aboveground biomass increment for period 2024-2030 is presented in detail for each prefecture and by vegetation type in the tables of appendix 3 the period 2010-2030.

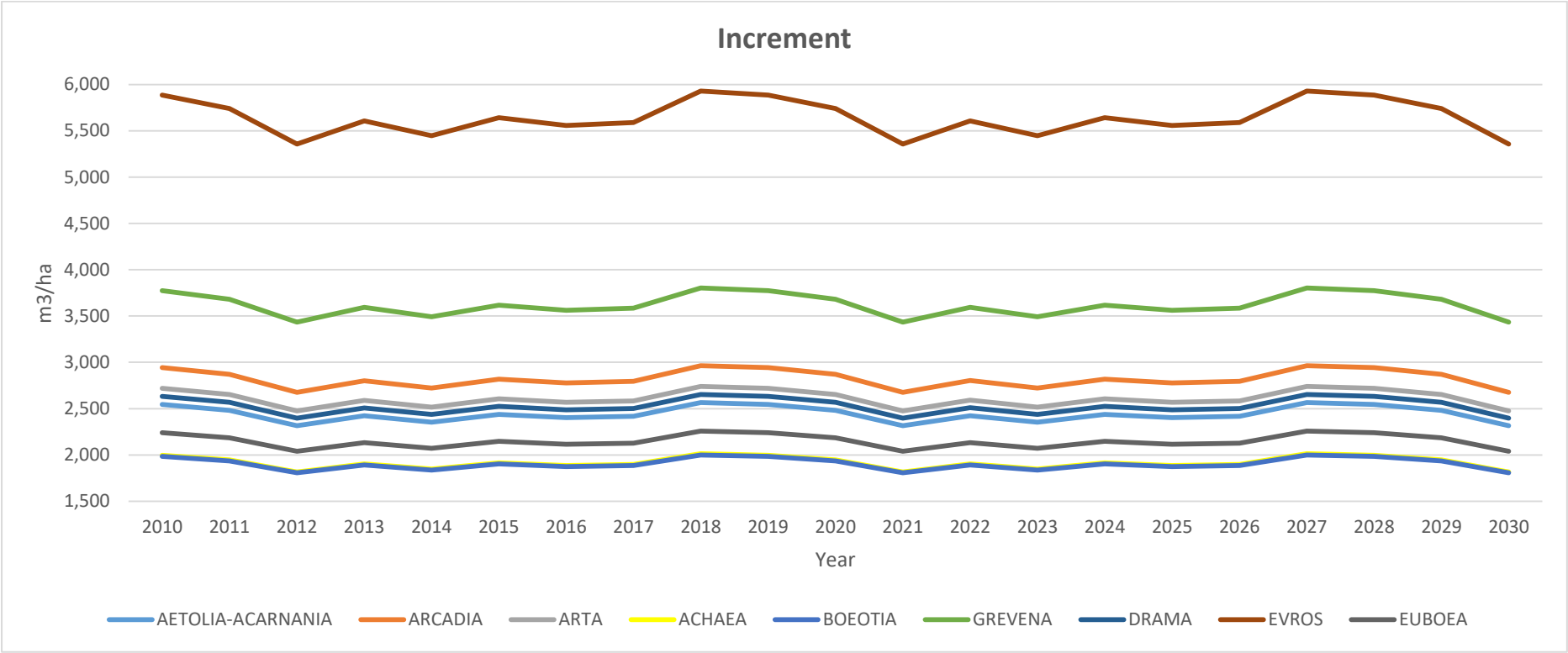


Figure 4.1: Increment volumes and progress for period 2010-2030 by prefecture

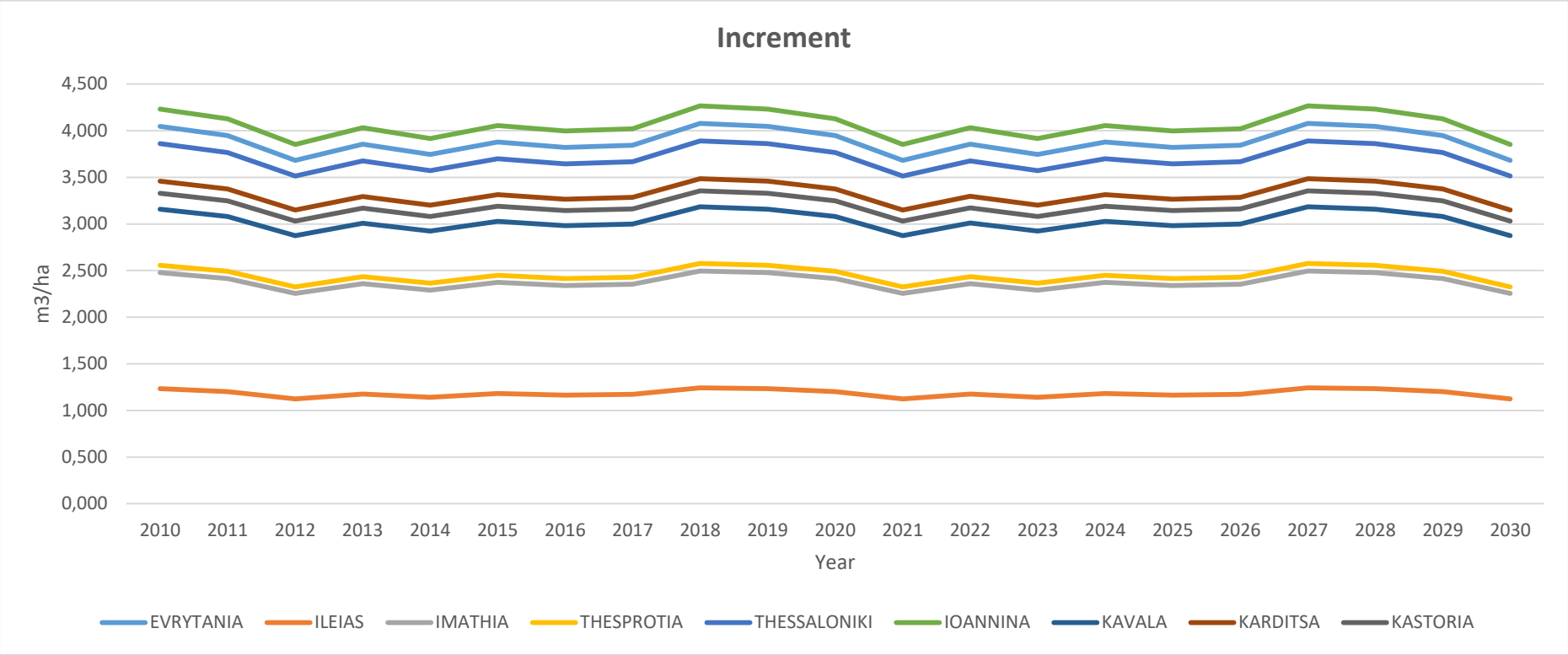


Figure 4.2: Increment volumes and progress for period 2010-2030 by prefecture

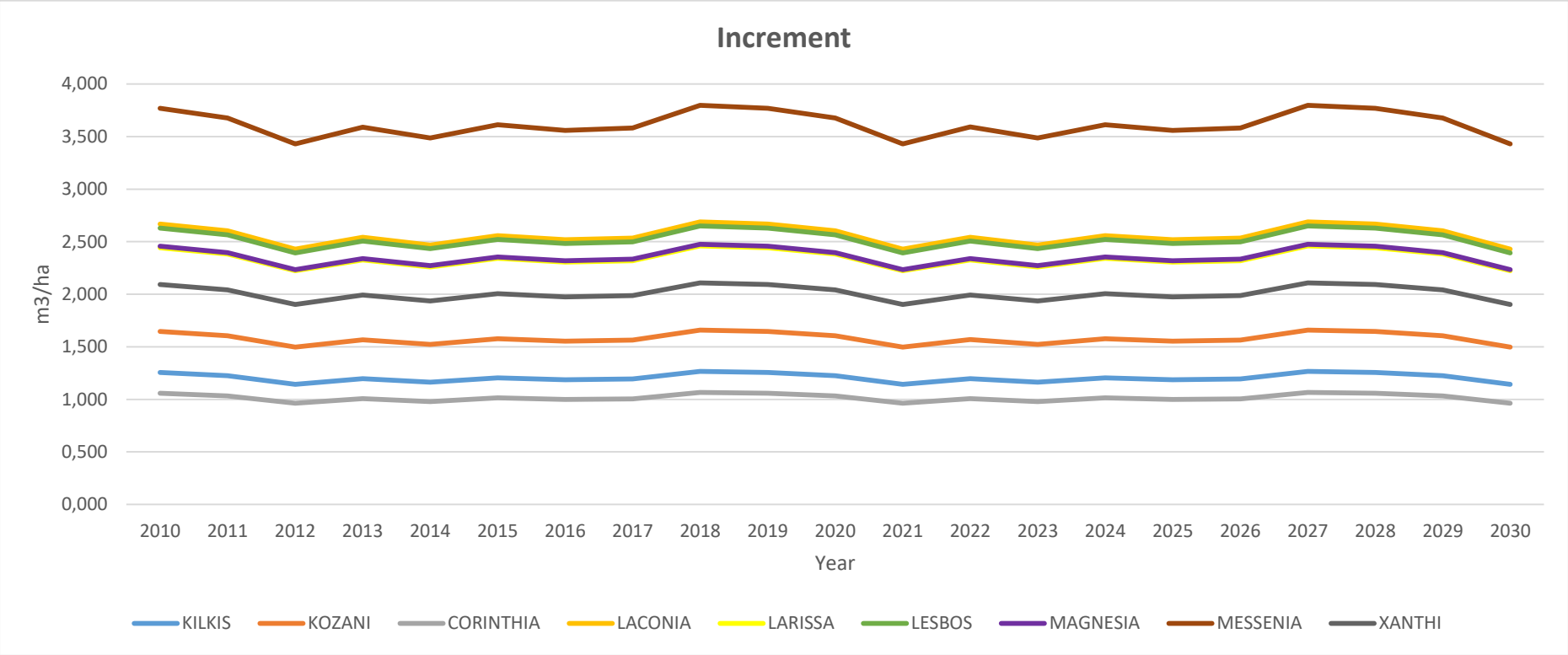


Figure 4.3: Increment volumes and progress for period 2010-2030 by prefecture

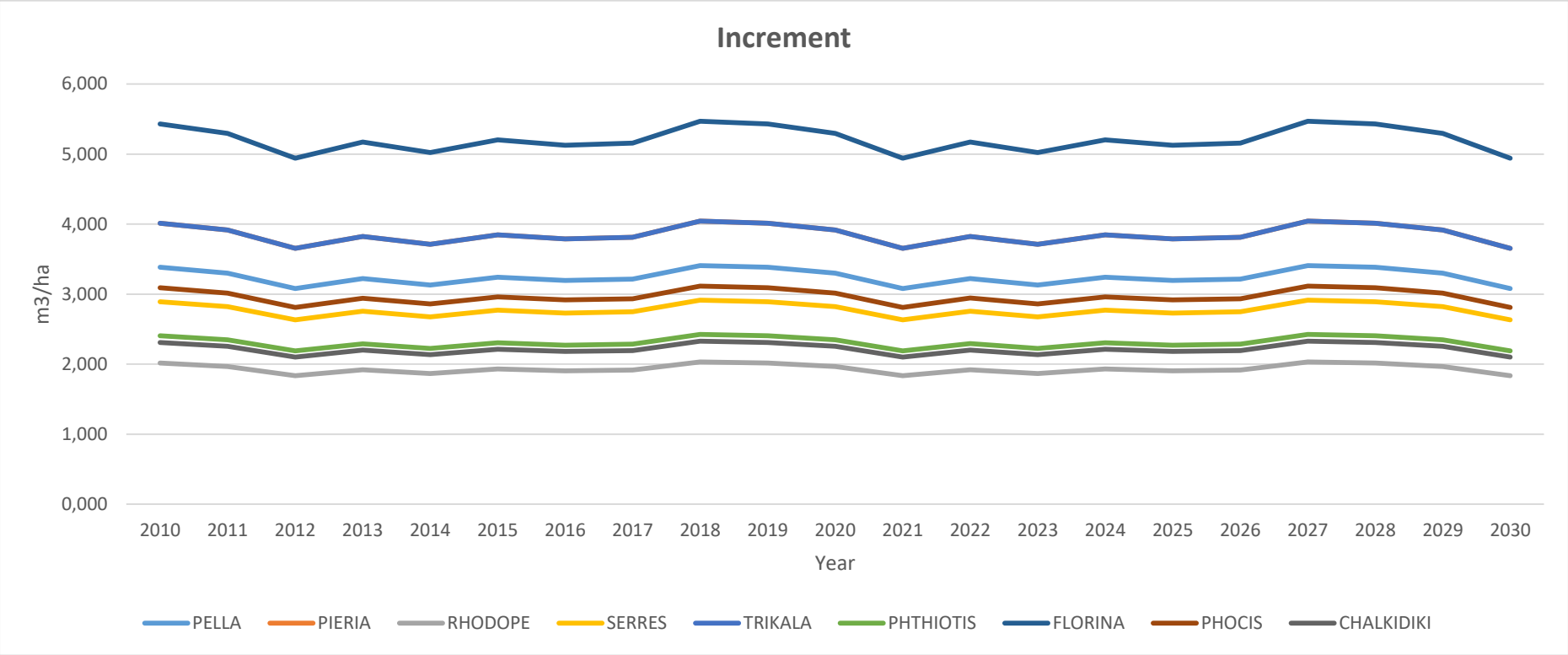


Figure 4.4: Increment volumes and progress for period 2010-2030 by prefecture

4.1.3 Documentation on historical and future harvest disaggregated between energy and non - energy wood

According to Forest Management practices, non-energy wood is collected from forest that are under sustainable management and selective cuttings and have a "stand" structure. On the contrary energy wood is collected under selective cuttings or clear cuttings. The ratio and the total harvest of non-energy wood and energy wood, differs from year to year. It depends mainly on the vitality of the forest, its annual and overall increment, sustainability, local needs and other ecological values (ecosystem services, biodiversity etc.). It is estimated ad hoc on the field by supervision of the foresters that implement the specific management plan of each forest.

	HARVEST (m^3)								
	NON - ENERGY WOOD			ENERGY WOOD			TOTAL		
	CONIFERS	BROADLEAVES	total	CONIFERS	BROADLEAVES	total	CONIFERS	BROADLEAVES	TOTAL
2000	284,000	156,000	440,000	189,000	1,343,158	1,532,158	473,000	1,499,158	1,972,158
2001	258,746	151,211	409,957	160,249	958,599	1,118,848	418,995	1,109,810	1,528,805
2002	258,891	124,400	383,291	238,183	964,032	1,202,215	497,074	1,088,432	1,585,506
2003	268,173	132,599	400,772	194,176	1,055,454	1,249,629	462,349	1,188,053	1,650,401
2004	248,052	132,879	380,931	191,883	1,119,740	1,311,623	439,935	1,252,619	1,692,554
2005	260,982	129,109	390,091	184,183	1,027,129	1,211,312	445,165	1,156,238	1,601,403
2006	246,544	137,876	384,420	199,442	1,081,996	1,281,438	445,985	1,219,873	1,665,858
2007	262,000	122,000	384,000	235,000	970,000	1,205,000	497,000	1,092,000	1,589,000
2008	293,214	122,928	416,141	181,260	868,176	1,049,436	474,473	991,104	1,465,577
2009	141,251	98,840	240,091	132,493	894,635	1,027,128	273,744	993,475	1,267,219
2010	186,480	71,748	258,229	259,925	1,320,167	1,580,092	446,406	1,391,915	1,838,321
2011	180,000	101,000	281,000	158,000	1,057,000	1,215,000	338,000	1,158,000	1,496,000
2012	190,000	101,000	291,000	281,000	1,174,000	1,455,000	471,000	1,275,000	1,746,000
2013	201,511	123,525	325,037	172,246	1,098,979	1,271,225	373,758	1,222,504	1,596,262

2014	176,431	116,512	292,943	138,136	959,700	1,097,836	314,567	1,076,213	1,390,779
2015	198,158	152,276	350,434	171,244	811,156	982,400	369,402	963,432	1,332,834
2016	196,431	179,394	375,825	166,312	1,034,759	1,201,071	362,743	1,214,153	1,576,896
2017	252,942	131,177	384,118	191,159	1,031,377	1,222,535	444,100	1,162,553	1,606,654
2018	172,832	143,422	316,253	114,199	640,505	754,704	287,031	783,926	1,070,958
2019	266,308	138,108	404,416	201,260	1,085,876	1,287,136	467,567	1,223,984	1,691,552
2020	259,751	134,708	394,459	196,304	1,059,141	1,255,445	456,055	1,193,848	1,649,904
2021	242,350	125,684	368,034	183,154	988,189	1,171,342	425,504	1,113,872	1,539,376
2022	253,698	131,569	385,267	191,730	1,034,462	1,226,192	445,429	1,166,031	1,611,459
2023	246,385	127,776	374,161	186,203	1,004,641	1,190,844	432,588	1,132,417	1,565,006
2024	255,212	132,354	387,565	192,874	1,040,631	1,233,505	448,085	1,172,985	1,621,070
2025	251,429	130,392	381,821	190,015	1,025,207	1,215,222	441,444	1,155,599	1,597,043
2026	252,942	131,177	384,118	191,159	1,031,377	1,222,535	444,100	1,162,553	1,606,654
2027	268,325	139,154	407,480	202,784	1,094,103	1,296,887	471,109	1,233,257	1,704,366
2028	266,308	138,108	404,416	201,260	1,085,876	1,287,136	467,567	1,223,984	1,691,552
2029	259,751	134,708	394,459	196,304	1,059,141	1,255,445	456,055	1,193,848	1,649,904
2030	242,350	125,684	368,034	183,154	988,189	1,171,342	425,504	1,113,872	1,539,376

Table 20: Historical and projected quantities of harvest (years 2000-2030)

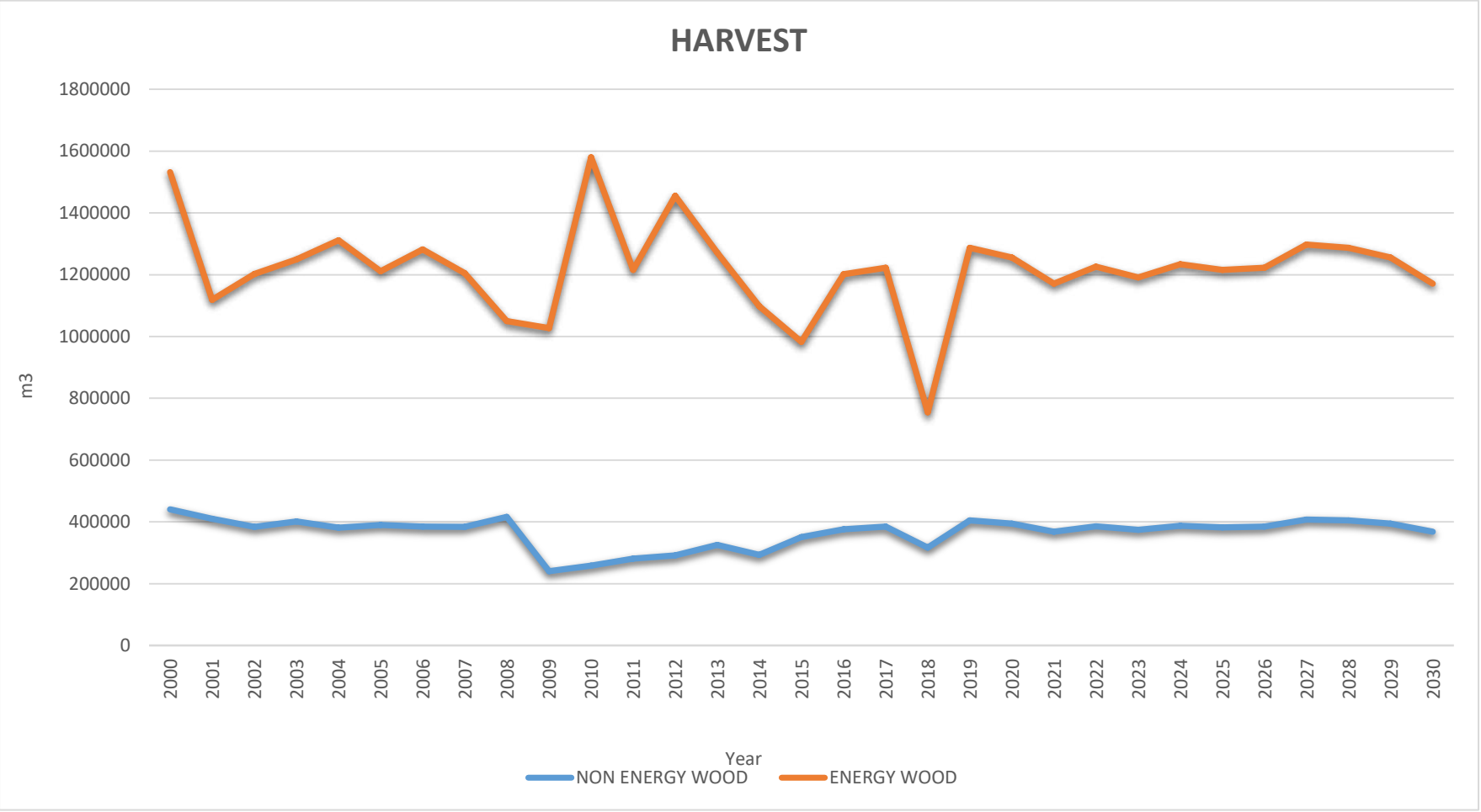


Figure 5: Harvest volume and progress for period 2010-2030 by prefecture

4.1.4 Natural disturbances – Fire

Forest fires is a major Natural Disturbance in Greece. They are almost the only ND and have a significant impact on emissions and removals of LULUCF.

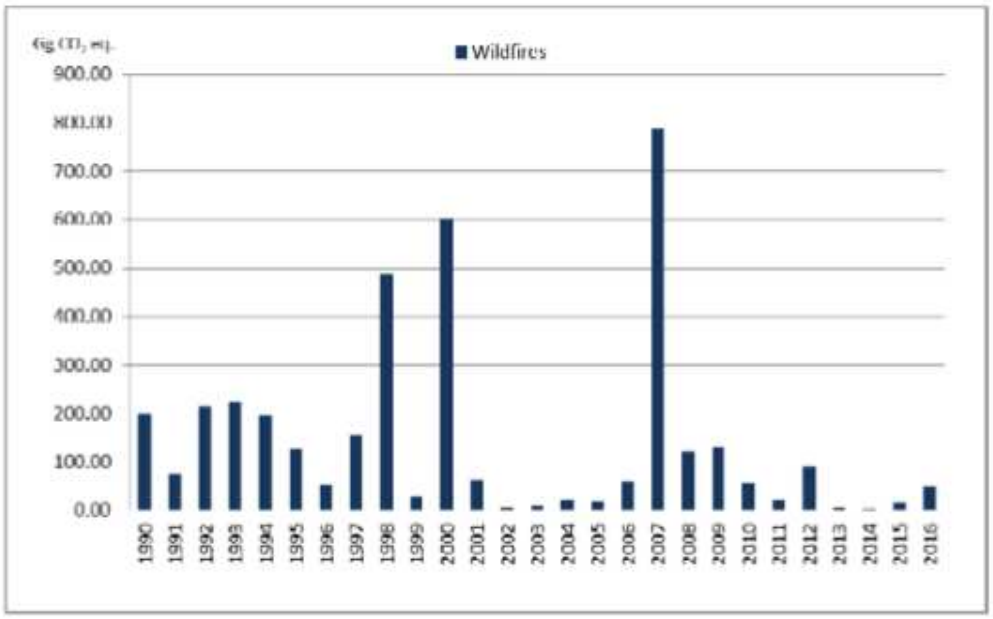


Figure 6: GHG emissions for period 1990-2016

Year	CO_2 emissions (kt CO_2/yr)
2000	602.007
2001	63.645
2002	48.853
2003	44.214
2004	42.974
2005	39.571
2006	47.768
2007	788.930
2008	122.080
2009	133.730

Table 21: CO_2 emissions due to wildfires on forests for period 2000-2009

The FRL projection must exclude the effect of ND (fire) in the RP and substitute them by the background level. In case of Greece a BL is not calculated and fires' effect will be taken into account directly for RP.

On this basis, consistently with article 10 of the EU regulation 2018/841 and its annex VI, a background level of GHG emissions associated with forest fires will be calculated by using the actual data (burnt areas, vegetation type e.tc.) from period 2000-2020. So a technical correction of the FRL will be applied taking into account the calculated BL for the years 2021-2025 and the actual GHG emissions occurred in period 2010 – 2017.

4.1.5 HWP pool

The HWP contribution is estimated using the Production Approach consistently with article 9 of the EU Regulation 2018/841 and its Annex V and according to guidance provided in the 2013 KP Supplement (IPCC, 2014). Historical data for the period 1960-2009 are those used for the Greek GHG inventory.

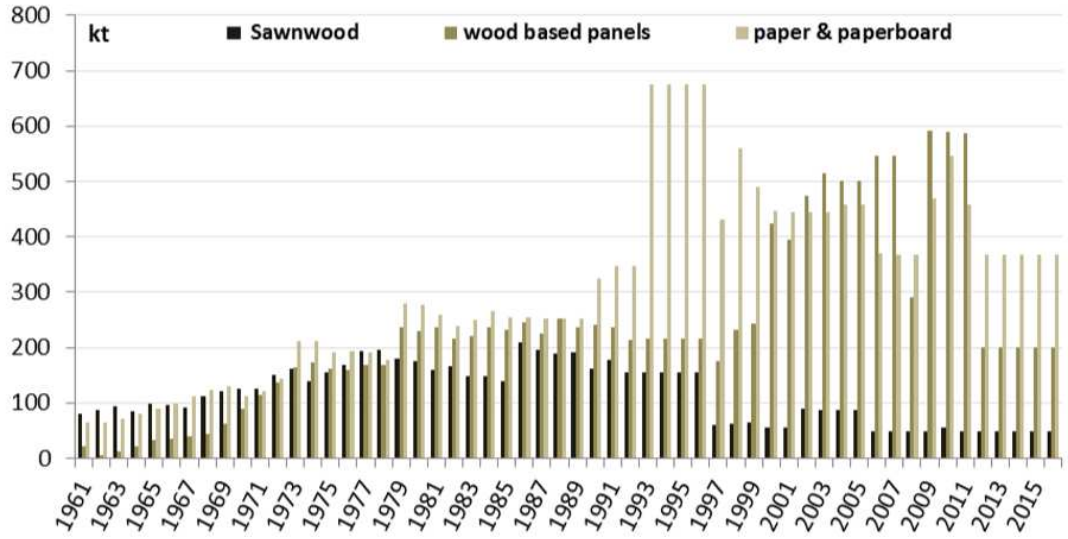


Figure 7: HWPs in use for period 1960-2016 (NIR 2018, for years 1990-2016)

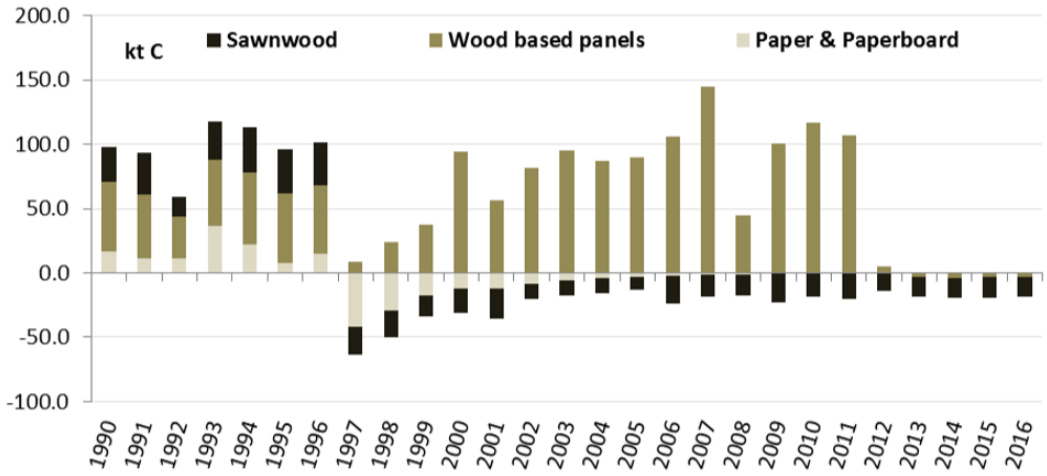


Figure 8: Annual change in carbon stock (NIR 2018, for years 1990-2016)

Calculations were made in three product categories (sawn wood, wood panels, paper and paperboard). To remain consistent with the GHG inventory (NIR 2018, for years 1990-2016), projection started from the year 2010. The average of the annual harvest for RP 2000-2009 was used. Average change rates for the product categories, were calculated. These rates were then applied to average HWP in order to estimate the carbon pool inflow.

Year	HPWj (kt C)		
	Sawn wood	Wood panels	Paper & Paper board
2000	72.12	-350.19	43.01
2001	85.36	-212.48	45.42
2002	43.33	-305.90	32.12
2003	42.21	-353.49	22.71
2004	42.24	-323.94	16.06
2005	37.91	-333.13	11.36
2006	79.78	-393.16	8.03
2007	62.73	-536.41	5.68
2008	65.84	-145.91	4.01
2009	80.39	-374.37	2.84

Table 22: HWP for period 2000-2009

Year	HPWj			
	Sawn wood (m3)	Wood panels (m3)	Paper & Paper board (t)	Harvest (m3)
2000	89330.59	519212.65	12546.85	1972158.00
2001	71701.64	387500.31	289558.25	1528805.00
2002	120244.02	489501.17	302756.37	1585506.00
2003	120577.88	547027.77	311099.50	1650401.00
2004	119542.29	526586.65	319063.04	1692554.00
2005	123753.59	545137.53	330303.17	1601403.00
2006	72496.01	616216.07	276558.85	1665858.00
2007	91120.28	774522.41	345075.89	1589000.00
2008	91121.84	411735.70	345081.77	1465577.00
2009	66855.17	627126.55	329171.06	1267219.00
average	**96674.33**	**544456.68**	**286121.48**	**1601848.10**
ratio	**0.060351747**	**0.339892829**	**0.178619605**	

Table 23: HWP ratios for period 2000-2009 and average values

Year	HPWj (kt C)		
	Sawn wood	Wood panels	Paper & Paper board
2021	59.92	-235.99	15.02
2022	55.10	-252.83	10.62
2023	56.33	-229.83	7.51
2024	52.39	-241.54	5.31
2025	52.55	-226.32	3.78

Table 24: HWP contribution for period 2021-2025

4.2 Consistency between the forest reference level and the latest national inventory report

Numeric results of the FRL (in the RP) are not different of these reported in Greek NIR 2018, for years 1990-2016. On the following figures it is depicted how the FRL correlates highly with NIR 2018, for years 1990-2016.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
FRL	2,285.54	2,829.16	2,844.52	2,849.13	2,850.23	2,853.66	2,845.08	2,096.74	2,770.14	2,758.38
GHG	1,124.24	1,798.06	1,875.04	1,888.18	1,879.53	2,293.7	2,245.6	1,463.54	2,051.62	2,057.6

Table 25: FRL and GHG values of kt CO_2 eq. for period 2000-2009

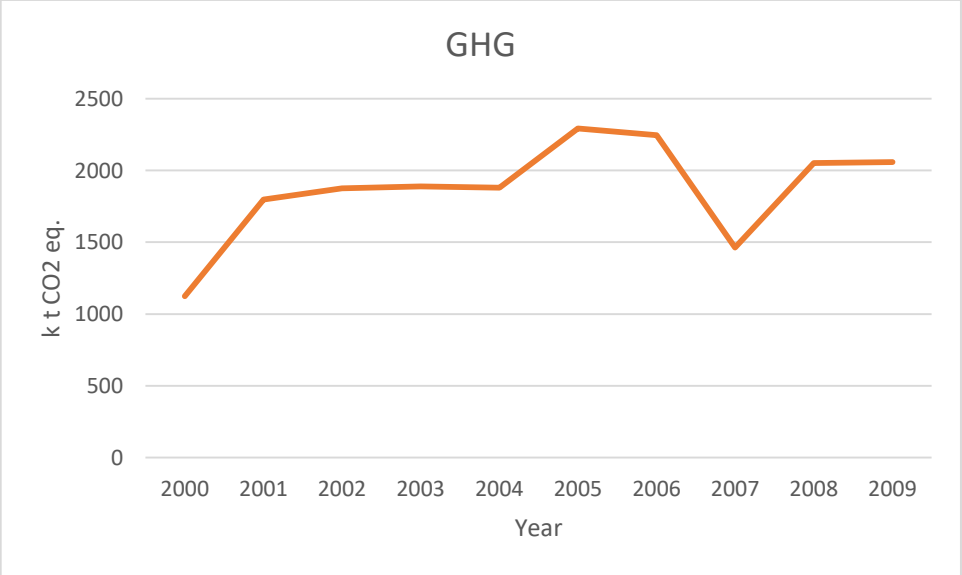


Figure 9: Greek GHG inventory (removals in period 2000-2009)

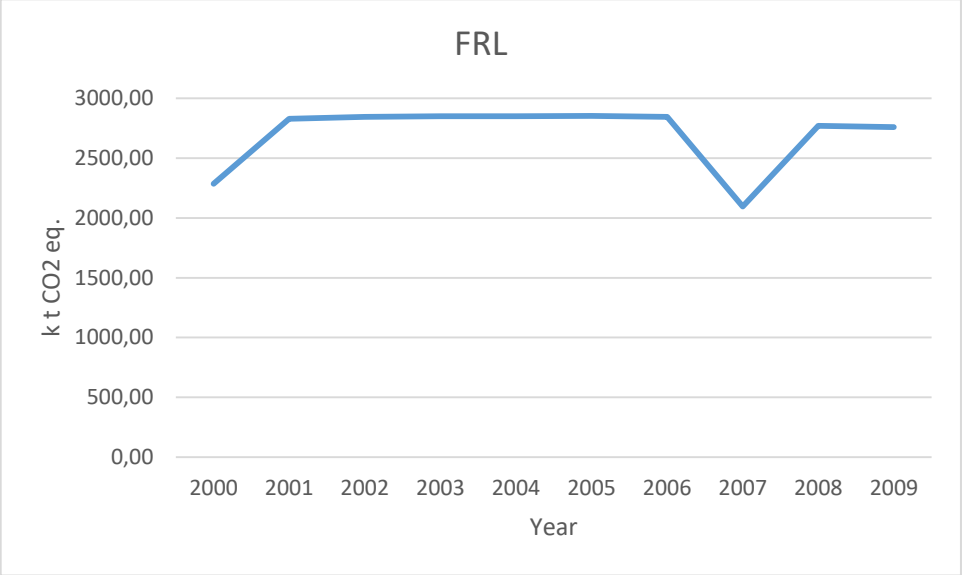


Figure 10: Greek FRL (removals in period 2000-2009)

We comment the following:

- In both GHG and FRL only forest area under permanent sustainable management is accounted
- In the stratification FRL separates areas (by prefecture, sustainable managed e.tc.) in 2 types of vegetation (conifer and broadleaves)
- Actual data of increment (based on measurements of Greek Forest Service) have been used in calculating FRL.
- Mortality has been inserted into the calculations of living biomass

Although the above slight numeric differences, the results of GHG inventory and Greek FRL are consistent because (as it I shown on the figure below), the trend of the results and their inter-annual variability are the same.

In the following figures (11-12) it is shown how GHG and FRL (as a whole) change their values consistently through time, RP of 2000-2009.

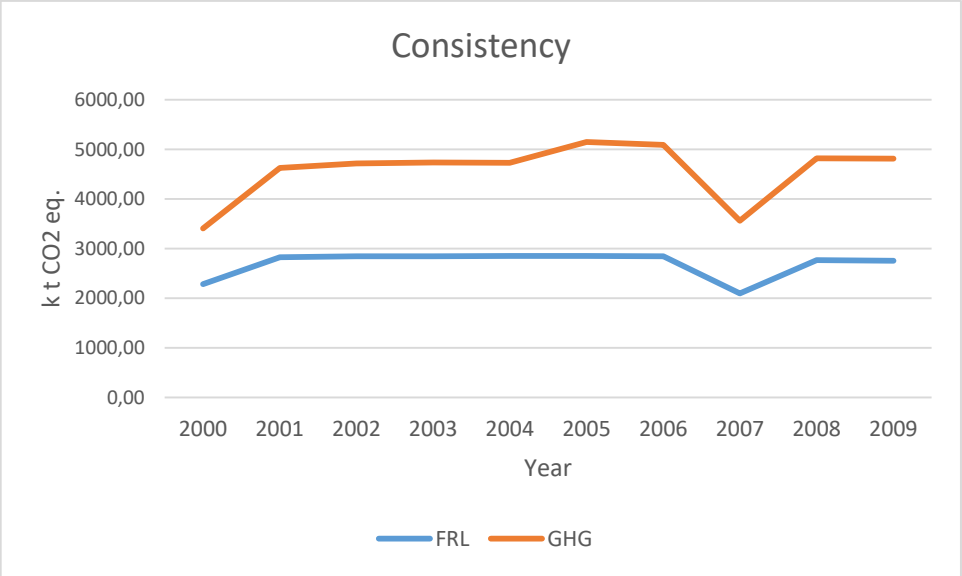


Figure 11: Correlation and consistency between Greek GHG inventory and FRL (period 2000-2009)

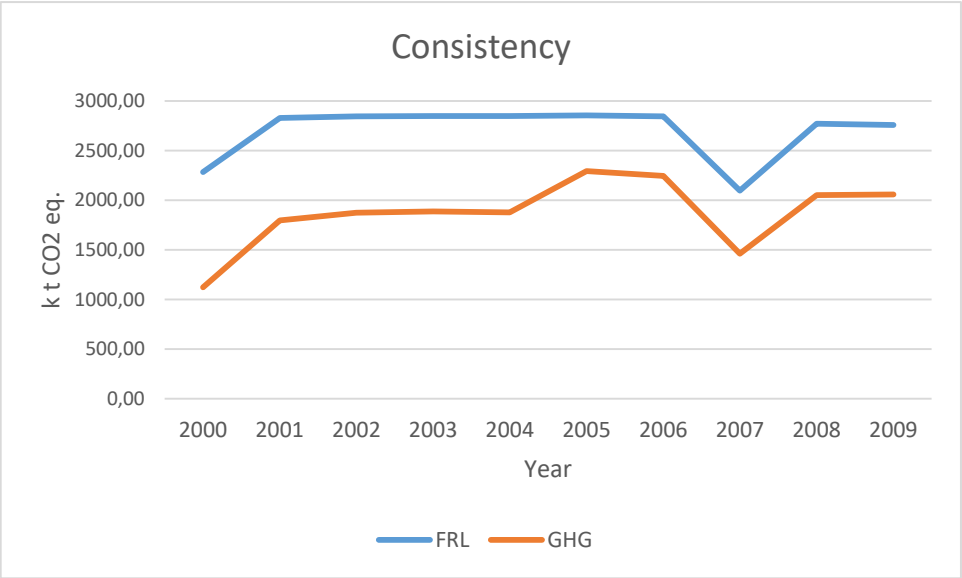


Figure 12: Correlation and consistency between Greek GHG inventory and FRL (removal values in period 2000-2009)

Additionally, it is also presented in the following figures the projection of Greek FRL for period 2010 to 2017, in comparison to the Greek GHG inventory estimates for the same period.

Year	2010	2011	2012	2013	2014	2015	2016	2017
FRL	2,998.22	2,955.74	2,690.12	2,903.02	2,822.43	2,910.51	2,833.74	2,866.21
GHG	2,148.78	2,161.17	2,107.11	2,188.77	2,201.58	2,169.48	2,159.11	2,121.43

Table 26: FRL and GHG values of kt CO_2 eq. for period 2010-2017

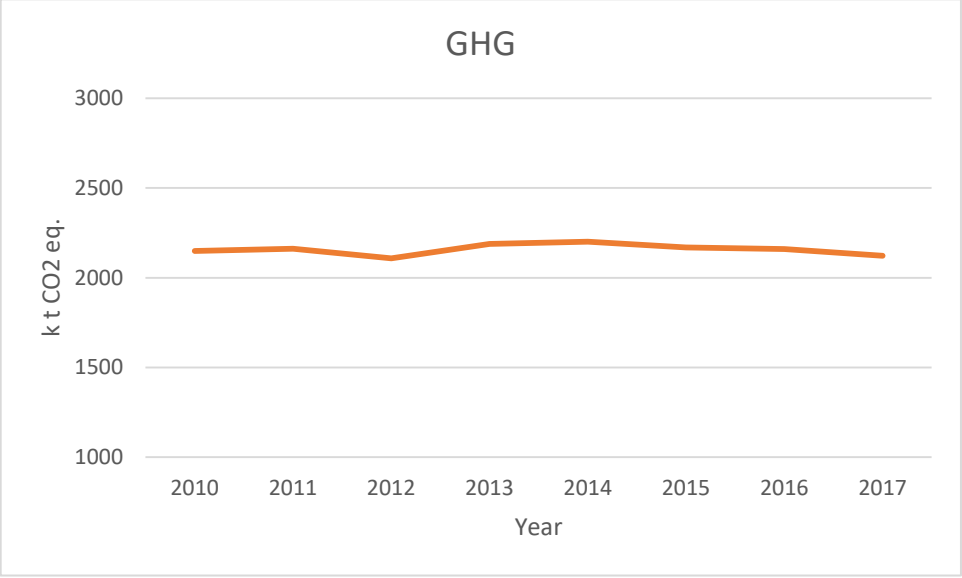


Figure 13: Greek GHG inventory (removals in period 2010-2017)

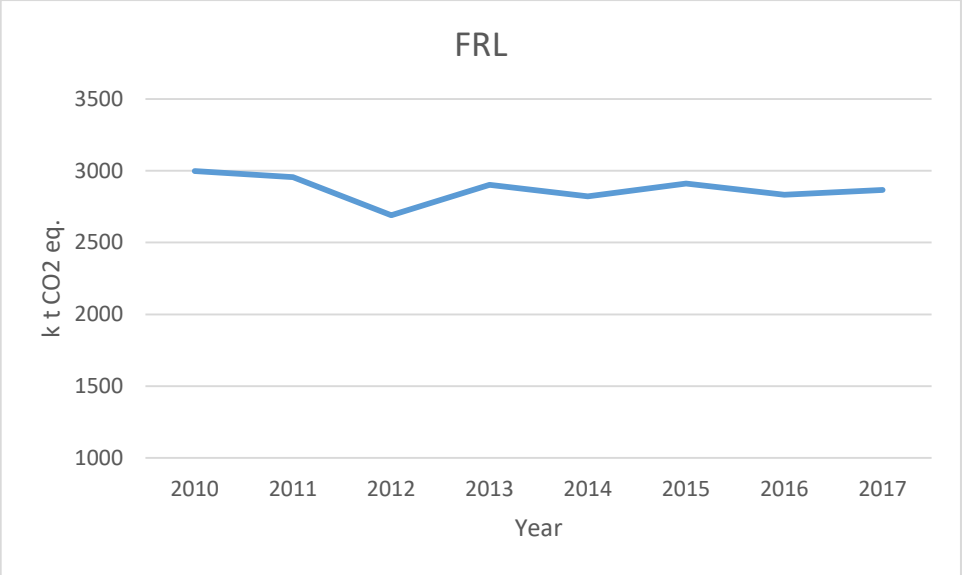


Figure 14: Greek FRL (projected removals in period 2010-2017)

Like RP (2000-2009) and although there are numeric differences, the estimation and projection of GHG inventory and Greek FRL are consistent because (as it I shown on the figure below), the trend of the results and their inter-annual variability are the same.

In the following figures it is shown how GHG and FRL (as a whole) change their values consistently through time after RP and for 2010-2017.

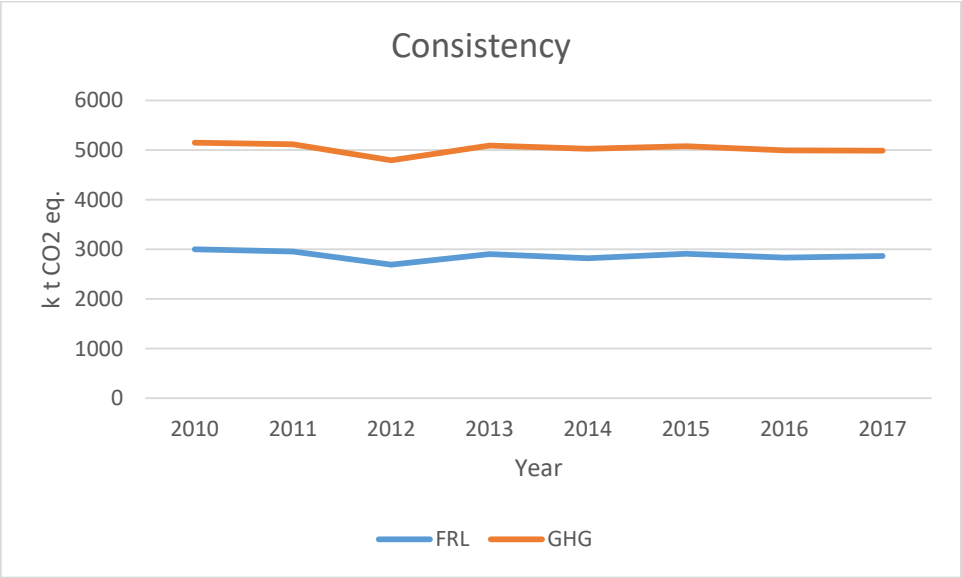


Figure 15: Correlation and consistency between Greek GHG inventory and FRL (period 2010-2017)

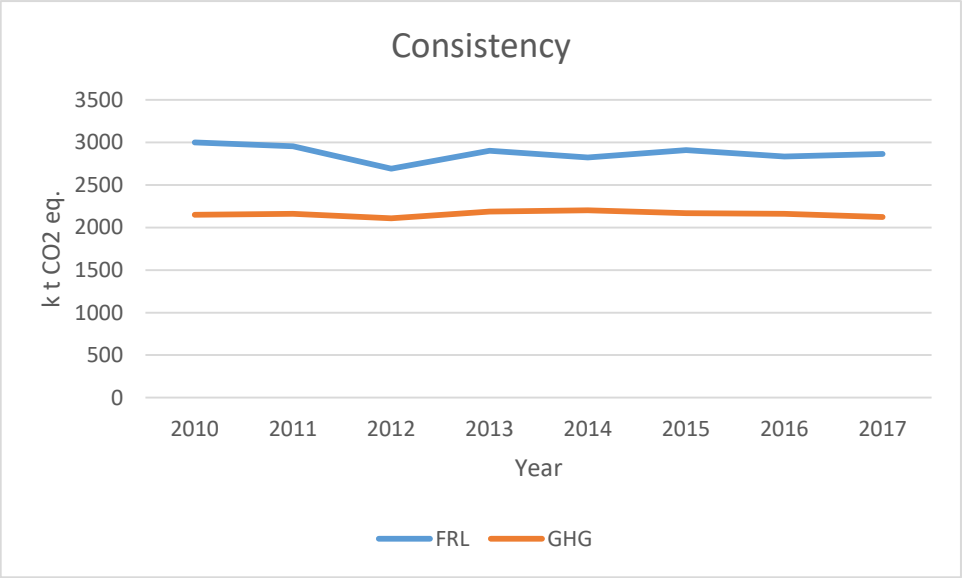


Figure 16: Correlation and consistency between Greek GHG inventory and FRL (removal values in period 2010-2017)

4.3 Calculated carbon pools and greenhouse gases for the forest reference level

In this chapter the calculated FRL is presented.

C pools that are included in calculations are the above & below living biomass pool and Harvested Wood Products pool (two methods FOD and IO are calculated). In both GHG inventory and FRL both pools of Dead wood and litter (DOM) along with soil (CO_2), are excluded.

Greenhouse Gas emissions that are included are carbon dioxide, methane and nitrous oxide, as they are reported in the LULUCF sector and in NIR 2018, for years 1990-2016.

The calculated average FRL is equal to **-3,038.67 kt CO_2 eq. /yr**

Kt CO_2 eq.	2021	2022	2023	2024	2025	Average
CO_2 (living biomass)	-2,780.59	-2,910.79	-2,826.88	-2,928.15	-2,884.75	-2,866.23
CO_2 (HWP_FOD)	-161.01	-187.11	-165.99	-183.84	-170.02	-173.59
CH_4	1.15	1.15	1.15	1.15	1.15	1.15
N_2O	0.01	0.01	0.01	0.01	0.01	0.01
Total CO_2 eq. (HWP_FOD)	-2,940.44	-3,096.74	-2,991.71	-3,110.83	-3,053.61	**-3,038.67**
Total CO_2 eq. (HWP_IO)	-2,779.43	-2,909.63	-2,825.72	-2,926.99	-2,883.59	-2,865.07

Table 27: Calculation of FRL

After the calculations, FRL is issued and remains the same. However, technical corrections to the FRL may subsequently be applied. No calibration or technical correction has yet been implemented to the FRL values.

In Greece the following years two majors projectς will take place:

1. The finalization of Forest Mapping
2. The new (second) Forest Inventory

It is estimated that these two projects will imply modifications to the FRL. Because of the direct measurements from Forest Service, the detailed data on increment and other variables (deriving from the new Forest Inventory), biomass C stock gains may need to be corrected.

References

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Tables and Figures

Tables

Figures

Appendix 1

PREFECTURE		Area (kHa)	Above	Below	TOTAL (kt C)
AETOLIA-ACARNANIA	Conifers	0.241	0.081	0.037	0.119
	Broadleaves	0.190	0.066	0.029	0.095
ARCADIA	Conifers	0.450	0.007	0.003	0.010
	Broadleaves	22.028	20.943	9.006	29.949
ARTA	Conifers	7.243	2.117	0.974	3.091
	Broadleaves	10.865	6.303	2.710	9.013
ACHAEA	Conifers	0.087	0.005	0.002	0.008
	Broadleaves	0.491	0.228	0.098	0.326
BOEOTIA	Conifers	4.323	2.100	0.966	3.067
	Broadleaves	0.000	0.000	0.000	0.000
GREVENA	Conifers	15.888	4.131	1.900	6.031
	Broadleaves	23.831	12.297	5.288	17.585
DRAMA	Conifers	107.091	16.339	7.516	23.855
	Broadleaves	45.896	3.971	1.707	5.678
EVROS	Conifers	95.985	106.864	49.157	156.021
	Broadleaves	41.136	25.969	11.167	37.136
EUBOEA	Conifers	1.948	0.027	0.012	0.039
	Broadleaves	37.013	12.752	5.483	18.235
EVRYTANIA	Conifers	33.470	29.820	13.717	43.537
	Broadleaves	3.719	0.487	0.209	0.697
HLEIAS	Conifers	7.683	0.073	0.034	0.107
	Broadleaves	2.561	0.011	0.005	0.015
IMATHIA	Conifers	22.829	3.759	1.729	5.488
	Broadleaves	15.219	2.210	0.950	3.161
THESPROTIA	Conifers	0.539	0.087	0.040	0.127
	Broadleaves	0.918	0.334	0.144	0.477
THESSALONIKI	Conifers	22.301	11.692	5.378	17.071
	Broadleaves	7.836	1.910	0.821	2.731
IOANNINA	Conifers	28.385	9.508	4.373	13.881
	Broadleaves	42.578	28.303	12.170	40.474
KAVALA	Conifers	2.341	0.788	0.362	1.150
	Broadleaves	1.916	0.698	0.300	0.998
KARDITSA	Conifers	14.205	1.396	0.642	2.039
	Broadleaves	21.307	4.157	1.787	5.944
KASTORIA	Conifers	23.240	5.202	2.393	7.595
	Broadleaves	17.532	3.917	1.684	5.601
KILKIS	Conifers	49.112	1.255	0.577	1.833
	Broadleaves	2.585	0.005	0.002	0.007
KOZANI	Conifers	8.735	0.231	0.106	0.338
	Broadleaves	7.147	0.205	0.088	0.293
CORINTHIA	Conifers	0.104	0.000	0.000	0.000
	Broadleaves	10.262	2.356	1.013	3.369
LACONIA	Conifers	0.250	0.003	0.001	0.005
	Broadleaves	12.268	10.314	4.435	14.749
LARISSA	Conifers	19.578	5.104	2.348	7.451
	Broadleaves	8.390	1.240	0.533	1.774
LESBOS	Conifers	0.534	0.254	0.117	0.371

	Broadleaves	0.188	0.042	0.018	0.059
MAGNESIA	Conifers	18.602	0.517	0.238	0.755
	Broadleaves	2.537	0.013	0.005	0.018
MESSENIA	Conifers	0.407	0.010	0.004	0.014
	Broadleaves	7.740	4.666	2.007	6.673
XANTHI	Conifers	74.127	26.715	12.289	39.005
	Broadleaves	3.901	0.098	0.042	0.140
PELLA	Conifers	37.515	32.066	14.750	46.817
	Broadleaves	1.160	0.041	0.017	0.058
PIERIA	Conifers	8.129	1.549	0.712	2.261
	Broadleaves	12.194	4.610	1.982	6.592
RHODOPE	Conifers	40.916	12.973	5.968	18.940
	Broadleaves	4.546	0.212	0.091	0.303
SERRES	Conifers	54.533	17.496	8.048	25.544
	Broadleaves	13.633	1.447	0.622	2.069
TRIKALA	Conifers	19.393	3.174	1.460	4.634
	Broadleaves	49.868	27.769	11.941	39.709
PHTHIOTIS	Conifers	30.706	13.924	6.405	20.329
	Broadleaves	9.172	1.644	0.707	2.350
FLORINA	Conifers	3.511	0.443	0.204	0.647
	Broadleaves	31.596	47.524	20.435	67.959
PHOCIS	Conifers	8.354	5.684	2.615	8.298
	Broadleaves	0.928	0.093	0.040	0.133
CHALKIDIKI	Conifers	5.301	1.030	0.474	1.503
	Broadleaves	6.479	2.035	0.875	2.910
TOTAL		**1247.687**	**545.293**	**243.969**	**789.261**

Appendix 2

PREFECTURE		2010	2011	2012	2013	2014	2015	2016
AETOLIA-ACARNANIA	Conifers	0.125	0.122	0.114	0.119	0.116	0.120	0.116
	Broadleaves	0.100	0.098	0.091	0.095	0.093	0.096	0.093
ARCADIA	Conifers	0.010	0.010	0.009	0.010	0.009	0.010	0.009
	Broadleaves	31.626	30.847	28.781	30.120	29.260	30.308	29.260
ARTA	Conifers	3.264	3.184	2.971	3.109	3.020	3.128	3.020
	Broadleaves	9.518	9.284	8.662	9.065	8.806	9.122	8.806
ACHAEA	Conifers	0.008	0.008	0.008	0.008	0.008	0.008	0.008
	Broadleaves	0.345	0.336	0.314	0.328	0.319	0.330	0.319
BOEOTIA	Conifers	3.238	3.159	2.947	3.084	2.996	3.103	2.996
	Broadleaves	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GREVENA	Conifers	6.369	6.212	5.796	6.065	5.892	6.103	5.892
	Broadleaves	18.570	18.113	16.899	17.685	17.181	17.796	17.181
DRAMA	Conifers	25.191	24.571	22.925	23.991	23.307	24.141	23.307
	Broadleaves	5.996	5.848	5.457	5.710	5.547	5.746	5.547
EVROS	Conifers	164.758	160.701	149.936	156.910	152.432	157.893	152.432
	Broadleaves	39.216	38.250	35.688	37.348	36.282	37.582	36.282
EUBOEA	Conifers	0.041	0.040	0.037	0.039	0.038	0.039	0.038
	Broadleaves	19.256	18.782	17.524	18.339	17.816	18.454	17.816
EVRYTANIA	Conifers	45.975	44.843	41.839	43.785	42.536	44.059	42.536
	Broadleaves	0.736	0.717	0.669	0.701	0.681	0.705	0.681
HLEIAS	Conifers	0.113	0.110	0.103	0.107	0.104	0.108	0.104
	Broadleaves	0.016	0.016	0.015	0.015	0.015	0.016	0.015
IMATHIA	Conifers	5.795	5.652	5.274	5.519	5.361	5.553	5.361
	Broadleaves	3.338	3.255	3.037	3.179	3.088	3.198	3.088
THESPROTIA	Conifers	0.134	0.131	0.122	0.128	0.124	0.129	0.124
	Broadleaves	0.504	0.492	0.459	0.480	0.466	0.483	0.466
THESSALONIKI	Conifers	18.027	17.583	16.405	17.168	16.678	17.275	16.678
	Broadleaves	2.884	2.813	2.624	2.746	2.668	2.764	2.668
IOANNINA	Conifers	14.658	14.297	13.340	13.960	13.562	14.048	13.562
	Broadleaves	42.740	41.688	38.895	40.704	39.543	40.959	39.543
KAVALA	Conifers	1.214	1.184	1.105	1.156	1.123	1.164	1.123
	Broadleaves	1.053	1.027	0.959	1.003	0.975	1.009	0.975
KARDITSA	Conifers	2.153	2.100	1.959	2.050	1.992	2.063	1.992
	Broadleaves	6.277	6.122	5.712	5.978	5.807	6.015	5.807
KASTORIA	Conifers	8.021	7.823	7.299	7.639	7.421	7.686	7.421
	Broadleaves	5.915	5.770	5.383	5.633	5.473	5.669	5.473
KILKIS	Conifers	1.935	1.888	1.761	1.843	1.790	1.855	1.790
	Broadleaves	0.007	0.007	0.006	0.007	0.006	0.007	0.006
KOZANI	Conifers	0.357	0.348	0.325	0.340	0.330	0.342	0.330
	Broadleaves	0.309	0.302	0.282	0.295	0.286	0.297	0.286
CORINTHIA	Conifers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Broadleaves	3.558	3.470	3.238	3.389	3.292	3.410	3.292
LACONIA	Conifers	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Broadleaves	15.575	15.191	14.174	14.833	14.410	14.926	14.410
LARISSA	Conifers	7.869	7.675	7.161	7.494	7.280	7.541	7.280
	Broadleaves	1.873	1.827	1.704	1.784	1.733	1.795	1.733

LESBOS	Conifers	0.392	0.383	0.357	0.374	0.363	0.376	0.363
	Broadleaves	0.063	0.061	0.057	0.060	0.058	0.060	0.058
MAGNESIA	Conifers	0.797	0.777	0.725	0.759	0.737	0.764	0.737
	Broadleaves	0.019	0.019	0.017	0.018	0.018	0.018	0.018
MESSENIA	Conifers	0.015	0.015	0.014	0.014	0.014	0.014	0.014
	Broadleaves	7.047	6.873	6.413	6.711	6.519	6.753	6.519
XANTHI	Conifers	41.189	40.175	37.483	39.227	38.107	39.473	38.107
	Broadleaves	0.148	0.144	0.135	0.141	0.137	0.142	0.137
PELLA	Conifers	49.438	48.221	44.991	47.084	45.740	47.378	45.740
	Broadleaves	0.061	0.060	0.056	0.058	0.057	0.059	0.057
PIERIA	Conifers	2.387	2.329	2.173	2.274	2.209	2.288	2.209
	Broadleaves	6.961	6.790	6.335	6.630	6.440	6.671	6.440
RHODOPE	Conifers	20.001	19.509	18.202	19.048	18.505	19.168	18.505
	Broadleaves	0.320	0.312	0.291	0.305	0.296	0.307	0.296
SERRES	Conifers	26.975	26.311	24.548	25.690	24.957	25.851	24.957
	Broadleaves	2.185	2.131	1.988	2.081	2.021	2.094	2.021
TRIKALA	Conifers	4.894	4.773	4.453	4.661	4.528	4.690	4.528
	Broadleaves	41.933	40.901	38.161	39.936	38.796	40.186	38.796
PHTHIOTIS	Conifers	21.467	20.939	19.536	20.445	19.861	20.573	19.861
	Broadleaves	2.482	2.421	2.259	2.364	2.296	2.379	2.296
FLORINA	Conifers	0.684	0.667	0.622	0.651	0.633	0.655	0.633
	Broadleaves	71.765	69.998	65.309	68.347	66.396	68.775	66.396
PHOCIS	Conifers	8.763	8.547	7.975	8.346	8.108	8.398	8.108
	Broadleaves	0.140	0.137	0.128	0.134	0.130	0.134	0.130
CHALKIDIKI	Conifers	1.587	1.548	1.445	1.512	1.469	1.521	1.469
	Broadleaves	3.073	2.997	2.796	2.926	2.843	2.945	2.843
TOTAL		**833.460**	**812.939**	**758.480**	**793.760**	**771.108**	**798.732**	**771.108**

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PREFECTURE								
		2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
AETOLIA-ACARNANIA	Conifers	0.119	0.126	0.125	0.122	0.114	0.119	0.116
	Broadleaves	0.095	0.101	0.100	0.098	0.091	0.095	0.093
ARCADIA	Conifers	0.010	0.010	0.010	0.010	0.009	0.010	0.009
	Broadleaves	30.039	31.866	31.626	30.847	28.781	30.129	29.260
ARTA	Conifers	3.101	3.289	3.264	3.184	2.971	3.110	3.020
	Broadleaves	9.041	9.590	9.518	9.284	8.662	9.068	8.806
ACHAEA	Conifers	0.008	0.008	0.008	0.008	0.008	0.008	0.008
	Broadleaves	0.327	0.347	0.345	0.336	0.314	0.328	0.319
BOEOTIA	Conifers	3.076	3.263	3.238	3.159	2.947	3.085	2.996
	Broadleaves	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GREVENA	Conifers	6.049	6.417	6.369	6.212	5.796	6.067	5.892
	Broadleaves	17.638	18.711	18.570	18.113	16.899	17.691	17.181
DRAMA	Conifers	23.927	25.382	25.191	24.571	22.925	23.998	23.307
	Broadleaves	5.695	6.041	5.996	5.848	5.457	5.712	5.547
EVROS	Conifers	156.489	166.006	164.758	160.701	149.936	156.957	152.432
	Broadleaves	37.248	39.513	39.216	38.250	35.688	37.359	36.282
EUBOEA	Conifers	0.039	0.041	0.041	0.040	0.037	0.039	0.038

	Broadleaves	18.290	19.402	19.256	18.782	17.524	18.344	17.816
EVRYTANIA	Conifers	43.668	46.323	45.975	44.843	41.839	43.798	42.536
	Broadleaves	0.699	0.741	0.736	0.717	0.669	0.701	0.681
HLEIAS	Conifers	0.107	0.114	0.113	0.110	0.103	0.108	0.104
	Broadleaves	0.015	0.016	0.016	0.016	0.015	0.015	0.015
IMATHIA	Conifers	5.504	5.839	5.795	5.652	5.274	5.520	5.361
	Broadleaves	3.170	3.363	3.338	3.255	3.037	3.180	3.088
THESPROTIA	Conifers	0.127	0.135	0.134	0.131	0.122	0.128	0.124
	Broadleaves	0.479	0.508	0.504	0.492	0.459	0.480	0.466
THESSALONIKI	Conifers	17.122	18.163	18.027	17.583	16.405	17.173	16.678
	Broadleaves	2.739	2.906	2.884	2.813	2.624	2.747	2.668
IOANNINA	Conifers	13.923	14.769	14.658	14.297	13.340	13.964	13.562
	Broadleaves	40.595	43.064	42.740	41.688	38.895	40.717	39.543
KAVALA	Conifers	1.153	1.223	1.214	1.184	1.105	1.157	1.123
	Broadleaves	1.001	1.061	1.053	1.027	0.959	1.003	0.975
KARDITSA	Conifers	2.045	2.169	2.153	2.100	1.959	2.051	1.992
	Broadleaves	5.962	6.325	6.277	6.122	5.712	5.980	5.807
KASTORIA	Conifers	7.618	8.081	8.021	7.823	7.299	7.641	7.421
	Broadleaves	5.618	5.960	5.915	5.770	5.383	5.635	5.473
KILKIS	Conifers	1.838	1.950	1.935	1.888	1.761	1.844	1.790
	Broadleaves	0.007	0.007	0.007	0.007	0.006	0.007	0.006
KOZANI	Conifers	0.339	0.359	0.357	0.348	0.325	0.340	0.330
	Broadleaves	0.294	0.312	0.309	0.302	0.282	0.295	0.286
CORINTHIA	Conifers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Broadleaves	3.379	3.585	3.558	3.470	3.238	3.390	3.292
LACONIA	Conifers	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Broadleaves	14.793	15.693	15.575	15.191	14.174	14.838	14.410
LARISSA	Conifers	7.474	7.928	7.869	7.675	7.161	7.496	7.280
	Broadleaves	1.779	1.887	1.873	1.827	1.704	1.784	1.733
LESBOS	Conifers	0.373	0.395	0.392	0.383	0.357	0.374	0.363
	Broadleaves	0.060	0.063	0.063	0.061	0.057	0.060	0.058
MAGNESIA	Conifers	0.757	0.803	0.797	0.777	0.725	0.759	0.737
	Broadleaves	0.018	0.019	0.019	0.019	0.017	0.018	0.018
MESSENIA	Conifers	0.014	0.015	0.015	0.015	0.014	0.014	0.014
	Broadleaves	6.693	7.100	7.047	6.873	6.413	6.713	6.519
XANTHI	Conifers	39.122	41.501	41.189	40.175	37.483	39.239	38.107
	Broadleaves	0.140	0.149	0.148	0.144	0.135	0.141	0.137
PELLA	Conifers	46.957	49.813	49.438	48.221	44.991	47.098	45.740
	Broadleaves	0.058	0.062	0.061	0.060	0.056	0.058	0.057
PIERIA	Conifers	2.268	2.406	2.387	2.329	2.173	2.274	2.209
	Broadleaves	6.612	7.014	6.961	6.790	6.335	6.632	6.440
RHODOPE	Conifers	18.997	20.153	20.001	19.509	18.202	19.054	18.505
	Broadleaves	0.304	0.322	0.320	0.312	0.291	0.305	0.296
SERRES	Conifers	25.621	27.179	26.975	26.311	24.548	25.697	24.957
	Broadleaves	2.075	2.201	2.185	2.131	1.988	2.081	2.021
TRIKALA	Conifers	4.648	4.931	4.894	4.773	4.453	4.662	4.528
	Broadleaves	39.829	42.251	41.933	40.901	38.161	39.948	38.796
PHTHIOTIS	Conifers	20.390	21.630	21.467	20.939	19.536	20.451	19.861
	Broadleaves	2.358	2.501	2.482	2.421	2.259	2.365	2.296
FLORINA	Conifers	0.649	0.689	0.684	0.667	0.622	0.651	0.633

	Broadleaves	68.163	72.309	71.765	69.998	65.309	68.367	66.396
PHOCIS	Conifers	8.323	8.830	8.763	8.547	7.975	8.348	8.108
	Broadleaves	0.133	0.141	0.140	0.137	0.128	0.134	0.130
CHALKIDIKI	Conifers	1.508	1.599	1.587	1.548	1.445	1.512	1.469
	Broadleaves	2.919	3.096	3.073	2.997	2.796	2.927	2.843
TOTAL		**791.629**	**839.774**	**833.460**	**812.939**	**758.480**	**793.997**	**771.108**

PREFECTURE								
		2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
AETOLIA-ACARNANIA	Conifers	0.120	0.118	0.119	0.126	0.125	0.122	0.114
	Broadleaves	0.096	0.095	0.095	0.101	0.100	0.098	0.091
ARCADIA	Conifers	0.010	0.010	0.010	0.010	0.010	0.010	0.009
	Broadleaves	30.308	29.859	30.039	31.866	31.626	30.847	28.781
ARTA	Conifers	3.128	3.082	3.101	3.289	3.264	3.184	2.971
	Broadleaves	9.122	8.986	9.041	9.590	9.518	9.284	8.662
ACHAEA	Conifers	0.008	0.008	0.008	0.008	0.008	0.008	0.008
	Broadleaves	0.330	0.325	0.327	0.347	0.345	0.336	0.314
BOEOTIA	Conifers	3.103	3.057	3.076	3.263	3.238	3.159	2.947
	Broadleaves	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GREVENA	Conifers	6.103	6.013	6.049	6.417	6.369	6.212	5.796
	Broadleaves	17.796	17.532	17.638	18.711	18.570	18.113	16.899
DRAMA	Conifers	24.141	23.784	23.927	25.382	25.191	24.571	22.925
	Broadleaves	5.746	5.661	5.695	6.041	5.996	5.848	5.457
EVROS	Conifers	157.893	155.553	156.489	166.006	164.758	160.701	149.936
	Broadleaves	37.582	37.025	37.248	39.513	39.216	38.250	35.688
EUBOEA	Conifers	0.039	0.039	0.039	0.041	0.041	0.040	0.037
	Broadleaves	18.454	18.180	18.290	19.402	19.256	18.782	17.524
EVRYTANIA	Conifers	44.059	43.406	43.668	46.323	45.975	44.843	41.839
	Broadleaves	0.705	0.694	0.699	0.741	0.736	0.717	0.669
HLEIAS	Conifers	0.108	0.107	0.107	0.114	0.113	0.110	0.103
	Broadleaves	0.016	0.015	0.015	0.016	0.016	0.016	0.015
IMATHIA	Conifers	5.553	5.471	5.504	5.839	5.795	5.652	5.274
	Broadleaves	3.198	3.151	3.170	3.363	3.338	3.255	3.037
THESPROTIA	Conifers	0.129	0.127	0.127	0.135	0.134	0.131	0.122
	Broadleaves	0.483	0.476	0.479	0.508	0.504	0.492	0.459
THESSALONIKI	Conifers	17.275	17.019	17.122	18.163	18.027	17.583	16.405
	Broadleaves	2.764	2.723	2.739	2.906	2.884	2.813	2.624
IOANNINA	Conifers	14.048	13.839	13.923	14.769	14.658	14.297	13.340
	Broadleaves	40.959	40.352	40.595	43.064	42.740	41.688	38.895
KAVALA	Conifers	1.164	1.146	1.153	1.223	1.214	1.184	1.105
	Broadleaves	1.009	0.995	1.001	1.061	1.053	1.027	0.959
KARDITSA	Conifers	2.063	2.033	2.045	2.169	2.153	2.100	1.959
	Broadleaves	6.015	5.926	5.962	6.325	6.277	6.122	5.712
KASTORIA	Conifers	7.686	7.573	7.618	8.081	8.021	7.823	7.299
	Broadleaves	5.669	5.585	5.618	5.960	5.915	5.770	5.383
KILKIS	Conifers	1.855	1.827	1.838	1.950	1.935	1.888	1.761
	Broadleaves	0.007	0.007	0.007	0.007	0.007	0.007	0.006
KOZANI	Conifers	0.342	0.337	0.339	0.359	0.357	0.348	0.325
	Broadleaves	0.297	0.292	0.294	0.312	0.309	0.302	0.282

CORINTHIA	Conifers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Broadleaves	3.410	3.359	3.379	3.585	3.558	3.470	3.238
LACONIA	Conifers	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	Broadleaves	14.926	14.705	14.793	15.693	15.575	15.191	14.174
LARISSA	Conifers	7.541	7.429	7.474	7.928	7.869	7.675	7.161
	Broadleaves	1.795	1.768	1.779	1.887	1.873	1.827	1.704
LESBOS	Conifers	0.376	0.370	0.373	0.395	0.392	0.383	0.357
	Broadleaves	0.060	0.059	0.060	0.063	0.063	0.061	0.057
MAGNESIA	Conifers	0.764	0.752	0.757	0.803	0.797	0.777	0.725
	Broadleaves	0.018	0.018	0.018	0.019	0.019	0.019	0.017
MESSENIA	Conifers	0.014	0.014	0.014	0.015	0.015	0.015	0.014
	Broadleaves	6.753	6.653	6.693	7.100	7.047	6.873	6.413
XANTHI	Conifers	39.473	38.888	39.122	41.501	41.189	40.175	37.483
	Broadleaves	0.142	0.140	0.140	0.149	0.148	0.144	0.135
PELLA	Conifers	47.378	46.676	46.957	49.813	49.438	48.221	44.991
	Broadleaves	0.059	0.058	0.058	0.062	0.061	0.060	0.056
PIERIA	Conifers	2.288	2.254	2.268	2.406	2.387	2.329	2.173
	Broadleaves	6.671	6.572	6.612	7.014	6.961	6.790	6.335
RHODOPE	Conifers	19.168	18.884	18.997	20.153	20.001	19.509	18.202
	Broadleaves	0.307	0.302	0.304	0.322	0.320	0.312	0.291
SERRES	Conifers	25.851	25.468	25.621	27.179	26.975	26.311	24.548
	Broadleaves	2.094	2.063	2.075	2.201	2.185	2.131	1.988
TRIKALA	Conifers	4.690	4.620	4.648	4.931	4.894	4.773	4.453
	Broadleaves	40.186	39.590	39.829	42.251	41.933	40.901	38.161
PHTHIOTIS	Conifers	20.573	20.268	20.390	21.630	21.467	20.939	19.536
	Broadleaves	2.379	2.343	2.358	2.501	2.482	2.421	2.259
FLORINA	Conifers	0.655	0.645	0.649	0.689	0.684	0.667	0.622
	Broadleaves	68.775	67.755	68.163	72.309	71.765	69.998	65.309
PHOCIS	Conifers	8.398	8.274	8.323	8.830	8.763	8.547	7.975
	Broadleaves	0.134	0.132	0.133	0.141	0.140	0.137	0.128
CHALKIDIKI	Conifers	1.521	1.499	1.508	1.599	1.587	1.548	1.445
	Broadleaves	2.945	2.901	2.919	3.096	3.073	2.997	2.796
TOTAL		**798.732**	**786.893**	**791.629**	**839.774**	**833.460**	**812.939**	**758.480**

Appendix 3

PREFECTURE		2010	2011	2012	2013	2014	2015	2016
AETOLIA-ACARNANIA	Conifers	1.425	1.390	1.297	1.357	1.319	1.366	1.319
	Broadleaves	1.120	1.092	1.019	1.066	1.036	1.073	1.036
ARCADIA	Conifers	0.059	0.057	0.054	0.056	0.054	0.056	0.054
	Broadleaves	2.883	2.812	2.624	2.746	2.667	2.763	2.667
ARTA	Conifers	1.088	1.061	0.990	1.036	1.006	1.042	1.006
	Broadleaves	1.632	1.591	1.485	1.554	1.509	1.564	1.509
ACHAEA	Conifers	0.300	0.292	0.273	0.285	0.277	0.287	0.277
	Broadleaves	1.697	1.656	1.545	1.617	1.570	1.627	1.570
BOEOTIA	Conifers	1.985	1.936	1.807	1.891	1.837	1.903	1.837
	Broadleaves	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GREVENA	Conifers	1.510	1.472	1.374	1.438	1.397	1.447	1.397
	Broadleaves	2.264	2.209	2.061	2.157	2.095	2.170	2.095
DRAMA	Conifers	1.844	1.798	1.678	1.756	1.706	1.767	1.706
	Broadleaves	0.790	0.771	0.719	0.752	0.731	0.757	0.731
EVROS	Conifers	4.121	4.020	3.750	3.925	3.813	3.949	3.813
	Broadleaves	1.766	1.723	1.607	1.682	1.634	1.693	1.634
EUBOEA	Conifers	0.112	0.109	0.102	0.107	0.104	0.107	0.104
	Broadleaves	2.128	2.075	1.936	2.026	1.969	2.039	1.969
EVRYTANIA	Conifers	3.642	3.552	3.314	3.468	3.369	3.490	3.369
	Broadleaves	0.405	0.395	0.368	0.385	0.374	0.388	0.374
HLEIAS	Conifers	0.925	0.902	0.842	0.881	0.856	0.887	0.856
	Broadleaves	0.308	0.301	0.281	0.294	0.285	0.296	0.285
IMATHIA	Conifers	1.486	1.449	1.352	1.415	1.375	1.424	1.375
	Broadleaves	0.991	0.966	0.901	0.943	0.916	0.949	0.916
THESPROTIA	Conifers	0.946	0.922	0.860	0.901	0.875	0.906	0.875
	Broadleaves	1.610	1.570	1.465	1.533	1.490	1.543	1.490
THESSALONIKI	Conifers	2.856	2.786	2.599	2.720	2.642	2.737	2.642
	Broadleaves	1.004	0.979	0.913	0.956	0.928	0.962	0.928
IOANNINA	Conifers	1.693	1.651	1.541	1.612	1.566	1.622	1.566
	Broadleaves	2.539	2.477	2.311	2.419	2.349	2.434	2.349
KAVALA	Conifers	1.737	1.694	1.581	1.654	1.607	1.665	1.607
	Broadleaves	1.421	1.386	1.293	1.354	1.315	1.362	1.315
KARDITSA	Conifers	1.384	1.350	1.259	1.318	1.280	1.326	1.280
	Broadleaves	2.076	2.025	1.889	1.977	1.920	1.989	1.920
KASTORIA	Conifers	1.897	1.851	1.727	1.807	1.755	1.818	1.755
	Broadleaves	1.431	1.396	1.303	1.363	1.324	1.372	1.324
KILKIS	Conifers	1.194	1.164	1.086	1.137	1.104	1.144	1.104
	Broadleaves	0.063	0.061	0.057	0.060	0.058	0.060	0.058
KOZANI	Conifers	0.905	0.883	0.824	0.862	0.838	0.868	0.838
	Broadleaves	0.741	0.723	0.674	0.706	0.685	0.710	0.685
CORINTHIA	Conifers	0.011	0.010	0.010	0.010	0.010	0.010	0.010
	Broadleaves	1.048	1.022	0.953	0.998	0.969	1.004	0.969
LACONIA	Conifers	0.053	0.052	0.049	0.051	0.049	0.051	0.049
	Broadleaves	2.615	2.551	2.380	2.491	2.420	2.506	2.420
LARISSA	Conifers	1.710	1.668	1.556	1.628	1.582	1.639	1.582
	Broadleaves	0.733	0.715	0.667	0.698	0.678	0.702	0.678

LESBOS	Conifers	1.947	1.899	1.771	1.854	1.801	1.865	1.801
	Broadleaves	0.684	0.667	0.622	0.651	0.633	0.655	0.633
MAGNESIA	Conifers	2.162	2.108	1.967	2.059	2.000	2.071	2.000
	Broadleaves	0.295	0.287	0.268	0.281	0.273	0.282	0.273
MESSENIA	Conifers	0.188	0.184	0.172	0.180	0.174	0.181	0.174
	Broadleaves	3.581	3.493	3.259	3.411	3.313	3.432	3.313
XANTHI	Conifers	1.987	1.938	1.809	1.893	1.839	1.905	1.839
	Broadleaves	0.105	0.102	0.095	0.100	0.097	0.100	0.097
PELLA	Conifers	3.282	3.201	2.987	3.126	3.036	3.145	3.036
	Broadleaves	0.102	0.099	0.092	0.097	0.094	0.097	0.094
PIERIA	Conifers	1.606	1.566	1.461	1.529	1.485	1.539	1.485
	Broadleaves	2.408	2.349	2.192	2.294	2.228	2.308	2.228
RHODOPE	Conifers	1.814	1.770	1.651	1.728	1.679	1.739	1.679
	Broadleaves	0.202	0.197	0.183	0.192	0.187	0.193	0.187
SERRES	Conifers	2.314	2.257	2.106	2.204	2.141	2.217	2.141
	Broadleaves	0.578	0.564	0.526	0.551	0.535	0.554	0.535
TRIKALA	Conifers	1.124	1.096	1.023	1.070	1.040	1.077	1.040
	Broadleaves	2.890	2.819	2.630	2.752	2.674	2.770	2.674
PHTHIOTIS	Conifers	1.853	1.807	1.686	1.765	1.714	1.776	1.714
	Broadleaves	0.554	0.540	0.504	0.527	0.512	0.530	0.512
FLORINA	Conifers	0.543	0.530	0.494	0.517	0.502	0.520	0.502
	Broadleaves	4.886	4.766	4.446	4.653	4.520	4.682	4.520
PHOCIS	Conifers	2.781	2.712	2.531	2.648	2.573	2.665	2.573
	Broadleaves	0.309	0.301	0.281	0.294	0.286	0.296	0.286
CHALKIDIKI	Conifers	1.040	1.014	0.946	0.990	0.962	0.996	0.962
	Broadleaves	1.271	1.240	1.156	1.210	1.176	1.218	1.176

PREFECTURE		**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
AETOLIA-ACARNANIA	Conifers	1.354	1.436	1.425	1.390	1.297	1.358	1.319
	Broadleaves	1.064	1.128	1.120	1.092	1.019	1.067	1.036
ARCADIA	Conifers	0.056	0.059	0.059	0.057	0.054	0.056	0.054
	Broadleaves	2.738	2.905	2.883	2.812	2.624	2.747	2.667
ARTA	Conifers	1.033	1.096	1.088	1.061	0.990	1.036	1.006
	Broadleaves	1.550	1.644	1.632	1.591	1.485	1.554	1.509
ACHAEA	Conifers	0.285	0.302	0.300	0.292	0.273	0.285	0.277
	Broadleaves	1.612	1.710	1.697	1.656	1.545	1.617	1.570
BOEOTIA	Conifers	1.886	2.000	1.985	1.936	1.807	1.891	1.837
	Broadleaves	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GREVENA	Conifers	1.434	1.521	1.510	1.472	1.374	1.438	1.397
	Broadleaves	2.151	2.282	2.264	2.209	2.061	2.157	2.095
DRAMA	Conifers	1.751	1.858	1.844	1.798	1.678	1.756	1.706
	Broadleaves	0.750	0.796	0.790	0.771	0.719	0.753	0.731
EVROS	Conifers	3.914	4.152	4.121	4.020	3.750	3.926	3.813
	Broadleaves	1.678	1.780	1.766	1.723	1.607	1.683	1.634
EUBOEA	Conifers	0.106	0.113	0.112	0.109	0.102	0.107	0.104
	Broadleaves	2.021	2.144	2.128	2.075	1.936	2.027	1.969
EVRYTANIA	Conifers	3.459	3.670	3.642	3.552	3.314	3.469	3.369
	Broadleaves	0.384	0.408	0.405	0.395	0.368	0.385	0.374

HLEIAS	Conifers	0.879	0.932	0.925	0.902	0.842	0.881	0.856
	Broadleaves	0.293	0.311	0.308	0.301	0.281	0.294	0.285
IMATHIA	Conifers	1.411	1.497	1.486	1.449	1.352	1.415	1.375
	Broadleaves	0.941	0.998	0.991	0.966	0.901	0.944	0.916
THESPROTIA	Conifers	0.898	0.953	0.946	0.922	0.860	0.901	0.875
	Broadleaves	1.529	1.622	1.610	1.570	1.465	1.534	1.490
THESSALONIKI	Conifers	2.713	2.878	2.856	2.786	2.599	2.721	2.642
	Broadleaves	0.953	1.011	1.004	0.979	0.913	0.956	0.928
IOANNINA	Conifers	1.608	1.706	1.693	1.651	1.541	1.613	1.566
	Broadleaves	2.412	2.559	2.539	2.477	2.311	2.419	2.349
KAVALA	Conifers	1.650	1.750	1.737	1.694	1.581	1.655	1.607
	Broadleaves	1.350	1.432	1.421	1.386	1.293	1.354	1.315
KARDITSA	Conifers	1.314	1.394	1.384	1.350	1.259	1.318	1.280
	Broadleaves	1.971	2.091	2.076	2.025	1.889	1.977	1.920
KASTORIA	Conifers	1.802	1.912	1.897	1.851	1.727	1.807	1.755
	Broadleaves	1.359	1.442	1.431	1.396	1.303	1.363	1.324
KILKIS	Conifers	1.134	1.203	1.194	1.164	1.086	1.137	1.104
	Broadleaves	0.060	0.063	0.063	0.061	0.057	0.060	0.058
KOZANI	Conifers	0.860	0.912	0.905	0.883	0.824	0.863	0.838
	Broadleaves	0.704	0.746	0.741	0.723	0.674	0.706	0.685
CORINTHIA	Conifers	0.010	0.011	0.011	0.010	0.010	0.010	0.010
	Broadleaves	0.995	1.055	1.048	1.022	0.953	0.998	0.969
LACONIA	Conifers	0.051	0.054	0.053	0.052	0.049	0.051	0.049
	Broadleaves	2.484	2.635	2.615	2.551	2.380	2.491	2.420
LARISSA	Conifers	1.624	1.723	1.710	1.668	1.556	1.629	1.582
	Broadleaves	0.696	0.738	0.733	0.715	0.667	0.698	0.678
LESBOS	Conifers	1.849	1.961	1.947	1.899	1.771	1.854	1.801
	Broadleaves	0.650	0.689	0.684	0.667	0.622	0.652	0.633
MAGNESIA	Conifers	2.053	2.178	2.162	2.108	1.967	2.059	2.000
	Broadleaves	0.280	0.297	0.295	0.287	0.268	0.281	0.273
MESSENIA	Conifers	0.179	0.190	0.188	0.184	0.172	0.180	0.174
	Broadleaves	3.402	3.609	3.581	3.493	3.259	3.412	3.313
XANTHI	Conifers	1.888	2.002	1.987	1.938	1.809	1.893	1.839
	Broadleaves	0.099	0.105	0.105	0.102	0.095	0.100	0.097
PELLA	Conifers	3.117	3.307	3.282	3.201	2.987	3.127	3.036
	Broadleaves	0.096	0.102	0.102	0.099	0.092	0.097	0.094
PIERIA	Conifers	1.525	1.618	1.606	1.566	1.461	1.530	1.485
	Broadleaves	2.287	2.427	2.408	2.349	2.192	2.294	2.228
RHODOPE	Conifers	1.723	1.828	1.814	1.770	1.651	1.728	1.679
	Broadleaves	0.191	0.203	0.202	0.197	0.183	0.192	0.187
SERRES	Conifers	2.198	2.331	2.314	2.257	2.106	2.204	2.141
	Broadleaves	0.549	0.583	0.578	0.564	0.526	0.551	0.535
TRIKALA	Conifers	1.067	1.132	1.124	1.096	1.023	1.071	1.040
	Broadleaves	2.745	2.912	2.890	2.819	2.630	2.753	2.674
PHTHIOTIS	Conifers	1.760	1.867	1.853	1.807	1.686	1.765	1.714
	Broadleaves	0.526	0.558	0.554	0.540	0.504	0.527	0.512
FLORINA	Conifers	0.516	0.547	0.543	0.530	0.494	0.517	0.502
	Broadleaves	4.641	4.923	4.886	4.766	4.446	4.655	4.520
PHOCIS	Conifers	2.641	2.802	2.781	2.712	2.531	2.649	2.573
	Broadleaves	0.293	0.311	0.309	0.301	0.281	0.294	0.286

CHALKIDIKI	Conifers	0.988	1.048	1.040	1.014	0.946	0.991	0.962
	Broadleaves	1.207	1.280	1.271	1.240	1.156	1.211	1.176

PREFECTURE								
		2024	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
AETOLIA-ACARNANIA	Conifers	1.366	1.346	1.354	1.436	1.425	1.390	1.297
	Broadleaves	1.073	1.057	1.064	1.128	1.120	1.092	1.019
ARCADIA	Conifers	0.056	0.056	0.056	0.059	0.059	0.057	0.054
	Broadleaves	2.763	2.722	2.738	2.905	2.883	2.812	2.624
ARTA	Conifers	1.042	1.027	1.033	1.096	1.088	1.061	0.990
	Broadleaves	1.564	1.540	1.550	1.644	1.632	1.591	1.485
ACHAEA	Conifers	0.287	0.283	0.285	0.302	0.300	0.292	0.273
	Broadleaves	1.627	1.603	1.612	1.710	1.697	1.656	1.545
BOEOTIA	Conifers	1.903	1.874	1.886	2.000	1.985	1.936	1.807
	Broadleaves	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GREVENA	Conifers	1.447	1.425	1.434	1.521	1.510	1.472	1.374
	Broadleaves	2.170	2.138	2.151	2.282	2.264	2.209	2.061
DRAMA	Conifers	1.767	1.741	1.751	1.858	1.844	1.798	1.678
	Broadleaves	0.757	0.746	0.750	0.796	0.790	0.771	0.719
EVROS	Conifers	3.949	3.891	3.914	4.152	4.121	4.020	3.750
	Broadleaves	1.693	1.667	1.678	1.780	1.766	1.723	1.607
EUBOEA	Conifers	0.107	0.106	0.106	0.113	0.112	0.109	0.102
	Broadleaves	2.039	2.009	2.021	2.144	2.128	2.075	1.936
EVRYTANIA	Conifers	3.490	3.438	3.459	3.670	3.642	3.552	3.314
	Broadleaves	0.388	0.382	0.384	0.408	0.405	0.395	0.368
HLEIAS	Conifers	0.887	0.873	0.879	0.932	0.925	0.902	0.842
	Broadleaves	0.296	0.291	0.293	0.311	0.308	0.301	0.281
IMATHIA	Conifers	1.424	1.403	1.411	1.497	1.486	1.449	1.352
	Broadleaves	0.949	0.935	0.941	0.998	0.991	0.966	0.901
THESPROTIA	Conifers	0.906	0.893	0.898	0.953	0.946	0.922	0.860
	Broadleaves	1.543	1.520	1.529	1.622	1.610	1.570	1.465
THESSALONIKI	Conifers	2.737	2.697	2.713	2.878	2.856	2.786	2.599
	Broadleaves	0.962	0.947	0.953	1.011	1.004	0.979	0.913
IOANNINA	Conifers	1.622	1.598	1.608	1.706	1.693	1.651	1.541
	Broadleaves	2.434	2.398	2.412	2.559	2.539	2.477	2.311
KAVALA	Conifers	1.665	1.640	1.650	1.750	1.737	1.694	1.581
	Broadleaves	1.362	1.342	1.350	1.432	1.421	1.386	1.293
KARDITSA	Conifers	1.326	1.306	1.314	1.394	1.384	1.350	1.259
	Broadleaves	1.989	1.960	1.971	2.091	2.076	2.025	1.889
KASTORIA	Conifers	1.818	1.791	1.802	1.912	1.897	1.851	1.727
	Broadleaves	1.372	1.351	1.359	1.442	1.431	1.396	1.303
KILKIS	Conifers	1.144	1.127	1.134	1.203	1.194	1.164	1.086
	Broadleaves	0.060	0.059	0.060	0.063	0.063	0.061	0.057
KOZANI	Conifers	0.868	0.855	0.860	0.912	0.905	0.883	0.824
	Broadleaves	0.710	0.699	0.704	0.746	0.741	0.723	0.674
CORINTHIA	Conifers	0.010	0.010	0.010	0.011	0.011	0.010	0.010
	Broadleaves	1.004	0.989	0.995	1.055	1.048	1.022	0.953
LACONIA	Conifers	0.051	0.050	0.051	0.054	0.053	0.052	0.049
	Broadleaves	2.506	2.469	2.484	2.635	2.615	2.551	2.380

LARISSA	Conifers	1.639	1.614	1.624	1.723	1.710	1.668	1.556
	Broadleaves	0.702	0.692	0.696	0.738	0.733	0.715	0.667
LESBOS	Conifers	1.865	1.838	1.849	1.961	1.947	1.899	1.771
	Broadleaves	0.655	0.646	0.650	0.689	0.684	0.667	0.622
MAGNESIA	Conifers	2.071	2.041	2.053	2.178	2.162	2.108	1.967
	Broadleaves	0.282	0.278	0.280	0.297	0.295	0.287	0.268
MESSENIA	Conifers	0.181	0.178	0.179	0.190	0.188	0.184	0.172
	Broadleaves	3.432	3.381	3.402	3.609	3.581	3.493	3.259
XANTHI	Conifers	1.905	1.876	1.888	2.002	1.987	1.938	1.809
	Broadleaves	0.100	0.099	0.099	0.105	0.105	0.102	0.095
PELLA	Conifers	3.145	3.099	3.117	3.307	3.282	3.201	2.987
	Broadleaves	0.097	0.096	0.096	0.102	0.102	0.099	0.092
PIERIA	Conifers	1.539	1.516	1.525	1.618	1.606	1.566	1.461
	Broadleaves	2.308	2.274	2.287	2.427	2.408	2.349	2.192
RHODOPE	Conifers	1.739	1.713	1.723	1.828	1.814	1.770	1.651
	Broadleaves	0.193	0.190	0.191	0.203	0.202	0.197	0.183
SERRES	Conifers	2.217	2.185	2.198	2.331	2.314	2.257	2.106
	Broadleaves	0.554	0.546	0.549	0.583	0.578	0.564	0.526
TRIKALA	Conifers	1.077	1.061	1.067	1.132	1.124	1.096	1.023
	Broadleaves	2.770	2.729	2.745	2.912	2.890	2.819	2.630
PHTHIOTIS	Conifers	1.776	1.750	1.760	1.867	1.853	1.807	1.686
	Broadleaves	0.530	0.523	0.526	0.558	0.554	0.540	0.504
FLORINA	Conifers	0.520	0.513	0.516	0.547	0.543	0.530	0.494
	Broadleaves	4.682	4.613	4.641	4.923	4.886	4.766	4.446
PHOCIS	Conifers	2.665	2.625	2.641	2.802	2.781	2.712	2.531
	Broadleaves	0.296	0.292	0.293	0.311	0.309	0.301	0.281
CHALKIDIKI	Conifers	0.996	0.982	0.988	1.048	1.040	1.014	0.946
	Broadleaves	1.218	1.200	1.207	1.280	1.271	1.240	1.156