

Landscape Perception and Coastal Management: A Methodology to Encourage Public Participation

C. Pereira da Silva

e-GEO, Centro de Estudos de Geografia
e Planeamento Regional
Universidade Nova de Lisboa
Avenida de Berna 26C, 1069-061,
Lisboa, Portugal
cpsilva@fsh.unl.pt



ABSTRACT

PEREIRA da SILVA, C., 2006. Landscape perception and coastal management: A methodology to encourage public participation. Journal of Coastal Research, SI 39 (Proceedings of the 8th International Coastal Symposium), 930 - 934. Itajaí, SC, Brazil, ISSN 0749-0208.

The increase in coastal tourism over the last 30 years has altered the quality and types of recreational activity that are both expected and required. Intensive usage, in some coastal areas, has been a principal cause of degradation, and in turn, of subsequent intervention to re-establish the human-environment equilibrium. This intervention is almost always reactive rather than proactive and was often poorly understood by those at whom it was directed. Traditional and negative planning that prohibits and restricts without indicating clear alternatives is always resented and often only unwillingly accepted by the target groups. In Portugal although public participation in the planning process has been increasing, it was often no more than a final-phase charade; a show of public consultation put on simply to 'rubberstamp' non-negotiable proposals put forward by consultants and politicians. Perception studies can help to alleviate some of these problems. By sounding out relevant groups such studies can establish how people live an area, perceive it, and what their expectations are. By understanding attitudes and being able to anticipate reactions, it becomes easier to make and implement sound management policies. Through the analyses of questionnaires with visitors to an exhibition held at Sines, Portugal, during the summer of 1998, this paper explores the perceptions of beach users, with a view to utilising an understanding of their behaviour and attitudes more closely in the planning process. It carefully considers how the ideas of beach users can be integrated into the broader process of Coastal Zone Management in the region.

ADDITIONAL INDEX WORDS: *Coastal planning, beaches, questionnaires,*

INTRODUCTION

In Portugal, as in many other countries, the levels of public participation in the planning process are far from being satisfactory. This element can be considered as essential in integrated coastal management and so it is necessary to find the means to stimulate such participation in order to produce more effective forms of coastal planning.

It is precisely in this sense that studies of landscape perception will be able to play an important role in stimulating public participation to the point where it becomes an effective and vital aspect of integrated coastal management.

Over the last twenty-five years the development of such studies and the increasing understanding of their value, in parallel with the development of more reliable techniques for handling qualitative information, have made it possible to introduce that information into the planning process (O'RIORDAN *et al.*, 1993).

Landscape perception studies have made it possible to define and evaluate the elements which influence the way individuals react to the landscape. The subjectivity involved with the almost inevitable need to evaluate the intangible has been one of the principal obstacles to the formation of a consistent theoretical framework and agreed procedures, a problem that should not prevent appropriate utilization.

Landscape evaluation is a part of our daily life. Every day we perceive and evaluate landscapes in a process that both influences and is influenced by our behaviour and attitudes; very much a two way process. Which things being so, integration into the planning process, as already happens in many countries, becomes crucial. This contributes to a better management of resources and, with a view to its protection, a better ordering of the landscape itself.

In recent years various projects have been developed in response to the needs of integrated coastal management. These include a significant component related to landscape perception (SOUTHERN CROSS UNIVERSITY, 1997; SEA GRANT PROGRAM, 1984; UNIVERSITY OF ULSTER, 1996) illustrating how these studies can increase awareness, raise environmental consciousness and encourage public participation. In general the projects tended towards new forms of participation, through exhibitions, games and use of technology, in order to collect not just more information but, above all, better information, which would be a true stimulus to public participation and a means of assessing perceptions and expectations in relation to the coast.

Participation should be based on access to information. This is crucial to establishing a relationship of trust between researchers, decision-makers, and the community. But such an approach also demands major investment, as much in time as in materials. Only thus can we establish the relationship of confidence that is essential for producing reliable results in studies of landscape perception.

Clearly, very careful preparation is essential in the collection of this sort of information, not least the investment of time and effort in promotion and publicity to ensure that potential respondents have some previous understanding of the issues and may be more disposed to participate, were they to be asked.

These activities are equally important as a means to counteract the habitual inertia of public non-participation. In effect some studies show that predisposition to public participation is not high (BOSWORTH *et al.*, 2002) found that over 50% of the population were disinclined to become involved. Only fewer than 15% were prepared to take part and these include some 5% who could be considered militant participants or the type who are always inclined to get involved in any issue (Figure 1)



Figure 1. Public Participation Pyramid.

Thus it becomes necessary to create new ways to stimulate and maximize participation among the huge majority who do not feel tempted to join in. Only so is possible that the results can be considered at least minimally credible and not limited to an expression of the opinions of a few individuals, or even worst, just a single interest group.

In the specific case of beaches, the increasing demand for use of these spaces has brought new problems to their management, demonstrating more and more the necessity of including user perspectives and users' relationships with these spaces as important factors in their planning (BRETON *et al.*, 1996; DE RUYCK *et al.*, 1995; MACLEOD, PEREIRA DA SILVA and COOPER, 2002; MORGAN *et al.*, 1993; MORGAN, 1997; PEREIRA DA SILVA, 2003; WILLIAMS *et al.*, 1993). The increasing importance that has come to be attached to these factors is caught up with their being presented as determinants for evaluating means to optimize the social and ecological functions of beaches. Beaches are extremely important touristic resources (HOUSTON, 1995). They are integrated into a competitive market, and subjected to high demand over a very short period of time. The aspects referred to above will doubtless serve to identify the quality of beaches most appreciated by users (responding to their expectations without compromising the equilibrium) and to evaluate the efficiency of implementation of the means of management. In effect the economic importance that beaches nowadays means they must be considered as an important factor of production (YEPES, 1998).

METHODS

As a means of testing and developing some of the aforementioned concepts, a project was carried out on part of the Portuguese coast during the summer of 1998. The area chosen was the coast line of Sines, a county council 150 km. South of Lisbon (Figure 2) and which has some characteristics that would turn out to be extremely interesting as a case study.

Although it is an important industrial pole, notably with an industrial port and a refinery, it also has a significant proportion of its coastline classified as a Natural Park; the condition of the environment being such that it is considered as one of the best preserved stretches of coastline in Europe. At the same time, because of the congestion in some traditional tourist areas this coast is gradually becoming more sought after by summer tourists. The equilibrium between these three, environment, tourism, and industry, creates problems in their management in relation to which the perceptions of users can play an important role.

In Portugal, public participation in the planning process, though increasing, is still at an incipient stage. Commonly, participation is confused with consultation, where, solely because of the legal obligation to do so, decisions that have already been taken are submitted for public appreciation with few or no results. Portuguese coastal planning is no exception to this and the Management Plans for the Coast (*Planos de Ordenamento da Orla Costeira*) are a good example of this situation.



Figure 2. Location of Sines.

The Sines coastline project was directed at users of the beaches, succeeded in developing a component of perception analysis that aimed to improve understanding of users' images of the beaches and the coastal zone that frames them. This objective was based on the idea that such understanding can provide the means to integrate the perceptions to develop public participation.

Whilst preparing the fieldwork it became evident that a structure was needed; something that would function as an anchor space during the research period and would stimulate public participation. This would give greater visibility to the research project and at the same time would provide some information that would both alert the population to the existing problems in the study area, and demonstrate the need for their participation. A small exhibition was the chosen tool, simultaneously directed at the resident and tourists and intending to achieve three objectives.

- To present the research project to potential participants.
- To create an awareness of the area, especially through information not normally available to the public (satellite images, orthophoto maps, 3D images, old maps etc.)
- To show perspectives of the future evolution of the area and, in particular, the plans proposed for the beaches by the Plan for the Management of the Coast.

With these objectives, it was decided to present exclusively geographical information in two agreed dimensions. The first consisted of a multi-temporal exploration of existing information on the history of the landscape and the uses associated with it. The current landscape is the product of these many historic transformations, and these in their turn, when articulated with information resulting from planning proposals, can allow us to anticipate potential future transformations. The second dimension consists of the presentation or rather demonstration to visitors of a different way of seeing their space; brought to life and perceived through contact with maps, aerial photographs, and satellite images. To reinforce this idea of difference and novelty, vertical aerial photographs from 1995 were available for 3D viewing through mirror stereoscopes.

Based on these suppositions, an exhibition entitled 'Maps

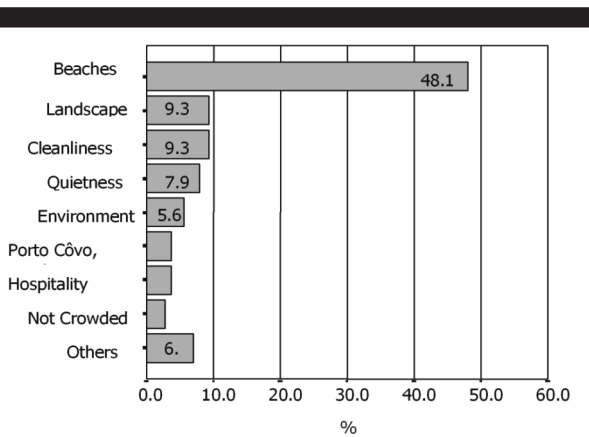


Figure 3. Sines coastline; most valued aspects.

and other representations of Sines' was mounted (5-12 August 1998) in the centre of the village of Porto Covo. The exhibition was publicized by, posters throughout the territory of Sines, advertisements in two local newspapers, local radio, and the distribution of more than 900 leaflets. When visitors came to the exhibition they were invited to respond to a questionnaire on the coast of Sines with a view to finding their opinion of the area, not only their perceptions, but also their expectations, hopes and ambitions. The questionnaire was structured into four groups of questions directed towards the following objectives.

- To contextualize the relationship between the respondent and the coastal space using open questions to gain their opinions of the Portuguese coast, its value, problems, and it's most and least attractive aspects.
- To evaluate the respondent's awareness of Sines in general and its littoral in particular, using open and closed questions, associations, attitude scales, and, to get an impression of the importance of the coast in their image of Sines.
- To evaluate the interviewees' perception of the beaches, and to stimulate their participation using techniques such as photographs and the creation of possible scenarios.

To characterize interviewees e.g. by gender, age, residence, employment, duration of stay etc...

RESULTS AND DISCUSSIONS

The exhibition was visited by over 550 people, of whom 200 completed the questionnaire, which made it possible to collect some important ideas. Both the attendance and participation rate exceeded expectations. Equally significantly the average time to complete the questionnaire was over 15 minutes although it had been structured to take about ten minutes. The open question motivated the interviewees to prolong the

discussion and show their interest in the themes under consideration, somewhat contradicting the common impression that the population at large generally lacks any interest in the space that surrounds them.

The information obtained from the interviewees was later treated statistically using cross-correlations and measures of association to establish which relationships were not the product of chance. To confirm the existence of dependent relationships, degrees of association were studied using measures more suited to the nominal and ordinal variables. Some of the results obtained are used in this article to demonstrate the utility of such studies.

The first surprising result was that only 72% of the respondents realized they were within a Natural Park. Having 25% of respondents not knowing they were in a protected area, could help explain some situations that clearly demonstrates lack of care for the natural fragility of the area e.g. disorderly parking on dunes and cliff-tops, with aggressive behaviour and total lack of respect for the environment. It is clearly going to be necessary to invest much more in publicizing the area's protected status and its values. Besides this preoccupation, this result also reveals that the tourist potential associated with the existing natural values has not been significantly explored.

The second group of questions was intended to evaluate the respondents' knowledge of the Sines coastal zone and its importance to the area's image (Figure 3).

The beaches are the most valued aspect of the Sines coast (48% of respondents) with all other factors having much lower scores. This leads to the obvious conclusion that the area's ability to attract tourism is based on the use of beaches for bathing. This strong seasonality, and summer focus, cause disequilibria in the area's touristic and general economic development.

About the least attractive features, Figure 4, industry (23%) is outstanding among the most negative of the Sines coast, followed by pollution (16%) which suggests a likely causal relationship between these two elements and the answer of respondents to the previous group of questions. Although the presence of industry did not pass unnoticed to the eyes of these respondents (at least as far as the association with pollution) the industry is not incompatible with the use of neighboring beaches for bathing. The satisfaction obtained clearly seems to compensate for any visual negatives.

The results in Figure 5 show that despite presenting problems of accessibility, the area is by no means left unvisited. In terms of planning it is interesting to note that, although the local authorities may not be responsible, there is awareness that this aspect needs to be improved. The desire for more tourism brings into focus not only the beach centered nature of touristic provision in the area but also the lack of services and infrastructure, although in Porto Covo (the tourist centre for this area) none of the respondents raised this issue. In relation to the various desired changes, overall 11.5% of respondents appeared to be entirely satisfied with the current situation, in that they did not want any type of change at all.

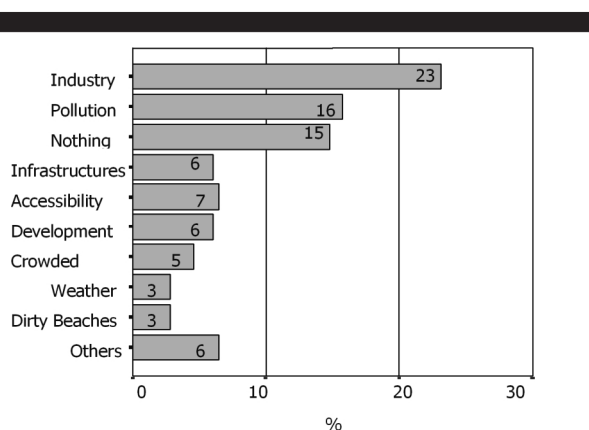


Figure 4. Sines coastline; least valued aspects.

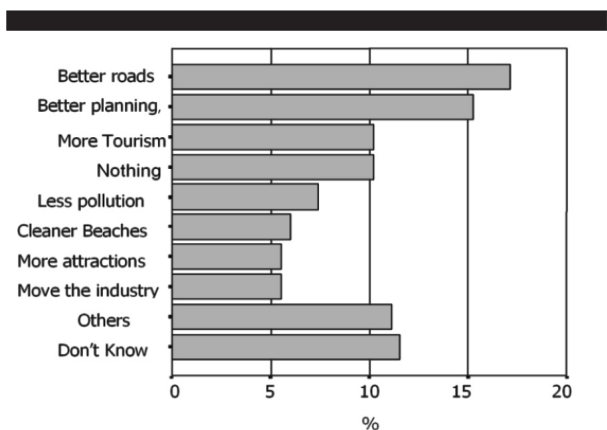


Figure 5. What changes should be made in this area?

Table 1. Reasons for choosing the most and least attractive beach.

Photographs	Motives
Less attractive A (55%)	Crowded (90%) Urban (7%)
Less attractive C (18%)	Lack of sand (82%) Dirty (10%)
More attractive F (83%)	Less people (28%) Clean (16%) Landscape (14%)
More attractive B (7%)	Quietness (27%) Space (20%)

As to their expectations for the future, respondents showed themselves as very pessimistic. Around 30% consider the emergence of a 'new Algarve' as likely, with all its concomitant problems of congestion, and 28% foresaw de-characterization of the landscape as a result of accelerated development and construction. However a small percentage (11%) maintained a more optimistic view, noting that the area would gain some benefits from its protected area status.

To help with their evaluation of the most and least valued aspects of the beaches, the respondents were presented with six photographs (Figure 6) representing different kinds of beach:

- A. An urban beach with high-density utilization.
- B. A beach delimited by water courses.
- C. A natural beach with limited sand area and a harsh rocky substrate.
- D. A beach sharing space with another activity (fishing) and the sand appearing distinctly less clean.
- E. A peri-urban beach backed by a high cliff.
- F. A lightly used beach enclosed by cliffs.

The respondents were invited to choose the most and least attractive of these various beach situations and to explain the reasons for their choice.

From the data presented in Table 1 it is clear that there is a general consensus as to the least and most attractive beaches. Photograph A was least attractive, above all because of the congestion, although photograph C with its limited sand and obtrusive and harsh geological strata was also regarded as repellent.



Figure 6. Photographs of beaches, more or less attractive to holidaymakers.

As to the most attractive beach, it seems clear that the same criteria were being applied. For over 80% of respondents, photograph F presented the fewest vestiges of human presence and, being the most natural, was therefore the most attractive.

This information is without doubt important for guiding the area's development, showing as it does that for the users of the beaches of Sines, density of occupation and the natural surroundings are significant factors in their perception and evaluation.

CONCLUSIONS

From the results of the questionnaire it is interesting to note that the industry and the protected area status seem to have been considered obstacles to greater tourist development on this stretch of coast.

But, if this limited and low-level development is, in some way, responsible for the lack of good access, for some insecurity, the absence of beach cleaning in some cases, or for poor planning, it is also largely responsible for maintaining the characteristics that most satisfy beach users. As shown by the type of beach preferred by most respondents (photograph F), the beaches of Sines are chosen for reasons of calm and rest, beauty of landscape, and cleanliness. These are characteristics that, together, correspond to undisturbed coastal areas which, as a rule, are away from urban centers. Moreover it seems that the urge to continue to use undisturbed un-congested beaches grows in proportion to the fear of seeing the arrival of mass tourism in the area. Throughout the information on the perceptions of the users of this coastal zone, and in balancing today's reality with the desired changes, it can be seen that support for quality tourism is compatible with the area's industrial image and with its protected status.

Given that, in the majority of cases, the participation of the population helps to improve understanding of the problems that management planning is trying to resolve, it will have to be built in at an environmental, economic, social and cultural level, and from the beginning, if integrated coastal zone management also aims for sustainable public use (CICIN-SAIN and KNECHT, 1998; KAY and ALDER, 1999).

Whether one is dealing with the management of coastal tourist areas or the erosion of beaches, public opinion will always have an important perspective on the matter, and should therefore be considered. These perspectives and perceptions at times escape technicians and investigators, who devalue them or do not see how certain aspects of the coast can be important for users. This alone justifies public participation. For this reason, before we use the apparent unwillingness of the public to participate as an excuse for not including it in the planning process, we should find new methods to stimulate participation. The example presented here show that there exists a readiness to participate on the part of the public provided it is duly stimulated, as been demonstrated by the popularity of the Sines coastline exhibition.

This type of methodology helps to break down barriers and serves not only to obtain information on landscape perception but also to supply some idea of the importance to the public of, for example, the environmental aspects that are to be protected or the anti-social behavior that should be avoided. In democratic societies this situation will become ever more pressing because, as citizens have ever increasing access to information, so too do they acquire more responsibility for taking decisions.

ACKNOWLEDGEMENTS

The author wishes to express his gratitude to the students that helped with the exhibition and the surveys, Dr. John F. Loder for the translation and João Silva for the review and editing of the manuscript.

LITERATURE CITED

- BLAKEMORE, F. B.; WILLIAMS, A. T. (1998). "Public Valuation of Beaches in South East Wales, UK." *Shore and Beach* (October 1998): 18-24.
- BOSWORTH, M.; DONOVAN, J. *et al.* (2002). "Portland Metro's dream for public involvement." *Community Participation and Geographic Information Systems*. W. Craig, T. Harris and D. Weiner. New York, Taylor and Francis: 383.
- BRETON, F.; CLAPÉS, J., *et al.* (1996). "The recreational use of beaches and consequences for the development of the new trends in management: the case of the beaches of the metropolitan region of Barcelona (Catalonia, Spain)." *Ocean and Coastal Management* 32 (n.º3): 153-180.
- CICIN-SAIN, B.; KNECHT, R. (1998). *Integrated Coastal and Ocean Management. Concepts and Practices*. Washington, Island Press.
- DE RUYCK, M.C.; SOARES, A.G. and MCLACHLAN, A., 1997. Social Carrying Capacity as a Management Tool for Sandy Beaches. *Journal of Coastal Research*, (13)3, 822-830.
- HOUSTON, J. R. (1995). "The economic value of beaches." *CERCular CERC-95-4*(December 1995): 1-4.
- KAY, R.; ALDER, J. (1999). *Coastal Planning and Management*. London, Routledge.
- MACLEOD, M.; PEREIRA DA SILVA, C.; COOPER, J.A.G. (2002). "A Comparative Study of the Perception and Value of Beaches in rural Ireland and Portugal: Implications for Coastal Zone Management." *Journal of Coastal Research* 18(1): 14-24.
- MORGAN, R. (1997). "Beach User Preferences and Priorities in Wales, UK." Policopiado.
- MORGAN, R.; JONES, T. C. (1993). "Opinions and Perceptions of England and Wales Heritage Coast Beach Users: Some Management Implications from the Glamorgan Heritage Coast, Wales." *Journal of Coastal Research* 9(4): 1083-93.
- O'RIORDAN, T.; WOOD, C. (1993). "Landscapes for Tomorrow." *Journal of Environmental Planning and Management* 36(Nº2): 123-147.
- Sea Grant Program (1984) *Attitudes, Concerns and Priorities of Oregon Coast Residents Regarding Tourism and Economic Development*. Oregon Sea Grant.
- PEREIRA DA SILVA, C., (2003) *Gestão Litoral. Integração de Estudos de Percepção da Paisagem e Imagens Digitais na Definição da capacidade de carga de Praias. O Troço Litoral S. Torpes Ilha do Pessegueiro*. Lisboa, Portugal Universidade Nova de Lisboa, Ph.D. thesis, 361p.
- Southern Cross University (1997). *Images from the Edge: Landscape and Lifestyle choices for Northern Rivers Regions of NSW*. Lismore, Southern Cross University: 235.
- University of Ulster (1996) LIFE Project UK/404/LBL "Implementing alternative strategies in Irish Beach and dune management: involvement in sustainable coastal development", University of Ulster and Donegal County Council.
- WILLIAMS, A. T.; GARDNER, W. (1993). "A psychological approach to attitudes and perceptions of beach users: Implications for coastal zone management." The first International Conference on the Mediterranean Coastal Environment, MEDCOAST 93, Antalya, Turkey.
- YEPES, V. (1998). *Planificación e Gestión Turística de Playas*, Cedex, Madrid.