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ROGER G. BENNETT

FUTURE PERSPECTIVES ON INTEGRATED COASTAL ZONE MANAGEMENT

Summary

The paper gives a brief overview of the motives for and essential features of integrated coastal zone management and planning (ICZM&P). Challenges facing management and planning are divided into two interrelated groups: problems of substance or content, and problems arising from the organisation and procedures management itself. As regards the former, reference is made to five major areas of concern identified in the NORCOAST Interreg II Project: marginal areas and regional development, large ports and installations, pollution and water quality, mari-culture and fisheries, and coastal defences. The presentation then examines essential problems of sectoral management and the implications of integration. Finally, it challenges the assumption underlying much ICZM research that more knowledge of coastal systems is the key to better management, pointing out that problems related to the management system itself often hinder the application of knowledge that we already possess. Greater attention to the organisation and function of management is advocated.

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Mail address: Department of geography, Breiviksveien 40, N-5045 Bergen, Norway
E-mail: roger.Bennett@geog.uib.no

Tel.: (47) 55 95 93 56

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Introduction

I want to start this talk on prospects in integrated coastal management by stating briefly what ICZM is essentially about. Management of the world's coastal and marine resources was firmly placed on the international agenda by the UNCED conference in Rio in 1992 (Agenda 21). Since then, reports from several international bodies have called for a more integrated coastal management as a fundamental prerequisite for sustainable development, one of the most recent being the EC recommendation for A European Strategy for Integrated Coastal Management 2000.

This international focus on coastal problems is due to the increasing awareness that our coastal areas are some of the biologically most productive areas in the world and as such that they are extremely important for world food production. At the same time, these areas are subject to a number of threats. About 60 per cent of the world population lives within 100 km of the coast and are dependent on the coast for survival. Attendant on this concentration of population, there is a continuous struggle for space and resources, serious problems of pollution and waste treatment, loss of biodiversity, depletion of non-renewable resources and over-exploitation of renewable resources, loss of attractivity and access, and reduction of the coast's ability to protect people and property from the sea. These problems are both complex and challenging. Their solution demands new knowledge, new awareness, development of competency and management skills, new political approaches, new institutional and organisational arrangements, and new management routines.

Although there is no universally accepted definition of ICZM, authors usually agree on some central points. To take an example, ICZM as defined by Cicin-Sain and Knetch (1998:39) runs as follows:

"Integrated coastal management can be defined as a continuous and dynamic process by which decisions are made for the sustainable use, development and protection of coastal and marine areas and resources. First and foremost, the process is designed to overcome the fragmentation inherent in both the

sectoral management approach and the splits in jurisdiction among levels of government at the land-water interface. This is done by ensuring that the decisions of all sectors and all levels of government are harmonised and consistent with the coastal policies of the nation in question. A key part of ICM is the design of institutional processes to accomplish this harmonisation in a politically acceptable manner."

The main points to notice here are the emphasis on coordination and harmonisation of decision making under an overall national policy; that management is seen as a process rather than a time limited project; sustainability is mentioned here as in most other definitions, the reason being that experience has shown that a fragmentary sectoral approach to ICZM has proved to be ineffective in relation to the problems I have mentioned, and that it is therefore non-sustainable.

The integration concept can be related to three dimensions:

- (i) A spatial or geographical dimension, which implies that 1) terrestrial and marine areas and the development of these are to be seen in conjunction with one-another, and 2) that coordination between geographical-administrative units takes place over large areas of coast.
- (ii) Horizontal or cross-sectoral integration, i.e. coordination and conflict resolution between sectoral interests at the same administrative level.
- (iii) Vertical integration between different steering levels, i.e. harmonisation of policy and action between agencies at different levels in the management hierarchy.

In reality, these 3 dimensions are closely interdependent and it is difficult to deal with the one without touching on the others. I shall return to these later on.

Having defined terms, I now want to turn now to some of the main challenges to ICZM & P in a Northern European perspective. I include planning because the two go hand in hand and because planning is a very significant instrument of integration, for shaping priorities and drawing up the frameworks within which sectoral management is to operate. I want also to make a major distinction between 1) the substance and content of management and 2) the management system itself. In reality the two are closely intertwined, but the distinction will help us to get a hold of the main issues.

Reading scientific journals one gets the impression that a large majority of articles are concerned with the substance of management, in that their aim is to provide knowledge about how the natural and human systems of the coastal zone work and the interaction between them. Managers and planners too are naturally preoccupied with the practicalities of management, with how to resolve conflicts, where to locate activities, how to protect vulnerable biotopes etc – in other words problems of substance. Far less attention is given to management policy, how the management system is organised and how it functions.

The substance of management

By way of introduction I made reference to some of the main motives for ICZM. All of them were of substantive character, having to do with the use and protection of resources and environments. Recently, I had the privilege to take part as a guest in an Interreg II project with the name of NORCOAST, part of whose aim was to look at the main issues of coastal planning and management around the North Sea. These are of course many and varied, due to the physical, economic, social and cultural differences between the various North Sea countries. However, certain common trends can be identified (NORCOAST 1999, 2001).

a) Marginal areas and regional development

Many parts of the North Sea coast can be characterised as marginal regions within the particular countries. These areas are generally suffering depopulation and economic decline under the influence of global trends affecting traditional industries like fisheries and agriculture. Some of the main challenges here are how to attract investments, how to create new employment opportunities, how to improve infrastructure and services, and how to make alternative use of the local resource base. At the same time, many of the same areas are under pressure from tourism, recreation and the demand for second homes, activities which of course bring with them employment, improvements to infrastructure and services, but which also have a price, such as crowding, negative effects on the natural environment, pollution and waste problems, noise and nuisance. So, the central management problem here is a classical one: how to balance the need for economic and social development with

environmental considerations – in this particular case how to protect the resources and amenity values upon which tourism and recreation depend.

b) Large ports and installations, shipping

The North Sea coast supports some of the largest ports and urban concentrations in Europe. Spatial needs of container ports, airport development, wind energy plants, refineries and industrial sites are already huge and will undoubtedly increase in the future. In the southern part of the North Sea ideas have already been put forward for wind energy plants and airport extensions into the sea. The spatial needs of such developments are of course very large, and they also bring with them heavy environmental impacts in the form of increased traffic, dredging, pollution and disturbances to wild life, fisheries etc. A parallel to the user-pays principle, is that of compensation, whereby developers must compensate for the areas they consume by providing nature areas elsewhere. This is done by letting coastal areas return to a natural state or even by constructing new nature areas. Whether such a practice is sustainable or not is open to question.

c) Pollution, waste and water quality

Many of the present and future challenges to ICZM are related to past sins. Nowhere is this more true than in the case of water quality where we are now witnessing the accumulated effects of many years of widespread pollution, for example widespread eutrophication and algal blooms in the North Sea and Baltic. These are also some of the most intractable problems. Although the sources are many and varied and often difficult to pinpoint, the impacts are universal, representing serious threats to the future of marine ecosystems, to the sustainability of marine food production, and ultimately to human health and welfare. In fact marine pollution is one of the greatest challenges to ICZM & P both today and in the future. Relevant at all levels of management from the local to the international, it is at least as serious as the climate problem.

d) Mari-culture and fisheries

As coastal fishing has declined and global fish stocks have been reduced, the interest in fish-farming and shellfish cultivation has increased, especially in the northern part

of the North Sea. Developments raise many issues, such as the need for space and environmentally suitable locations, privatisation of the sea surface and sea bed, conflicts and competition with other interests, cumulative effects on water quality, diseases, parasites and genetic pollution, as well as the general question of sustainability of the salmon industry. At the same time, such activities are usually of vital importance to the economies of the communities and regions where they are situated.

North Sea coastal fisheries are in crisis due to over-fishing, under-reporting of catches, pollution etc. At the same time, other activities within the coastal zone, such as sand dredging and algae harvesting may be seriously affecting the environments and ecosystems that are so vital for reproduction and rejuvenation.

e) Coastal defences and sea-level rise

We tend to forget that in certain parts of the North Sea drainage and protection from the sea have been major issues in coastal management for several hundred years; and will continue to be so in the future. The coastlines of Lower Saxony and the Netherlands are geologically speaking coastlines of submergence, and many sections of coast in Denmark and Britain are subject to serious erosion. Add to this climatic change and sea-level rise and the future prospects are not particularly good. The costs of sea defences are already very high, and there is growing doubt around the world as to the efficacy, wisdom and cost of coastal engineering.

Management itself

This section deals with what essentially are problems of sectorised management and the challenge of integration.

In most countries the coastal zone is managed by many different authorities at different levels of government, each with responsibility for a small part of the whole. In some respects, this is an efficient means of dealing with things, but it also has its price in the form of fragmented and uncoordinated decision-making. Sectoral management means that each agency deals only with a limited set of variables. For

this reason the impacts and consequences of certain actions may not be recognised because they lie outside the competency of the particular agency. It is well known that strong sectors have a tendency to dump problems on weak sectors, and that some problems have no clear address at all (cf. the stranded whale on a beach in SW Norway in April 2001). Where sector responsibilities are not well defined and appear to overlap one-another, conflicts of competence arise; and sector agencies struggle not only over who has the right to manage certain resources, but also whose knowledge is correct and legitimate and who has the right to decide what is held to be good and true. In Norway, for example, there is an on-going competency struggle between the fisheries and the planning authorities over the right of local authorities to exclude aquaculture from multiple use areas in the sea (Bennett 2000).

Vertical integration can also be problematical. As we all know, the political aims of communes, county authorities and the state are quite often in conflict with one another. This is part of democracy; but it has its price in the form of conflicts and disjointed decision-making.

Most European countries have a fairly well developed planning system on the terrestrial side, that functions in an integratory way. With notable exception of Norway and Sweden, the jurisdiction of regional planning authorities does not usually extend to the wet side, where responsibility is shared by various sector authorities. This division of responsibilities is a major obstacle to spatial integration across the coastline.

Authorities on ICZM agree that the lack of integration, as I have defined it, is one of the most severe limitations to achieving a more integrated and sustainable coastal management (Cicin-Sain and Knetch 1998, Kay and Alder 1999). The major challenge, then, is how to create management regimes to counteract these tendencies. In many cases, this would demand coordinated policies, coordinated legal framework, the appointment of lead agencies at national and regional level, major reorganisations of management systems, and the institution of coordinated decision-making. A tall order indeed, even in advanced countries with well developed systems of government.

How the public sector organises itself, then, is crucial to the success or failure of integrated management; but it is easy to fall into a trap here, the notion that perfect organisation and rational steering are the ultimate answers. Usually the public sector has enough with trying to co-ordinate itself, let alone the private sector over which it has limited control. And this brings me to another concept of integration, namely integration through partnership building, dialogue and public participation; a concept which has very much in common with emerging ideas of good governance. This is an aspect of coastal management that tends to be under-communicated in textbooks and reports from international agencies, where top-down approaches tend to be favoured. A country that has come quite far in management through partnership building is Great Britain (see e.g. the Moray Firth partnership: <http://www.morayfirth-partnership.org/>).

Of course, one of the big challenges to ICZM today and in the future, is integration over national boundaries, the problems of global pollution and algae blooms being cases in point. This is not as easy as it may seem, because it presupposes that nations both have the will to cooperate and have developed the necessary management systems and tools to deal with these problems on the ground, which means locally at source. And of course, we are all aware that many countries around the world (e.g. in Eastern Europe and the Third World) neither have the resources nor the institutions. For this reason, international co-operation often involves starting from scratch, with aid to institution building and development of competency.

Conclusion

Attending conferences on ICZM, I am often left with the impression that what we need is more scientific knowledge. We need to know more about how coastal systems work, the underlying assumption being that more knowledge is the cure for problems in management. If we only knew more, we could be more rational in our actions. Perfect knowledge would produce perfect management. There is of course a lot in the coastal zone that we do not know enough about, particularly the impacts of human action on natural systems; but is the assumption true?

We scientists often fall into what I call the rationality trap – we like to believe that knowledge is the basis of rational management. But in fact knowledge is often not used impartially as a basis for optimal, rational management, because it is almost always caught up with interest and with power. Indeed knowledge is often perverted and harnessed in the service of power, not unusually against change. So, one of the challenges in coastal management today is not only more science, but how to use the knowledge we already have to solve recognisable problems, and how to remove the bottle necks that hinder management problems from being solved. The implication of this is that we need to focus on the ways in which planning and management are organised and how they operate in relation to recognisable problems. The question always in the back of our minds should be why things are as they are. The answer is likely to bring us outside science and management, into political science and politics itself.

Ask me whether I am optimistic about future prospects for ICZM, and I must answer that progress towards ICZM is likely to be a long, hard climb.

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