

Integrated Coastal Zone Management Strategies on Small Islands

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ABSTRACT

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In 2002 the European Parliament and Council indicated the general principles and options for an Integrated Coastal Management Strategy for Europe (Recommendation 2002/413/CE). In 2005, due to the lack of contributions by each State member, the European Council invited all the EU countries to establish the ground rules for that strategy by presenting the national efforts on the field and by establishing their one Integrated Coastal Zone Management Strategies (ICZMS). The document had a deadline of February 2006. The National Strategies then presented are now being evaluated.

What is proposed in this paper is not a quantitative structured analysis but a comprehensive one applied to small islands. For sure we know that small islands problems and needs are different from the mainland countries. So, is there a true need for ICZM guidelines with a scale and operational contexts often applied to larger territories? Are there specific features to small island ICZM Strategies? Based on the analysis of the Macaronesian Archipelagos of Azores, Madeira and Canary Islands the discussion is presented and some conclusions are drawn.

ADDITIONAL INDEX WORDS: *Small Islands, Macaronesia, ICZM*

INTRODUCTION

Integrated Coastal Zone Management became a discussion theme all over the world, mostly due to the increasing pressure over coastal features and values. The growing recognition of the importance of Seas and Coasts is largely induced by the degradation of some functions and values connected to them. At the same time natural disasters stressed the sense for ICZM. The loss of human lives and properties is the ultimate indicator that the rules in place are not adequate and management actions are missing.

The common needs for strategic and sustainable policies lead to the ¹EU Iczm Recommendation of May 2002. However, some stakeholders discuss that an ICZM Directive should be proposed. The increase demand for regulations and decision support is producing a “boom” of Plans and Strategies at different scales and levels. In Europe, several research projects develop new models and scientific knowledge for more sound Coastal Management. The general and integrated character of strategies makes them useful in large scales, as European or National levels. But, when operational actions are need, they

tend to be programmed at a regional/local level and mostly based on Spatial Planning.

The discussion on this paper evolves around the need for ICZM strategies on Small Islands, as those territories have distinctive features and different problems and needs. It's not a question of doubting of the importance of Integrated Thinking or of Management and Planning but more an equation of how to gain in time and efficiency by keeping the process more simpler, flexible and realistic.

ISLANDS

It's not pretended on this paper to discuss the definition of “what is an island”, but refer to the unique characteristics of them. What makes an island a territory so different from the others? Why special attention must be paid to all the actions concerning management?

An island is “... *body of land cut off from adjacent lands by water*” The VERRILL (1922) definition is presented by NUNN (1994) almost as mockery of how ridiculous it would be to define islands only for the fact that they are involved with water. However the remoteness and isolation are characteristics that make islands distinctive spaces.

Therefore another distinctive character is identified: the Area. What makes us say that Australia is an island or not? We have to take smallness as a factor of distinction. This discussion could go

¹ 2002/413/EC, Recommendation of the European Parliament and of the Council of 30 May 2002 concerning the implementation of integrated coastal zone management, OJ L148 of 6.6.2002.

on for ever, the important is that if we sum up: remoteness, isolation and smallness we reach the factors that make islands geographical entities with well design and clear boundaries. The sea around, the smallness and the distance to other land spaces, makes it impossible to see islands as open systems. This fact, being a closed system, has huge implications concerning management and spatial planning processes.

SMALL ISLANDS

"Small islands (SI) are defined here as those with approximately 10,000km² or less and approximately 5000,000 or fewer residents" (BELLER et al., 2004). A new feature of islands is now added to the ones described before. As important as the size of the island is also the number of inhabitants. In fact the limit of human resources is pointed by several documents as the key factor for failure on development policies and economical activities. Along with the limits of human resources, there is also the question of the close system of relationships:

"On small islands most people are either closely related or know each other well...in administrative and management matters it creates certain problems. It is much more difficult to formulate and apply policies on their own merits and decisions are inevitably highly influenced by personal and kinship considerations. In many islands, this is compounded by ethnic and racial divisions and intense political partisanship" (BRIGUGLIO & KISANGA, 2004)

In SI the insular natural resources, as water, soil, air, shore systems and wildlife also dictate the capacity of an island to embrace sustainable development. The most important limit on resources management, is the one imposed by the level of exploitation where ecosystem functions can be menaced. Here, damages in one function produce impacts in downstream ecosystems. These will hardly be fixed due to the small capacity of closed systems to recover (GOLDSMITH, 1991).

Small islands experience wave action from all sides, therefore the models usually developed for sediments transport and currents can not be applied here. Also, in SI, there's a different rate of loss of water and sediments due to the small size of water catchments. Usually there are no estuaries and most of the threats to coastal areas can be attributed to unregulated and poorly controlled land based activities. Therefore, management plans for the protection of SI coast should be integrated with spatial plans of land-based activities.

In sum, remoteness, isolation, smallness, and particularly closed systems, make Planning and Management on SI more challenging in scientific and technical terms, but in what concerns human or economical resources, not more equipped to deal with.

INTEGRATED COASTAL ZONE MANAGEMENT

In 1999, a study on "The Influence of EU Policies on The Evolution of Coastal Zones" showed the need for the EU to develop more explicit strategy on ICZM, mostly because a "bottom-up" approach was needed. This approach would ensure that all EU policies with effects on the coastal zones or coastal management (direct and indirect) were taken into account. It also means that some level of synergies and uniformity was required. (Institute for European Environmental Policy, 1999)

The EU ICZM Recommendation finally was published on May 2002 and the goal was that by 2006 all EU members would have an ICZM strategy complying with the principles of the Recommendation: "Is a strategy for an integrated approach to planning and management in which all policies, sectors and to the highest possible extent, individual interests are properly taken into account with proper consideration given to the full range of temporal and spatial scales and involving all coastal stakeholders in a participative way?" (EU, 2002)

An assessment of its implementation was carried out (MERCADIÉ, 1999) and the most important benefits shown from EU ICZM Recommendation were stressed and also the main success factors for the EU ICZM Recommendation implementation by the EU state members were identified:

- The small size and high importance of the coast in relation to total size of the country;
- Utilizing and strengthening existing territorial planning and management institutions (egg from spatial planning) for ICZM;
- Proper allocation of competences, functions and tasks between central and lower state levels;
- Leadership or at least a dedicated caretaker role (political will) by the national level driving and/or coordinating ICZM;
- National, regional and local levels working in connection with regional seas initiatives.

We can notice that SI are not very well positioned to address these success factors. In fact, if the first one is clearly present, the others have a more fuzzy distribution. In ICZM, in general, questions of leadership, competences, functions and tasks, tend to be spread among several actors and pressure groups and it isn't always clear which ones (GOMES et al., 2006). When it comes to SI the question is even more complicated as competences cross several levels of administration and political power.

ICZM ON ISLANDS

In 2006 the report on "The changing faces of Europe's coastal areas" focused on the land/sea interface. However the report does not cover Europe's ultra-peripheral regions, such as small islands. Only when special activities, like tourism are reported the islands appear. The report lightly addresses the economic question on SI with the same approach that we have stated before: Small islands are especially affected by social and economic problems (e.g. migration and lack of economic infrastructure). Improving living standards within coastal communities is therefore an obvious challenge for coastal peripheral regions."

In what concerns sea flooding, the report admits that the impact of sea level rise is expected to be more local than global. Low coastal areas and small islands are at more risk than others. And it confirms that: "*There is a need to work more on regional sustainable development. Using a regional scope, islands need a specific approach as they have specific problems such as limited land availability, lack of water reserves, waste management etc.*" To conclude, we see in this report the same idea that SI requires more ambitious scientific and technical skills conceptions.

In 1994, the United Nations Global Conference on the Sustainable Development of Small Island Developing States held in Barbados presented the Islands Developing States first program of Action (BPoA). BPoA was designed to achieve sustainable development resulting from the mandates developed in Chapter 17 of the Agenda 21.

Following the Barbados Conference, Small Islands Developing States (SIDS) issues have been reviewed a number of times at the international level. In 2005, at the Mauritius International Meeting,

the review of the Barbados Programme of Action (BPoA+10) resulted in the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. This program underlines the problems and the actions that have to be addressed to achieve the complete implementation of the BpoA. Also the Community of the Portuguese Speaking Countries (CPLP) supported the *Strategy for the Seas of CPLP: Priority actions*, in Paris, at the Third Global Conference on Oceans, Coasts, and Islands -*Moving the Global Oceans Agenda Forward* (UN, 2005). The proposed program is very similar with the Mauritius Strategy but strongly involving the CPLP. If we carefully observe the list of priority actions, one can notice the focus on resource needs: human, scientifically, technical and mostly financial. But a new feature emerges: Ocean “boundaries” (ZEE) and the need to claim, manage, explore and monitor this “parcel of space” constituted by water, with the same extreme care as the land based spaces.

MACARONESIA ISLANDS

“...there is no better comparison for an island than another island” (BALDACCHINO, 2003). In order to have clarity it's tried to observe the institutional attitude towards ICZM in different SI. Being based in the Azores, the macaronesia resulted as the simpler choice.

Macaronesia is a Biogeographic Region that includes several groups of islands in the North Atlantic Ocean spread between Europe and North-Africa. They are under the administration of three countries: Portugal, Spain and Cape Vert. This region is characterized by the volcanic genesis and vegetation affinities, despite the climate differences (MORTON et al., 1998).

These islands are grouped in 4 archipelagos (Azores, Madeira, Canary Islands and Cape Vert) with a total area of 14610 km² and are spread between 15° and 40° N in latitude (Fig. 1).

There are 28 macaronesian islands, plus several small

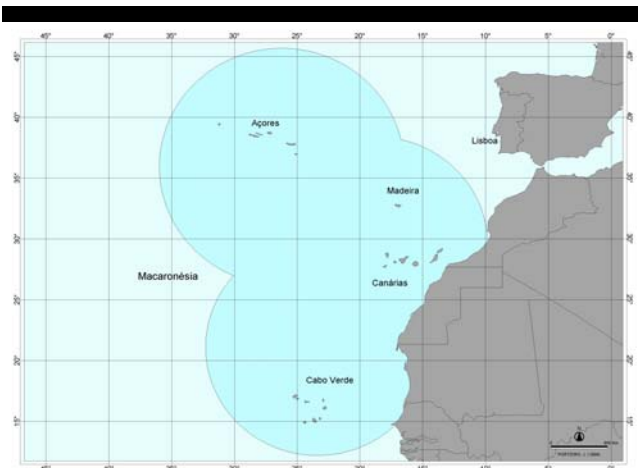


Figure 1. Macaronesian Biogeographic Region

islets. The islands area variation is huge, from 17 to 2053 km². Regarding the number of islands and the total area of each

archipelago (Table 1) it's obvious that in the Azores the islands are smaller.

Table 1: N° of Islands, total area and average island area of Macaronesian Archipelagos

Archipelago	Total Area (Km ²)	N° of islands	Average Island Area (Km ²)
Canary Islands	7447	10	1063,9
Cape Vert	4033	7	403,3
Azores	2333	9	259,2
Madeira	797	2	398,5

Canary Islands are the most representative archipelago in Macaronesia with the biggest area, approximately half of the total area. Madeira archipelago has the smallest area.

The human settlements in Macaronesia Islands can be described in two distinct temporal phases: The first, in the XV century, in which the land occupation was restricted to disembark needs and short term needs, near shore (ex: Anjos, Santa Maria (Azores); Machico, (Madeira); Ribeira Grande, Santiago (Cape Vert)) (FERNANDES, 1997).

The second, between the XV and XVI century's, were the human settlements were formed through the spread of rural activities slightly inshore in a linear shaped structure. In some cases the physical continuity of this linear structure was disrupted by the physical characteristics of some islands especially the smaller ones.

Beside the general pressures that coastal zones face, as housing, tourism, over fishing, pollution, etc. The macaronesia have also in common the remoteness and isolation. Madeira and Canary Islands developed Tourism activities to the limit, with the help of good climate and airline connections with an impressive number of daily air traffic. Being more extreme, either in the Atlantic position and in climatic terms, Cape Vert and the Azores are only now experiencing a visible growth in tourism, and it's expected that this will be the base for islands economic diversification.

However, one cannot ignore the signs already existing, in the four archipelagos, of huge pressure on the coast due to human activities: housing, tourism and harbor activities. If tourism is greatly responsible for this pressure in Madeira and Canary Islands, one can expect that its impacts in the Azores and Cape Vert will be even more noticed, as those archipelagos already experience the concentration of almost all human settlements on the coast due to the extreme conditions inland (dry and hot in Cape Vert; cold and humid in the Azores) (CALADO, 2005).

Looking at the economic systems, similar characteristics are also visible. They all evenly rely on exterior help, Madeira, Azores and Canary Islands from the mainland countries, and Cape Vert from international instruments. Signs of improvement are shown on the last years but it's hardly a changing reality. Probably the most important sign of change is based on the investment on Human Capital that all the four archipelagos are doing. This investment is strongly supported by the EU program INTERREG-IIIIB, a special instrument for Açores, Madeira and Canary Islands that also allows a partnership with Cape Vert. The program covers a wide range of matters and among the most interesting results are the scientific and technical advances on natural resources management (BOTELHO et al., 2005).

For the purpose of this paper the most peculiar similarity between the macaronesia islands is the instruments for coastal planning. It seems logical that Azores, Madeira and Canary

archipelagos have chosen similar solutions for coastal management. They are part of the EU, they comply with the EU ICZM Recommendation and, as Portugal and Spain has similar regimes for their archipelagos (autonomous regions), they have spatial planning instruments for the coast (Coastal Zone Management Plans in Portugal, Lei de Costas in Spain). The coastal planning legislation of Cape Vert is similar to the Portuguese and based on the same structure, principles and instruments.

The similarities between the archipelagos go far beyond on coastal planning: there are instruments but the power to implement them is spread between different organisations, and there is even the question of national sovereignty for several aspects as the ZEE surveillance or national defense. In conclusion the local/regional institutions tend to accomplish their part of the task by promoting Spatial Planning although the successful implementation can be a problem of making partnerships and define regional/local competences. Other kind of problems remains unsolved. Among these the ZEE surveillance, on the last year has brought to us images of the illegal immigration in Canary Islands, fisheries disputes in the Azores, etc. and it can be pointed as a major priority for the macaronesia in general.

In Portugal the development of spatial planning instruments as tools for coastal management improved during the last decade. The CZMP are the instruments intend to assure that the principles established by law for the use and transformation of coastal zones (Decree nr 302/90, September 26th) are implemented (CALADO et al., 2002).

The Decree nr 380/99 dated from September 2nd establishes the legal regime of the territory management instruments in Portugal and considers the Coastal Zone Management Plans (CZMP) as Territorial Major Master Plans of a regulatory nature. According to the article 42º (2). *The Territory Management Special Plans constitute a supplementary means of Governmental intervention aiming to pursuit objectives of national interest with spatial effects, establishing protection regimens of natural resources and values and assuring the maintenance of systems which are essential to the territory sustainable use.*

In the Azores, the Resolution nr 138/2000, from August 17th, approves the guidelines for coastal interventions in which the CZMP will be based. This resolution, even being generic on is terms addresses the most important problems that coastal planning is facing in the Azores. Besides the pressures already

pointed, the particular physical conditions of the Azorean Islands are raised to an important factor to be observed. These constraints to planning and management of coastal areas on small islands environments are especially important to local quality of life. In some cases is totally impossible to dissociate the coast from the rest of the territory (ex: São Jorge island, Azores) (Fig. 2).

In fact this particular island, in what regards Portuguese planning system, may be considered as “integrally coastal”, and if we apply the law blindly, then population has no means of development and living. In this particular case the model applied was a compromise between safety and development criteria (CALADO et al., 2002).

CONCLUSION

At the end the question remains: Do SI need a strategy for Integrated CZMP? Or the question is not well addressed: What special matters or principles must be observed when Integrated CZMP strategies for SI are designed?

The point here is not a question of need. We agree that establishing Integrated CZMP strategies on SI has the positive thinking of starting a process, initiate dialogue, stress the need for a new style of governance, improve public participation on decision making, raise awareness for coastal problems, etc. What must be observed is the level of success to be realistically expected, the time scale to achieve it, and the special conditions needed to implement it.

In SI, applying policies, as already mentioned, can be a difficult task as it can be expected a certain amount of personal influences. Also, being close systems tends to limit the number of actors with an impassioned point of view. Facing it, when ever an Integrated CZMP strategy is designed, it should start to design some kind of mechanism to ensure that personal influences impacts are minimized. Probably the best way to do it is raise transparency on the process, making each citizen a guardian of the others conduct, building the foundations of a partnership with all of the segments of the society. Also a decision support system should be adapted, similar to the models proposed by BANA & COSTA et al. (1995) and already applied with success on Spatial Planning. These kind of models, along with Strategic Environmental Assessment (RAMOS, 2004), should insure that decision makers, technicians, administrative and political powers, have an unbiased vision of the problems and solutions.

Another particular feature when we look at SI, specially if they are part of a Continental based country (Açores, Madeira and Canary Islands), is the overlap of political and institutional powers, thus stressing the need for new channels of communication, new models of governance to reach an enhanced cooperation between states and their “Region Islands”. This also means certain cohesion around the concept of national solidarity, making the entire society responsible for the development of a strategy for the implementation of the priorities including funding, institutional, and practical aspects.

The institutional aspects can also be addressed at a superior level then Regional or National. The pursuit for stronger and higher performance economies led the SI to form a number of institutions and groups, all with similar proposes. At the conferences on economic vulnerability and resilience of small states, promoted by the Alliance of Small Islands States (AOSIS) an analysis of the role of a variety of International Organisations was presented: UNEP; UNDP; FAO; UNESCO; etc these are possible partners for sustainable development. They can also play an important role concerning the scientific gaps fulfilling; technical support and most important

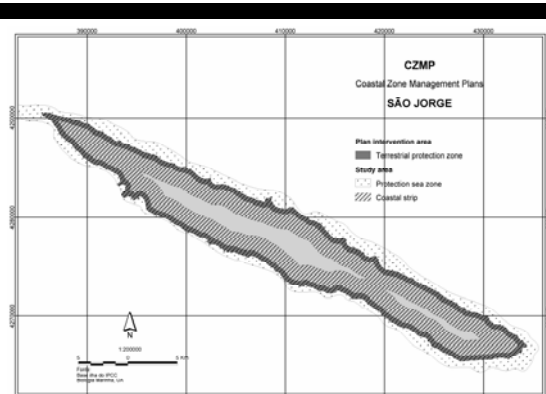


Figure 2. CZMP intervention area on S.Jorge Island

financial help. Although the Country base Nations responsible for SI must be the major contributors, these International Organisations have also special instruments for SI and the financial aspects play a capital role concerning coastal problems solutions. More important they can make the difference when facing problems of claiming the ZEE jurisdiction and surveillance (OCEAN STRATEGY, 2005).

As we have seen, SI have special needs, among these, new models of spatial planning that integrate land based activities with coastal planning are mandatory. But also different approaches may be required. If continental spatial plans are mostly designed according the "Design with Nature" principles, in SI this can lead to a loss of important land mass or it may come as natural solution due to financial problems. For the Micronesian islands we can see that spatial planning is the main instrument for coastal management. With instruments that have bindery and discriminating powers several problematic aspects are overcome: the time scale is imposed (10 to 15 years); the zoning land use is clear; the responsible named and the rules are known by all the society. However, other aspects as integration with other land based spatial planning instruments (as the Master Municipal Plans) may be conflictive; the absence of a wider and generic view may disconnect coastal problems from their inland origin; the concentration of competences in one instrument and one institution may favour the bias of personal influences. In conclusion even if spatial planning is the best instrument to address coastal problems in SI, ICZM strategies are needed, at least aiming at it, and pave the path to achieve it.

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