MINISTRY OF ENVIRONMENT & ENERGY

NATIONAL FORESTRY ACCOUNTING PLAN (NFAP)

GREECE

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Introduction

The Greek National Forestry Accounting Plan 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 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 national forestry accounting plan (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 two Appendixes. Chapter 1 provides a general introduction of the forest reference level and how it address 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 -13864,58 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 and Unmanaged.

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 -13864,58 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 and Unmanaged) as reported in Table 1 below

Kt CO_2 eq.	2021	2022	2023	2024	2025	Average
CO_2 (living biomass)	-13336,53	-13857,35	-13521,71	-13926,79	-13753,19	-13679,114
CO_2 (HWP_FOD)	-200,348	-162,816	-174,464	-189,799	-210,128	-187,51
CH_4	2,03	2,03	2,03	2,03	2,03	2,03
N_2O	0,01	0,01	0,01	0,01	0,01	0,01
Total CO_2 eq. (HWP_FOD)	-13534,84	-14018,13	-13694,13	-14114,55	-13961,28	**-13864,58**
Total CO_2 eq. (HWP_IOD)	-13334,49	-13855,31	-13519,67	-13924,75	-13751,15	-13677,07

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 forested 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). In the calculation of C pools 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 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 CO2 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 in account directly as no BL value has been estimated yet, according to article 10 EU 841/2018.

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

The Greek FRL includes the Harvested Wood Products (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 (permanently or periodically) and not from OWL. Fuelwood is harvested throughout all areas (sustainably managed or OWL). 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 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 o 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 FRL is fully consistent with the national projections of anthropogenic greenhouse gas emissions by sources and removals by sinks reported under Regulation (EU) n. 525/2013. Both approaches report the same carbon pools (living biomass e.tc.) and non- CO_2 emissions.

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 9 and 12.

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 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 2018)

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)

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 not practiced in Greece. (Greek NIR 2018)

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 (m3) 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 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 (9). 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 (6). 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 today 419 areas: 241 Sites of Community Importance (SCI) and 202 Special Protection Areas (SPA). The total area of the network, when overlapping between the areas of the above types of sites is excluded, rises to 4.294.960,14 ha, of which 3.603.354,61 ha are land (27,2% of terrestrial part of Greece) and 691.605,53 ha are marine areas (6,12% 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 1 5,7) and (b) grow under permanent threats, such as wildfires (6) 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 (4). Forest Management is conducted by the State Forest Service, who 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 forested 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 (11) 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 (1). 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 forested land according to their vegetation type

Forest management plans

The Forest Service is responsible for managing the state forests while 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 analysing 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 200m3. 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 about ten 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 have been updated a year ago, 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 (eg streams, ridges, watercourses) and other important technical data (eg 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 (eg 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 (2). 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 unfortunately no updated information available on the progress of conversion of the other broadleaf species.

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

Short rotation is being applied only in poplar plantations and afforestations 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 6) 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. To date only a few of the required Special Environmental Studies are completed for Natura 2000 areas in Greece. However, the requirements of the respective Directives are already taken under consideration by managers of the local forest services and the organisms 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 Gazzette B' 5351) and the first action plans are being developed.

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 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:

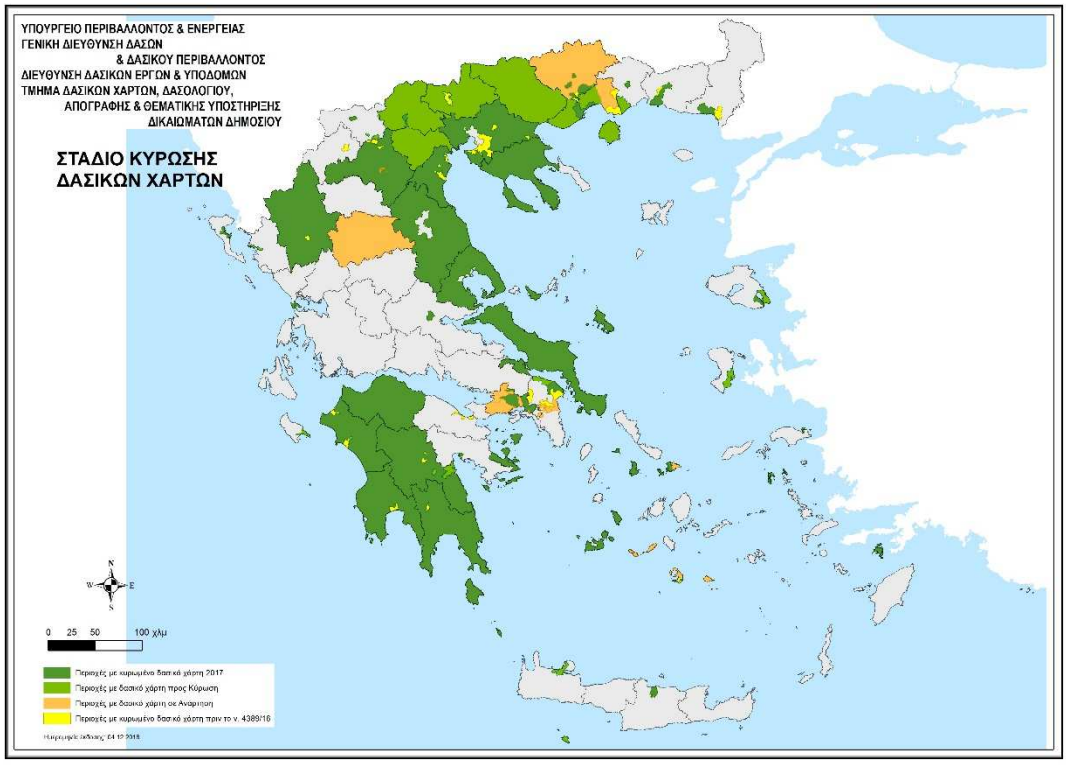
- Assessment of forest ecosystems' vulnerability based on the Regional Plans for Climate Change Adaptation (National Climate Change Adaptation Strategy)
- Suitable policy and measures for the LULUCF sector
- Forest land conservation and forest ecosystems' quality increase
- Restoration of low quality 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 41.5% of its territory, while for the rest of the area almost 14% 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 61% 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" (First National Inventory of Forests 1992).

The National Inventory of Forests provides, theoretically at least, 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 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, so that it can be completed and its results published within 2 years from the time it starts to be carried out.

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

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. This depicts the effort undertaken to rehabilitate and increase the density of Greek forests and constitutes o proof that they are sustainable managed. A rate of approximately 35% of annual increment is being harvested.

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. The action plans for the Strategy are still under development, 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”. 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 three categories of forest land:

i. Forests, Permanently sustainably managed
ii. Forests, Periodically sustainably managed
iii. Other wooded Land (OWL), under management or not.

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

i. Conifers and Broadleaves - (Forests, Permanently sustainably managed)
ii. Conifers and Broadleaves - Forests, Periodically sustainably managed
iii. Evergreen Broadleaves - Other wooded Land (OWL), under management or not.

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).

Other Wooded Land:

It includes open woodland and scrub, shrub and brush land, whether or not used for pasture or range. They are also used for producing fuelwood and for hydrological protection of the ground.

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

iv. 25% minimum tree crown.
v. 0.3 hectares minimum land area.
vi. 2 metres tree height, or the potential to achieve it.

An area designated as a forest (state, private, etc.) may consist of forests and woodland as well as other wooded land (OWL). In this area there may be parcels of conifers, broad-leaved and evergreen broad-leaved. Consequently, in Greece, the areas under management (permanent or periodical) include forest areas as well as OWL. 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', 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.

3.2 Documentation of data sources as applied for estimating the forest reference level

All the areas that are used in calculations derive 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 derive 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 calculation (e.g. Estimated Value of Forest Land in Greece, 2980/11-2014. Ministry of Environment & Energy) have been taken into account.

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

No gap filling of data is implemented 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)	OWL (kHa)
AETOLIA-ACARNANIA	0,431	138,521	151,563
MOUNT ATHOS		15,927	18,446
ARGOLIS		6,751	91,659
ARCADIA	22,477	71,703	150,778
ARTA	18,108	19,195	46,286
ATTICA		74,234	90,652
ACHAEA	0,578	83,298	88,294
BOEOTIA	4,323	32,119	96,786
GREVENA	39,719	37,558	55,431
DRAMA	152,987	77,446	34,015
DODECANESE		64,379	50,838
EVROS	137,121	-7,669	38,614
EUBOEA	38,961	74,915	108,585
EVRYTANIA	37,188	79,609	30,113
ZAKYNTHOS		6,042	15,001
HLEIAS	10,244	52,278	28,078
IMATHIA	38,048	14,372	17,265
HERAKLION		10,418	55,005

THESPROTIA	1,458	19,941	49,330
THESSALONIKI	30,137	16,450	84,798
IOANNINA	70,963	139,770	119,058
KAVALA	4,257	78,861	62,041
KARDITSA	35,512	19,806	34,768
KASTORIA	40,772	23,488	14,996
KERKYRA		4,167	9,584
KEFALONIA		11,460	50,421
KILKIS	51,696	7,115	25,107
KOZANI	15,882	55,980	65,142
CORINTHIA	10,366	59,894	55,387
CYCLADES		5,834	68,132
LACONIA	12,519	24,010	138,513
LARISSA	27,968	32,444	134,880
LASITHI		10,625	37,713
LESBOS	0,722	48,446	45,629
LEFKADA		0,208	10,209
MAGNESIA	21,139	25,781	103,014
MESSENIA	8,147	35,773	67,600
XANTHI	78,029	32,279	18,683
PELLA	38,675	46,765	49,186
PIERIA	20,323	25,785	31,037
PREVEZA		16,328	31,436
RETHYMNO		5,000	42,921
RHODOPE	45,462	47,717	45,153
SAMOS		17,710	35,420
SERRES	68,167	40,941	60,843
TRIKALA	69,261	67,662	40,682
PHTHIOTIS	39,878	93,458	165,918
FLORINA	35,107	26,915	6,831
PHOCIS	9,283	102,886	77,506
CHALKIDIKI	11,780	86,788	103,481
CHANIA		19,166	63,759
CHIOS		11,251	37,295
TOTAL	**1247,687**	**2111,799**	**3153,882**

Table 6: Area of forestland in Greece by management

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

PREFECTURE	PERMANENTLY SUSTAINABLY MANAGED FORESTS (kHa)	PERIODICALLY SUSTAINABLY MANAGED FORESTS (kHa)	OWL (kHa)	Conifers (kHa)	Broadleaves (kHa)	Evergreen broadleaves (kHa)
AETOLIA-ACARNANIA	0,431	138,521	151,563	45,051	93,901	151,563
MOUNT ATHOS		15,927	18,446	2,873	13,054	18,446
ARGOLIS		6,751	91,659	5,740	1,011	91,659
ARCADIA	22,477	71,703	150,778	61,308	32,872	150,778

ARTA	18,108	19,195	46,286	14,228	23,075	46,286
ATTICA		74,234	90,652	73,224	1,010	90,652
ACHAEA	0,578	83,298	88,294	67,991	15,885	88,294
BOEOTIA	4,323	32,119	96,786	34,480	1,962	96,786
GREVENA	39,719	37,558	55,431	35,489	41,788	55,431
DRAMA	152,987	77,446	34,015	34,492	195,941	34,015
DODECANESE		64,379	50,838	63,339	1,040	50,838
EVROS	137,121	-7,669	38,614	3,950	125,502	38,614
EUBOEA	38,961	74,915	108,585	105,124	8,752	108,585
EVRYTANIA	37,188	79,609	30,113	94,206	22,591	30,113
ZAKYNTHOS		6,042	15,001	6,042	0,000	15,001
HLEIAS	10,244	52,278	28,078	42,727	19,795	28,078
IMATHIA	38,048	14,372	17,265	8,837	43,583	17,265
HERAKLION		10,418	55,005	8,335	2,083	55,005
THESPROTIA	1,458	19,941	49,330	1,394	20,005	49,33
THESSALONIKI	30,137	16,450	84,798	2,753	43,834	84,798
IOANNINA	70,963	139,770	119,058	80,426	130,307	119,058
KAVALA	4,257	78,861	62,041	35,212	47,906	62,041
KARDITSA	35,512	19,806	34,768	20,807	34,511	34,768
KASTORIA	40,772	23,488	14,996	9,291	54,969	14,996
KERKYRA		4,167	9,584	2,916	1,251	9,584
KEFALONIA		11,460	50,421	11,252	0,208	50,421
KILKIS	51,696	7,115	25,107	0,479	58,332	25,107
KOZANI	15,882	55,980	65,142	16,939	54,923	65,142
CORINTHIA	10,366	59,894	55,387	66,559	3,701	55,387
CYCLADES		5,834	68,132	0,000	5,834	68,132
LACONIA	12,519	24,010	138,513	27,821	8,708	138,513
LARISSA	27,968	32,444	134,880	15,932	44,480	134,88
LASITHI		10,625	37,713	9,167	1,458	37,713
LESBOS	0,722	48,446	45,629	37,919	11,249	45,629
LEFKADA		0,208	10,209	0,208	0,000	10,209
MAGNESIA	21,139	25,781	103,014	12,300	34,620	103,014
MESSENIA	8,147	35,773	67,600	17,716	26,204	67,6
XANTHI	78,029	32,279	18,683	1,676	108,631	18,683
PELLA	38,675	46,765	49,186	3,500	81,940	49,186
PIERIA	20,323	25,785	31,037	17,594	28,514	31,037
PREVEZA		16,328	31,436	0,000	16,328	31,436
RETHYMNO		5,000	42,921	3,334	1,666	42,921
RHODOPE	45,462	47,717	45,153	4,670	88,509	45,153
SAMOS		17,710	35,420	15,626	2,084	35,42
SERRES	68,167	40,941	60,843	6,226	102,882	60,843
TRIKALA	69,261	67,662	40,682	70,185	66,738	40,682
PHTHIOTIS	39,878	93,458	165,918	71,972	61,364	165,918
FLORINA	35,107	26,915	6,831	0,962	61,060	6,831
PHOCIS	9,283	102,886	77,506	82,408	29,760	77,506
CHALKIDIKI	11,780	86,788	103,481	47,428	51,140	103,481
CHANIA		19,166	63,759	17,501	1,665	63,759
CHIOS		11,251	37,295	10,001	1,250	37,295
TOTAL	**1247,687**	**2111,799**	**3153,882**	**1429,610**	**1929,876**	**3153,882**

Table 7: Area of forestland in Greece by vegetation type

The stratification of areas, as presented in detail on the tables, may be unpredictable in the future (probably leading to technical corrections 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

The equation for the calculations is the following:

Vi = Gi – Hi – Mi

Vi = volume of growing stock in a year, m3 ha-1

Gi = total current increment of growing stock in a year, m3 ha-1

Hi = total amount of harvest in a year, m3 ha-1

Mi = annual rate of mortality, m3 ha-1

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, 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.

We modeled the annual growing stock (x) of the Greek forests and its relationship to the average total annual increment (y) using real data from the Public Forest Service. The time span was 2000-2009.

Due to the non-normal distribution of the two variables, they were transformed to their natural logarithms.

The appropriate model was a linear one, where the independent variable was the natural logarithm of annual growing stock. The R^2 coefficient was 0.877. The linear relationship is expressed as follows

Ln(y) = -2.51+0.924Ln(x) and is presented in the following figure

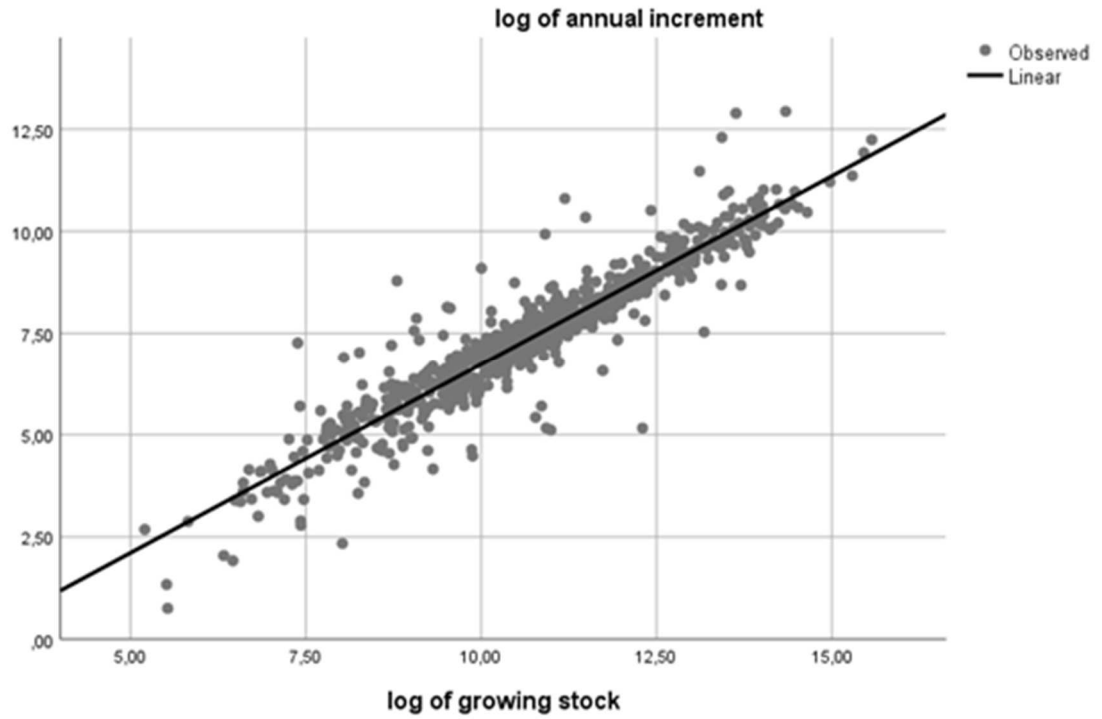


Figure 2: Figure relationship model of growing stock and increment

The growing stock equation for the calculations is the following:

C = [V ● D • BEF] ● (1 + R) ● CF

C = total carbon in biomass, tones C

V = volume of growing stock, m3 ha-1

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 8: coefficient BEF•D according to Greek vegetation (Source: estimated value of forest land in Greece 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 9: coefficient R according to vegetation (Source: estimated value of forest land in Greece 2980/4-11-2014)

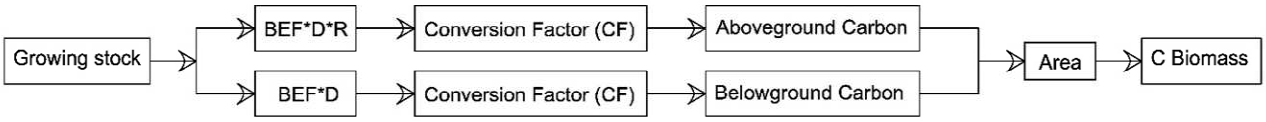


Figure 3: Biomass Flowchart

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 2010-2025 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 2010-2025 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 10 and 11. They have been projected (as described in chapter 3.3), for the period 2010 – 2025.

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)	Evergreen broadleaves (kt C)	TOTAL
1734,637	1422,417	603,968	**3761,022**

Table 10: Living biomass (above + below) C stock of Greece for 2009

YEAR	Conifers (kt C)	Broadleaves (kt C)	Evergreen broadleaves (kt C)
2010	1831,777	1502,072	603,968
2011	1786,676	1465,089	603,968
2012	1666,986	1366,942	603,968
2013	1744,525	1430,524	603,968
2014	1694,741	1389,701	603,968
2015	1755,453	1439,486	603,968
2016	1694,741	1389,701	603,968
2017	1739,841	1426,684	603,968
2018	1845,654	1513,451	603,968
2019	1831,777	1502,072	603,968
2020	1786,676	1465,089	603,968
2021	1666,986	1366,942	603,968
2022	1745,045	1430,951	603,968
2023	1694,741	1389,701	603,968
2024	1755,453	1439,486	603,968
2025	1729,433	1418,149	603,968

Table 11: Living biomass (above + below) C stock of Greece for period 2010-2025

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 2010-2025.

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)	Evergreen broadleaves (kHa)	Above + Below (kt C)
AETOLIA-ACARNANIA	45,051	93,901	151,563	58,036
MOUNT ATHOS	2,873	13,054	18,446	23,659
ARGOLIS	5,740	1,011	91,659	29,054
ARCADIA	61,308	32,872	150,778	89,117
ARTA	14,228	23,075	46,286	18,107
ATTICA	73,224	1,010	90,652	150,460
ACHAEA	67,991	15,885	88,294	25,757
BOEOTIA	34,480	1,962	96,786	82,455
GREVENA	35,489	41,788	55,431	35,587
DRAMA	34,492	195,941	34,015	309,035
DODECANESE	63,339	1,040	50,838	133,463
EVROS	3,950	125,502	38,614	49,784
EUBOEA	105,124	8,752	108,585	170,385

EVRYTANIA	94,206	22,591	30,113	206,385
ZAKYNTHOS	6,042	0,000	15,001	14,562
HLEIAS	42,727	19,795	28,078	101,435
IMATHIA	8,837	43,583	17,265	122,794
HERAKLION	8,335	2,083	55,005	29,044
THESPROTIA	1,394	20,005	49,33	11,905
THESSALONIKI	2,753	43,834	84,798	27,310
IOANNINA	80,426	130,307	119,058	403,467
KAVALA	35,212	47,906	62,041	31,415
KARDITSA	20,807	34,511	34,768	32,600
KASTORIA	9,291	54,969	14,996	38,382
KERKYRA	2,916	1,251	9,584	8,619
KEFALONIA	11,252	0,208	50,421	30,121
KILKIS	0,479	58,332	25,107	22,188
KOZANI	16,939	54,923	65,142	62,080
CORINTHIA	66,559	3,701	55,387	34,734
CYCLADES	0,000	5,834	68,132	20,135
LACONIA	27,821	8,708	138,513	32,306
LARISSA	15,932	44,480	134,88	63,991
LASITHI	9,167	1,458	37,713	26,626
LESBOS	37,919	11,249	45,629	95,764
LEFKADA	0,208	0,000	10,209	2,357
MAGNESIA	12,300	34,620	103,014	18,676
MESSENIA	17,716	26,204	67,6	25,210
XANTHI	1,676	108,631	18,683	42,199
PELLA	3,500	81,940	49,186	110,965
PIERIA	17,594	28,514	31,037	35,927
PREVEZA	0,000	16,328	31,436	25,858
RETHYMNO	3,334	1,666	42,921	16,577
RHODOPE	4,670	88,509	45,153	27,710
SAMOS	15,626	2,084	35,42	39,545
SERRES	6,226	102,882	60,843	43,108
TRIKALA	70,185	66,738	40,682	141,167
PHTHIOTIS	71,972	61,364	165,918	236,262
FLORINA	0,962	61,060	6,831	75,815
PHOCIS	82,408	29,760	77,506	202,484
CHALKIDIKI	47,428	51,140	103,481	51,180
CHANIA	17,501	1,665	63,759	47,587
CHIOS	10,001	1,250	37,295	27,631
TOTAL	**1429,610**	**1929,876**	**3153,882**	**3761,022**

Table 12: 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 2010-2025, per hectare.

PREFECTURE	Above + Below (t C / ha)							
	2010	2011	2012	2013	2014	2015	2016	2017
AETOLIA-ACARNANIA	1,381	1,347	1,257	1,315	1,277	1,323	1,304	1,311
MOUNT ATHOS	8,448	8,240	7,688	8,046	7,816	8,096	7,976	8,024
ARGOLIS	8,448	8,240	7,688	8,046	7,816	8,096	7,976	8,024
ARCADIA	3,057	2,981	2,782	2,911	2,828	2,929	2,886	2,903
ARTA	1,268	1,237	1,154	1,208	1,173	1,216	1,197	1,205
ATTICA	8,448	8,240	7,688	8,046	7,816	8,096	7,976	8,024
ACHAEA	1,002	0,977	0,911	0,954	0,927	0,960	0,946	0,951
BOEOTIA	8,026	7,828	7,304	7,643	7,425	7,691	7,577	7,623
GREVENA	2,908	2,837	2,647	2,770	2,691	2,787	2,746	2,762
DRAMA	7,711	7,522	7,018	7,344	7,135	7,390	7,281	7,324
DODECANESE	8,839	8,621	8,044	8,418	8,177	8,470	8,345	8,395
EVROS	1,899	1,852	1,728	1,809	1,757	1,820	1,793	1,804
EUBOEA	6,508	6,348	5,922	6,198	6,021	6,237	6,144	6,181
EVRYTANIA	8,258	8,055	7,515	7,865	7,640	7,914	7,797	7,843
ZAKYNTHOS	6,199	6,046	5,641	5,903	5,735	5,940	5,852	5,888
HLEIAS	12,598	12,288	11,465	11,998	11,656	12,073	11,894	11,966
IMATHIA	11,621	11,335	10,576	11,067	10,752	11,137	10,972	11,038
HERAKLION	8,839	8,621	8,044	8,418	8,177	8,470	8,345	8,395
THESPROTIA	1,573	1,534	1,432	1,498	1,455	1,507	1,485	1,494
THESSALONIKI	2,493	2,432	2,269	2,375	2,307	2,389	2,354	2,368
IOANNINA	9,095	8,871	8,277	8,662	8,414	8,716	8,587	8,638
KAVALA	2,057	2,006	1,872	1,959	1,903	1,971	1,942	1,953
KARDITSA	4,626	4,512	4,210	4,406	4,280	4,433	4,367	4,394
KASTORIA	4,433	4,324	4,034	4,222	4,101	4,248	4,185	4,210
KERKYRA	8,416	8,209	7,659	8,015	7,787	8,066	7,946	7,994
KEFALONIA	8,026	7,828	7,304	7,643	7,425	7,691	7,577	7,623
KILKIS	2,505	2,443	2,280	2,386	2,318	2,401	2,365	2,379
KOZANI	5,142	5,015	4,680	4,897	4,757	4,928	4,855	4,884
CORINTHIA	1,813	1,768	1,650	1,727	1,677	1,737	1,712	1,722
CYCLADES	2,767	2,699	2,518	2,635	2,560	2,651	2,612	2,628
LACONIA	1,081	1,054	0,984	1,030	1,000	1,036	1,021	1,027
LARISSA	3,918	3,821	3,565	3,731	3,624	3,754	3,699	3,721
LASITHI	8,839	8,621	8,044	8,418	8,177	8,470	8,345	8,395
LESBOS	8,965	8,745	8,159	8,538	8,295	8,592	8,465	8,515
LEFKADA	6,199	6,046	5,641	5,903	5,735	5,940	5,852	5,888
MAGNESIA	2,276	2,220	2,072	2,168	2,106	2,181	2,149	2,162
MESSENIA	3,314	3,232	3,015	3,156	3,066	3,175	3,128	3,147
XANTHI	2,374	2,316	2,161	2,261	2,197	2,276	2,242	2,255
PELLA	5,719	5,578	5,204	5,446	5,291	5,480	5,399	5,432
PIERIA	5,163	5,036	4,699	4,917	4,777	4,948	4,875	4,904
PREVEZA	2,767	2,699	2,518	2,635	2,560	2,651	2,612	2,628
RETHYMNO	8,839	8,621	8,044	8,418	8,177	8,470	8,345	8,395
RHODOPE	1,727	1,684	1,571	1,645	1,598	1,655	1,630	1,640
SAMOS	8,965	8,745	8,159	8,538	8,295	8,592	8,465	8,515

SERRES	2,812	2,742	2,559	2,678	2,601	2,695	2,655	2,671
TRIKALA	6,099	5,949	5,550	5,808	5,643	5,845	5,758	5,793
PHTHIOTIS	10,370	10,115	9,437	9,876	9,594	9,938	9,791	9,849
FLORINA	9,874	9,631	8,985	9,403	9,135	9,462	9,322	9,378
PHOCIS	8,258	8,055	7,515	7,865	7,640	7,914	7,797	7,843
CHALKIDIKI	2,170	2,117	1,975	2,067	2,008	2,080	2,049	2,061
CHANIA	8,416	8,209	7,659	8,015	7,787	8,066	7,946	7,994
CHIOS	8,416	8,209	7,659	8,015	7,787	8,066	7,946	7,994

Table 13: Living biomass (above + below) C stock of Greece for period 2010-2017 by prefecture.

PREFECTURE	**Above + Below (t C / ha)**							
	2018	2019	2020	2021	2022	2023	2024	2025
AETOLIA-ACARNANIA	1,391	1,381	1,347	1,257	1,315	1,277	1,323	1,304
MOUNT ATHOS	8,512	8,448	8,240	7,688	8,048	7,816	8,096	7,976
ARGOLIS	8,512	8,448	8,240	7,688	8,048	7,816	8,096	7,976
ARCADIA	3,080	3,057	2,981	2,782	2,912	2,828	2,929	2,886
ARTA	1,278	1,268	1,237	1,154	1,208	1,173	1,216	1,197
ATTICA	8,512	8,448	8,240	7,688	8,048	7,816	8,096	7,976
ACHAEA	1,009	1,002	0,977	0,911	0,954	0,927	0,960	0,946
BOEOTIA	8,086	8,026	7,828	7,304	7,646	7,425	7,691	7,577
GREVENA	2,930	2,908	2,837	2,647	2,771	2,691	2,787	2,746
DRAMA	7,770	7,711	7,522	7,018	7,346	7,135	7,390	7,281
DODECANESE	8,906	8,839	8,621	8,044	8,420	8,177	8,470	8,345
EVROS	1,914	1,899	1,852	1,728	1,809	1,757	1,820	1,793
EUBOEA	6,557	6,508	6,348	5,922	6,200	6,021	6,237	6,144
EVRYTANIA	8,320	8,258	8,055	7,515	7,867	7,640	7,914	7,797
ZAKYNTHOS	6,246	6,199	6,046	5,641	5,905	5,735	5,940	5,852
HLEIAS	12,693	12,598	12,288	11,465	12,002	11,656	12,073	11,894
IMATHIA	11,709	11,621	11,335	10,576	11,071	10,752	11,137	10,972
HERAKLION	8,906	8,839	8,621	8,044	8,420	8,177	8,470	8,345
THESPROTIA	1,585	1,573	1,534	1,432	1,499	1,455	1,507	1,485
THESSALONIKI	2,512	2,493	2,432	2,269	2,375	2,307	2,389	2,354
IOANNINA	9,164	9,095	8,871	8,277	8,664	8,414	8,716	8,587
KAVALA	2,072	2,057	2,006	1,872	1,959	1,903	1,971	1,942
KARDITSA	4,661	4,626	4,512	4,210	4,407	4,280	4,433	4,367
KASTORIA	4,467	4,433	4,324	4,034	4,223	4,101	4,248	4,185
KERKYRA	8,480	8,416	8,209	7,659	8,018	7,787	8,066	7,946
KEFALONIA	8,086	8,026	7,828	7,304	7,646	7,425	7,691	7,577
KILKIS	2,524	2,505	2,443	2,280	2,386	2,318	2,401	2,365
KOZANI	5,181	5,142	5,015	4,680	4,899	4,757	4,928	4,855
CORINTHIA	1,827	1,813	1,768	1,650	1,727	1,677	1,737	1,712
CYCLADES	2,788	2,767	2,699	2,518	2,636	2,560	2,651	2,612
LACONIA	1,089	1,081	1,054	0,984	1,030	1,000	1,036	1,021
LARISSA	3,947	3,918	3,821	3,565	3,732	3,624	3,754	3,699
LASITHI	8,906	8,839	8,621	8,044	8,420	8,177	8,470	8,345
LESBOS	9,033	8,965	8,745	8,159	8,541	8,295	8,592	8,465
LEFKADA	6,246	6,199	6,046	5,641	5,905	5,735	5,940	5,852
MAGNESIA	2,294	2,276	2,220	2,072	2,169	2,106	2,181	2,149

MESSENIA	3,339	3,314	3,232	3,015	3,157	3,066	3,175	3,128
XANTHI	2,392	2,374	2,316	2,161	2,262	2,197	2,276	2,242
PELLA	5,762	5,719	5,578	5,204	5,448	5,291	5,480	5,399
PIERIA	5,203	5,163	5,036	4,699	4,919	4,777	4,948	4,875
PREVEZA	2,788	2,767	2,699	2,518	2,636	2,560	2,651	2,612
RETHYMNO	8,906	8,839	8,621	8,044	8,420	8,177	8,470	8,345
RHODOPE	1,740	1,727	1,684	1,571	1,645	1,598	1,655	1,630
SAMOS	9,033	8,965	8,745	8,159	8,541	8,295	8,592	8,465
SERRES	2,833	2,812	2,742	2,559	2,679	2,601	2,695	2,655
TRIKALA	6,145	6,099	5,949	5,550	5,810	5,643	5,845	5,758
PHTHIOTIS	10,448	10,370	10,115	9,437	9,879	9,594	9,938	9,791
FLORINA	9,948	9,874	9,631	8,985	9,406	9,135	9,462	9,322
PHOCIS	8,320	8,258	8,055	7,515	7,867	7,640	7,914	7,797
CHALKIDIKI	2,187	2,170	2,117	1,975	2,067	2,008	2,080	2,049
CHANIA	8,480	8,416	8,209	7,659	8,018	7,787	8,066	7,946
CHIOS	8,480	8,416	8,209	7,659	8,018	7,787	8,066	7,946

Table 14: Living biomass (above + below) C stock of Greece for period 2018-2025 by prefecture.

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.

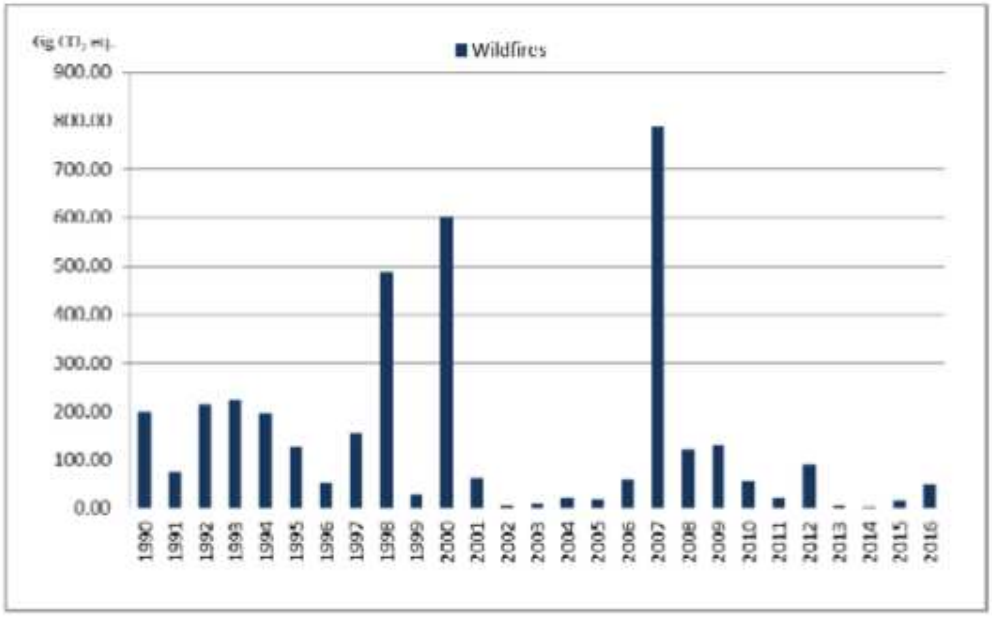


Figure 4: GHG emissions for period 1990-2016

Year	CO_2 emissions (kt CO_2/yr)
2000	2.349
2001	838
2002	579
2003	528
2004	555
2005	483
2006	588
2007	1.950
2008	911
2009	898

Table 15: CO_2 emissions due to wildfires on forests & forested land 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 – 2020.

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.

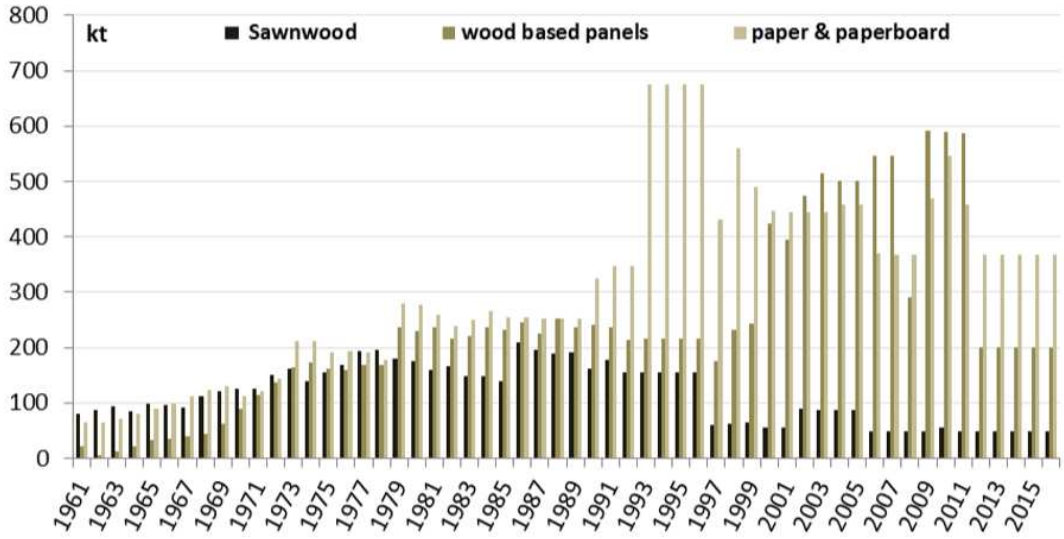


Figure 5: HWPs in use for period 1960-2016 (NIR 2018)

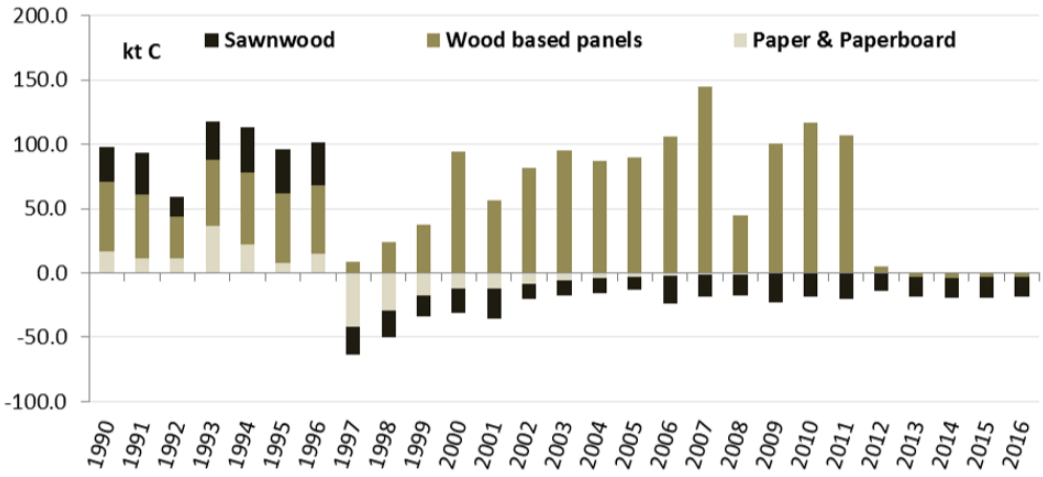


Figure 6: Annual change in carbon stock (NIR 2018)

Calculations were made in three product categories (sawn wood, wood panels, paper and paperboard). To remain consistent with the GHG inventory (NIR 2018), 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	72,1	-344,9	43,0
2001	85,4	-207,3	45,4
2002	43,3	-300,9	32,1
2003	42,2	-348,6	22,7
2004	42,2	-319,2	16,1
2005	37,9	-328,5	11,4
2006	79,8	-388,7	8,0
2007	62,7	-532,1	5,7
2008	61,5	-164,6	4,0
2009	80,5	-369,6	2,8

Table 16: HWP for period 2000-2009

Year	HPWj			
	Sawn wood (m3)	Wood panels (m3)	Paper & Paper board (t)	Harvest (m3)
2000	89330,591	519212,7	4843,085	1413758
2001	71701,643	387500,3	0	1215805
2002	120244,02	489501,2	0	1108135
2003	120577,88	547027,8	0	1245856
2004	119542,29	526586,6	0	1225707
2005	123753,59	545137,5	0	1305555
2006	72496,008	616216,1	0	1262119
2007	91120,284	774522,4	0	1272916
2008	91121,835	411735,7	0	1261046
2009	66855,172	627126,5	0	1033898
average	**96674,331**	**544456,7**	**484,3085**	**1234479**
ratio	**0,0783118**	**0,441042**	-	

Table 17: HWP ratios for period 2000-2009 and average values

Year	HPWj (kt C)		
	Sawn wood	Wood panels	Paper & Paper board
2021	56.729,2	-257.077,3	0
2022	59.659,1	-222.475,4	0
2023	58.206,2	-232.670,1	0
2024	54.264,7	-244.064,0	0
2025	49.691,1	-259.819,0	0

Table 18: HWP for period 2021-2025 (projected)

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

Numeric results of the FRL (in the RP) are different of these reported in Greek NIR 2018. This is explained by various reasons. On the following figures it is depicted how the FRL differences with NIR 2018.

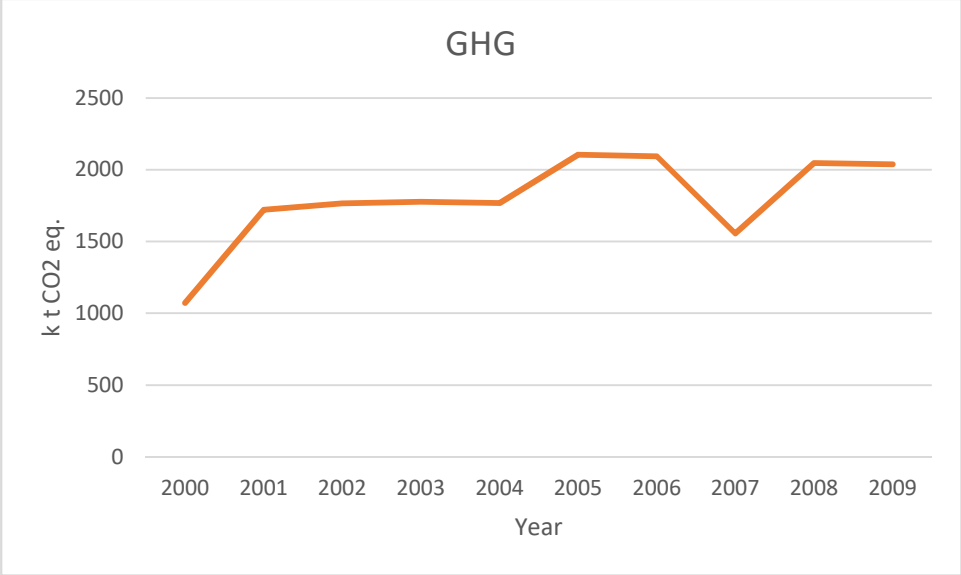


Figure 7: Greek GHG inventory (removals in period 2000-2009)

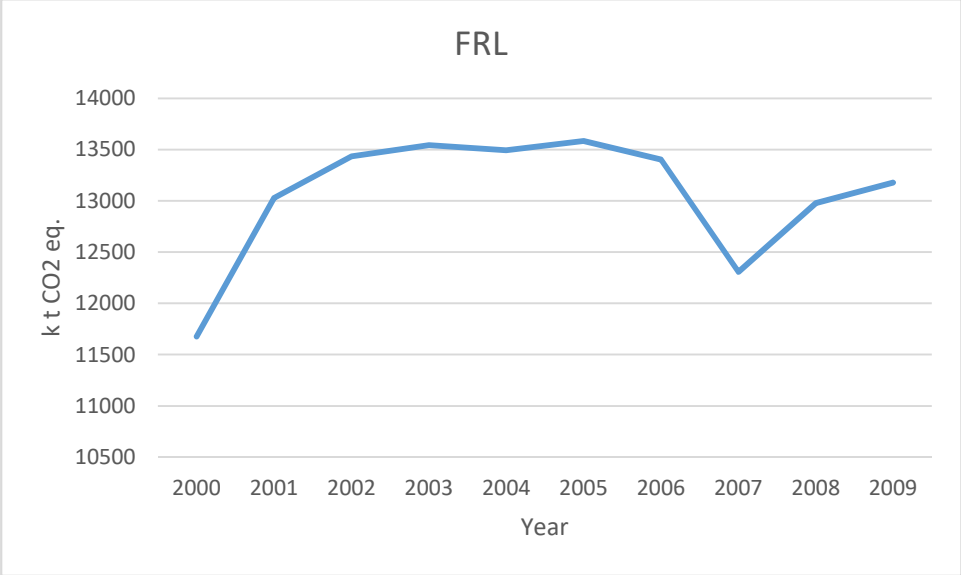


Figure 8: Greek FRL (removals in period 2000-2009)

The main reasons are the following:

- In GHG inventory only the area of permanent sustainable management was accounted
- In FRL all forested and wooded area is accounted (under permanent sustainable management, periodic sustainable management e.tc.)
- There are differences in the stratification. FRL separates areas (by prefecture, sustainable managed e.tc.) in 3 types of vegetation (conifer, broadleaves, and evergreen 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 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. There has been an overall positive shift of FRL, for the reasons that reported previously and especially for the accounting of significantly more area in the calculations.

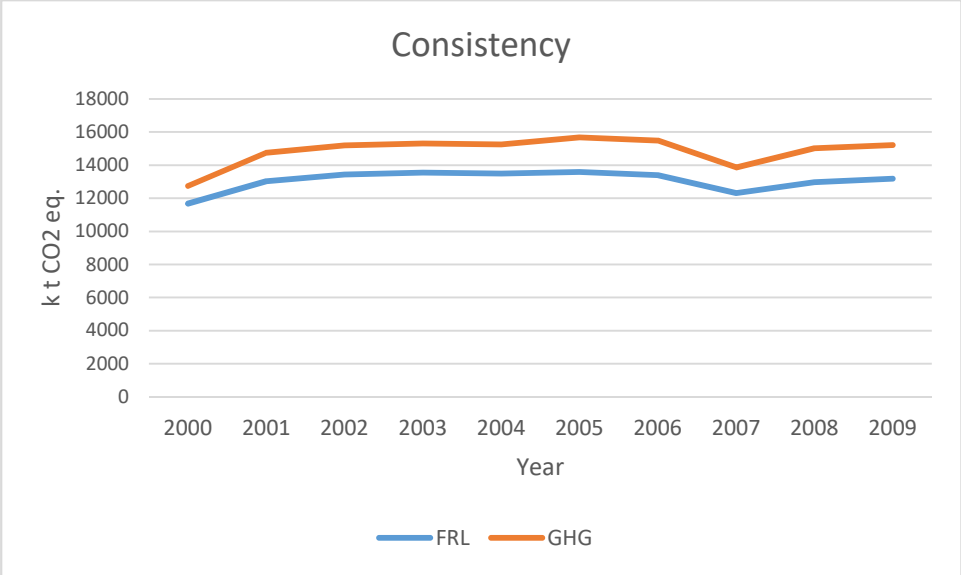


Figure 9: Correlation and consistency between Greek GHG inventory and FRL (removals in period 2000-2009)

Additionally there are also presented to the following figures, the projection of Greek FRL for period 2010 to 2016, in comparison to the Greek GHG inventory estimates for the same period.

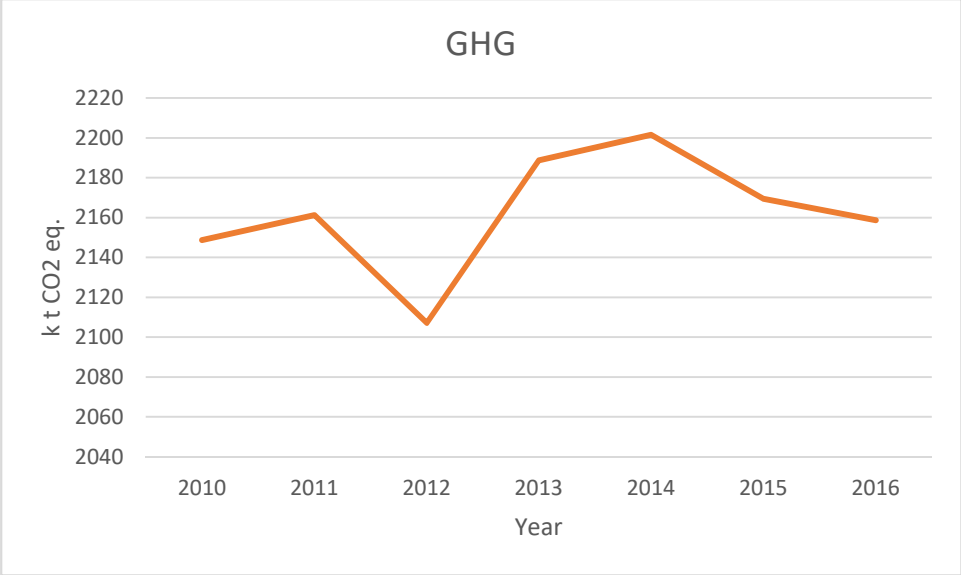


Figure 10: Greek GHG inventory (removals in period 2010-2016)

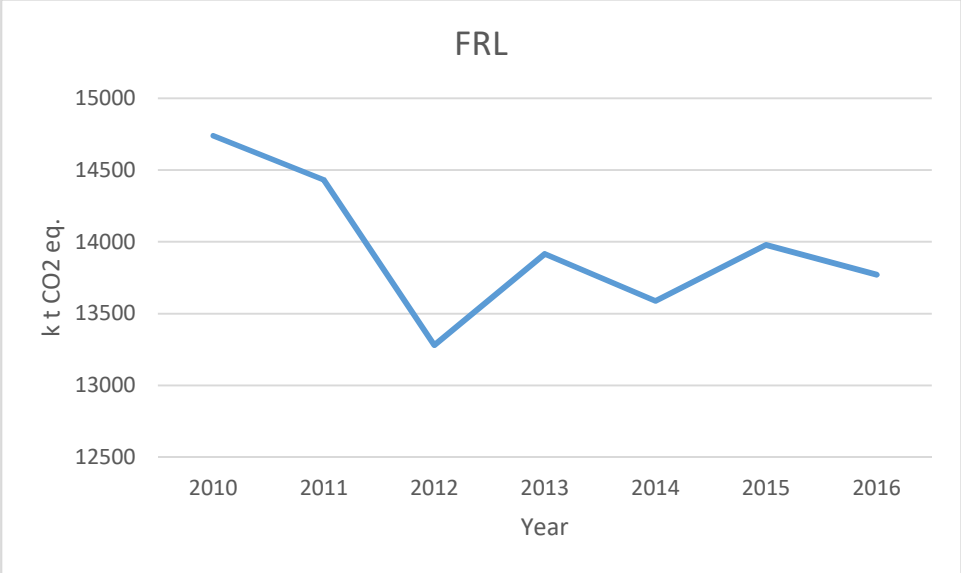


Figure 11: Greek FRL (projected removals in period 2010-2016)

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. There has been an overall positive shift of FRL, for the reasons that reported previously and especially for the accounting of significantly more area in the calculations.

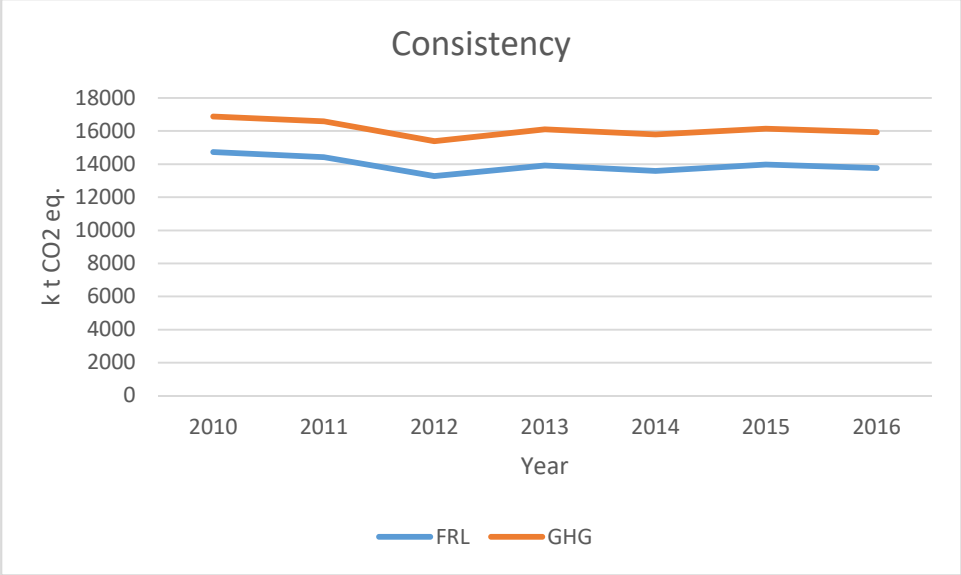


Figure 12: Correlation and consistency between Greek GHG inventory and FRL (removals in period 2010-2016)

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.

Green House Gas emissions that are included are carbon dioxide, methane and nitrous oxide, as they are reported in the LULUCF sector and in NIR 2018.

The calculated average FRL is equal to **-13864,58 kt CO_2 eq. /yr**

Kt CO_2 eq.	2021	2022	2023	2024	2025	Average
CO_2 (living biomass)	-13336,53	-13857,35	-13521,71	-13926,79	-13753,19	-13679,114
CO_2 (HWP_FOD)	-200,348	-162,816	-174,464	-189,799	-210,128	-187,51
CH_4	2,03	2,03	2,03	2,03	2,03	2,03
N_2O	0,01	0,01	0,01	0,01	0,01	0,01
Total CO_2 eq. (HWP_FOD)	-13534,84	-14018,13	-13694,13	-14114,55	-13961,28	**-13864,58**
Total CO_2 eq. (HWP_IOD)	-13334,49	-13855,31	-13519,67	-13924,75	-13751,15	-13677,07

Table 19: Calculation of FRL

After the calculations, FRL is issued and remains the same. However, technical corrections to the FRL may subsequently be applied.

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 believed that these two projects will imply modifications to the FRL. Because of the change in forest area (possible rise from 50% to approximately 62% of the total area of Greece) and direct measurements from Forest Service, detailed data on increment and other variables (deriving from the new Forest Inventory), biomass C stock gains may need to be corrected.

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Appendix 1

		Area (kHa)	Above	Below	TOTAL (kt C)
AETOLIA-ACARNANIA	Conifers	45,051	7,095	3,264	10,359
	Broadleaves	93,901	13,044	5,609	18,653
	Evergreen Broadleaves	151,563	7,578	21,446	29,024
MOUNT ATHOS	Conifers	2,873	3,546	1,631	5,177
	Broadleaves	13,054	10,455	4,495	14,950
	Evergreen Broadleaves	18,446	0,922	2,610	3,532
ARGOLIS	Conifers	5,740	7,084	3,259	10,343
	Broadleaves	1,011	0,810	0,348	1,158
	Evergreen Broadleaves	91,659	4,583	12,970	17,553
ARCADIA	Conifers	61,308	28,200	12,972	41,172
	Broadleaves	32,872	13,337	5,735	19,071
	Evergreen Broadleaves	150,778	7,539	21,335	28,874
ARTA	Conifers	14,228	2,637	1,213	3,849
	Broadleaves	23,075	3,772	1,622	5,394
	Evergreen Broadleaves	46,286	2,314	6,549	8,864
ATTICA	Conifers	73,224	90,372	41,571	131,943
	Broadleaves	1,010	0,809	0,348	1,157
	Evergreen Broadleaves	90,652	4,533	12,827	17,360
ACHAEA	Conifers	67,991	5,043	2,320	7,363
	Broadleaves	15,885	1,039	0,447	1,486
	Evergreen Broadleaves	88,294	4,415	12,494	16,908
BOEOTIA	Conifers	34,480	42,555	19,575	62,130
	Broadleaves	1,962	1,252	0,539	1,791
	Evergreen Broadleaves	96,786	4,839	13,695	18,535
GREVENA	Conifers	35,489	8,479	3,900	12,379
	Broadleaves	41,788	8,806	3,787	12,593
	Evergreen Broadleaves	55,431	2,772	7,843	10,615
DRAMA	Conifers	34,492	35,074	16,134	51,207
	Broadleaves	195,941	175,744	75,570	251,314
	Evergreen Broadleaves	34,015	1,701	4,813	6,514
DODECANESE	Conifers	63,339	83,929	38,607	122,536
	Broadleaves	1,040	0,833	0,358	1,191
	Evergreen Broadleaves	50,838	2,542	7,194	9,735
EVROS	Conifers	3,950	1,021	0,469	1,490
	Broadleaves	125,502	28,601	12,299	40,900
	Evergreen Broadleaves	38,614	1,931	5,464	7,395
EUBOEA	Conifers	105,124	95,585	43,969	139,554
	Broadleaves	8,752	7,019	3,018	10,037
	Evergreen Broadleaves	108,585	5,429	15,365	20,794
EVRYTANIA	Conifers	94,206	118,610	54,561	173,171
	Broadleaves	22,591	19,194	8,253	27,448
	Evergreen Broadleaves	30,113	1,506	4,261	5,767
ZAKYNTHOS	Conifers	6,042	8,006	3,683	11,689
	Broadleaves	0,000	0,000	0,000	0,000
	Evergreen Broadleaves	15,001	0,750	2,123	2,873
HLEIAS	Conifers	42,727	46,987	21,614	68,601
	Broadleaves	19,795	19,201	8,256	27,457
	Evergreen Broadleaves	28,078	1,404	3,973	5,377
IMATHIA	Conifers	8,837	15,557	7,156	22,713
	Broadleaves	43,583	67,675	29,100	96,775
	Evergreen Broadleaves	17,265	0,863	2,443	3,306
HERAKLION	Conifers	8,335	11,044	5,080	16,125

	Broadleaves	2,083	1,668	0,717	2,386
	Evergreen Broadleaves	55,005	2,750	7,783	10,533
THESPROTIA	Conifers	1,394	0,126	0,058	0,184
	Broadleaves	20,005	1,591	0,684	2,275
	Evergreen Broadleaves	49,330	2,467	6,980	9,447
THESSALONIKI	Conifers	2,753	0,514	0,236	0,750
	Broadleaves	43,834	7,217	3,103	10,320
	Evergreen Broadleaves	84,798	4,240	11,999	16,239
IOANNINA	Conifers	80,426	108,650	49,979	158,628
	Broadleaves	130,307	155,272	66,767	222,039
	Evergreen Broadleaves	119,058	5,953	16,847	22,800
KAVALA	Conifers	35,212	6,150	2,829	8,980
	Broadleaves	47,906	7,381	3,174	10,554
	Evergreen Broadleaves	62,041	3,102	8,779	11,881
KARDITSA	Conifers	20,807	7,303	3,360	10,663
	Broadleaves	34,511	10,685	4,594	15,279
	Evergreen Broadleaves	34,768	1,738	4,920	6,658
KASTORIA	Conifers	9,291	3,980	1,831	5,811
	Broadleaves	54,969	20,769	8,931	29,699
	Evergreen Broadleaves	14,996	0,750	2,122	2,872
KERKYRA	Conifers	2,916	3,864	1,777	5,641
	Broadleaves	1,251	0,799	0,343	1,142
	Evergreen Broadleaves	9,584	0,479	1,356	1,835
KEFALONIA	Conifers	11,252	13,887	6,388	20,275
	Broadleaves	0,208	0,133	0,057	0,190
	Evergreen Broadleaves	50,421	2,521	7,135	9,656
KILKIS	Conifers	0,479	0,112	0,052	0,164
	Broadleaves	58,332	12,040	5,177	17,217
	Evergreen Broadleaves	25,107	1,255	3,553	4,808
KOZANI	Conifers	16,939	8,938	4,112	13,050
	Broadleaves	54,923	25,563	10,992	36,556
	Evergreen Broadleaves	65,142	3,257	9,218	12,475
CORINTHIA	Conifers	66,559	15,768	7,253	23,022
	Broadleaves	3,701	0,773	0,333	1,106
	Evergreen Broadleaves	55,387	2,769	7,837	10,607
CYCLADES	Conifers	0,000	0,000	0,000	0,000
	Broadleaves	5,834	4,957	2,131	7,088
	Evergreen Broadleaves	68,132	3,407	9,641	13,047
LACONIA	Conifers	27,821	3,116	1,434	4,550
	Broadleaves	8,708	0,860	0,370	1,230
	Evergreen Broadleaves	138,513	6,926	19,600	26,525
LARISSA	Conifers	15,932	7,661	3,524	11,185
	Broadleaves	44,480	18,865	8,112	26,977
	Evergreen Broadleaves	134,880	6,744	19,086	25,830
LASITHI	Conifers	9,167	12,147	5,588	17,735
	Broadleaves	1,458	1,168	0,502	1,670
	Evergreen Broadleaves	37,713	1,886	5,336	7,222
LESBOS	Conifers	37,919	50,245	23,113	73,358
	Broadleaves	11,249	9,558	4,110	13,667
	Evergreen Broadleaves	45,629	2,281	6,457	8,738
LEFKADA	Conifers	0,208	0,276	0,127	0,402
	Broadleaves	0,000	0,000	0,000	0,000
	Evergreen Broadleaves	10,209	0,510	1,445	1,955
MAGNESIA	Conifers	12,300	-0,210	-0,097	-0,306

	Broadleaves	34,620	-0,521	-0,224	-0,745
	Evergreen Broadleaves	103,014	5,151	14,576	19,727
MESSENIA	Conifers	17,716	3,688	1,696	5,384
	Broadleaves	26,204	4,811	2,069	6,880
	Evergreen Broadleaves	67,600	3,380	9,565	12,945
XANTHI	Conifers	1,676	0,464	0,213	0,678
	Broadleaves	108,631	26,534	11,410	37,944
	Evergreen Broadleaves	18,683	0,934	2,644	3,578
PELLA	Conifers	3,500	3,277	1,507	4,784
	Broadleaves	81,940	67,665	29,096	96,762
	Evergreen Broadleaves	49,186	2,459	6,960	9,419
PIERIA	Conifers	17,594	8,557	3,936	12,493
	Broadleaves	28,514	12,232	5,260	17,491
	Evergreen Broadleaves	31,037	1,552	4,392	5,944
PREVEZA	Conifers	0,000	0,000	0,000	0,000
	Broadleaves	16,328	13,873	5,965	19,838
	Evergreen Broadleaves	31,436	1,572	4,448	6,020
RETHYMNO	Conifers	3,334	4,418	2,032	6,450
	Broadleaves	1,666	1,334	0,574	1,908
	Evergreen Broadleaves	42,921	2,146	6,073	8,219
RHODOPE	Conifers	4,670	0,752	0,346	1,097
	Broadleaves	88,509	12,564	5,402	17,966
	Evergreen Broadleaves	45,153	2,258	6,389	8,647
SAMOS	Conifers	15,626	20,706	9,525	30,230
	Broadleaves	2,084	1,771	0,761	2,532
	Evergreen Broadleaves	35,420	1,771	5,012	6,783
SERRES	Conifers	6,226	1,410	0,649	2,059
	Broadleaves	102,882	20,558	8,840	29,398
	Evergreen Broadleaves	60,843	3,042	8,609	11,651
TRIKALA	Conifers	70,185	50,153	23,070	73,224
	Broadleaves	66,738	42,065	18,088	60,153
	Evergreen Broadleaves	40,682	2,034	5,757	7,791
PHTHIOTIS	Conifers	71,972	88,827	40,860	129,687
	Broadleaves	61,364	52,309	22,493	74,801
	Evergreen Broadleaves	165,918	8,296	23,477	31,773
FLORINA	Conifers	0,962	1,187	0,546	1,733
	Broadleaves	61,060	50,890	21,883	72,773
	Evergreen Broadleaves	6,831	0,342	0,967	1,308
PHOCIS	Conifers	82,408	103,756	47,728	151,483
	Broadleaves	29,760	25,285	10,873	36,158
	Evergreen Broadleaves	77,506	3,875	10,967	14,842
CHALKIDIKI	Conifers	47,428	11,121	5,116	16,237
	Broadleaves	51,140	10,577	4,548	15,126
	Evergreen Broadleaves	103,481	5,174	14,643	19,817
CHANIA	Conifers	17,501	23,190	10,667	33,858
	Broadleaves	1,665	1,063	0,457	1,520
	Evergreen Broadleaves	63,759	3,188	9,022	12,210
CHIOS	Conifers	10,001	13,252	6,096	19,348
	Broadleaves	1,250	0,798	0,343	1,141
	Evergreen Broadleaves	37,295	1,865	5,277	7,142
TOTAL		**6513,368**	**2340,499**	**1420,524**	**3761,022**

Appendix 2

PREFECTURE		Above + Below (kt C)							
		2010	2011	2012	2013	2014	2015	2016	2017
AETOLIA-ACARNANIA	Conifers	10,939	10,670	9,955	10,418	10,121	10,483	10,121	10,390
	Broadleaves	19,698	19,213	17,926	18,759	18,224	18,877	18,224	18,709
	Evergreen Broadleaves	29,024	29,024	29,024	29,024	29,024	29,024	29,024	29,024
MOUNT ATHOS	Conifers	5,467	5,332	4,975	5,206	5,058	5,239	5,058	5,192
	Broadleaves	15,787	15,399	14,367	15,035	14,606	15,130	14,606	14,995
	Evergreen Broadleaves	3,532	3,532	3,532	3,532	3,532	3,532	3,532	3,532
ARGOLIS	Conifers	10,922	10,653	9,940	10,402	10,105	10,467	10,105	10,374
	Broadleaves	1,223	1,193	1,113	1,164	1,131	1,172	1,131	1,161
	Evergreen Broadleaves	17,553	17,553	17,553	17,553	17,553	17,553	17,553	17,553
ARCADIA	Conifers	43,477	42,407	39,566	41,406	40,225	41,666	40,225	41,295
	Broadleaves	20,139	19,644	18,328	19,180	18,633	19,300	18,633	19,129
	Evergreen Broadleaves	28,874	28,874	28,874	28,874	28,874	28,874	28,874	28,874
ARTA	Conifers	4,065	3,965	3,699	3,871	3,761	3,896	3,761	3,861
	Broadleaves	5,696	5,555	5,183	5,424	5,270	5,458	5,270	5,410
	Evergreen Broadleaves	8,864	8,864	8,864	8,864	8,864	8,864	8,864	8,864
ATTICA	Conifers	139,332	135,902	126,798	132,695	128,909	133,527	128,909	132,339
	Broadleaves	1,221	1,191	1,112	1,163	1,130	1,171	1,130	1,160
	Evergreen Broadleaves	17,360	17,360	17,360	17,360	17,360	17,360	17,360	17,360
ACHAEA	Conifers	7,775	7,584	7,076	7,405	7,193	7,451	7,193	7,385
	Broadleaves	1,569	1,531	1,428	1,495	1,452	1,504	1,452	1,491
	Evergreen Broadleaves	16,908	16,908	16,908	16,908	16,908	16,908	16,908	16,908
BOEOTIA	Conifers	65,609	63,994	59,707	62,484	60,701	62,876	60,701	62,316
	Broadleaves	1,891	1,845	1,721	1,801	1,750	1,812	1,750	1,796
	Evergreen Broadleaves	18,535	18,535	18,535	18,535	18,535	18,535	18,535	18,535
GREVENA	Conifers	13,073	12,751	11,897	12,450	12,095	12,528	12,095	12,416
	Broadleaves	13,298	12,971	12,102	12,665	12,303	12,744	12,303	12,631
	Evergreen Broadleaves	10,615	10,615	10,615	10,615	10,615	10,615	10,615	10,615
DRAMA	Conifers	54,075	52,744	49,210	51,499	50,030	51,822	50,030	51,361
	Broadleaves	265,387	258,853	241,513	252,746	245,534	254,330	245,534	252,068
	Evergreen Broadleaves	6,514	6,514	6,514	6,514	6,514	6,514	6,514	6,514
DODECANESE	Conifers	129,398	126,212	117,757	123,235	119,718	124,007	119,718	122,904
	Broadleaves	1,258	1,227	1,145	1,198	1,164	1,205	1,164	1,195
	Evergreen Broadleaves	9,735	9,735	9,735	9,735	9,735	9,735	9,735	9,735
EVROS	Conifers	1,573	1,535	1,432	1,499	1,456	1,508	1,456	1,494
	Broadleaves	43,190	42,127	39,305	41,133	39,959	41,391	39,959	41,023
	Evergreen Broadleaves	7,395	7,395	7,395	7,395	7,395	7,395	7,395	7,395
EUBOEA	Conifers	147,369	143,741	134,111	140,349	136,344	141,229	136,344	139,973
	Broadleaves	10,600	10,339	9,646	10,095	9,807	10,158	9,807	10,068

	Evergreen Broadleaves	20,794	20,794	20,794	20,794	20,794	20,794	20,794	20,794
EVRYTANIA	Conifers	182,868	178,366	166,417	174,158	169,188	175,249	169,188	173,690
	Broadleaves	28,985	28,271	26,377	27,604	26,816	27,777	26,816	27,530
	Evergreen Broadleaves	5,767	5,767	5,767	5,767	5,767	5,767	5,767	5,767
ZAKYNTHOS	Conifers	12,343	12,040	11,233	11,756	11,420	11,829	11,420	11,724
	Broadleaves	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Evergreen Broadleaves	2,873	2,873	2,873	2,873	2,873	2,873	2,873	2,873
HLEIAS	Conifers	72,443	70,659	65,925	68,992	67,023	69,424	67,023	68,807
	Broadleaves	28,995	28,281	26,387	27,614	26,826	27,787	26,826	27,540
	Evergreen Broadleaves	5,377	5,377	5,377	5,377	5,377	5,377	5,377	5,377
IMATHIA	Conifers	23,985	23,394	21,827	22,842	22,191	22,985	22,191	22,781
	Broadleaves	102,194	99,678	93,000	97,326	94,549	97,936	94,549	97,065
	Evergreen Broadleaves	3,306	3,306	3,306	3,306	3,306	3,306	3,306	3,306
HERAKLION	Conifers	17,028	16,609	15,496	16,217	15,754	16,318	15,754	16,173
	Broadleaves	2,519	2,457	2,293	2,399	2,331	2,414	2,331	2,393
	Evergreen Broadleaves	10,533	10,533	10,533	10,533	10,533	10,533	10,533	10,533
THESPROTIA	Conifers	0,194	0,189	0,176	0,185	0,179	0,186	0,179	0,184
	Broadleaves	2,403	2,343	2,186	2,288	2,223	2,302	2,223	2,282
	Evergreen Broadleaves	9,447	9,447	9,447	9,447	9,447	9,447	9,447	9,447
THESSALONIKI	Conifers	0,792	0,773	0,721	0,755	0,733	0,759	0,733	0,753
	Broadleaves	10,898	10,630	9,918	10,379	10,083	10,444	10,083	10,351
	Evergreen Broadleaves	16,239	16,239	16,239	16,239	16,239	16,239	16,239	16,239
IOANNINA	Conifers	167,512	163,387	152,442	159,533	154,980	160,532	154,980	159,104
	Broadleaves	234,473	228,700	213,379	223,305	216,932	224,703	216,932	222,705
	Evergreen Broadleaves	22,800	22,800	22,800	22,800	22,800	22,800	22,800	22,800
KAVALA	Conifers	9,482	9,249	8,629	9,031	8,773	9,087	8,773	9,006
	Broadleaves	11,145	10,871	10,143	10,614	10,312	10,681	10,312	10,586
	Evergreen Broadleaves	11,881	11,881	11,881	11,881	11,881	11,881	11,881	11,881
KARDITSA	Conifers	11,260	10,983	10,247	10,724	10,418	10,791	10,418	10,695
	Broadleaves	16,135	15,738	14,683	15,366	14,928	15,462	14,928	15,325
	Evergreen Broadleaves	6,658	6,658	6,658	6,658	6,658	6,658	6,658	6,658
KASTORIA	Conifers	6,136	5,985	5,584	5,844	5,677	5,880	5,677	5,828
	Broadleaves	31,363	30,590	28,541	29,869	29,016	30,056	29,016	29,789
	Evergreen Broadleaves	2,872	2,872	2,872	2,872	2,872	2,872	2,872	2,872
KERKYRA	Conifers	5,957	5,811	5,421	5,673	5,512	5,709	5,512	5,658
	Broadleaves	1,206	1,176	1,097	1,148	1,116	1,156	1,116	1,145
	Evergreen Broadleaves	1,835	1,835	1,835	1,835	1,835	1,835	1,835	1,835
KEFALONIA	Conifers	21,411	20,883	19,484	20,391	19,809	20,518	19,809	20,336
	Broadleaves	0,200	0,196	0,182	0,191	0,185	0,192	0,185	0,190
	Evergreen Broadleaves	9,656	9,656	9,656	9,656	9,656	9,656	9,656	9,656
KILKIS	Conifers	0,173	0,169	0,157	0,165	0,160	0,166	0,160	0,164

	Broadleaves	18,181	17,733	16,545	17,315	16,821	17,423	16,821	17,268
	Evergreen Broadleaves	4,808	4,808	4,808	4,808	4,808	4,808	4,808	4,808
KOZANI	Conifers	13,781	13,442	12,541	13,124	12,750	13,207	12,750	13,089
	Broadleaves	38,603	37,652	35,130	36,764	35,715	36,994	35,715	36,665
	Evergreen Broadleaves	12,475	12,475	12,475	12,475	12,475	12,475	12,475	12,475
CORINTHIA	Conifers	24,311	23,712	22,124	23,153	22,492	23,298	22,492	23,091
	Broadleaves	1,168	1,139	1,063	1,112	1,080	1,119	1,080	1,109
	Evergreen Broadleaves	10,607	10,607	10,607	10,607	10,607	10,607	10,607	10,607
CYCLADES	Conifers	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Broadleaves	7,485	7,301	6,812	7,129	6,925	7,173	6,925	7,109
	Evergreen Broadleaves	13,047	13,047	13,047	13,047	13,047	13,047	13,047	13,047
LACONIA	Conifers	4,805	4,686	4,373	4,576	4,445	4,605	4,445	4,564
	Broadleaves	1,299	1,267	1,182	1,237	1,202	1,245	1,202	1,234
	Evergreen Broadleaves	26,525	26,525	26,525	26,525	26,525	26,525	26,525	26,525
LARISSA	Conifers	11,811	11,520	10,748	11,248	10,927	11,319	10,927	11,218
	Broadleaves	28,487	27,786	25,925	27,131	26,356	27,301	26,356	27,058
	Evergreen Broadleaves	25,830	25,830	25,830	25,830	25,830	25,830	25,830	25,830
LASITHI	Conifers	18,728	18,267	17,043	17,836	17,327	17,947	17,327	17,788
	Broadleaves	1,763	1,720	1,605	1,679	1,631	1,690	1,631	1,675
	Evergreen Broadleaves	7,222	7,222	7,222	7,222	7,222	7,222	7,222	7,222
LESBOS	Conifers	77,466	75,559	70,497	73,777	71,671	74,239	71,671	73,578
	Broadleaves	14,433	14,077	13,134	13,745	13,353	13,831	13,353	13,708
	Evergreen Broadleaves	8,738	8,738	8,738	8,738	8,738	8,738	8,738	8,738
LEFKADA	Conifers	0,425	0,414	0,387	0,405	0,393	0,407	0,393	0,404
	Broadleaves	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Evergreen Broadleaves	1,955	1,955	1,955	1,955	1,955	1,955	1,955	1,955
MAGNESIA	Conifers	-0,323	-0,315	-0,294	-0,308	-0,299	-0,310	-0,299	-0,307
	Broadleaves	-0,786	-0,767	-0,716	-0,749	-0,728	-0,754	-0,728	-0,747
	Evergreen Broadleaves	19,727	19,727	19,727	19,727	19,727	19,727	19,727	19,727
MESSENIA	Conifers	5,686	5,546	5,174	5,415	5,261	5,449	5,261	5,400
	Broadleaves	7,266	7,087	6,612	6,920	6,722	6,963	6,722	6,901
	Evergreen Broadleaves	12,945	12,945	12,945	12,945	12,945	12,945	12,945	12,945
XANTHI	Conifers	0,716	0,698	0,651	0,681	0,662	0,686	0,662	0,680
	Broadleaves	40,068	39,082	36,464	38,160	37,071	38,399	37,071	38,057
	Evergreen Broadleaves	3,578	3,578	3,578	3,578	3,578	3,578	3,578	3,578
PELLA	Conifers	5,052	4,928	4,597	4,811	4,674	4,841	4,674	4,798
	Broadleaves	102,180	99,664	92,988	97,313	94,536	97,923	94,536	97,052
	Evergreen Broadleaves	9,419	9,419	9,419	9,419	9,419	9,419	9,419	9,419
PIERIA	Conifers	13,192	12,867	12,005	12,564	12,205	12,642	12,205	12,530
	Broadleaves	18,471	18,016	16,809	17,591	17,089	17,701	17,089	17,544
	Evergreen Broadleaves	5,944	5,944	5,944	5,944	5,944	5,944	5,944	5,944

PREVEZA	Conifers	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Broadleaves	20,949	20,433	19,065	19,951	19,382	20,076	19,382	19,898
	Evergreen Broadleaves	6,020	6,020	6,020	6,020	6,020	6,020	6,020	6,020
RETHYMNO	Conifers	6,811	6,643	6,198	6,487	6,302	6,527	6,302	6,469
	Broadleaves	2,015	1,965	1,834	1,919	1,864	1,931	1,864	1,914
	Evergreen Broadleaves	8,219	8,219	8,219	8,219	8,219	8,219	8,219	8,219
RHODOPE	Conifers	1,159	1,130	1,054	1,104	1,072	1,110	1,072	1,101
	Broadleaves	18,972	18,505	17,265	18,068	17,553	18,182	17,553	18,020
	Evergreen Broadleaves	8,647	8,647	8,647	8,647	8,647	8,647	8,647	8,647
SAMOS	Conifers	31,923	31,137	29,051	30,402	29,535	30,593	29,535	30,321
	Broadleaves	2,674	2,608	2,433	2,546	2,474	2,562	2,474	2,540
	Evergreen Broadleaves	6,783	6,783	6,783	6,783	6,783	6,783	6,783	6,783
SERRES	Conifers	2,175	2,121	1,979	2,071	2,012	2,084	2,012	2,065
	Broadleaves	31,044	30,280	28,251	29,565	28,722	29,750	28,722	29,486
	Evergreen Broadleaves	11,651	11,651	11,651	11,651	11,651	11,651	11,651	11,651
TRIKALA	Conifers	77,324	75,420	70,368	73,641	71,539	74,102	71,539	73,443
	Broadleaves	63,522	61,958	57,807	60,496	58,769	60,875	58,769	60,333
	Evergreen Broadleaves	7,791	7,791	7,791	7,791	7,791	7,791	7,791	7,791
PHTHIOTIS	Conifers	136,950	133,578	124,630	130,427	126,705	131,244	126,705	130,076
	Broadleaves	78,990	77,045	71,884	75,228	73,081	75,699	73,081	75,026
	Evergreen Broadleaves	31,773	31,773	31,773	31,773	31,773	31,773	31,773	31,773
FLORINA	Conifers	1,831	1,785	1,666	1,743	1,694	1,754	1,694	1,739
	Broadleaves	76,848	74,956	69,935	73,188	71,099	73,646	71,099	72,991
	Evergreen Broadleaves	1,308	1,308	1,308	1,308	1,308	1,308	1,308	1,308
PHOCIS	Conifers	159,967	156,028	145,576	152,347	147,999	153,301	147,999	151,938
	Broadleaves	38,183	37,243	34,748	36,364	35,326	36,592	35,326	36,266
	Evergreen Broadleaves	14,842	14,842	14,842	14,842	14,842	14,842	14,842	14,842
CHALKIDIKI	Conifers	17,147	16,724	15,604	16,330	15,864	16,432	15,864	16,286
	Broadleaves	15,973	15,579	14,536	15,212	14,778	15,307	14,778	15,171
	Evergreen Broadleaves	19,817	19,817	19,817	19,817	19,817	19,817	19,817	19,817
CHANIA	Conifers	35,754	34,873	32,537	34,051	33,079	34,264	33,079	33,959
	Broadleaves	1,605	1,565	1,461	1,529	1,485	1,538	1,485	1,524
	Evergreen Broadleaves	12,210	12,210	12,210	12,210	12,210	12,210	12,210	12,210
CHIOS	Conifers	20,431	19,928	18,593	19,458	18,903	19,580	18,903	19,406
	Broadleaves	1,205	1,175	1,097	1,148	1,115	1,155	1,115	1,144
	Evergreen Broadleaves	7,142	7,142	7,142	7,142	7,142	7,142	7,142	7,142
TOTAL		**3937,817**	**3855,734**	**3637,897**	**3779,018**	**3688,410**	**3798,907**	**3688,410**	**3770,493**

PREFECTURE		Above + Below (kt C)							
		2018	2019	2020	2021	2022	2023	2024	2025
AETOLIA-ACARNANIA	Conifers	11,022	10,939	10,670	9,955	10,421	10,121	10,483	10,328
	Broadleaves	19,847	19,698	19,213	17,926	18,765	18,224	18,877	18,597
	Evergreen Broadleaves	29,024	29,024	29,024	29,024	29,024	29,024	29,024	29,024
MOUNT ATHOS	Conifers	5,508	5,467	5,332	4,975	5,208	5,058	5,239	5,161
	Broadleaves	15,907	15,787	15,399	14,367	15,040	14,606	15,130	14,905
	Evergreen Broadleaves	3,532	3,532	3,532	3,532	3,532	3,532	3,532	3,532
ARGOLIS	Conifers	11,005	10,922	10,653	9,940	10,405	10,105	10,467	10,312
	Broadleaves	1,232	1,223	1,193	1,113	1,165	1,131	1,172	1,154
	Evergreen Broadleaves	17,553	17,553	17,553	17,553	17,553	17,553	17,553	17,553
ARCADIA	Conifers	43,807	43,477	42,407	39,566	41,419	40,225	41,666	41,048
	Broadleaves	20,292	20,139	19,644	18,328	19,186	18,633	19,300	19,014
	Evergreen Broadleaves	28,874	28,874	28,874	28,874	28,874	28,874	28,874	28,874
ARTA	Conifers	4,096	4,065	3,965	3,699	3,873	3,761	3,896	3,838
	Broadleaves	5,739	5,696	5,555	5,183	5,426	5,270	5,458	5,377
	Evergreen Broadleaves	8,864	8,864	8,864	8,864	8,864	8,864	8,864	8,864
ATTICA	Conifers	140,388	139,332	135,902	126,798	132,735	128,909	133,527	131,548
	Broadleaves	1,231	1,221	1,191	1,112	1,164	1,130	1,171	1,153
	Evergreen Broadleaves	17,360	17,360	17,360	17,360	17,360	17,360	17,360	17,360
ACHAEA	Conifers	7,834	7,775	7,584	7,076	7,407	7,193	7,451	7,341
	Broadleaves	1,581	1,569	1,531	1,428	1,495	1,452	1,504	1,482
	Evergreen Broadleaves	16,908	16,908	16,908	16,908	16,908	16,908	16,908	16,908
BOEOTIA	Conifers	66,106	65,609	63,994	59,707	62,503	60,701	62,876	61,944
	Broadleaves	1,906	1,891	1,845	1,721	1,802	1,750	1,812	1,786
	Evergreen Broadleaves	18,535	18,535	18,535	18,535	18,535	18,535	18,535	18,535
GREVENA	Conifers	13,172	13,073	12,751	11,897	12,454	12,095	12,528	12,342
	Broadleaves	13,399	13,298	12,971	12,102	12,669	12,303	12,744	12,555
	Evergreen Broadleaves	10,615	10,615	10,615	10,615	10,615	10,615	10,615	10,615
DRAMA	Conifers	54,485	54,075	52,744	49,210	51,515	50,030	51,822	51,054
	Broadleaves	267,398	265,387	258,853	241,513	252,822	245,534	254,330	250,560
	Evergreen Broadleaves	6,514	6,514	6,514	6,514	6,514	6,514	6,514	6,514
DODECANESE	Conifers	130,378	129,398	126,212	117,757	123,271	119,718	124,007	122,169
	Broadleaves	1,267	1,258	1,227	1,145	1,198	1,164	1,205	1,187
	Evergreen Broadleaves	9,735	9,735	9,735	9,735	9,735	9,735	9,735	9,735
EVROS	Conifers	1,585	1,573	1,535	1,432	1,499	1,456	1,508	1,486
	Broadleaves	43,517	43,190	42,127	39,305	41,145	39,959	41,391	40,777
	Evergreen Broadleaves	7,395	7,395	7,395	7,395	7,395	7,395	7,395	7,395
EUBOEA	Conifers	148,485	147,369	143,741	134,111	140,391	136,344	141,229	139,135
	Broadleaves	10,680	10,600	10,339	9,646	10,098	9,807	10,158	10,007
	Evergreen Broadleaves	20,794	20,794	20,794	20,794	20,794	20,794	20,794	20,794
EVRYTANIA	Conifers	184,254	182,868	178,366	166,417	174,210	169,188	175,249	172,651

	Broadleaves	29,204	28,985	28,271	26,377	27,612	26,816	27,777	27,365
	Evergreen Broadleaves	5,767	5,767	5,767	5,767	5,767	5,767	5,767	5,767
ZAKYNTHOS	Conifers	12,437	12,343	12,040	11,233	11,759	11,420	11,829	11,654
	Broadleaves	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Evergreen Broadleaves	2,873	2,873	2,873	2,873	2,873	2,873	2,873	2,873
HLEIAS	Conifers	72,991	72,443	70,659	65,925	69,012	67,023	69,424	68,395
	Broadleaves	29,215	28,995	28,281	26,387	27,622	26,826	27,787	27,375
	Evergreen Broadleaves	5,377	5,377	5,377	5,377	5,377	5,377	5,377	5,377
IMATHIA	Conifers	24,167	23,985	23,394	21,827	22,849	22,191	22,985	22,645
	Broadleaves	102,968	102,194	99,678	93,000	97,355	94,549	97,936	96,484
	Evergreen Broadleaves	3,306	3,306	3,306	3,306	3,306	3,306	3,306	3,306
HERAKLION	Conifers	17,157	17,028	16,609	15,496	16,222	15,754	16,318	16,077
	Broadleaves	2,538	2,519	2,457	2,293	2,400	2,331	2,414	2,378
	Evergreen Broadleaves	10,533	10,533	10,533	10,533	10,533	10,533	10,533	10,533
THESPROTIA	Conifers	0,195	0,194	0,189	0,176	0,185	0,179	0,186	0,183
	Broadleaves	2,421	2,403	2,343	2,186	2,289	2,223	2,302	2,268
	Evergreen Broadleaves	9,447	9,447	9,447	9,447	9,447	9,447	9,447	9,447
THESSALONIKI	Conifers	0,798	0,792	0,773	0,721	0,755	0,733	0,759	0,748
	Broadleaves	10,981	10,898	10,630	9,918	10,382	10,083	10,444	10,290
	Evergreen Broadleaves	16,239	16,239	16,239	16,239	16,239	16,239	16,239	16,239
IOANNINA	Conifers	168,781	167,512	163,387	152,442	159,580	154,980	160,532	158,153
	Broadleaves	236,249	234,473	228,700	213,379	223,371	216,932	224,703	221,373
	Evergreen Broadleaves	22,800	22,800	22,800	22,800	22,800	22,800	22,800	22,800
KAVALA	Conifers	9,554	9,482	9,249	8,629	9,033	8,773	9,087	8,953
	Broadleaves	11,230	11,145	10,871	10,143	10,618	10,312	10,681	10,523
	Evergreen Broadleaves	11,881	11,881	11,881	11,881	11,881	11,881	11,881	11,881
KARDITSA	Conifers	11,345	11,260	10,983	10,247	10,727	10,418	10,791	10,631
	Broadleaves	16,257	16,135	15,738	14,683	15,371	14,928	15,462	15,233
	Evergreen Broadleaves	6,658	6,658	6,658	6,658	6,658	6,658	6,658	6,658
KASTORIA	Conifers	6,182	6,136	5,985	5,584	5,845	5,677	5,880	5,793
	Broadleaves	31,600	31,363	30,590	28,541	29,878	29,016	30,056	29,610
	Evergreen Broadleaves	2,872	2,872	2,872	2,872	2,872	2,872	2,872	2,872
KERKYRA	Conifers	6,002	5,957	5,811	5,421	5,675	5,512	5,709	5,624
	Broadleaves	1,215	1,206	1,176	1,097	1,149	1,116	1,156	1,139
	Evergreen Broadleaves	1,835	1,835	1,835	1,835	1,835	1,835	1,835	1,835
KEFALONIA	Conifers	21,573	21,411	20,883	19,484	20,397	19,809	20,518	20,214
	Broadleaves	0,202	0,200	0,196	0,182	0,191	0,185	0,192	0,189
	Evergreen Broadleaves	9,656	9,656	9,656	9,656	9,656	9,656	9,656	9,656
KILKIS	Conifers	0,174	0,173	0,169	0,157	0,165	0,160	0,166	0,163
	Broadleaves	18,319	18,181	17,733	16,545	17,320	16,821	17,423	17,165
	Evergreen Broadleaves	4,808	4,808	4,808	4,808	4,808	4,808	4,808	4,808

KOZANI	Conifers	13,885	13,781	13,442	12,541	13,128	12,750	13,207	13,011
	Broadleaves	38,895	38,603	37,652	35,130	36,775	35,715	36,994	36,446
	Evergreen Broadleaves	12,475	12,475	12,475	12,475	12,475	12,475	12,475	12,475
CORINTHIA	Conifers	24,495	24,311	23,712	22,124	23,160	22,492	23,298	22,953
	Broadleaves	1,177	1,168	1,139	1,063	1,113	1,080	1,119	1,103
	Evergreen Broadleaves	10,607	10,607	10,607	10,607	10,607	10,607	10,607	10,607
CYCLADES	Conifers	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Broadleaves	7,542	7,485	7,301	6,812	7,131	6,925	7,173	7,067
	Evergreen Broadleaves	13,047	13,047	13,047	13,047	13,047	13,047	13,047	13,047
LACONIA	Conifers	4,841	4,805	4,686	4,373	4,577	4,445	4,605	4,536
	Broadleaves	1,309	1,299	1,267	1,182	1,238	1,202	1,245	1,227
	Evergreen Broadleaves	26,525	26,525	26,525	26,525	26,525	26,525	26,525	26,525
LARISSA	Conifers	11,900	11,811	11,520	10,748	11,252	10,927	11,319	11,151
	Broadleaves	28,703	28,487	27,786	25,925	27,139	26,356	27,301	26,896
	Evergreen Broadleaves	25,830	25,830	25,830	25,830	25,830	25,830	25,830	25,830
LASITHI	Conifers	18,870	18,728	18,267	17,043	17,841	17,327	17,947	17,681
	Broadleaves	1,777	1,763	1,720	1,605	1,680	1,631	1,690	1,665
	Evergreen Broadleaves	7,222	7,222	7,222	7,222	7,222	7,222	7,222	7,222
LESBOS	Conifers	78,053	77,466	75,559	70,497	73,799	71,671	74,239	73,138
	Broadleaves	14,542	14,433	14,077	13,134	13,749	13,353	13,831	13,626
	Evergreen Broadleaves	8,738	8,738	8,738	8,738	8,738	8,738	8,738	8,738
LEFKADA	Conifers	0,428	0,425	0,414	0,387	0,405	0,393	0,407	0,401
	Broadleaves	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Evergreen Broadleaves	1,955	1,955	1,955	1,955	1,955	1,955	1,955	1,955
MAGNESIA	Conifers	-0,326	-0,323	-0,315	-0,294	-0,308	-0,299	-0,310	-0,305
	Broadleaves	-0,792	-0,786	-0,767	-0,716	-0,749	-0,728	-0,754	-0,743
	Evergreen Broadleaves	19,727	19,727	19,727	19,727	19,727	19,727	19,727	19,727
MESSENIA	Conifers	5,729	5,686	5,546	5,174	5,417	5,261	5,449	5,368
	Broadleaves	7,321	7,266	7,087	6,612	6,922	6,722	6,963	6,860
	Evergreen Broadleaves	12,945	12,945	12,945	12,945	12,945	12,945	12,945	12,945
XANTHI	Conifers	0,721	0,716	0,698	0,651	0,682	0,662	0,686	0,676
	Broadleaves	40,372	40,068	39,082	36,464	38,171	37,071	38,399	37,830
	Evergreen Broadleaves	3,578	3,578	3,578	3,578	3,578	3,578	3,578	3,578
PELLA	Conifers	5,090	5,052	4,928	4,597	4,813	4,674	4,841	4,770
	Broadleaves	102,954	102,180	99,664	92,988	97,342	94,536	97,923	96,471
	Evergreen Broadleaves	9,419	9,419	9,419	9,419	9,419	9,419	9,419	9,419
PIERIA	Conifers	13,292	13,192	12,867	12,005	12,568	12,205	12,642	12,455
	Broadleaves	18,611	18,471	18,016	16,809	17,596	17,089	17,701	17,439
	Evergreen Broadleaves	5,944	5,944	5,944	5,944	5,944	5,944	5,944	5,944
PREVEZA	Conifers	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Broadleaves	21,108	20,949	20,433	19,065	19,957	19,382	20,076	19,779

	Evergreen Broadleaves	6,020	6,020	6,020	6,020	6,020	6,020	6,020	6,020
RETHYMNO	Conifers	6,863	6,811	6,643	6,198	6,489	6,302	6,527	6,431
	Broadleaves	2,030	2,015	1,965	1,834	1,919	1,864	1,931	1,902
	Evergreen Broadleaves	8,219	8,219	8,219	8,219	8,219	8,219	8,219	8,219
RHODOPE	Conifers	1,167	1,159	1,130	1,054	1,104	1,072	1,110	1,094
	Broadleaves	19,116	18,972	18,505	17,265	18,074	17,553	18,182	17,912
	Evergreen Broadleaves	8,647	8,647	8,647	8,647	8,647	8,647	8,647	8,647
SAMOS	Conifers	32,165	31,923	31,137	29,051	30,412	29,535	30,593	30,139
	Broadleaves	2,694	2,674	2,608	2,433	2,547	2,474	2,562	2,524
	Evergreen Broadleaves	6,783	6,783	6,783	6,783	6,783	6,783	6,783	6,783
SERRES	Conifers	2,191	2,175	2,121	1,979	2,072	2,012	2,084	2,053
	Broadleaves	31,279	31,044	30,280	28,251	29,574	28,722	29,750	29,310
	Evergreen Broadleaves	11,651	11,651	11,651	11,651	11,651	11,651	11,651	11,651
TRIKALA	Conifers	77,910	77,324	75,420	70,368	73,663	71,539	74,102	73,004
	Broadleaves	64,003	63,522	61,958	57,807	60,514	58,769	60,875	59,972
	Evergreen Broadleaves	7,791	7,791	7,791	7,791	7,791	7,791	7,791	7,791
PHTHIOTIS	Conifers	137,987	136,950	133,578	124,630	130,465	126,705	131,244	129,298
	Broadleaves	79,589	78,990	77,045	71,884	75,250	73,081	75,699	74,577
	Evergreen Broadleaves	31,773	31,773	31,773	31,773	31,773	31,773	31,773	31,773
FLORINA	Conifers	1,844	1,831	1,785	1,666	1,744	1,694	1,754	1,728
	Broadleaves	77,431	76,848	74,956	69,935	73,210	71,099	73,646	72,555
	Evergreen Broadleaves	1,308	1,308	1,308	1,308	1,308	1,308	1,308	1,308
PHOCIS	Conifers	161,178	159,967	156,028	145,576	152,392	147,999	153,301	151,029
	Broadleaves	38,472	38,183	37,243	34,748	36,375	35,326	36,592	36,049
	Evergreen Broadleaves	14,842	14,842	14,842	14,842	14,842	14,842	14,842	14,842
CHALKIDIKI	Conifers	17,276	17,147	16,724	15,604	16,335	15,864	16,432	16,189
	Broadleaves	16,094	15,973	15,579	14,536	15,216	14,778	15,307	15,080
	Evergreen Broadleaves	19,817	19,817	19,817	19,817	19,817	19,817	19,817	19,817
CHANIA	Conifers	36,024	35,754	34,873	32,537	34,061	33,079	34,264	33,756
	Broadleaves	1,617	1,605	1,565	1,461	1,529	1,485	1,538	1,515
	Evergreen Broadleaves	12,210	12,210	12,210	12,210	12,210	12,210	12,210	12,210
CHIOS	Conifers	20,586	20,431	19,928	18,593	19,464	18,903	19,580	19,290
	Broadleaves	1,214	1,205	1,175	1,097	1,148	1,115	1,155	1,138
	Evergreen Broadleaves	7,142	7,142	7,142	7,142	7,142	7,142	7,142	7,142
TOTAL		**3963,074**	**3937,817**	**3855,734**	**3637,897**	**3779,965**	**3688,410**	**3798,907**	**3751,551**