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Tourism and Regional Development

New Pathways

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Contents

<i>List of Contributors</i>	vii
<i>Preface</i>	x
1 Emerging Trends in Tourism Development in an Open World <i>Maria Giaoutzi and Peter Nijkamp</i>	1
PART I Tourism, Regional Development and Communications Technology	
2 Information Technologies and Tourism Development in Developing Markets <i>Elyra Morella</i>	15
3 'Reverse Network Engineering': A Top-down and Bottom-up Approach in the Tourist Market <i>Dirk-Jan F. Kamann and Dirk Strijker</i>	29
4 The Potential of Virtual Organizations in Local Tourist Development <i>Anastasia Stratigea, Maria Giaoutzi and Peter Nijkamp</i>	51
5 E-Travel Business: E-Marketplaces versus Tourism Product Suppliers <i>Dimitris Papadokostantinou</i>	71
6 ICTs and Local Tourist Development in Peripheral Regions <i>Anastasia Stratigea and Maria Giaoutzi</i>	83
7 European Informational Cultures and the Urbanization of the Mediterranean Coasts <i>Lila Leontidou</i>	99
PART II Methodological Advances in Tourism Research	
8 Economic Impacts of Tourism: A Meta-analytic Comparison of Regional Output Multipliers <i>Eveline S. van Leeuwen, Peter Nijkamp and Piet Rietveld</i>	115

9	Competition among Tourist Destinations: An Application of Data Envelopment Analysis to Italian Provinces <i>M. Francesca Cracolici and Peter Nijkamp</i>	133
10	Delineating Ecoregions for Tourism Development <i>Thomas Hatzichristos, Maria Giaoutzi and John C. Mourmouris</i>	153
11	Tourism and the Political Agenda: Towards an Integrated Web-based Multicriteria Framework for Conflict Resolution <i>Andrea De Montis and Peter Nijkamp</i>	177
12	A Methodology for Eliciting Public Preferences for Managing Cultural Heritage Sites: An Application to the Temples of Paestum <i>Patrizia Rigotti, Annamaria Nese and Ugo Colombino</i>	201
PART III Policy Strategies on Tourism		
13	The Importance of Friends and Relations in Tourist Behaviour: A Case Study on Heterogeneity in Surinam <i>Pauline Poel, Enno Mastrel and Peter Nijkamp</i>	219
14	Technology Transfer to Small Businesses in the Tourist Sector: Supporting Regional Economic Development <i>Peter M. Towmroe</i>	239
15	Possibilities for Using ICT to Realize Heritage and Ecotourism Potential: A Case Study on the Zululand Region of South Africa <i>Peter Robinson</i>	253
16	Tourism, Technological Change and Regional Development in Islands <i>Harry Coccoxsis</i>	271
17	Regional Development, Environment and the Tourist Product <i>Spyros J. Vlamos</i>	281
	<i>Index</i>	303

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Chapter 11

Tourism and the Political Agenda: Towards an Integrated Web-based Multicriteria Framework for Conflict Resolution

Andrea De Montis and Peter Nijkamp

11.1 Introduction

During the last 30 years, the successful development of various regions endowed with natural capital has evoked confidence in tourism as a catalyst for economic and cultural growth. In developing countries neo-classical economists have advocated policies for a higher level of tourist activities and revenues in the hope of obtaining overall higher performances in the economic system.

There have been many changes in this paradigm, though. Recent advances in studies on the concept of integrated tourist development (Pearce, 1989; Wall, 1997) have suggested that tourism per se cannot be seen as a guaranteed factor of development, since it has to be linked to other economic sectors. Furthermore, research findings (APDR, 2000) indicate that integrated tourist development involves many conflicting stakes and interests. Butler (2000) recalls that, in many studies on environmental policy and planning, integration of tourism with other economic sectors is often regarded as a strategic goal. Indeed, integration is frequently associated with sustainability, since the objectives of the development are generally linked to the human and material resources embedded in the local context. In this case, sustainable development can be supported by the attitude of local communities towards social learning and self-organizing.

The introduction of policies furthering tourist activities into the agenda of an institutional body is frequently connected to the rise of sharp political debates among the different parties involved. These political conditions usually endorse different value systems, are often concerned with interests linked to important territorial investments, and represent future perspectives of a number of stakeholders.

In those delicate decision-making environments, multicriteria analysis has proven to be a useful tool for supporting planning processes, at least if it helps stakeholders in confronting their different value systems in order to reach a reasonable compromise solution. Acknowledging the presence of some subjectivity in using multicriteria decision analysis, the need to open up the framework traditionally set for multicriteria methods and to conceive of new strategies for involving local societies in a dynamic, adaptive and interactive pattern becomes apparent.

Against this background, the aim of this chapter is to present an experimentation with a multicriteria method, with the goal of involving as many stakeholders as possible from all social groupings in the actual decision-making process. In this case study, the method is used to measure the achievement in integrating tourism with the whole economic system, on the basis of a case study applied to a set of municipalities located along the coast of the province of Cagliari, Italy.

The contents are articulated as follows. In Section 11.2 next, an innovative economic model of tourism activities is described that could support environmental policy and planning. In Section 11.3, the search for innovative approaches to tourism in Sardinia is introduced. The following Section 11.4 describes a first experimental application of the multicriteria process, as it could be used to further the involvement of stakeholders and the general public and help to resolve potential conflicts. This same section goes on to present some numerical results, which are discussed and screened by means of sensitivity analysis. In Section 11.5, some remarks are developed on the role criteria and stakeholders play during this multicriteria procedure. In the sixth Section 11.6, a further critical reflection leads to the need to introduce the experimentation of a web-based framework. This is explained in greater detail in the final Section 11.7, where conclusions are derived and new research directions introduced.

11.2 Recent advances in tourism modelling for economic policy and planning

According to approaches stemming from classical economics, tourism *per se* is believed to bring advantage to the economies of developing countries. The main assumption of these theories is that especially international tourism stimulates a higher level of consumption, thus leading to an overall higher level of disposable income (Krapf, 1961). Inspired by these theories, since the end of the 1960s, many developing countries have introduced international tourism into their economic system (for example, the Caribbean Islands, Mexico, Thailand, Indonesia, the Maldives and Spain). In synthesis, the following characteristics can be associated with the traditional approach to tourist policies: antarchy of tourist entrepreneurship; internationalization; and impacts on local culture that might lead to the loss of cultural identity.

Coccosis and Nijkamp (1996), however, starting from the interaction between tourism and environment, emphasize that, if correctly conceived, tourist activities might contribute to the protection of the natural environment. They point out that classical economic tools like internalization do not seem to solve the dilemma of tourism impacts on local communities. Thus, Briassoulis (1996) claims that mainstream economic analysis is not adequate to support tourism policy decisions, because tourism is not a typical economic sector or activity assumed by this kind of analysis. When tourism is conceptualized as an activity complex, more integrated analytical approaches are required to represent the interrelatedness among the tourism-related economic sectors and the environment. A new paradigm in economics is required for tackling tourism, because today tourism is recognized worldwide as a strategic sector of the economy.

The tourist experience is a multifaceted phenomenon. Research studies (compare Ryan, 1998) investigate the main characteristics of leisure travelling. In the last few years, technological changes, the increase in leisure time, and the specialization of tourism have fostered original issues into the classical patterns of tourist sector planning. The idea is that mono-cultural tourism, based only on the exploitation of the singular beauties of a country, can no longer be considered sustainable. It seems that an innovative model for development should involve diversifying activities and reducing seasonal fluctuation in demand.

Butler (2000) proposes 'complementarity' as a term, similar to sustainable tourism, as it is regarded in an integrative concept. Complementarity is understood as the optimal level of the relationship between tourism and other resource activities. This term implies that tourism and the other activities are not only in relative harmony with each other in the destination region, but in fact add to each other by their mutual presence. The concept will be illustrated in the following section, by using the example of Sardinia.

11.3 A dilemma for Sardinia: Promoting tourism without jeopardizing local resource endowment

The history of tourist activities in Sardinia, one of the main Mediterranean islands, mirrors the shift in the political agenda illustrated in the preceding section. During the 1960s, 1970s and 1980s, the island has been affected by significant financial investments for the construction of its tourist system. The main geographical zones affected still show signs of this relatively big economic push: the north-eastern coastal stretch called the 'Emerald Coast', the south-western coastal boundary, and the south-eastern coastal part. The characteristics of tourist investments and entrepreneurship within this pattern can be summarized as follows: foreign entrepreneurship; foreign management; interest only in the coastal stretch; internationalization of the holiday pattern; introduction of an external model for tourist activities; mono-development of tourist activities exploiting 'sun and sand';

indifference to the suitability of the land for tourist settlements; and little involvement of the local society in decision-making.

As described earlier, in Italy at the end of the 1980s and the entire decade of the 1990s, environmental concerns have induced major conceptual changes in the economics and planning of tourist settlements. In this regard, the trend of tourist integrated policies involves the following strategies: internal entrepreneurship; domestic management; interest for the territory as a whole in its interior and coastal zones; globalization – linking global networks and local natural and human resources; exploitation of models of tourism stemming from internal human resources; openness to a variety of tourist activities; selection of areas suitable for tourist settlement, as well as high involvement of local communities in decision-making. However, a sort of inertia seems to be affecting tourism in Sardinia and it is still difficult to provide evidence of a diffused movement towards the integration of the tourist subsystem with other economic, social and cultural subsystems.

The main reason for this resistance to the introduction of new strategies is the coexistence of a variety of parties and stakeholders who conceive tourism development from very different perspectives. In this specific case, stakeholders are politicians at the regional and the local level, mayors of the municipalities, and official representatives of private firms or public bodies.

The scenario of the possible models for tourism development suggests the opportunity to reach a compromise solution in which conflicting positions might be successfully reduced and a common framework for tourism development may be provided. In this case, experimentation is developed to assess a system that is useful as a support for decision-making, within the mandatory duties of a generic territorial body responsible for the allocation of funds and investments. Thus, the potential users might be the officials of this hypothetical agency for tourism settlement planning. In their duties, these officials must use tools that take into account a shared model of development for tourist activities.

11.4 Description of the technique

A useful method within the policy perspective introduced in the last section can be found in the family of multicriteria approaches and, in particular, in the set of tools able to tackle complex environmental questions. In regard to consensus building and conflict resolution, multicriteria analysis has a framework suitable for the decomposition of complex values into their simple components. These simple elements can be considered as representations of different concerns and stakes. In this experimentation, the emphasis is laid on the way different points of view can be confronted. Various conflicts can be reduced, and intermediate solutions can be sought within a multicriteria framework. In the perspective of an institutional body responsible for territorial governance, multicriteria analysis may become an effective support for decision-making and interactive planning, whenever it stimulates the construction of common knowledge and representation, thus

enabling a convergence of the stakeholders towards common views and models for development.

With respect to the operational features of the method selected and studied, many findings indicate that multicriteria tools based on outranking and concordance analysis are usually preferred in environmental integrated evaluations. In this application, the multicriteria method adopted is the qualitative choice method regime (Hindloopen and Nijkamp, 1990), combined with the analytical hierarchy process (AHP) designed by Saaty (1988). The first of these belongs to the broader family of concordance methods developed by Roy (1985). This method has major advantages in comparison to the classical outranking methods (Electoré I, II, III), since it allows analysts to process mixed data in an intuitive way and provides the user with the complete final ranking of the alternatives. On the other hand, concordance analysis, allowing for incomparability and incomplete ranking of the alternatives, may lead to fallacies in interpreting the final output.

The method is analyzed in different steps: the specification of the alternatives; the definition of the criteria and the assessment of the weights the involvement of the stakeholders; and the analysis of the results.

11.4.1 The set of alternatives

Since the main objective of the method is to help an institutional body to evaluate the territorial quality with reference to tourism, in this experimentation a set of seven alternatives is considered, as they correspond to relevant municipalities that could host tourist activities. The review of the current state of European funding programmes and of regional special programmes reveals that these domains have many possibilities to receive support. The alternatives consist of the following municipalities located in Southern Sardinia, Italy: Arbus, Pula, Carloforte and Iglesias in the western part of the province of Cagliari, and the Municipality of Cagliari, Muravera and Villasimius in the eastern part of the province of Cagliari. The restriction of the whole stretch of Sardinian coastal municipalities to seven allows for a better understanding of the model. Eventually, this procedure could be extended to the whole set of coastal municipalities. It should be noted that alternatives do not consist of different project options. Rather they refer to different potential characteristics for the seven alternative municipalities, treated as complex values.

11.4.2 Criteria, scores and weights in an adaptive perspective

In a multicriteria analysis, criteria and weights represent the core of the framework, since they mirror what Roy calls the system of individual preferences in the case of a single decision maker (1985). In this situation, the multicriteria approach adopted is used in an open framework to represent a large set of individual preferences belonging to the many stakeholders involved. However, the openness of the framework is not complete. The analyst develops a list of criteria (Table 11.1),

discusses the meaning of the criteria, and calculates the weights according to one-to-one interviews with a set of selected stakeholders. The criteria are chosen by confronting different experiences in tourism planning with each other, assuming that a reasonable scheme for the development of local societies can be derived by comparing a number of best practices that have been successful in the Mediterranean area (De Montis, 2001). Therefore, the list of criteria has been set up via an analysis of such case studies.

Criteria have been clustered according to a hierarchy: the general goal, the development of integrated and sustainable tourism, is articulated into seven complex criteria that are themselves decomposed into twenty-six simple criteria. Table 11.1 shows the list of simple criteria with respect to their synthetic name and policy concern. It should be noted that these criteria after having been fixed were not changed during the process. The main consequence of this operational choice is that the scores are fixed. It should be noted that in this chapter the focus is not directed to the scores table.¹ Data have been processed by means of the experimental software 'Samisoft', tested at the Department of Spatial Economics, Free University of Amsterdam.

Following the framework of the analytical hierarchy process (AHP), the weights, meant also as levels of relative importance of each criterion, have been assessed by means of pair-wise comparisons based on the appraisal of a variety of stakeholders. Since the importance of the criteria is recognized to be dependent on subjective feelings and experiences, the set of weights was calculated according to the judgement expressed during a survey of different actors. The survey consisted of separate one-to-one direct meetings with each stakeholder. During the meeting, documents consisting of four parts were presented. In the first part, the *Informative note*, the theme of sustainable tourism was introduced and the whole experimentation explained. In the second part, the *List of criteria*, criteria were presented in their hierarchical structure. In the third, the *Score matrix*, the answers were coded in triangular matrices. In the fourth, the *Questionnaire*, information about the professional activity of the interviewee was gathered.

These materials were presented to 26 stakeholders. The analyst, who aimed to consider a significant number of classes, selected the professionals according to the following criteria. They should be directly or indirectly concerned with tourism policy and planning, should enact the behaviour of a category of professionals, and should have experiences in decision-making in tourism governance. Therefore, the following professionals were selected: six from professional bodies responsible for planning (DE), three officials of environmental and cultural organisations (EN), four freelance professional urban planners (LP), six managers of institutional bodies or of private companies (MG), five public administrators (PA) and two researchers (RE). The list of criteria was presented to each stakeholder, who was asked to compare criteria pair-wise. In this experimentation, substitution of the

original tentative criteria list was not allowed; each interviewee expressed his appraisals on the same list.

Table 11.1 General goal, complex and simple criteria

General goal	Complex criteria	Code	Synthetic name	Simple criteria	Policy concern
DEVELOPING INTEGRATED SUSTAINABLE TOURISM	DEMOGRAPHIC DEVELOPMENT (C _{Db})	C _{D01}	Population	Stable settlement	
		C _{D02}	Population growth	Re-equilibrium of population	
		C _{D03}	Human capital	Educating to a highly qualified and varied culture of tourism	
	ECONOMIC DEVELOPMENT (C _{Ed})	C _{E01}	Employment	Reducing unemployment starting from critical level	
		C _{E02}	Income per capita	Income distribution	
		C _{E03}	Productivity	Balancing the productivity of the areas	
		C _{E04}	Coherence with EU	Linking operationally tourist projects to EU programmes of financial support	
	TOURISM DEMAND (C _{Dp})	C _{T01}	Bed-nights	Balancing tourist bed-nights	
		C _{T02}	Length of stay	Balancing tourist length of stay	
		C _{T03}	Accessibility	Balancing the quality of infrastructure for transportation	
	C _{T04}	Tourist consumption	Balance of the tourist revenues among the areas		
TOURISM SUPPLY (C _{Ts})	C _{Ts1}	System capacity	Sustain a balanced increase of hotels and residences		
	C _{Ts2}	Specialized employment	Balancing attitudes to specialization of tourist services		
	C _{Ts3}	'Second houses'	Recover fiscal benefits		
	C _{Ts4}	Output in services	Sustaining autonomous development of integrated tourist services		
	C _{Ts5}	'Tertiary' employment	Encourage tourism within economies of services		
OPERATIVE TOURISM PLANNING (C _{Op})	C _{Op1}	'F' zones	Emphasis of tourist policies within urban and environmental planning		
	C _{Op2}	Built 'F' zones	Assign tourist settlements to suitable zones		
	C _{Op3}	Carrying capacity	Respecting the equilibrium of local natural resources		
PROTECTION (C _{Pr})	C _{Pr1}	Diversification	Emphasis of tourist policies in non-coastal domains		
	C _{Pr2}	Park integration	Linking tourist activities to natural parks		
	C _{Pr3}	Reserve integration	Linking tourist activities to natural reserves		
ENVIRONMENTAL (C _{En})	C _{En1}	Bathing	Better use of coastlines		
	C _{En2}	Water	Continuous water delivery		
	C _{En3}	Forest	Integrated tourist use of forests		
IMPACT (C _{Im})	C _{Im1}	Naturation	Environmental compatibility		

¹ For a report on the 7 by 26 matrix, we refer to De Montis (2001).

11.4.3 The role of the stakeholders

We now discuss the role of the stakeholders during the interviews; the debate about the criteria: the stakeholders' reactions to their structure; the pair-wise comparisons: the level of knowledge of multicriteria evaluation procedures; and the attitude towards Internet-based processes.

Regarding the debate on the criteria, when the stakeholder received the list of criteria, the meanings and concerns associated were introduced to him/her. Often this process of explanation took more than one-third of the global time of the interview: this indicates that the link between meanings and criterion was not so obvious for the stakeholder. The analyst had to face the problem of explaining the pre-designed fixed structure of the list of criteria to the interviewed stakeholders, who often had a completely different concept about the model of integrated tourism and, in the end, about the list of criteria to be proposed. The stakeholders reacted with a wide pattern of behaviour: curiosity, agreement, interest, scepticism, and refusal. Each actor conceived the issue of the integration in tourism in a personal and subjective way. The actors were explicitly asked to agree or disagree with respect to the list of criteria: some agreed, and others disagreed, with the concept embedded in the list. In the case of refusal, the actors could propose a list of criteria which might be different from the one delivered by the analyst. In other cases, the refusal was instigated by the suggestion to change the form of the functions that translate the criteria to numerical figures. In many cases, the interviewees claimed that the structure of criteria, as it was fixed, was too rigid a framework to work with. In all cases, there was a considerable number of suggestions for completing and widening the array of criteria considered.

This is a situation that certainly complicated the process of pair-wise comparison, since the analyst had to go to great lengths to explain the meaning of criteria when he/she asked the interviewees to express the degree of preference. It was very hard for the stakeholder to follow the line of argument embedded in the list of criteria. The main question was due to the difficulty of conceiving a separation of the complex issue into its simple concerns. These difficulties were associated with a general scepticism towards using evaluation frameworks.

As a matter of fact, on the side of knowledge of evaluation schemes, only a few stakeholders had an idea of a multicriteria procedure: most of the interviewees had just heard of the existence of this kind of evaluation model for supporting decisions. They had been taking decisions along unstructured systems of knowledge and on a sort of intuitive rationality.

The analyst, in response to the rigid list of criteria, then presented Internet-based procedures as an alternative. One of the questions was whether the actor agreed to use the Net as a medium for supporting decisional processes. The answers of the interviewees were generally characterized by the tendency to endorse the use of the Internet, even though some scepticism was also expressed. As a whole, the set of stakeholders cannot be defined as a group of 'digitalphobes' (Mitchell, 2000), but almost everyone wanted about the use of the Net for

institutional and mandatory decision-making. The main reason they gave was the still low diffusion of the digital culture, which has been termed the 'digital divide' (Mitchell, 2000).

It should be noted that, during the interviews, the analyst presented the criteria list, discussing the concerns and meanings in dedicated talks consisting of a one-to-one communication between analyst and interviewee. The communication between analyst and interviewee was not affected by any exterior element; and no other stakeholder was involved. Therefore, no debate was allowed among the actors mutually and the analyst. This experience illustrates difficulties of traditional applications of multicriteria decision aid that can arise with regard to incorporating the knowledge of stakeholders and of producing results considered as legitimate.

11.4.4 Discussion of the results

The main result of the procedure is that the analyst elaborated 26 different assessment systems and obtained 26 different and independent sets of weights. Again, this outcome was due to the fact that there was no meeting between the 26 actors. The output of the combination of the weights with the scores yields a 7 by 26 matrix (Tables 11.2 and 11.3), which for each interviewee selected, represents the resulting final rankings of the alternatives.

The set of results is very variable; figures are volatile and change over the categories of professionals involved. In the experimentation, a series of approaches was applied to study and reduce the complexity of this output to a manageable framework. In this chapter only some of these approaches are described: the synthesis of a unique ranking index, the analysis of the aggregate rankings and the frequency analysis of the rankings.

Table 11.2 Final rankings of the alternatives by professional categories, part 1

Alternatives	Professional categories codes												
	DE1	DE2	DE3	DE4	DE5	DE6	EN1	EN2	EN3	LP1	LP2	LP3	LP4
Arbus	0.82	0.77	0.65	0.80	0.64	1.00	0.93	0.87	0.75	0.80	0.83	0.47	0.91
Cagliari	0.02	0.35	0.14	0.14	0.39	0.40	0.04	0.19	0.49	0.25	0.23	0.12	0.03
Carloforte	0.50	0.71	0.35	0.35	0.32	0.08	0.32	0.16	0.08	0.27	0.78	0.52	0.44
Iglesias	0.56	0.72	0.93	0.93	0.70	0.29	0.79	0.63	0.52	0.66	0.89	0.81	0.54
Muravera	0.90	0.39	0.89	0.53	0.49	0.42	0.49	0.77	0.66	0.57	0.46	0.61	0.66
Pula	0.42	0.14	0.29	0.25	0.43	0.73	0.31	0.40	0.60	0.80	0.17	0.90	0.60
Villaluminus	0.28	0.43	0.25	0.50	0.53	0.58	0.63	0.49	0.33	0.15	0.15	0.06	0.32

Note: * For an explanation of the categories, see Section 11.4.2.

Table 11.3 Final rankings of the alternatives by professional categories, part 2

Alternatives	Professional categories codes												
	MG1	MG2	MG3	MG4	MG5	MG6	PA1	PA2	PA3	PA4	PA5	RE1	RE2
Arbus	0.43	0.90	0.81	0.79	0.99	0.36	0.52	0.71	0.71	0.66	0.80	0.97	0.41
Cagliari	0.42	0.15	0.03	0.01	0.05	0.20	0.28	0.56	0.46	0.05	0.28	0.01	0.46
Carloforte	0.02	0.36	0.47	0.67	0.73	0.49	0.84	0.29	0.04	0.44	0.22	0.22	0.08
Iglesias	0.67	0.73	0.90	0.45	0.60	0.37	0.36	0.99	0.77	0.53	0.97	0.65	0.14
Muravera	0.81	0.68	0.37	0.54	0.54	0.76	0.79	0.44	0.88	0.65	0.67	0.58	0.81
Pula	0.54	0.15	0.32	0.26	0.40	0.55	0.04	0.29	0.25	0.35	0.40	0.39	0.89
Villasimius	0.61	0.54	0.59	0.78	0.20	0.77	0.67	0.22	0.39	0.83	0.17	0.69	0.70

Note: * For an explanation of the categories, see Section 11.4.2.

11.4.4.1 The synthesis of unique indexes

The ranking symbolizing the aggregated preference of the group of interviewees can be calculated as a vector function of the rankings expressed by each stakeholder. In this case, this function has been adopted as the linear unweighted mean of the final scores expressed by each stakeholder. In such a pattern, the resulting ranking (Table 11.4) consists of the expression of vote, provided that each elector has the same political weight.

Table 11.4 Aggregate final ranking of the alternatives

Alternatives	Aggregate scores
Arbus	0.74
Iglesias	0.66
Muravera	0.63
Villasimius	0.46
Pula	0.42
Carloforte	0.37
Cagliari	0.22

While the group ranks the municipality of Arbus in the first position, Iglesias as second, and Muravera as third, it ranks the main town of the island, Cagliari, in the last position. According to its output, the multicriteria system suggests scenarios where municipalities with underdeveloped social and economic and sometimes

also existing tourist systems have to be promoted, especially if they are well-endowed with natural resources.

11.4.4.2 The analysis of the aggregated ordinal rankings

This method has been applied to study the variability of the results, with respect to the different views of the stakeholders. The method consists of two steps. First, the scores corresponding to the stakeholders belonging to the same group have been aggregated, by means of a linear unweighted mean. Second, the resulting aggregate scores have been converted into ordinal terms.

Table 11.5 Variability of the positions in the final average ranking referred to each category of actors

Alternatives	Aggregate scores					
	DE	EN	LP	MG	PA	RE
Arbus	1	1	1	1	3	3
Cagliari	7	6	7	7	6	6
Carloforte	5	7	5	5	5	7
Iglesias	2	2	2	2	2	5
Muravera	3	3	4	3	1	1
Pula	6	5	3	6	7	4
Villasimius	4	4	6	4	4	2

Note: For an explanation of the categories, see Section 11.4.2.

Table 11.5 shows in ordinal terms the different positions occupied in the final ranking by the alternatives, according to each group of stakeholders. The results confirm what Table 11.4 shows: those municipalities that received the highest scores still continue to rank in the highest positions also according to the different groups. Therefore, the municipality of Arbus occupies the first position, according to the evaluation of four groups out of six, and the municipality of Iglesias occupies the second position, according to the evaluation of five groups out of six.

11.4.4.3 The frequency analysis

As in the previous paragraph, the scores, originally expressed in cardinal terms, have been converted into ordinal terms. These figures represent the relative rank of the alternatives for the whole set of interviewees. Thus, it is possible to calculate an absolute frequency matrix, showing the number of times (as a percentage) an alternative has been ranked in a certain position.

In Table 11.6, absolute frequency values refer to the relative number of times interviewees put the alternatives in the different ranks.

Table 11.6 Alternatives versus ranks: Absolute frequencies

Alternatives	Absolute frequencies						
	1	2	3	4	5	6	7
Arbus	42.31	30.77	7.69	3.85	11.54	3.85	0.00
Cagliari	0.00	0.00	3.85	7.69	15.38	30.77	42.31
Carloforte	3.85	3.85	11.54	19.23	26.92	7.69	26.92
Iglesias	26.92	23.08	19.23	11.54	11.54	7.69	0.00
Muravera	11.54	26.92	19.23	34.62	7.69	0.00	0.00
Pula	11.54	3.85	11.54	7.69	26.92	30.77	7.69
Villasimius	7.69	7.69	26.92	15.38	3.85	19.23	19.23

The municipality of Arbus takes the first position according to 42 per cent of the interviewees, and the second position, according to 30 per cent. The municipality of Iglesias has been ranked in first position according to 27 per cent, and in second position according to 23 per cent. The municipality of Muravera is placed in the first position according to 11 per cent of the interviewees, and in the second position according to 27 per cent.

It is not surprising that these results confirm the pattern stemming from the ranking of the mean of the scores, as displayed in Table 11.4. This evidence again shows that municipalities with a rich natural endowment are placed in the highest positions by quite a large share of the interviewees.

11.5 A critical reflection on the process

The variability of the set of resulting scores depends on the semi-openness of the entire multicriteria procedure. In other words, the rankings are variable, because the weights have been calculated with reference to the judgements expressed by the different stakeholders. Yet, by fixing the list of criteria, the analyst may have induced a sort of 'environmental bias' in the trend of the final rankings: the municipalities with a greater endowment of environmental resources rank in the highest positions. The selection procedure for the criteria might also have led to a generally high sensitivity of the results, since each interviewee reacted only according to his/her own interpretation of the criteria. This is confirmed by the mode of communication between analyst and interviewee. In a direct one-to-one dialogue, there are not many chances to enrich the discussion with contributions coming from other fields and to develop a convergence regarding a common point of view about criteria and weights. In terms different from multicriteria technicalities, it could be said that the construction of a shared vision on the model of tourism development in these conditions may perhaps be more a hope than a feasible option.

Moreover, the analyst again, with reference to the 'main' actors playing in the scene of tourism development, has decided on the set of stakeholders. They can be considered as representative of six categories of professionals, but there is no statistical evidence of this relationship. Indeed, even when a fair representation may be assumed, the number of categories considered should not be limited to six. On the other hand, the representation should be extended to the many other communities, which could not have the same 'voice', but should still be encouraged to express their opinion on the future scenarios of development based on tourism. In this way, a variety of concerns might arise that may disturb the rigid list of criteria and enrich the originally steady portrait. Within this option, the analyst would become more a communicative master of the debate, while each actor would exchange opinions with the other stakeholders.

These points reveal the need to individuate places, sites, and halls, where the debate can be addressed to building common points of view regarding concerns, objectives, and meanings of tourism-based development policies. To this end, an interactive participatory process based on the Internet has been designed by constructing a virtual decision arena to facilitate the involvement of more stakeholders in the decision-making process. In further studies, the Internet-based procedures will experiment with large and different samples of users.

11.6 Virtual environments for communicative decision making

The experimentation that will be now described has been designed to allow for new digital forms of collaborative planning. In this environment, Internet distributed computing is applied to negotiating processes where decision making is coupled with group learning and distributed computing.

This application can be considered one possible interpretation of the concept of cyber-multicriteria decision-making. The procedure consists of processes that are made accessible via Internet hyperlinks and is illustrated by means of a demonstration available on request.

The system consists of a virtual decision-making arena, which allows group leaders to manage a variety of activities, such as group learning and interaction. The info-design of a complex Internet interface provides an interactive spatial decision support system, through which each member of the group has the opportunity to enter a communicative arena and carry out all the activities and debates described in Section 11.5 above. Within this framework, the stakeholder can become familiar with the sensitivity of the procedure, propose modifications by indicating new criteria and even a different approach to evaluation.

11.6.1 The digital lab 'Evaluating Tourism'

The application introduced above has been developed on the basis of the research advances in multicriteria methodology.

The above-mentioned concerns about communication inside the process have led to the design of an Internet application, the project called 'Evaluating Tourism', which we believe will allow for an 'on-line evaluation' process, based on a remote access debate among the stakeholders. The complexity of the management of the process, where many actors have the opportunity to communicate, had led to the integration of multicriteria analysis with information and on-line communication technology inside a single environment.

The experimental Internet site has two main areas of service: a public and a private domain. This choice meets the need for allowing access to the community as a whole and for opening virtual laboratories dedicated to the activities of the decision-making group. The Home Page presents the available fields for action: an area for geographic information retrieval; a public forum; and a private consultant's area. The information about the nature of the site, or the general 'message', is formulated so that a normal user can understand the main concepts and scope of the procedure, without having to understand technicalities.

The public domain of the site presents a discussion forum for users, where simple geographic information can be retrieved, accessible through the area 'GIS on-line' (Figure 11.1). In this area, geographic maps can be examined and the user can navigate through them with zoom and pan commands. These features are designed to allow for easy consultation by non-expert users.

The domain of the public Forum is regulated by characteristics that are common to Internet discussion groups: free access allows the users to choose the fields being debated and to express their opinions. The virtual agora takes shape spontaneously, and collective intelligence emerges from a variety of judgements stimulated by society as a whole. In this Forum, it is possible to gather useful information about citizens' images of the development of local tourism. The use of this system could help to suggest how a further debate mechanism could be elaborated to stimulate the exchange of opinions. Following this strategy some topics could be proposed, while citizens could be encouraged to debate other topics in a multiplicity of 'virtual living rooms'.

The private domain of this site is only directly accessible through the Home page for those decision-makers who have been given an account by the process administrator. The system of virtual activities is accessible through the list of links in the welcome page (Figure 11.2). The link 'Il Progetto' (The Project) allows access to information about the strategic objectives of the evaluation process for the development of sustainable tourism in southern Sardinia. Many activities can be coordinated in this electronic environment: knowledge construction, evaluation procedures, and schedules of meetings.

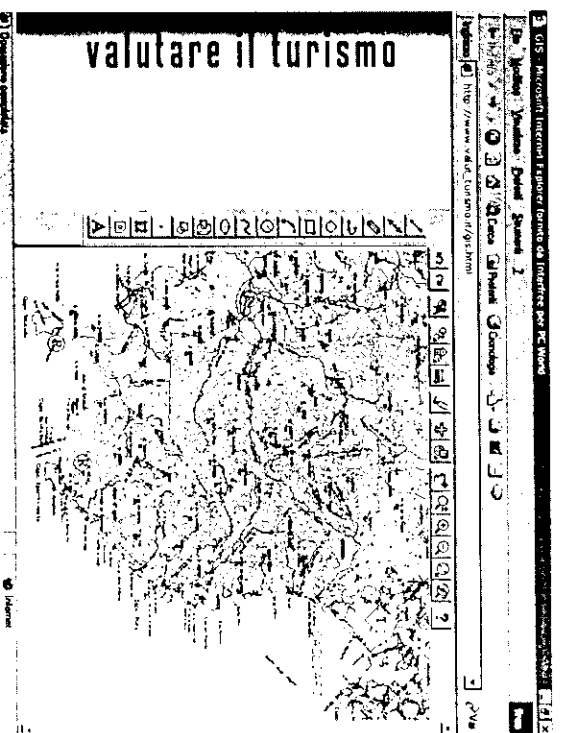


Figure 11.1 An example of 'zooming' in to a geographic area in Southern Sardinia through the GIS on-line function

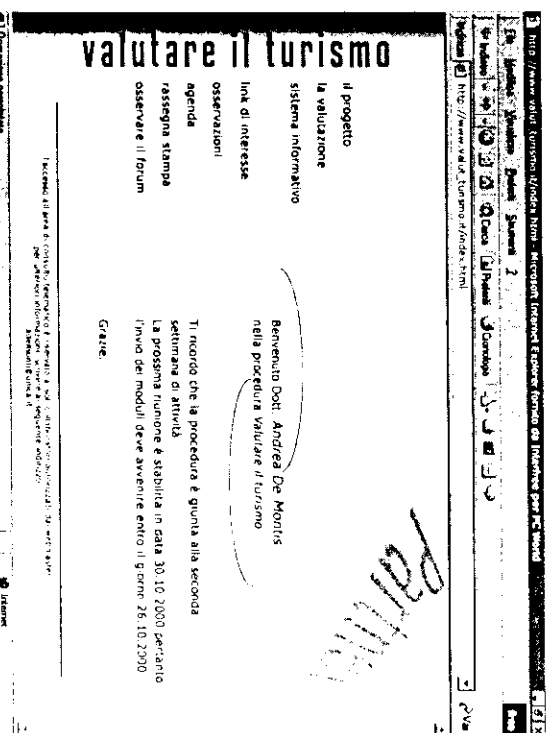


Figure 11.2 The welcome page of the private domain: On the left of the screen a list of virtual activities is shown

Knowledge construction is supported by a series of links. Useful sources are displayed in different ways: information from public debates, newspaper reports, public forum debates, and Internet links as well as an on-line GIS (Figure 11.3). Through the link 'rassegna stampa' (Press review), it is possible to read materials contained in electronic journals related to the issue of tourism. In the private domain, each participant can retrieve information from the public Forum by following the link 'osservare il forum' (Watching the forum) and read the opinions being expressed by the citizens. This is a sort of window on the public arena: community concerns enrich elements of the decision-making process.

The link 'query' allows one to perform advanced spatial analysis by means of database and geographic filters (Figure 11.4). The data is constructed in a way that can be checked and verified.

The section related to the link 'la valutazione' (The evaluation) consists of an electronic environment where the actors in the process can be guided throughout a variety of phases involved in the multicriteria procedure. In this case, great efforts have been made to explain the logic underlying highly specific techniques, such as the Regime-AHP multicriteria approach. Following this philosophy, the systems available in this virtual laboratory are designed to make the functioning of the techniques easier to understand. The continuous interactions between the actors and the system helps in the process of harmonizing the conceptual significance of all of the evaluation steps, such as building the criteria system and debating the results.

The link 'i criteri' (The criteria) leads to a virtual lab where evaluation criteria are presented and compared with the system of objectives and the values associated with them. Each actor can see the hierarchy of criteria at all times and can propose corrections (Figures 11.5 and 11.6).

The links 'i pesi' (The weights) and 'Come compilare la matrice' (How to fill in the matrix) explain the calculation procedure and introduce guided completion procedures for the criteria matrices (Figure 11.7). This process evolves by means of the electronic delivery of digitally completed forms to the system administrator. The system elaborates these data and sends the results back to each actor, who can thus realize how the multicriteria evaluation algorithm works and, if necessary, propose improvements. Once again, these interactions are designed to increase the harmonization of the group for the areas under consideration.

The link 'i risultati' (The results) opens a sort of virtual scrutiny hall, where each actor is given the opportunity to check his own set of results (Figure 11.8) and only the administrator is allowed to screen the results of every actor (Figure 11.9). The last feature could be extended to all the actors, in order to test how sensitive the system is to interference from a variety of results systems.

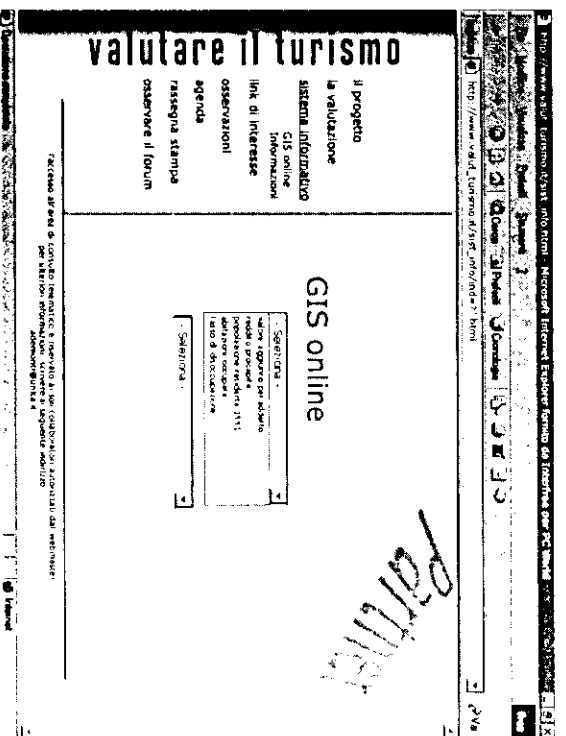


Figure 11.3A simulation of a spatial query, from the input of the data requested

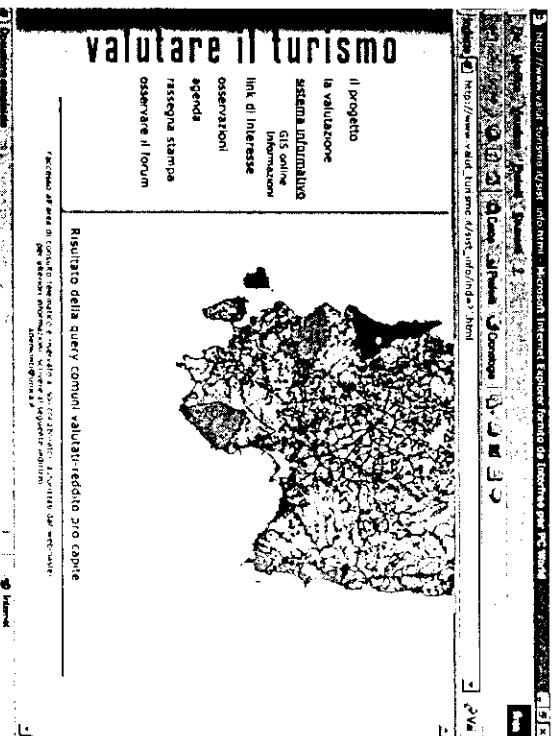


Figure 11.4 Display of the results about the evaluated areas

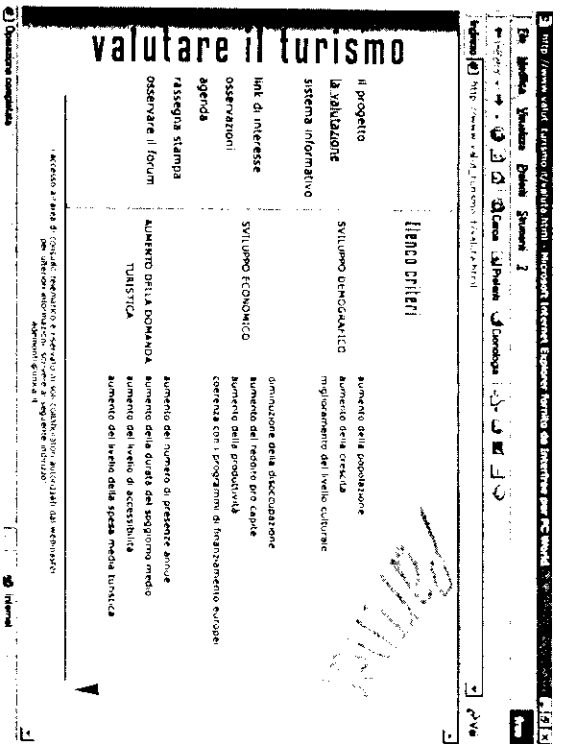


Figure 11.5 The display of criteria hierarchy

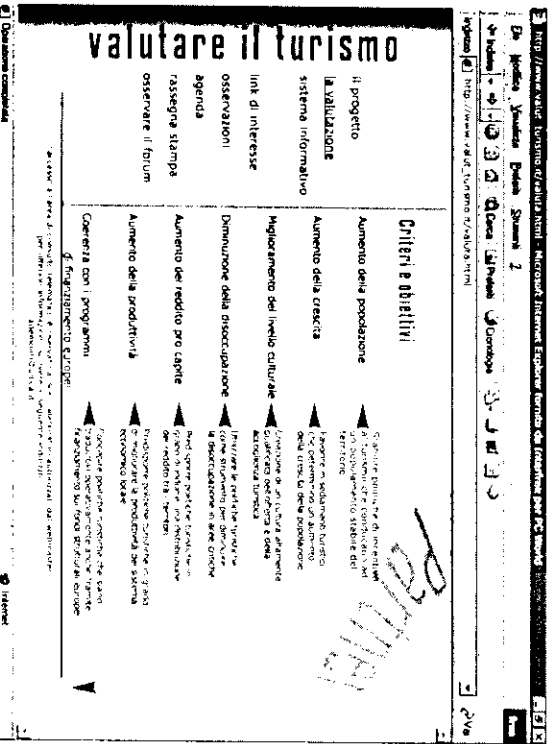


Figure 11.6 The display of the meaning of the criteria

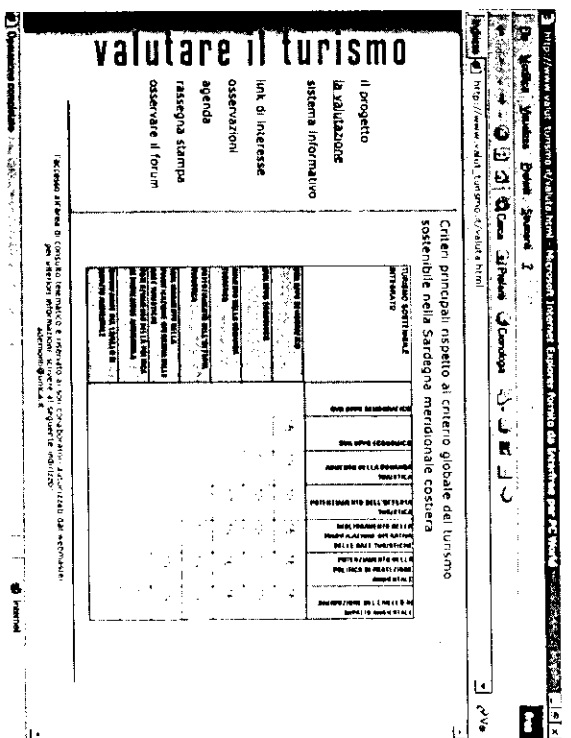


Figure 11.7 The activity of filling in the matrix is guided by the instructions displayed

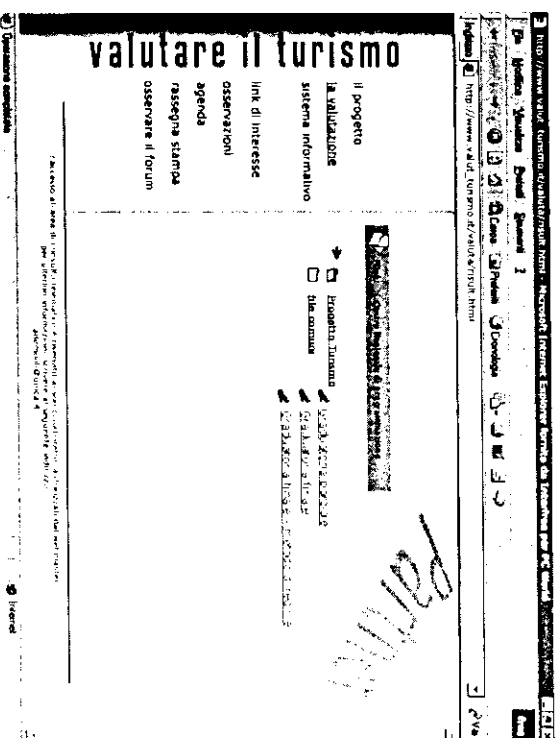


Figure 11.8 The display of results for each stakeholder

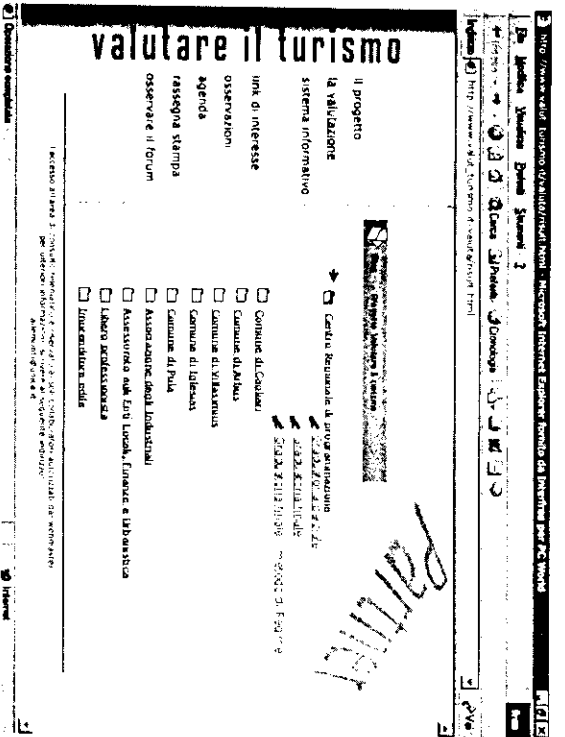


Figure 11.9 The display for the evaluation administrator

The virtual spaces described do not simply duplicate the traditional decision-making arena: they strengthen it. The activities that take 'place' in the virtual labs dedicated to evaluation contribute greatly to stimulating participation, since they allow each actor to be intensely aware of his/her cognitive participation in the process and ability to visualize it. Thus two domains of activities can be identified in the same evaluation process. The first consists of a discrete number of face-to-face meetings with a 15-day schedule, where a 'contact' confrontation evolves in the traditional manner. The second consists of continuous meetings in digital space, where interactions and learning evolve in a tele-mediated pattern. These fields can actually be considered complementary aspects of a single communicative planning process. Virtualization is essential to foster learning and negotiation. These continuous background activities prepare an environment suitable for shared decision-making paths.

At this stage of the project, the aforementioned public and private domains of activities have been just conceived, since they are projected on the basis of the many suggestions stemming from the interviewees' reactions. The authors hope to extend this approach and set up a series of experiments on the practical usability of the Internet-based multicriteria framework.

11.7 Concluding remarks and open questions

While some general comments have already addressed the results of the multicriteria procedure, this section is focussed on its possible web-based solutions. This tool represents an example of a system-user interface, designed using techniques for the construction of multimedia communication and virtual reality. In this view, the system can be described as a communication management system that is available either by public remote access (Internet pattern) or by password protected remote access (Intranet pattern)².

'Evaluating Tourism' consists of a co-ordinated network and information system, in so far as it supports the management of interactions and communication between the analyst and other actors in the evaluation process. In terms of communication, it is a useful tool, not only because it leads to a reliable set of results but also because it is able to foster a lively debate among the stakeholders. The deliberate reconstruction of the local development model is the basis for a shared process of decision making. These results reveal new 'agoras' for planning, where the 'cyber process' has the opportunity to evolve. The experimental virtual decisional lab 'Evaluating Tourism' is designed to allow for faster interactions and more personalized evaluation paths in a real decisional hall.

The main utility of the internet-based procedure is that it is able to reduce the level of conflict by stimulating the debate among the actors. The site allows direct use of the system of multicriteria analysis leading to a reduction of the subjectivity of the results, since the actors may converge on a common way of conceiving concerns and objectives.

In addition to the aforementioned results, there still seem to be some questions that remain open for future research. The first concerns the extent to which a society and its planners are capable of adapting to innovations in communication technology and 'digital planning'. The digital age seems to produce not only a change in the mode of communicating, but also a mutation in a particular community's patterns of knowledge and existence. Indiscriminate expansion of the availability of digital planning aids could create an inflationary perspective for cyber planners in terms of planning practice. Planners might risk becoming the victims of programmers of electronic sequences that are not necessarily related to the real organization of their geographical spaces. This is the main reason for concern about the widespread diffusion of video-game patterns inside many available software packages for environmental and urban simulation. The term 'Nintendo decision-making', coined by Carver (1999) with reference to the practice described above, depicts the situation of contemporary planners, who may be too absorbed by the innovation of digital simulation to focus on the real consequences of actual changes in real geographical places.

² A demo-simulation of the experimental site 'Evaluating Tourism' is available on request. The readers may refer to the authors of this chapter.

Even though these scenarios raise disquieting questions about what telepresence is and what potential human sensory capacities are, there nevertheless seems to be a need to develop further studies on the possible ways of improving planning procedures through the use of digital technologies.

In particular, there seems to be widespread optimism about the ability of humans to interpret ideas coming from virtual spaces. In this case study, the development of the system of virtual laboratories' potential, which supported the evaluation process, may allow the meaning of a specialized technique such as multicriteria analysis to be communicated to the group.

In further studies, the practical use of the Internet-based features will provide the authors with important information about the efficiency in the transmission of all the 'messages' connected to a communicative multicriteria planning support system.

The second question, which is connected to the first, concerns the new role of decision-making centres in light of the possibilities offered by digital telepresence. The issue can be divided into two parts: planning theory and planning processes.

From the point of view of planning theory, the advent of 'cyberspace' and of the opportunities linked to the concept of simultaneous presence in many places might lead to a lessening of the sense and perception of territory (Mitchell, 1995). Classical categories of Euclidean space have to be re-interpreted, since electronic spaces have different topologies. In sociological terms, one of the main results can be seen as a change in the sense of belonging to the same 'territory' as a sign of cultural identity. The Net, interpreted as a system able to connect a theoretically infinite number of places, might suggest the idea of loss of territory, known as 'de-territorialization'. Time-space substitutes for geographical space: the real-time aspect of the Internet can remove the barriers of physical distance, with the eventual possible disappearance of the concept of geographical place, and thus of borders that have hitherto been the foundation of a community's social identity.

The possibility of real-time presence can encourage a radical change in the structure of planning processes. Planners are currently faced with new digital tools and instruments that seem to mean that temporal and spatial patterns of work must change. At the same time, it seems that the job description of the contemporary planner will be characterized by requiring expertise in a variety of innovative fields, such as geo-informatics, remote sensing, pattern recognition, objects programming, and process programming.

Furthermore, social landmarks seem to be in the process of mutation as far as the construction of the master plan is concerned. According to recent radical perspectives, if a collective intelligence established itself within the framework of the master plan, each individual citizen would be able to elaborate and propose solutions for the use of spaces. The application of direct democracy mechanisms to planning practice would mean the re-organization of the functions and duties not only of decision-makers and communities, but also of analysts and planners.

The emerging dissolution of the territory and of the planning process may be a problem for the future of planning. However, the evidence found by this chapter

supports a more optimistic position. A planning decision cannot be envisaged without an associated, geographical location. No virtualizations of the territory can substitute for perceptions or real experiences of it.

The approach advocated in this chapter seems to provide a framework of valid suggestions, which could stimulate further research on the innovative role planners could play in interpreting current changes in information technology.

References

- Associação Portuguesa para o Desenvolvimento Regional (APDR) (2000), 'Tourism Sustainability and Territorial Organisation', *VII Summer Institute of the European Regional Science Association*, Gráfica de Coimbra Lia, Coimbra, Portugal.
- Briassoulis, H. (1996), 'The Environmental Internalities of Tourism: Theoretical Analysis and Policy Implication', in H. Coccoisis and P. Nijkamp (eds), *Sustainable Tourism Development*, Ashgate Publishing Company, Aldershot, UK.
- Butler, R.W. (2000), 'Tourism, Natural Resources and Remote Areas', in Associação Portuguesa para o Desenvolvimento Regional (APDR), 'Tourism Sustainability and Territorial Organisation', *VII Summer Institute of the European Regional Science Association*, Gráfica de Coimbra Lia, Coimbra, Portugal, pp. 47-60.
- Carver, S. (1999), 'Developing Web-based GIS/MCE: Improving Access to Data and Spatial Decision Support Tools', in J.C. Thill (ed), *Spatial Multicriteria Decision Making and Analysis: A Geographic Information Sciences Approach*, Aldershot, UK, pp. 49-75.
- Coccoisis, H. and P. Nijkamp (eds) (1996), *Sustainable Tourism Development*, Ashgate Publishing Company, Aldershot, UK.
- De Montis, A. (2001), 'Valutazione e pianificazione per la gestione dei processi insediativi. Dall'approccio "razionale" all'approccio "comunicativo"', Ph.D. Thesis, Dipartimento di Architettura e urbanistica per l'Ingegneria, Università degli Studi di Roma, La Sapienza, (unpublished).
- Hinloopen, E. and P. Nijkamp (1990), 'Qualitative Multiple Criteria Choice Analysis: The Dominant Regime Method', *Qualin and Quantin*, 2:4-57-56.
- Krapf, K. (1961), 'Les pays en voie de développement face au tourisme: introduction méthodologique', *Revue de Tourisme*, 16(3): 82-89.
- Mitchell, W.J. (1995), *City of Bits. Space, Time and the Hybrid*, MIT University Press, Cambridge, USA.
- Mitchell, W.J. (2000), *Etiopia: Urban Life, Jim - But Not as We Know It*, MIT University Press, Cambridge, USA.
- Pearce, D.G. (1989), *Tourism Development*, Longman, London.
- Roy, B. (1985), *Methodologie Multicritere d'Aide a la Decision*, Economica, Paris.
- Ryan, C. (ed.) (1998), *The Tourist Experience*, Redwood Books, Trowbridge, Wiltshire, UK.
- Saary, T.L. (1988), *Decision Making for Leaders: The Analytical Hierarchy Process for Decisions in a Complex World*, RWS Publications, Pittsburgh.
- Wall, G. (1997), 'Sustainable Tourism - Unsustainable Development', in S. Wahab and J.J. Pizam (eds), *Tourism Development and Growth: The Challenge of Sustainability*, Routledge, London, pp. 36-52.