A participatory methodological framework for paving alternative local tourist development paths—the case of Sterea Ellada Region

Maria Panagiotopoulou · Anastasia Stratigea

Abstract The focus of the present paper is on the development of a participatory methodological framework, based on the future workshop participatory approach and participatory evaluation tools for planning the integrated development of a specific region, the Region of Sterea Ellada—Greece. Towards this end, particular emphasis is placed upon the sustainable use of natural and cultural resources for the spatial planning of alternative tourist development paths, which are effectively integrated into the local economic structure and its future perspectives. The proposed framework results in the building of scenario-specific policy guidelines which, by taking into consideration developments of the internal and external environment of the study region and the specific decision contexts these outline, support policy makers by providing a range of policy directions and policy measures that can serve effective decision-making within each specific decision context. Moreover, the participatory evaluation approach adopted in the proposed framework supports public and stakeholders' engagement in the decision-making processes, rendering thus these processes more pluralistic, credible, legitimized and transparent, which in turn are to the benefit of the planning process, the final policy decisions and their successful implementation at the local level.

Keywords Spatial planning · Participatory planning · Scenarios · MULTIPOL evaluation model · Policy guidelines · Alternative tourism

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Introduction

The role of the tourist sector in supporting local development objectives has been largely recognized. At the same time, many regions of the world are experiencing certain undesirable social, environmental and cultural impacts, mainly due to the irrational exploitation of cultural and natural resources. Along these lines, the issue of sustainable tourist development has emerged in the' 80s, as part of the concerns raised by society and policy makers on sustainability aspects [1]. Focusing on the protection of human and natural environment and the softening of the negative impacts emerging from conventional (mass) tourist development patterns, alternative tourism "…*is developed and maintained in an area* (*community*, *environment*, etc.) *in such a manner and at such a scale that it remains viable over an infinite period and does not degrade or alter the environment* (*human and physical*) *in which it exists to such a degree that it prohibits the successful development and well being of other activities and processes*" [2], p. 29].

Nowadays, the effective management of natural and cultural resources, constituting the vital components for paving alternative tourist development paths, is considered as of crucial importance in policy development in many countries around the globe. In this respect, a steadily increasing number of policies, programs and projects are being implemented, aiming at the protection, conservation and rational exploitation of natural and cultural resources. This largely reflects the appreciation of the role of natural and cultural capital as a development 'lever', but also as a 'tool' for building and promoting the *local identity* of each single tourist destination.

The *focus* of the present paper is on the structuring of a participatory methodological framework for planning the integrated development of a Greek region, based on the sustainable exploitation of natural and cultural resources for paving alternative tourist development paths. This framework supports the development of scenario-specific policy options

which, based on the alternative tourist development pattern they promote, can contribute to the economic and social restructuring and the balancing of regional disparities. The *structure* of the paper has as follows: in the first part the methodological approach is discussed; in the second part are presented the goal and objectives as well as the key attributes of the study region; the third part elaborates on the scenario building process and outcome as well as the participatory multicriteria evaluation framework for measuring the performance of scenarios as to certain evaluation criteria; in the fourth part, the policy options serving the set of goals and objectives are discussed; while finally in the last part some conclusions are drawn.

The methodological framework

The methodological framework adopted in this paper is based upon the discrete stages of the planning process [3, 4], namely (Fig. 1):

- The '*learning stage*': describes goal and objectives set, while it also elaborates on key attributes, comparative advantages, and problems of the study region;
- The '*evaluation stage*': refers to the structuring and evaluation of possible future images (alternative scenarios) of the region at hand, within which goal and objectives are reached;
- The '*implementation/action stage*': describes the scenario-specific policy framework for the sustainable use of natural and cultural resources of the study region towards paving alternative tourist development paths.

Moreover, it should be stressed the participatory approach adopted in this specific planning exercise, which was used for the refinement of the objectives set by planners and decision-makers ('learning stage'), as well as for refining the proposed alternative scenarios and for setting priorities (weights) at the stage of the evaluation of these scenarios ('evaluation stage') (see Fig. 1).

In depth analysis of the study region – the 'learning stage'

The study region of the present paper is the Region of Sterea Ellada (Fig. 2a), one of the 13 regions of Greece. It consists of five prefectures[1] being the: Viotia, Evia, Evritania, Fthiotida and Fokida (Fig. 2b). It belongs to the geographical compartment of Central Greece, located in the southern part of the mainland and occupying an area of 15.549 square kilometers (11.8 %, second largest region of the country).

The study area disposes an extremely *rich natural environment*, with abundant habitats, wetlands, natural reserves and protected CORINE and NATURA 2,000 areas; while it is also a rich aquatic compartment with numerous rivers, torrents,

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[1] NUTS 3 administrative level.

streams and lakes. Of great importance is also the *cultural reserves* of the region, composed of neolithic findings, monuments of the Classical and Hellenistic period, historical monuments of the Post-Byzantine period as well as contemporary, modern monuments, complemented by local habits and customs as well as various cultural events, and cultural infrastructure, such as museums, folklore centers, art galleries, etc.

The region has a population of 546.870 inhabitants (Census 2011). The *local economy* is strongly dependent on the *primary sector*, despite a certain shift of workforce towards the secondary and tertiary sector and the significant drawbacks of primary production, such as the small scale land properties, the ageing of workforce, and the lagging behind as to the technological modernization, innovation etc. sector [25]. The secondary sector is marked by the dominance of large industrial and commercial clusters in the manufacturing sector (largely linked to the mining activity), major technology-intensive industries (food, modern textile, aluminum, etc.) and new technology-intensive competitive dynamic sectors that exhibit remarkable export performance. The tertiary sector constitutes the vital component of the productive profile of the region, focusing on retail and wholesale trade and transport.

Due to its privileged geographical position at the central part of the country (Fig. 2a), the region has good *accessibility* to: transport networks, such as the international highway and railway networks, constituting parts of the Trans-European transport network; peripheral ports; remarkable local energy resources and energy distribution networks.

Despite the development potential, severe *disparities* appear in the region, mainly due to the increasing urbanization pattern and the lagging behind rural, mountainous and sub-mountainous regions while, during the last few years of economic recession, unemployment rates are rising quite high.

The *goal* set for the Sterea Ellada Region relates to the structuring of alternative tourist development paths that are based on the sustainable management of natural and cultural resources. An *integrated view* of the future development of the region is adopted, in which tourism lies at the core of the local economic profile, while efforts are placed upon the integration of tourism with the rest of the local economic sectors.

Under the above goal, the following *objectives* are falling [25]:

- Protection, preservation and promotion of cultural heritage – promotion of cultural tourism;
- Protection of natural environment – sustainable exploitation of natural resources for alternative tourist development purposes;
- Attraction of new investments – enhancement of 'green' entrepreneurship;
- Upgrading of human resources – specialization of workforce;
- Strengthening of social inclusion and cohesion;

Fig. 1 The participatory planning methodological framework
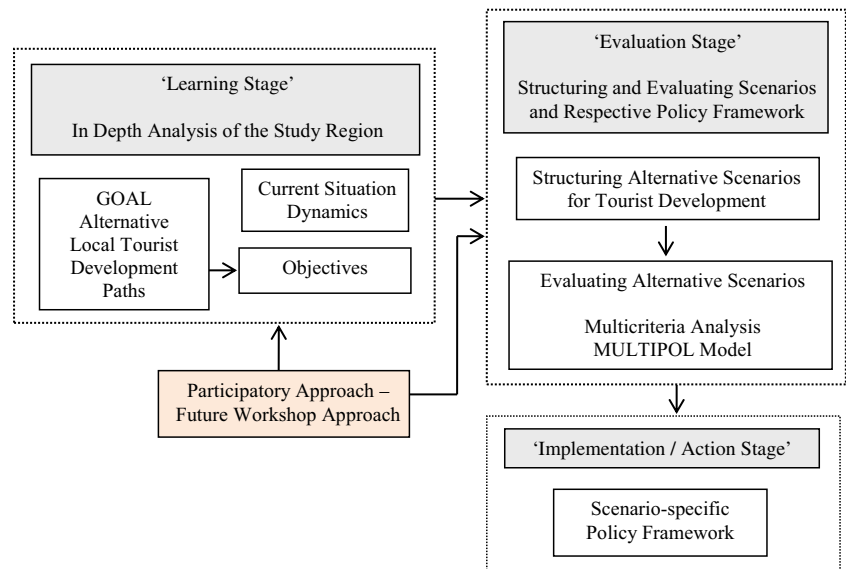
- Promotion of Protected Designation of Origin (PDO) products;
- Adoption/use of Information and Communication Technologies (ICTs);

- Promotion of a spatial organization that better serves the needs of people and activities;
- Encouragement of a balanced regional development pattern, opposing disparities;

Fig. 2 (**a**) Geographical position of the study region Source: http://periferiastereas.blogspot.gr/ [23] (**b**). Prefectures of the study region Source: http://www.minenv.gr/ [22]
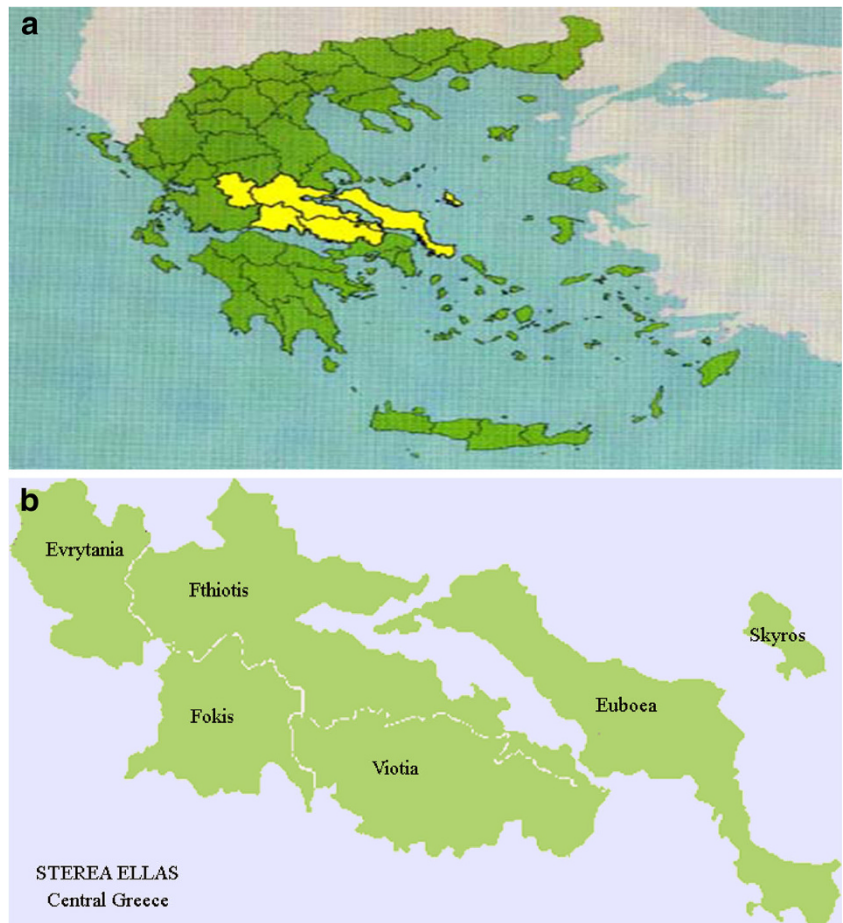
- Increasing awareness of local community on the value of local cultural and natural resources in the development process;
- Upgrading of transport and telecommunications accessibility; and
- Exploitation of Renewable Energy Sources (RES).

These objectives are at a first step the outcome of planners' work, while at a second step they were further elaborated and finalized in the context of a participatory workshop, organized in the study area. In this workshop, objectives were, among others, presented to a range of local decision-makers and stakeholders, and specific views and opinions expressed by them were taken into consideration, in order to end up with a set of objectives that were better reflecting the views and perspectives of local society.

The final set of objectives will form the ground for the construction, in the next steps, of a long term tourist development plan based upon the sustainable exploitation of natural and cultural resources, which can, among others, be used as a guide for directing private and public investments in the study area in a more cohesive and systematic way.

Structuring and evaluating scenarios for alternative tourist development of the study region – the 'evaluation stage'

For building and evaluating scenarios in this specific planning exercise (see Fig. 1 – 'evaluation stage'), a participatory approach was adopted, based on the engagement of local stakeholders and representatives (decision-makers) in a *participatory workshop* (20 persons were involved). In this workshop, the above participants took part in a structured discussion, organized by the authors of the present planning study. The whole event was structured according to the *future workshop qualitative participatory approach*, running in four discrete stages, namely the [5]:

- *Preparation phase*: where were prepared by the authors of the present planning exercise the structure of the discussion and the material to be presented, while was also selected and recruited the group of participants to be engaged and were settled the organization details of the specific workshop;
- *Critique phase*: where were identified by the participants problems or important issues to be considered for the region at hand, as a result of both the personal experiences of participants and the material presented by the authors;
- *Fantasy phase*: where was created a *vision* about the future, which has formed the basis for the building of the scenarios proposed in the present study; and
- *Implementation phase*: where were discussed the feasibility of the proposed scenarios and the policy directions and

policy measures that should be in place in order to implement them.

The *outcome* of this workshop was the: a) refinement of objectives; b) gathering of different views on the future development of the region, based on the sustainable exploitation of natural and cultural resources, which were used for the refinement of the proposed scenarios; and c) gathering of qualitative information on priorities and values of the local society, upon which was based the setting of priorities (weights) for further use in the MULTIPOL evaluation model.

Alternative tourist development scenarios

Two alternative scenarios, seeking for the sustainable tourist development of the Sterea Ellada Region, are structured that are built upon the availability of natural and cultural resources, while they also take into consideration the specific attributes and comparative advantages of the region as well as the policy guidelines set for the development of the tourist sector at the national level.

The scenarios are *differentiated* on the basis of the:

- *Spatial structure* of the development of the tourist sector, following either a *concentrated pattern*, aiming at the integration of similar tourist attractions into networks developing across the region at hand e.g. network of archaeological sites; or a *de-concentrated pattern* taking place in a range of local development poles, within which local tourist activities are integrated into the local economy, e.g. agro-tourism activities in agricultural regions;
- *Level of integration* of the tourist sector into the rest sectors of the local economy, which in fact emanates from the spatial structure of the sector, where the concentrated pattern of tourist development exhibits a much lower level of integration of the tourist sector into the rest of the sectors of the local economy, compared to the de-concentrated pattern of tourist development, where the tourist sector is well adjusted to the local economic structure of each specific local development pole
- *Level of government in charge* for the implementation of the tourist development plan, where in the case of the concentrated pattern the Region of Sterea Ellada can be in charge, while in the case of the de-concentrated pattern, efforts can be carried out both at the regional and the municipality level.

Based on the above attributes *two discrete scenarios* are constructed, namely the: Scenario 1 - Concentrated pattern of tourist development and the Scenario 2 – De-concentrated pattern of tourist development.

These scenarios are also structured in such a way that contributes to the [25]:

- Attenuation of regional disparities through a more balanced pattern of tourist activities, dispersed throughout the study area
- Strengthening of bonds and interaction among different spatial units, serving spatial cohesion objectives
- Creation of a functional spatial entity, whose development perspective is based on complementarity and synergies among both individual spatial entities and productive activities
- Enhancing of extroversion of the region;
- Emphasizing of its role as a regional node of prominent cultural and natural importance.

More specifically:

- *Scenario 1: Concentrated pattern of tourist development*

This scenario is built upon a *concentrated pattern of development* of the tourist sector, based on the management of natural and cultural capital. Along these lines, *thematic networks* interconnecting natural and cultural resources of similar nature are created at the regional level, targeting tourist flows with particular interests.

The *six thematic networks* created in the first scenario are [25]:

- NATURA 2,000 zones network
- Archaeological and historical sites network
- Resources of religious interest network
- Sanative resources network
- Eco–tourism, mountain and winter tourism network; and
- Museums network

Where the first two are indicatively presented in Fig. 3 and Fig. 4 respectively.

The diversity and quality of natural and cultural environment constitute the basis for the creation of the thematic networks, contributing to the development of the tourist activity/product as well as the reinforcement and maintenance of regional competitiveness. Aiming at the attraction of tourist flows with specific ecological, natural and cultural concerns, this scenario attempts to systematically 'shift' to a qualitative and environmentally-responsible tourist development of the study region [6, 7]. This 'shift' has the potential to positively affect the regional economy and redistribution of income, restrain local population decline, while protecting local resources, i.e. can serve *sustainability objectives*.

The *spatial interventions* associated with this scenario relate to interventions in the transport network, serving the
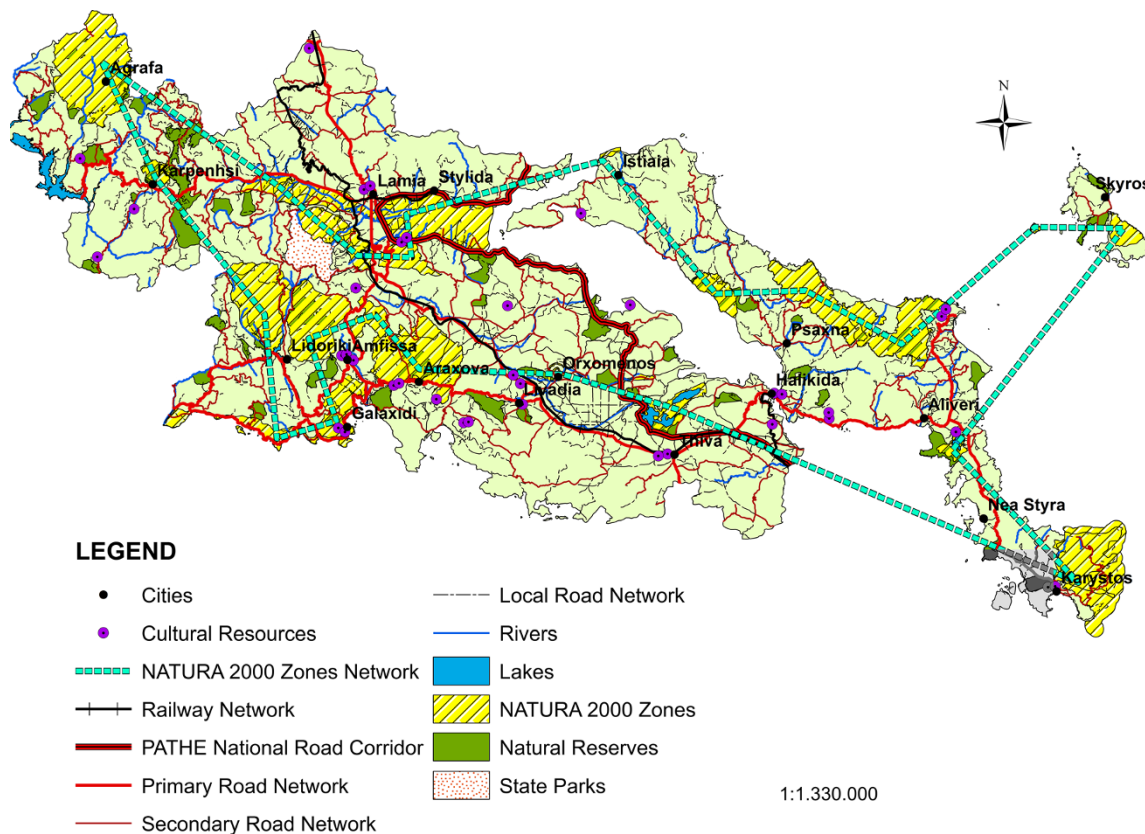
Fig. 3 Concentrated pattern of tourist development – Network of places of ecological interest – NATURA 2000 zones. Source: elaboration of data from www.geodata.gov.gr [24, 25]
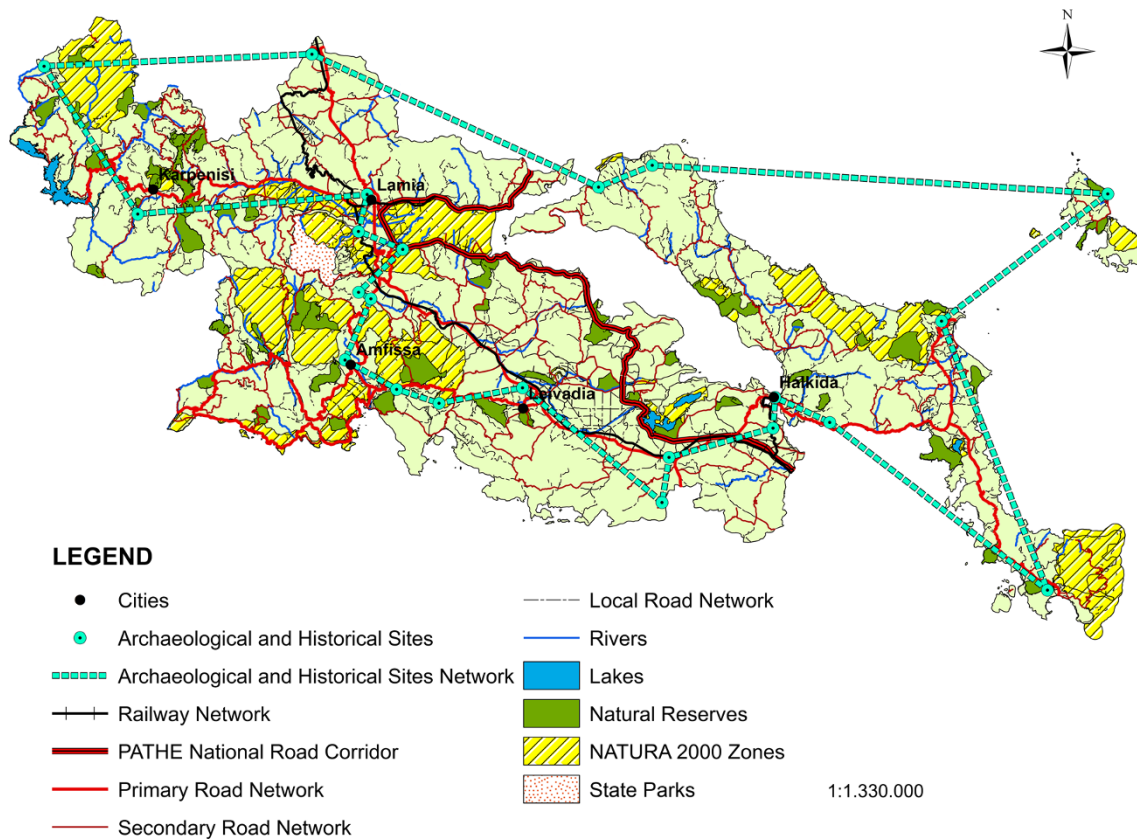
Fig. 4 Concentrated pattern of tourist development – archaeological and historical sites network. Source: elaboration of data from www.geodata.gov.gr [24, 25]

interconnection of individual spatial entities involved in each thematic network; and the upgrading of entry points to those networks at the regional level. Of crucial importance is the improvement of transport infrastructure, connecting the study area with gateways at the national level. Spatial interventions at the very local level are also carried out, incorporating actions towards the preservation and promotion of specific natural and cultural resources. In alignment with the spatial structure of each thematic network, are carefully selected settlements for the development of hosting infrastructure. In this context, a more balanced dispersion of tourist flows in selected settlements is achieved, ensuring also proximity to 'gates' of thematic networks of interest. Moreover, this entails a certain concentrated pattern of population and supporting activities carried out in these poles, creating a sort of economies of scale that support competitiveness and attractiveness at the regional level.

- *Scenario 2: De-concentrated pattern of tourist development*

In this scenario is built a *polycentric model* of tourist development, in alignment with the spatial pattern of natural and cultural reserves of each single part of the study region. More specifically, a diversified tourist product is built at the prefecture

level[2], which is well anchored to the rest of local activities, and supports the further enhancement of local identity. Key attributes of this scenario are the *diversification* of the tourist product and the *complementarity* among different spatial units.

The spatial development of the scenario is based on the creation of 'nodes' at the prefecture level, i.e. clusters of activities exploiting, in a sustainable way, the local natural and cultural resources. These can offer visitors a high-quality, all year round, diversified and of low ecological footprint tourist experience [6, 7], closely relating to the local identity of each single node. This in turn renders tourist development the 'vehicle' for local development, removing seasonality, softening the impacts on cultural and natural resources, and spreading the benefits throughout the nodes of the region, supporting thus economic, social and spatial cohesion objectives.

In Fig. 5 and fig. 6 are indicatively presented the *'polycentric' pattern* of alternative tourist development in the prefectures of Viotia and Fokida respectively, which are composed of three single sub-regions. Such 'future images' were also produced for the prefectures of Evia, Evritania, and Fthiotida.

The specific scenario promotes a *decentralized pattern* of tourist development; offers a broaden and diversified way of sustainable exploitation of natural and cultural resources; takes full advantage of external economies of scale arising from clustering of activities;
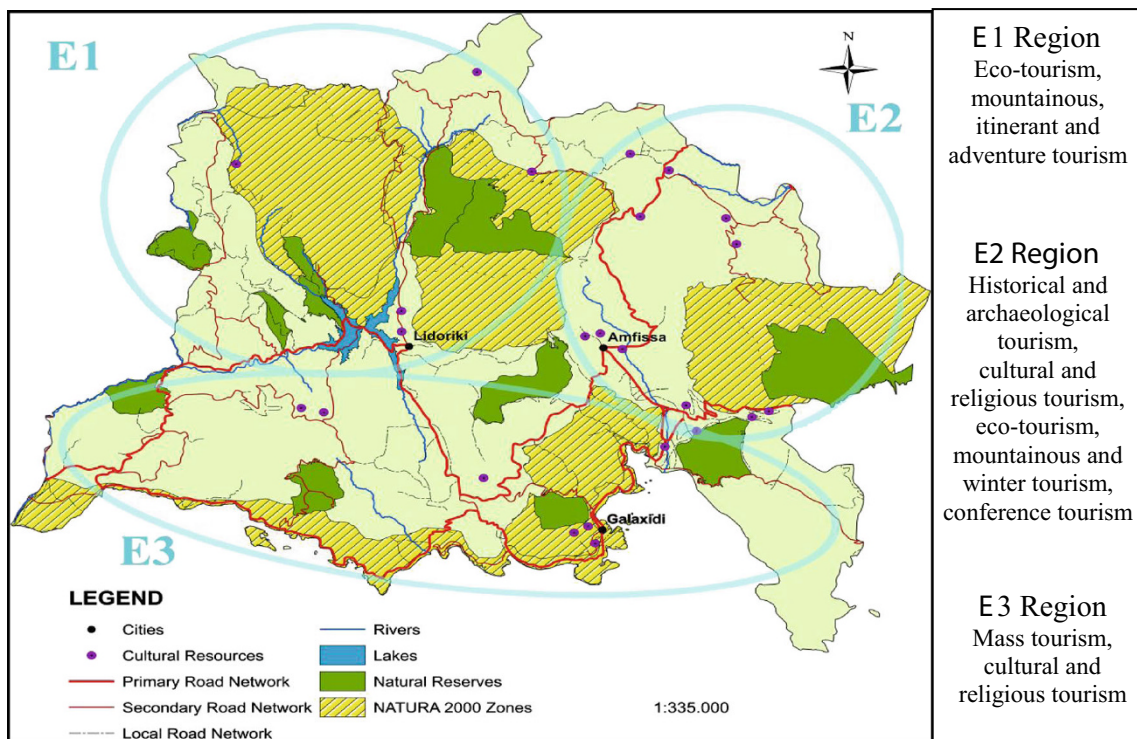
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[2] Prefectures of Viotia, Evia, Evritania, Fthiotida and Fokida.
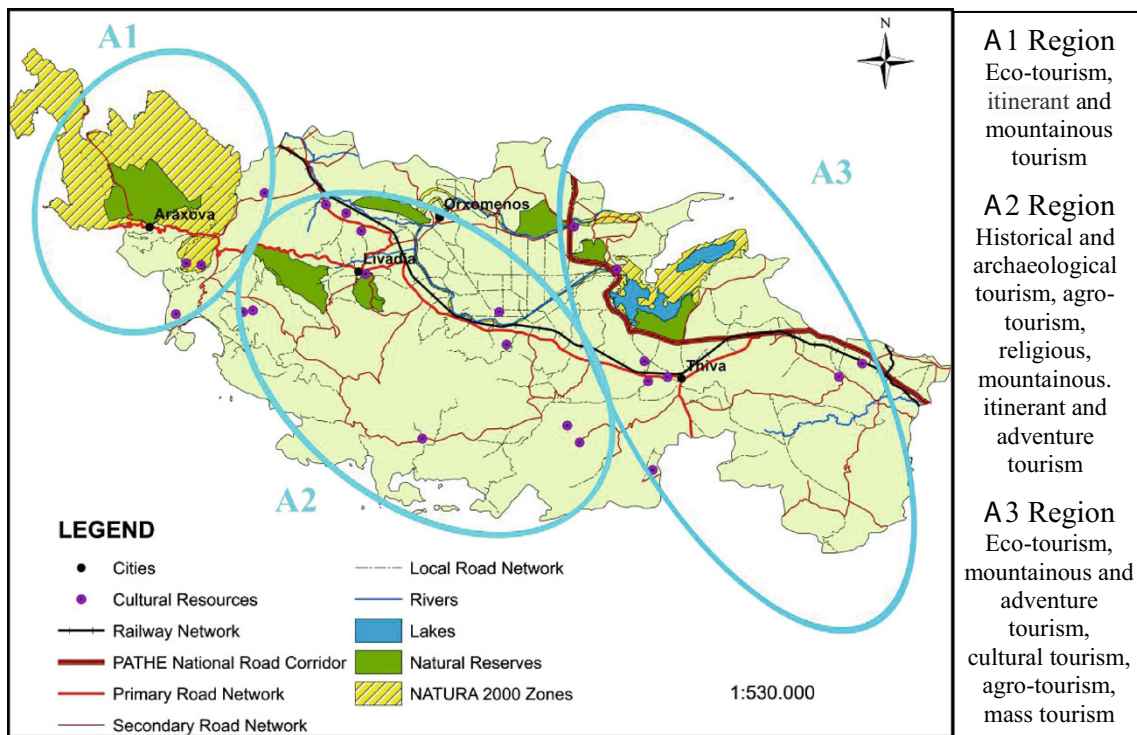
Fig. 5 De-concentrated pattern of tourist development in the Viotia prefecture. Source: elaboration of data from www.geodata.gov.gr [24, 25]

satisfies social, economic and environmental protection objectives; while it can attract a range of different age groups of tourist flows.

Moreover, it supports a decentralized population and activity pattern, with a remarkable rate of population increase, steering the development of more nodes and sectors, as a

Fig. 6 De-concentrated pattern of tourist development in the Fokida prefecture. Source: elaboration of data from www.geodata.gov.gr [24, 25]

result of the range of opportunities arising and their balanced dispersion throughout the study region. Environmental and cultural awareness, which is tightly interwoven with the sustainable use of resources, prevails in all economic sectors, while these present a rather balanced development pattern.

The *local economy* is characterized by the strong interaction among productive sectors, where strengthening of bonds has multiplying effects for all sectors, while complementary relationships are also evolving among regions as well, i.e. mountainous and sub-mountainous complexes, lowland rural areas and urban centers, forming thus spatial complexes that can offer visitors a diversified unique tourist experience.

The *spatial interventions* associated with this scenario relate to the: development of small scale environmentally-friendly tourist infrastructure in each prefecture; upgrading of transport network for serving the unimpeded access to areas endowed with significant natural and cultural resources and the interconnection among different areas. Emphasis is also placed on the integration of the tourist sector with the rest of productive sectors of each spatial unit and on interventions concerning the exploitation/upgrading/protection of available resources [10].

Evaluation of alternative scenarios

In this section is presented the evaluation of the two scenarios for the sustainable tourist development of the region of Sterea Ellada, by use of the multicriteria analysis model MULTIPOL[3] (MULTI-criteria – POLicy).

Structure of the MULTIPOL method

MULTIPOL constitutes a discrete multicriteria evaluation method, capable of dealing with qualitative information [11, 12]. The method is used for the evaluation of alternative scenarios, integrating a *participatory approach* through the involvement of experts or citizens, depending on the problem at hand. The specific method is based on the evaluation of policies and actions by means of a weighted average, taking into consideration the uncertainty and testing the effectiveness of different policies and actions as to the evaluated scenarios. In general, *"...MULTIPOL's aim is to help decision-making by drawing up a simple and evolving analysis grid of the different actions or solutions available to the decision-maker"* [12], p. 95].

The basic *input* of the MULTIPOL evaluation method consists of [13, 14]:

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[3] MULTIPOL is a multicriteria evaluation model. It is part of the LIPSOR scenario planning model (Laboratory for Investigation in Prospective and Strategy), developed by M. Godet [11, 12].

- *Evaluation criteria*: defined as "*...measurable aspects of judgment by which a dimension of the various choice possibilities under consideration can be characterized*" [8, p. 57]. They are considered as the cornerstone of any evaluation process for rating the performance of alternative scenarios, policies and policy measures involved in the MULTIPOL evaluation process.
- *Scenarios*: defined as structured future developments [15–18], within which goal and objectives set for the system/problem at hand are achieved.
- *Policies*: as strategies for the achievement of goals and objectives in a specific planning exercise, which are closely relating to the political, social, economic and physical context, within which the evaluation is taking place [9, 14].
- *Policy measures (actions)*: relating to potential interventions, aiming at the implementation of various policies.

The use of the method leads to the structuring of a scenario-specific policy framework matching, in a way, to each specific scenario the most effective policies and policy measures, based upon their performance with respect to a set of weighted criteria, using a simple grading scale [12].

The steps of the MULTIPOL multicriteria evaluation method are presented in Fig. 7. More specifically:

- The *first stage* refers to the structuring of the evaluation problem at hand, comprising the definition of: alternative scenarios (S_i), policies (P_j), policy measures (A_k) and evaluation criteria (K_n) [11–14];
- the *second stage* proceeds with the definition of *weights* for the alternative scenarios, policies and evaluation criteria;
- the *third stage* concerns the structuring of the evaluation data, input to the MULTIPOL method. In this context, three *impact matrixes* are created, which contain information relating to the impact of [12]: a) scenarios with respect to the evaluation criteria; b) policies with respect to the evaluation criteria; and c) policy measures with respect to the evaluation criteria;
- the *fourth stage* refers to the implementation of the MULTIPOL evaluation method, which carries out two different types of evaluation [12]. The first type concerns the evaluation of policy measures with respect to policies, providing answer to the question *'which policy measure is more efficient for which policy'*, and leading to the prioritization of policy measures, based on their performance with regard to the different policies. The second type refers to the evaluation of policies in respect of alternative scenarios and provides answer to the question *'which policy performs better for which scenario'*, resulting in the hierarchy of policies, based on their performance with respect to alternative scenarios;
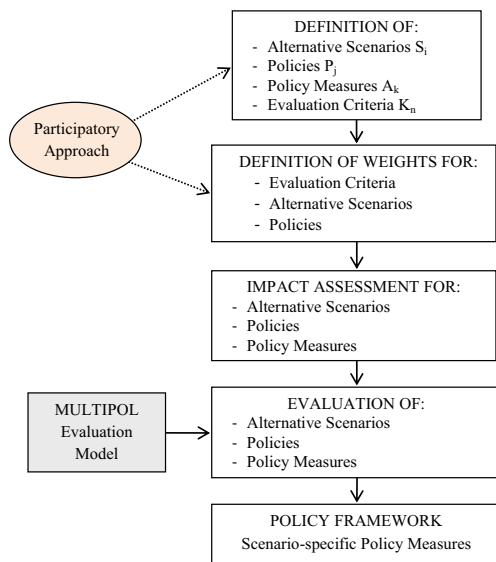
Fig. 7 Steps of the MULTIPOL multicriteria evaluation method. Source: Stratigea & Giaoutzi 2012; Stratigea 2013; Stratigea & Papadopoulou 2013a & 2013b [14, 19, 9, 20]

- The *fifth stage* presents the results obtained from the evaluation process, composed by sets of scenario-specific policies and policy measures, i.e. policy options in support of goal and objectives' achievement within each scenario context (see also Fig. 8 below).

The integration of participatory approaches into the first two stages is of vital importance as: engagement of stakeholders at the *first step* highlights a range of different dimensions, perspectives and values that are to a certain extent defining the way that the problem at hand is perceived and the potential solutions and policies to implement these solutions that are better tolerated by the local *community*; while engagement of stakeholders at the *second step* – setting weights of evaluation criteria, alternative scenarios and policies – highlights the priorities set by various local community groups, emanating from the specific social, economic, political and cultural context, within which the participatory planning exercise is taking place.
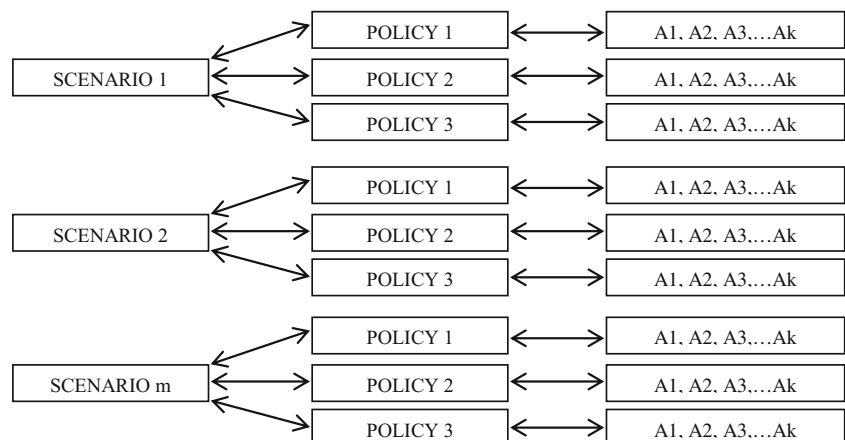
In this specific case study, the participatory aspect has been dealt with the organization of a participatory workshop, as earlier described, through which was gathered information on the specific views and preferences of decision-makers and local stakeholders, somehow delineating the priorities and thus the weights used in the application of the MULTIPOL method.

The MULTIPOL multicriteria evaluation method does not result in the selection of the dominant scenario, but in the creation of a *scenario-specific policy framework* for attaining the goal and objectives set (see Fig. 8). More specifically, the outcome of the evaluation process is a combination of an alternative scenario and the policy directions and policy measures that better contribute to its implementation. Stated otherwise, the outcome is a set of *policy options* in the hands of policy makers and local communities, each of which is presented by the *end point* (future state) and the *path* (policies and policy measures) to that point, supporting thus more *knowledgeable decisions* from the available set of options, which are best suited to the particular attributes of the local community. Moreover, it enables monitoring and on time 'reaction' on the basis of changes observed in the external environment, which may require a 'rerouting' of policy choices in order to achieve the objectives set.

Structure of the evaluation problem

This section presents the data used as input to the MULTIPOL evaluation model.

Evaluation criteria

The evaluation taking place by use of the MULTIPOL method is based upon a number of *evaluation criteria*, emanating from the goal and objectives of the study. Each criterion is assigned a *weight*, which determines the relative importance of the criterion in the specific evaluation problem. Defining weights should generally be the outcome of interaction among

Fig. 8 The structure of the evaluation problem in the MULTIPOL evaluation model. Source: Stratigea & Giaoutzi 2012; Stratigea & Papadopoulou 2013a [14, 20]

planners, decision-makers and the local community, in the context of a participatory planning process, aiming at grasping societal priorities and visions and embodying them in the planning process and outcomes.

In Table 1 are presented the evaluation criteria and their respective weights for the evaluation of the two alternative scenarios, seeking for the sustainable tourist development of the Sterea Ellada Region. It should be noted that weights used for the evaluation criteria in Table 1, but also the rating of scenarios and policies that are presented in the following, reflect the views of stakeholders and local representatives as these were expressed in the context of the participatory workshop, organized for gathering the data used as input to the MULTIPOL model (see section on structuring and evaluating scenarios).

Alternative scenarios

The two alternative scenarios used as input in the MULTIPOL model, are:

- Concentrated pattern of alternative tourist development – Scenario S1.
- De-concentrated pattern of alternative tourist development – Scenario S2.

The two scenarios are considered as of equal importance (weight=5).

Policies

Policies constitute different strategies – approaches that are utilized for the transition of the spatial system at hand from the current to the potential future states (scenarios). Each policy is assigned a certain weight. The policies set out in the present paper are [25]:

- *Development of the tourist sector (P1)* (weight=5): places emphasis on the efficient use of natural and cultural resources of the study area, for the development of alternative tourist activities. Tourist sector is considered as a 'lever' for regional development;
- *Adoption – use of Information and Communication Technologies (ICTs) (P2)* (weight=4): focuses on the adoption – use of ICTs to increase productivity and effectiveness of local production through the: upgrading of the stock of knowledge and workforce's capacity and skills, e-marketing of products but also of natural and cultural assets, e-commerce, networking among businesses, e-learning, e-government, etc.;
- *Green Entrepreneurship (P3)* (weight=5): relating to the development of a new technology-intensive and environmentally-friendly model of production for the rational exploitation and management of natural and cultural resources, applying to all sectors of the local economic structure;
- *Development of transport and telecommunications infrastructure (P4)* (weight=3): refers to the improvement and expansion of networks' infrastructure, ensuring both intra- and inter-regional flows of people, goods and information, enhancing thus the accessibility potential of the region.

Actions or policy measures

The following *17 actions* (policy measures) are used as data input in the MULTIPOL multicriteria evaluation model [25]:

- A1: Sustainable management of mountainous complexes, protected areas and natural environment;

Table 1 Evaluation criteria

A/A	DOMAIN	EVALUATION CRITERIA	WEIGHTS
K1	Environment	Exploitation of cultural resources	5
K2	Economy	Development of 'mild' forms of tourist activities	5
K3		Promotion of entrepreneurship	4
K4		Enhancement of regional extroversion	4
K5		Support of local employment	4
K6		Promotion of PDO products	4
K7	Society	Social and economic cohesion	5
K8		Increasing awareness of local community	5
K9	Spatial Organization	Integrated management of natural/cultural resources	4
K10		Balanced diffusion of activities	4
K11	Energy - RES	Renewable energy production/energy saving	3

Source: Panagiotopoulou 2012 [25]

Table 2 Performance of actions in relation to the proposed policies

	P1	P2	P3	P4	Mean Value	Standard Deviation	Rating
A1	7.2	5	7.3	7.1	6.7	1	2
A2	12.5	9.2	8.1	13	10.5	2.1	11
A3	6.4	4.4	7.7	7.1	6.4	1.2	1
A4	7.6	9	7.6	7.1	7.8	0.7	5
A5	11.5	8	8.6	11.7	9.9	1.6	8
A6	12.5	7.5	7.4	13.1	9.9	2.7	9
A7	9.2	11.9	8.6	8.2	9.5	1.4	7
A8	16.3	17.2	15.8	16.1	16.3	0.5	16
A9	17.7	16.7	16	17.3	16.9	0.7	17
A10	13.8	10.8	9.7	14.9	12.1	2.1	12
A11	5.6	8.4	10.4	4.8	7.5	2.2	4
A12	11.2	14.9	13.6	9.6	12.5	1.9	13
A13	13.8	15.6	13.7	12.5	14	1	15
A14	6.1	9.9	7.2	5	7.1	1.7	3
A15	7.6	11.5	7.8	6.3	8.4	1.8	6
A16	11.4	12.4	15.1	10.8	12.6	1.7	14
A17	12.4	9.6	7.4	13.6	10.5	2.4	10

- A2: Development of hosting infrastructure in selected nodes;
- A3: Demarcation of land use and productive activities' zones (agriculture, livestock, fisheries, processing, industry, tourism, etc.);
- A4: Digitization of cultural heritage of the study region – enhancement and promotion of its cultural profile;
- A5: Development of environmental and cultural infrastructure (museums, technology- and theme-parks, etc.);
- A6: Connection of areas with natural and cultural resources to the urban centers, through 'mild', environmentally-friendly road network interventions;
- A7: Promotion of Protected Designation of Origin (PDO), traditional and branded products;
- A8: Adoption – use of Information and Communication Technologies (ICTs);
- A9: Promotion of alternative tourist forms and activities;
- A10: Development of local networks of paths and routes that provide multifarious activities (tobacco roads, vine roads, olive roads, wine roads, etc.);
- A11: Development of organic agriculture and livestock;

- A12: Upgrading of human resources, lifelong learning and training in new advanced technologies, processes, products, ICTs, etc.
- A13: Strengthening of entrepreneurship, strong connection with the tourist sector;
- A14: Business networking;
- A15: Reinforcement of the export orientation of the region;
- A16: Promotion of 'green' entrepreneurship in all productive sectors; and
- A17: Improvement and integration of intra- and inter-regional transport networks (road network, railway network, port infrastructure).

Building a scenario-specific policy framework based on MULTIPOL results – the 'implementation/action stage'

In this section are presented the results obtained from the MULTIPOL evaluation exercise, used for building the policy options that are open for the region at hand in order to achieve the targets set. These results refer to the outcome of the evaluation of actions in respect of policies and the evaluation of policies in respect of scenarios. Each evaluation results in:

- A table of scores,
- A profile map, presenting the performance of policy measures in respect of policies and the performance of policies with respect to scenarios,
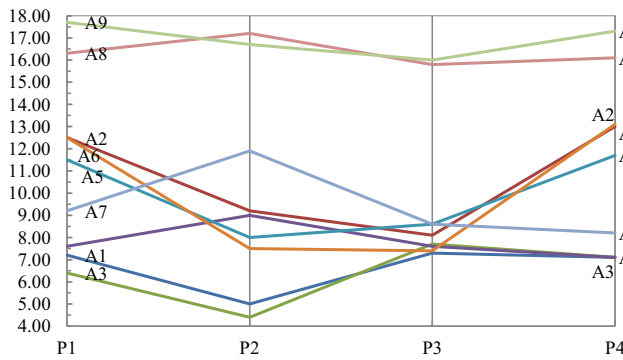- A sensitivity map, and
- A closeness map,

Table 3 Performance of policies in relation to the proposed scenarios

	S1	S2	Mean Value	Standard Deviation	Rating
P1	9.5	10.5	10	0.5	3
P2	10.6	8.3	9.4	1.1	2
P3	8.9	8.6	8.7	0.1	1
P4	9.7	10.4	10.1	0.3	4

Fig. 9 Profile map Actions-Policies (Actions A1-A9)

that are presented in the following.

Next are discussed results obtained from the actions – policies (see Table 2 and Fig. 12) and policies – scenarios (Table 3 and Fig. 13). Here it should be noted that according to the MULTIPOL model, Tables 2 and 3 present the performance of actions A_k with respect to policies P_j and the performance of policies P_j with respect to scenarios S_i respectively. Moreover is provided the mean value (mean performance) together with the standard deviation. Finally, in the last column of Tables 2 and 3 are prioritized actions A_k and policies P_j respectively, presented in ascending order of performance, based on the combination of the mean value and the standard deviation [14, 20].

Evaluation of actions in respect of policies

The results of the evaluation of policy measures in respect of policies (performance of each action in respect of each particular policy) are presented below. More specifically, Fig. 9 and Fig. 10 are presenting the profile maps of actions - policies.

In Table 2 (table of scores), the rating of policy measures A_k in respect of policies P_j is presented, where:

- The most efficient action for policy P1 (Development of the tourist sector) is action A9 (Promotion of alternative tourist forms and activities) (score 17.7), while the less
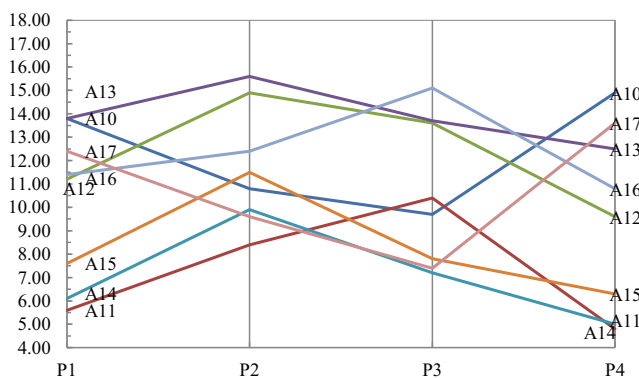

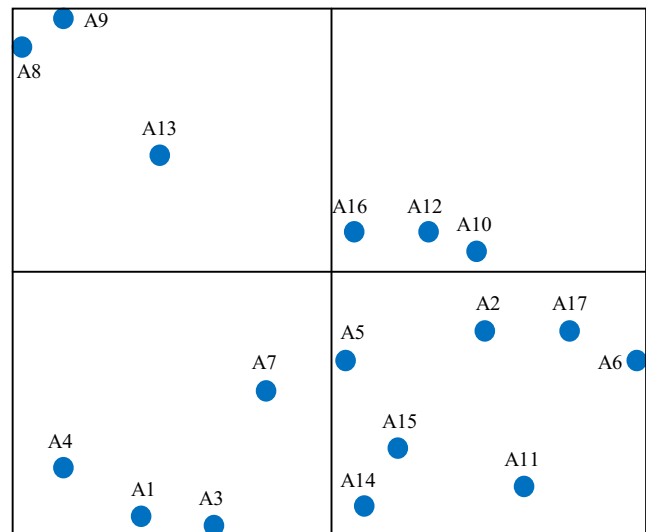**Fig. 10** Profile map Actions – Policies (Actions A10 – A17)

Fig. 11 Action's sensitivity map

efficient is action A11 (Development of organic agriculture and livestock) (score 5.6).

- For policy P2 (Adoption – use of ICTs), A8 (Adoption – use of ICTs) (score 17.2) seems to be the most well performing action, while last rates action A1 (Sustainable management of mountainous complexes, protected areas and natural environment) (score 5).

- For policy P3 (Green entrepreneurship), the most suitable action is A8 (Adoption – use of ICTs) (score 15.8); while the less suitable is action A14 (Business networking) (score 7.2).

- Finally, action A9 (Promotion of alternative tourist forms and activities) (score 17.3) performs better for policy P4 (Development of transport and telecommunications infrastructure), while last rates action A11 (Development of organic agriculture and livestock) (score 4.8).

Fig. 11 presents the actions' sensitivity map, where the axis (X) refers to the standard deviation, while the axis (Y) to the performance of an action in respect of policies, measured by the mean value. Policy measures that present low standard deviation and high mean value perform well for more than one policy. On the contrary, policy measures that present high standard deviation are more policy-specific; while their performance as to each single specific policy depends on the mean value they exhibit.

Based on the results obtained, the following can be noticed (see Fig. 11 and Table 2):

- Action A9 (Promotion of alternative tourist forms and activities) exhibits the highest performance for almost all policies.

- Actions A8 (Adoption – use of ICTs) and A13 (Strengthening of entrepreneurship, strong connection with the

tourist sector) are suitable for all policies, as they exhibit high mean value and very low standard deviation.

- Actions A16 (Promotion of 'green' entrepreneurship in all productive sectors), A12 (Upgrading of human resources, lifelong learning and training in new advanced technologies, processes, products, ICTs, etc.) and A10 [Development of local networks of paths and routes that provide multifarious activities (tobacco roads, vine roads, olive roads, wine roads, etc.)], exhibit medium standard deviation and therefore they do not perform well for all policies.

- Next in ranking are actions A2 (Development of hosting infrastructure in selected nodes), A5 [Development of environmental and cultural infrastructure (museums, technology – theme parks, etc.)], A6 (Connection of areas with natural and cultural resources to the urban centers of the study area, through 'mild', environmentally-friendly road network interventions), A7 [Promotion of Protected Designation of Origin (PDO), traditional and branded products] and A17 [Improvement and integration of intra- and inter-regional transport networks (road network, railway network, port infrastructure)]. The standard deviation these actions are presenting suggests that they do not perform equally well for all policies.

- Lower in the hierarchy as to their performance, but with a low standard deviation (fit in more than one policy), seem to be placed actions A1 (Sustainable management of mountainous complexes, protected areas and natural environment) and A4 (Digitization of cultural heritage of the study region – enhancement and promotion of its cultural profile).

- In a similar position to the previous group of policy measures as to their performance, but with higher standard deviation (suitable for specific policy each time), seem to be the actions A11 (Development of organic agriculture

and livestock), A14 (Business networking) and A15 (Reinforcement of the export orientation of the region).

- Finally, action A3 [Demarcation of land use and productive activities' zones (agriculture, livestock, fisheries, processing, industry, tourism, etc.)] exhibits the lowest performance rate, compared to the rates of all policy measures examined.

The overview of Fig. 12 provides significant information regarding which actions fit better to each single policy, leading to the creation of policy 'packages', i.e. sets of policy measures relevant to a specific policy (the smaller the distance of an action from a policy, the more efficient is the specific action as to this particular policy).

Evaluation of policies in respect of scenarios

The results obtained from the evaluation of policies in relation to the suggested scenarios are presented below (Table 3 and Fig. 13).

More specifically, the *policy options* available have as follows (Table 3 and Fig. 13):

- For *scenario S1* (Concentrated pattern of alternative tourist development), P2 (*Adoption – use of ICTs*) seems to be the most appropriate policy (score 10.6), next follow policies P4 (*Development of transport and telecommunications infrastructure*) and P1 (*Development of the tourist sector*) (scores 9.7 and 9.5 respectively), which are rather equally performing with respect to scenario S1, while last rates policy P3 (*Green Entrepreneurship*) (score 8.9).

- For *scenario S2* (De-concentrated pattern of alternative tourist development), P1 (*Development of the tourist sector*) (score 10.5) and P4 (*Development of transport
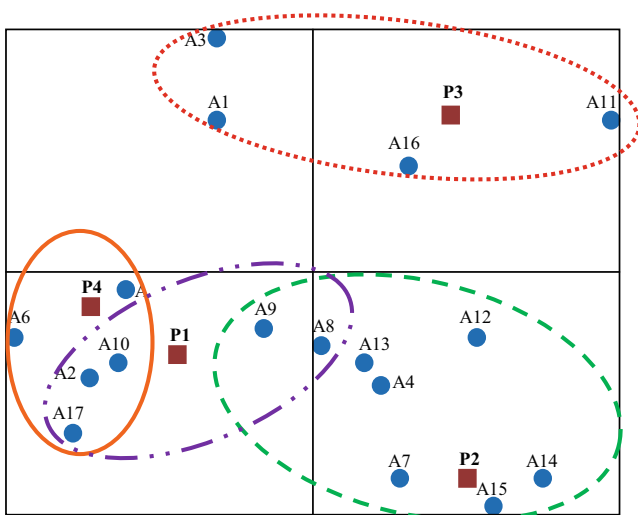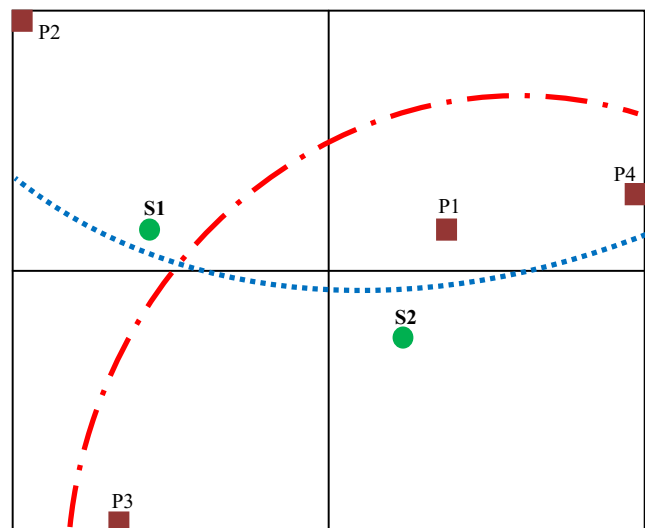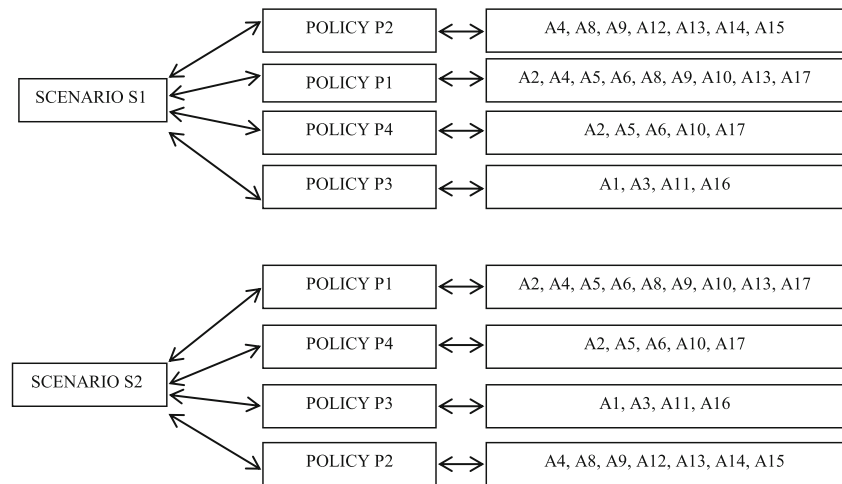

Fig. 12 Actions – Policies closeness map

Fig. 13 Policies – Scenarios closeness map

Fig. 14 Potential policy paths for reaching each single future scenario as combination of policies and respective policy measures

SCENARIO S1		
	POLICY P2	A4, A8, A9, A12, A13, A14, A15
	POLICY P1	A2, A4, A5, A6, A8, A9, A10, A13, A17
	POLICY P4	A2, A5, A6, A10, A17
	POLICY P3	A1, A3, A11, A16

SCENARIO S2		
	POLICY P1	A2, A4, A5, A6, A8, A9, A10, A13, A17
	POLICY P4	A2, A5, A6, A10, A17
	POLICY P3	A1, A3, A11, A16
	POLICY P2	A4, A8, A9, A12, A13, A14, A15

and telecommunications infrastructure) (score 10.4) seem to be the most well performing policies, almost equivalent in performance. Next follows policy P3 (*Green Entrepreneurship*) (score 8.6), while last rates policy P2 (*Adoption – use of ICTs*) (score 8.3), with much lower performance.

Finally, it should be noted that despite the fact that policy P3 ranks low in hierarchy in both scenarios, it can be combined with other policies for the implementation of each specific scenario due to its major importance.

Policy options outlined by the MULTIPOL multicriteria evaluation model

In Fig. 14 is presented the *policy framework* as this is outlined by the application of the MULTIPOL multicriteria evaluation model in the study region. This framework in fact consists of potential *future states* of the region at hand (scenarios), within which targets are reached, together with the *policy directions* and *policy measures* that are relevant for reaching each specific future state. In Fig. 14, policy directions P_j (j=1, …, 4) and policy measures A_k (k=1,…, 17) are presented in descending order of performance.

Conclusions

The emphasis of the present paper is on the use of *appropriate participatory planning tools* in support of decision-making for the sustainable development of alternative tourism of a Greek region, based on the rational exploitation of natural and cultural resources. These tools are used for both: increasing awareness of local communities on the value of these resources for the future development of the region; and presenting alternative tourist development options (scenarios)

together with the policy paths (policy directions and respective policy measures) required for their implementation.

The proposed framework draws upon *two distinct participatory approaches/tools* that are used at both the 'learning stage' and the 'evaluation stage' (see Fig. 1), namely the:

- *Future workshop participatory approach*, which based on its structure and the participatory context it entails, supports planners to gather useful knowledge from a range of stakeholders (decision-makers, public etc.) that can be used to inform the various stages of the planning process [21]. More specifically, the use of this knowledge can feed: a) the 'learning stage' (e.g. for finalizing objectives set by planners or better understanding the specific socio-economic and physical context) and b) the 'evaluation stage', i.e. the stage at which are structured and evaluated scenarios, where local knowledge can be used to delineate stakeholders' priorities and thus define weights to be used for evaluating scenarios in respect of the policy directions and the policy measures introduced in the specific evaluation exercise;
- MULTIPOL multicriteria analysis tool, which forms the ground of the evaluation exercise, resulting in a scenario-specific policy framework that combines efficiently scenarios, policies and policy measures.

The application of the proposed participatory planning framework in the study region seems to be quite promising, as participatory approaches have formed the ground for grasping the local taste, values, visions and views and incorporating them into the planning process and outcome. The proper communication of intermediate planning outcomes (scenarios, policies, evaluation criteria and policy measures) has contributed to the increasing of the stock of knowledge of participants, resulting thus in the empowerment of public participation as well as the increasing of awareness on the value of local resources, the imperative need for their protection and

their potential role in the development process of the region. It has also prepared the ground for a more effective implementation of policy decisions, while by taking part in the planning process and contributing to the outline of *'where you can go and how you can get there'*, more *transparent* and *knowledgeable decision-making* can be carried out, ensuring *commitment* of the various community groups.

Finally, the proposed framework enhances *flexibility* of decision-makers with regard to future unexpected changes that may occur in the external environment, by preparing their readiness for 're-orienting' the policy path, based on the policy options presented for each future state and the attributes of the environment within which policy decisions have to be made.

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