

# Methods and first results for the implementation of MAES at a national scale: the LIFE-IP 4 NATURA project (Greece)

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## Introduction

Life-IP 4 Natura is an 8-year integrated project (IP), the first Life-IP commissioned to Greece, mainly dealing with actions related to (a) habitats and species of Community Importance at the national and multiregional scale, (b) enhancement of the effectiveness of National and local authorities by developing appropriate tools, (c) stakeholder involvement and (d) study and acquisition of the necessary knowledge on ecosystem services and their provisions at national, regional and local level, by applying the MAES approach. After almost two years, of the project's implementation, we present the national scale assessment methodology and first results on mapping and assessment of ecosystems and their services at the national scale.

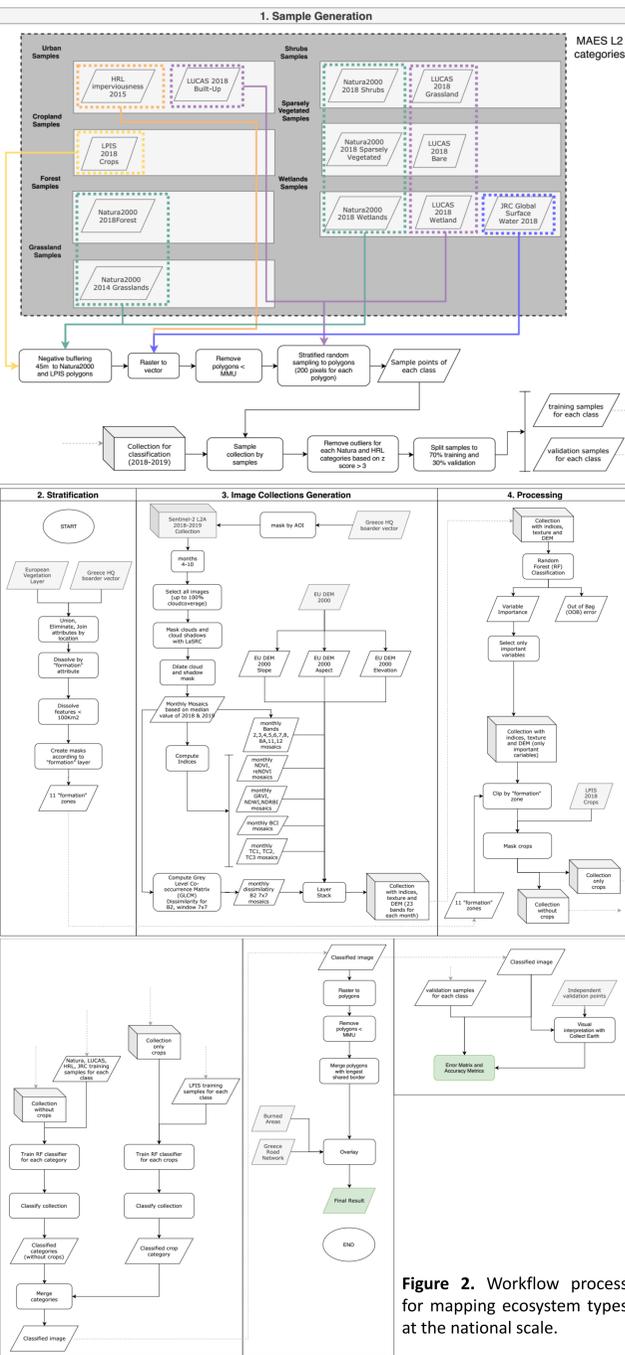


Figure 2. Workflow process for mapping ecosystem types at the national scale.

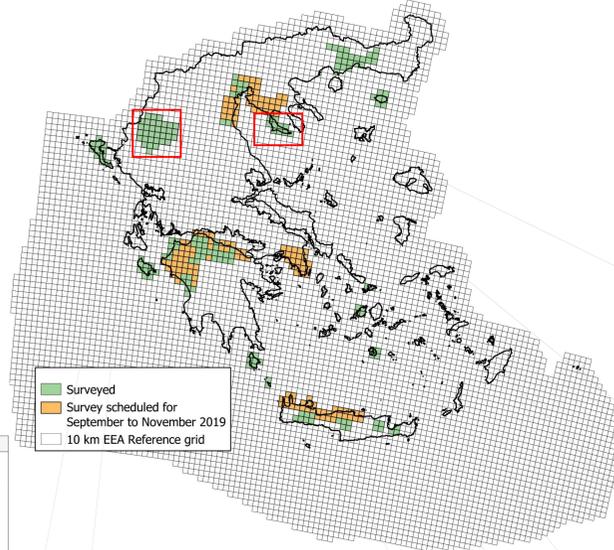
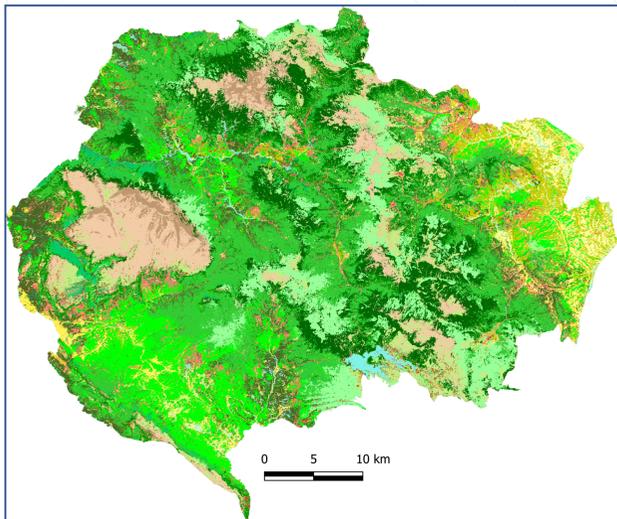


Figure 1. Map of Greece under the 10 Km EEA Reference grid, which is used for the national scale mapping and assessment of ecosystems and their services. Green cells depict areas where the field work for the assessment is completed, while orange cells depict areas where field surveys are on-going.



- Low density Urban Fabric (I.M.D. 0-30%) 1.1.2
- Arable land 2.1
- Permanent crops 2.2
- Heterogeneous agricultural areas 2.3
- Temperate deciduous forests
- Mediterranean deciduous forests
- Floodplain forests (Riparian forest/ Fluvial forest)
- Temperate mountainous coniferous forests
- Mediterranean coniferous forests
- Mediterranean sclerophyllous forests
- Mixed Forest
- Natural grasslands with trees and scrubs (T.C.D. > 30%) 4.2.2
- Moors and heathland 5.1.1
- Sclerophyllous vegetation 5.2.1
- Sparsely vegetated areas 6.1.1
- Mines, dump, land without current use 6.4.1
- Rivers and Lakes

Figure 4. Result of the classification and mapping process for ecosystem types in Northern Pindos National Park (NW Greece).

## Next steps for the national-scale assessment

Next steps for the completion of the national scale assessment include: (a) the coverage (field surveys) of the remaining, terrestrial grid cells, (b) the development (on-going process) of an algorithm for each ecosystem type, which elaborates all registered data and especially those of ecosystems' structures and functions and pressures present; this algorithm will be integrated into the online database and thus automatically export the relevant results for ecosystem condition, (c) the identification of hotspots of good, poor or bad ecosystem condition for each ecosystem type and (d) the identification of hotspot areas for the (potential) supply of ES.

## Materials and methods

Using the 10x10 Km EEA reference grid, terrestrial and marine areas of Greece have been partitioned and each cell is used as reference assessment unit (Figure 1). For assessing ecosystem condition and record current flows of ecosystem services (ES), at least one plot per ecosystem type in each cell has been set as a threshold. The assessment is conducted by field surveys, using an online, standardized assessment protocol for the condition of ecosystems and their services (provisioning, regulating and maintenance, cultural), based on the guidelines of the relevant MAES reports. Field surveyor's expert judgment on ecosystem condition is also reported. Sampling plot data have been collected and registered in a database developed for the project and will be used for further analysis and interpretation. Field data from the plots are also exploited for the training and validation of the remote-sensing model developed for ecosystem types' mapping at national scale. The workflow of the classification process for mapping ecosystem types at the national scale is presented in Figure 2.

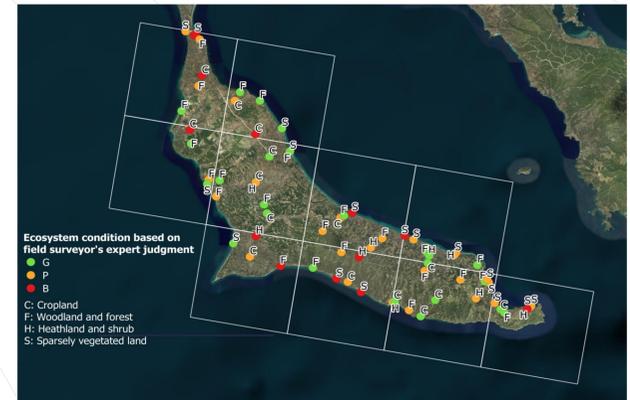


Figure 3. Preliminary results, based on field recordings, for ecosystem types and their condition at the peninsula of SW Chalkidiki (N Greece).

## Results

Until now, 181 cells have been assessed, including coastal, mountainous, mainland and island areas (Figure 1), from a total of 2061 cells (terrestrial areas) (i.e. 8,78% of cells has been surveyed). Preliminary results for ecosystem condition are exported in maps for an overview of ecosystem types and their condition at the areas already assessed. An example for the peninsula of SW Chalkidiki (N Greece) is presented in Figure 3. Map in Figure 4 depicts the result of the classification and mapping process for ecosystem types in NW Greece (Northern Pindos National Park). In Figure 5 a synoptic presentation of the usage of the online database is given showing some of the basic registering characteristics provided for the field surveyors.

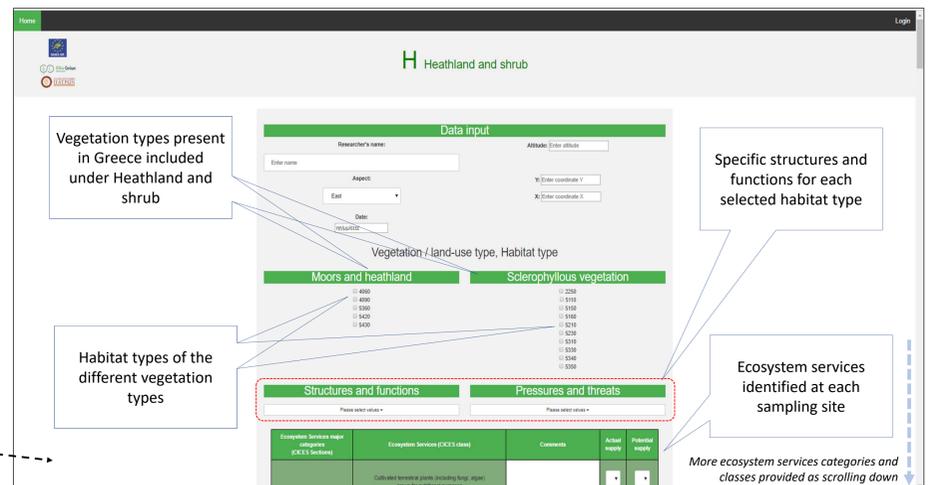
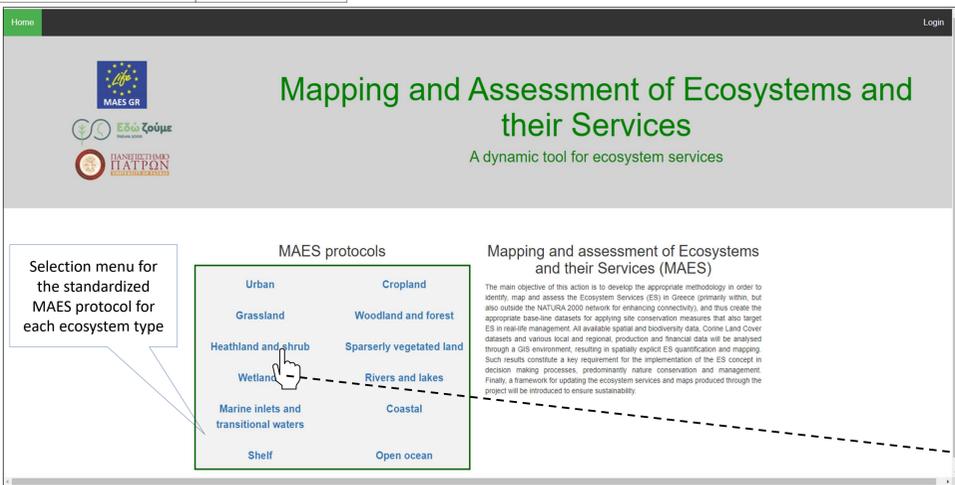


Figure 5. Synoptic presentation of the usage of online database. On the right, the main menu; on the left, input form for the "Heathland and shrub" ecosystem category.

## Project's Partners

