

SPATIAL DETECTION OF POTENTIAL AREAS WITH HIGH ECOTOURISM DEVELOPMENT IN EVROS PREFECTURE THROUGH GIS ANALYSIS

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SCOPE

The purpose of this study is to detect ideal areas for potential ecotourism development across the prefecture of Evros (Greece) using analyses of multiple spatial datasets through Geographic Information System. The study domain has many environmental protected areas rich in flora and fauna, but nowadays suffers from economic shrink and population decrease as it happens in many other remote regions, far away from the large cities and economic centers. In a more general aspect, the study aims to consist a driver in a sustainable planning that can use areas of high ecotourism value to lead to a sustainable economic growth.

METHODOLOGY

For the needs of the study, eight different spatial datasets were used, initially. These datasets include the road network, the NATURA and other protected natural ecosystems, an analytic digital elevation model (DEM), the coastline and rivers/lakes network [1], [2]. Additionally, secondary data were produced from the initial ones, where was needed (e.g. slope of the terrain and buffer zones). Finally, a set of criteria was defined to discriminate areas with potential ecotourism activities while two different classes of these activities were set ("mild" and "intense"). The final areas of interest were detected through the intersection of the datasets that fulfill the appropriate set of criteria. The whole analysis was performed in a Geographic Information System (GIS) and final maps with the areas of interest were produced.

RESULTS AND DISCUSSION

Using the data are mentioned before, different combinations and buffer zones are defined and analyzed, creating different scenarios (Table 1). Finally, the scenarios that include the larger parts of the protected areas, were considered as the best scenarios to be used as a driver for the potential development of ecotourism activities in Evros Prefecture (Scenario 2, scenario 2A and scenario 2B in the Figures below).

It is noted that in scenario 2 the land use/land cover data were intersected with the NATURA areas data, in the scenario 2A (mild ecotourism activity) except the two abovementioned data, a criterion of terrain slope lower than 10 degrees and a buffer zone of 2 Km of the road network were used. In the scenario 2B (intense ecotourism activity), except the first two, a buffer zone larger than 2 Km of the road network and a slope larger than 10 degrees, were used.



Scenario	Coverage area (%)
Scenario 1	6.8
Scenario 1A	2.62
Scenario 1B	2.17
Scenario 2	28.32
Scenario 2A	11.42
Scenario 2B	8.57
Scenario 3	9.18
Scenario 3A	3.92
Scenario 3B	1.74
Scenario 4	2.99
Scenario 4A	1.37
Scenario 4B	0.65
Evros Prefecture	100

Table 1. The coverage area (in comparison with the total area of Evros Prefecture) of the different scenarios developed.

CONCLUSIONS

It was found that very large areas can be used for ecotourism. The total areal extent of these locations varies from 20% to 30% of the whole areal extent of the Evros prefecture (Table 1). Moreover, most of these locations are broad leaves forests often mixed with sclerophyll vegetation which make them suitable for visiting during the whole year. Another important result is also that large parts of the locations with high potential for ecotourism development are included in environmentally protected areas, as well as in socioeconomically degraded areas.

The main conclusion of the study that Evros prefecture can be considered as important region for ecotourism development but an integrated and sustainable planning is needed. Proper utilization of the explored potential locations will not only ensure sustainable use of natural resources but also improve the livelihoods of local community.

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