CHAPTER 10
A COMPARATIVE ANALYSIS OF TWO FORMS OF STAKEHOLDER PARTICIPATION IN EUROPEAN AQUACULTURE GOVERNANCE: SELF-REGULATION AND INTEGRATED COASTAL ZONE MANAGEMENT

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Abstract

European aquaculture governance contains elements of the three main modes of governance: 1) hierarchical; 2) market; and 3) participative. This chapter focuses on the participative mode, both because it is the dominant mode, and because it offers a better prospect for the future of the aquaculture industry than either of the other two modes. There are two distinct forms of stakeholder participation: a) self-regulation, where participation is largely confined to the industry; and b) Integrated Coastal Zone Management (ICZM), where participation is (ideally) shared by all stakeholders. In this chapter, both forms of stakeholder participation are explained and evaluated, and the conclusion is drawn that the future of European aquaculture governance lies in strengthening the element of ICZM relative to the element of self-regulation.

10.1 Introduction

Aquaculture in Europe has been subjected to much less control by the European Commission than has the capture fisheries sector. This is partly because marine aquaculture generally takes place within Member States' territorial waters, and is therefore regulated mainly by the states themselves, and partly because aquaculture is a new industry, on a relatively small scale, and so has not raised many serious issues of competition between Member States in comparison with fisheries. As a result, the predominant mode of aquaculture governance in Europe is not the hierarchical mode (the top-down, centralised and coercive mode which predominates in the European catch fisheries in the form of the Common Fisheries Policy (CFP)), but what appears at first sight to be a modified version of the market mode, in which market forces of supply and demand are permitted to hold sway, subject to domestic legislation on planning, environmental protection, health and safety. However, scrutinising this modified market mode more closely, we can see that, notwithstanding its free market features, it contains a considerable amount of voluntary control by the aquaculture industry, laying down detailed guidelines and codes of conduct that all producers are virtually obliged to adopt. This form of governance, which has been termed 'self-regulation', thus embodies a 'thin' or partial form of stakeholder participation, in that the industry participates in decision-making, though other stakeholders are generally excluded. Accordingly, I have categorised it in the participative mode, rather than in the market mode, of fisheries governance.

However, there are increasing signs of a challenge to this self-regulating form of

T. S. Gray (ed.), Participation in Fisheries Governance, 179–192.

aquaculture governance in Europe, coming from two quarters. First, there are demands from other coastal resource users to participate in decision-making. Second, there is pressure from the European Union (EU) to shift from a single industry perspective to an eco-system approach, whereby aquaculture is governed in the context of the wider ecological environment in which it is located. The concept of Integrated Coastal Zone Management (ICZM) has arisen to satisfy these two aspirations, incorporating both a 'thick' or comprehensive form of stakeholder participation, and an ecosystem approach.

In this chapter, I examine each of these two forms of European aquaculture governance – self-regulation and ICZM – and show how the tide is gradually turning in favour of the latter. I conclude by arguing, however, that the best arrangement is where the two forms are combined, so that the industry retains its self-regulating capacity in spheres such as quality assurance, but that the whole coastal community is empowered to make decisions on such issues as the size and location of fish farms.

10.2 Development of aquaculture

Aquaculture is considered to be the fastest growing animal food production sector in the world, having increased at an average compounded rate of 9.2 per cent per year since 1970, compared with 1.4 per cent for capture fisheries and 2.8 per cent for terrestrial farmed meat production systems (FAO 2002). The marine aquaculture sector is dominated by high-value finfish, crustaceans, molluscs and aquatic plants. Finfish farming is the most important form of aquaculture in developed countries, having started commercially in the late 1970s/early 1980s, and having established itself as a successful alternative to fishing by the early 1990s. In western parts of the world, like Europe, the main opportunities for growth in the marine aquaculture sector lie in developing value-added products based on traditional farmed species, such as salmon (*Salmo salar* L.) and mussels (*Mytilus edulis*), and diversification into production of newer species such as cod (*Gadus* morhua) and haddock (*Melanogrammus aeglefinus*). Within the next 10 years, this sub-sector of aquaculture has been predicted to provide significant new employment. Organic fish farming is undertaken on a smaller scale, and the potential markets for organically farmed finfish, where a premium on price is paid, are more unpredictable, given that many consumers are more interested in competitively-priced products than in how fish are farmed.

Accordingly, despite some uncertainty, marine aquaculture is considered by many as a promising opportunity for diversification in coastal areas, especially in those areas that contain fisheries-dependent communities. Many human settlements are socially and economically dependent on unstable catch fishery resources, and, in some cases, aquaculture can offer an alternative sustainable livelihood, especially in rural areas where activities for income generation are limited. There are many examples where fishers have diversified into aquaculture successfully, meeting the need for employees skilled in working in and from a boat. Similarly, mollusc and cage culture provide additional revenue for fishers, who often perform them on a part-time basis. Indeed, in many parts of the world, fishing and aquaculture activities share similar coastal areas and services, and interaction between the two sectors is increasing. Moreover, offshore cage technology continues to advance and is becoming cheaper and increasingly viable,

and again this could open up opportunities for diversification, relying on skilled boat users to operate the sites. Competition for space in coastal waters has meant that aquaculturists are also looking towards onshore marine aquaculture production units, such as those that rely on recirculation, which are becoming cheaper to operate and could offer an alternative year-round supply of fish to local processors.

However, aquaculture is not without its problems. For example, in addition to increasing competition for space, some farmed species, such as salmon, have faced a number of setbacks, including falling prices and negative media coverage. Furthermore, in developed nations, the aquaculture industry has undergone restructuring from many middle-sized production units into fewer and more efficient bigger units. This has occurred largely as a result of outside investment, and is a trend expected to increase, particularly in developing countries. As many aquaculture farms have become more technology-based, they have become less reliant on a large workforce, and some communities that are now dependent on aquaculture as a source of income, particularly in rural areas, have been forced to look for alternative employment opportunities. This has caused disappointment in some quarters, because the initial establishment of aquaculture production units was embraced largely on the understanding that this was an activity that would create jobs. Also, despite the commonly held view that aquaculture can easily become a suitable occupation for fishers seeking, or having, to leave the fishing industry, in practice, the two working environments - the culture of organisms (‘gathering’) and fishing (‘hunting’) - have important cultural differences, which may make it difficult to match individual skills in fishing with the labour requirements of aquaculture.

10.3 Participatory aquaculture governance

Although there are examples of both the hierarchical mode of aquaculture governance (for example, Thailand), and the market mode of aquaculture governance (for example, in Nigeria and Ukraine), the most common mode of aquaculture governance, at least in developed countries, is the participatory mode. There are, however, two forms of the participatory mode in aquaculture governance: a) self-regulation; and b) ICZM. In the remainder of this chapter, most of my analysis will focus on these two forms of participatory aquaculture governance.

Despite its rapid expansion and success, relatively little academic attention has been devoted to the participatory mode of aquaculture governance, by contrast to the considerable amount of interest in the participatory mode of governance of capture fisheries. The reasons why less attention has been paid to addressing stakeholder participation in aquaculture compared to other sectors, such as capture fisheries, include the following. First, aquaculture is a relatively young industry, whereas capture fisheries have a long cultural heritage associated with traditional coastal communities. Second, fish farms are often located in isolated and/or peripheral areas, where transport to and from can be time-consuming and costly. Third, people have less awareness of aquaculture, because they are less likely to come into contact with aquatic production units than with fishing vessels. Fourth, until recently, aquatic products available for sale to consumers, like finfish and shellfish in retail outlets, have not differentiated between farmed and wild origin. Fifth, negative media coverage of the aquaculture industry labels this sector more an ‘abuser of the environment’ than a ‘victim of environmental

change', which is sometimes how the fishing industry is perceived. These factors explain why so few social scientists have worked on aquaculture-related case studies of stakeholder participation, compared to those who focus on stakeholder participation in catch fisheries.

However, there are signs that this picture is changing, because more attention is slowly being directed towards promoting participation in decision-making processes that deal with aquaculture-related topics. This is partly because of the activities of organisations such as the Federation of European Aquaculture Producers, which are improving stakeholder involvement through initiatives that focus on self-regulatory measures. Similarly, the European Aquaculture Society organises workshops that bring together stakeholders, such as producers, scientists and policy makers, to debate current and emerging issues. Likewise, the European Strategy for the Sustainable Development of European Aquaculture (EC 2002b) highlights the potential role of ICZM (EC 2002a) as a type of participatory forum that could help to advance sustainable development of the aquaculture sector.

Let us now turn our attention to the two forms of the participatory mode in aquaculture governance, beginning with self-regulation.

10.3.1 SELF-REGULATION AS A PARTICIPATORY MODE OF AQUACULTURE GOVERNANCE

Although self-regulation is a thin form of participation, in that the main stakeholder to participate in governance decisions is the aquaculture industry, nevertheless, it is still a participative mode of governance. Self-regulation is distinguished from the hierarchical mode in that the government allows an extensive amount of self-government to the aquaculture industry; and it is distinguished from the free market mode in that the industry imposes upon its members a strict code of conduct, to prevent a free-for-all. The European Commission's Strategy for the Sustainable Development of European Aquaculture clearly endorsed the concept of self-regulation, when it proposed that "The industry should make more use of self-regulation and voluntary agreements" (EC 2002b).

Self-regulation is being encouraged by the Commission in order to address some of the problems experienced by fish farmers and legislative institutions, particularly in resolving distortions of competition between Member States. Self-regulation and associated codes are a less mandatory form of control than is control through licensing, and in Europe, Codes of Conduct, including Codes of Practice and Voluntary Codes, have been used extensively to regulate the aquaculture sector. Codes of Conduct, such as the voluntary code developed for Europe's aquaculture sector by the Federation of European Aquaculture Producers (FEAP) (Hough 2000), offer considerable benefits to farmers and to the industry as a whole. These benefits include increased consumer confidence through imparting knowledge that products adhere to high levels of product safety and are produced by environmentally-friendly farming methods. Linked to this is an improved image of aquacultural products, which can enlarge market demand and generate higher returns from sales. Incentives such as these help to promote wider compliance among producers and adherence to good farming practices, which are linked

to eligibility for membership of quality assurance schemes such as the 'Label Rouge', used by French farmers, and, in Scotland, the 'Tartan Quality Salmon' label. The success of self-regulation, of course, relies on the implementation of good practices by producers, and then dissemination of the advantages to consumers.

It is probably true to say that the reason why self-regulation is the most widespread mode of governance in European aquaculture, is because, theoretically, at least, it takes into account not only the interests of the producers and consumers, but also the fish that are farmed, and the environment in which it operates (Hough 2000). The FEAP code is a voluntary and non-binding document, sometimes called soft law, drawn up in response to self-regulated sector development (Hough, 2000) and includes all species, types and scale of aquaculture. The code addresses the following topics among others:

- Guiding principles of the Code (expected conduct and attitudes by those involved);
- Husbandry;
- Environmental issues;
- Consumer issues;
- Social and economic considerations.

FEAP also promotes pro-active initiatives within the sector. For example, it encourages the development of Codes of Practice by Associations; Best Management Practices by Producer Groups and Co-operatives; and approved labelling schemes, such as "organic". As Hough (2000) notes, FEAP is particularly concerned to ensure the transparent management of aquaculture to the benefit of the consumer, the environment, and society. Self-publicity is also actively promoted. With this in mind, FEAP launched an initiative in 2001 – called 'Aqua-media' – designed to counter negative reports of the aquaculture industry in the media. This campaign was funded by the private sector, and its target audience included the general public, people in education (schools, colleges and universities), government and related institutions, the press, and consumer and special interest groups. FEAP released relevant information, using the Internet, multimedia Compact Discs, newsletters and brochures (Hough 2001). Similarly, some fish farmers actively try to engage with the local community by, for example, holding open days, participating in local fishery trusts and community council meetings, and sponsoring sporting events. In those areas where local coastal forums exist, representation of aquaculture interests is often found.

Outside Europe, we can find further examples of self-regulation in aquaculture governance. For instance, in Thailand, the hierarchical approach to aquaculture governance, which made use of command-and-control measures through legislation, proved inadequate in achieving sustainable development of the industry. Self-regulation as a form of stakeholder participation is now being pursued in preference to the earlier use of state regulation (Vandergeest *et al* 1999). State regulation failed to support the growth of aquaculture, because the laws and regulations quickly became outdated in relation to the rapidly developing industry (Lebel *et al* 2002) – dominated by shrimp. This legal inadequacy was compounded by a lack of support and involvement of relevant administration bodies; insufficient resources to enforce the regulations; and few incentives to promote compliance. This led to stakeholders working independently of one another and in an uncoordinated manner (Huitric *et al* 2002).

Codes of Conduct and Codes of Practice attracted considerable attention in Thailand in

the 1990s in response to this shift of policy towards self-regulation. These voluntary and non-binding documents were viewed as tools that could help the Thai aquaculture industry to overcome difficulties experienced in marketing and production – especially in the marine shrimp sector, which is mainly export-driven. The Thai Code of Conduct developed for marine shrimp has been given a five-year implementation phase (2001-2006). By 2006, it is hoped that a majority of shrimp farms will be certified to the required standard outlined in the Code of Conduct. However, critics have complained that, in Thailand, such a voluntary code will not work because compliance with best management practices can only be attained through environmental laws and regulations. The Thai government is well aware of this criticism, and has attempted to reinforce the voluntary codes by legal tools. Whether this hybrid system will work, is difficult to tell: it is too early to evaluate the effectiveness of this form of self-regulation, and careful monitoring and evaluation are necessary in order to provide evidence for its retention beyond 2006.

However, even where self-regulation appears to work well within a loose governmental regulatory framework, it has been criticised for two deficiencies: first, for excluding all resource users other than the aquaculture industry (the democratic deficit); and second, for excluding consideration of wider ecological issues than the aquacultural (the ecosystem deficit). To address both these issues, the concept of ICZM has been devised.

10.3.2 ICZM AS A FORM OF PARTICIPATIVE AQUACULTURE GOVERNANCE

The Commission has enthusiastically embraced the concept of ICZM as a means of overcoming both the democratic deficit, and the ecosystem deficit, in self-regulatory aquaculture. With regard to the *democratic deficit*, the European Commission's Strategy for the Sustainable Development of European Aquaculture stated that stakeholder participation must be increased. Stakeholder participation was identified by the Commission as a way to include broader consultations in the process of policy formulation. This approach is viewed as necessary by the Commission in order to include more extensive information on economic, social and physical considerations, as opposed to concentrating on policies that are only production-orientated. Participation by stakeholders such as consumers, farmers, producer associations, researchers and special interest groups in the decision-making process, according to the Commission, will also help tackle the aquaculture sector's over-dependence on governments and the private sector.

Until recently, initiatives aimed at improving stakeholder participation in the context of aquaculture governance were largely focused on stakeholders who are directly or indirectly involved in the industry. But, as aquaculture has expanded at such a rapid rate, particularly in coastal areas where many complaints against aquaculture development reflect competition for space (EC 2002b), it has been deemed important to explore how aquaculture can also meet the needs of coastal governance. This is an opportune time for aquaculture – given that the industry is still in its infancy, and coastal policy is receiving a high level of attention by governments and the Commission to develop ways that will allow it to integrate with existing and emerging users of the same coastal resource. This is especially challenging, given the multifaceted and dynamic nature of coastal areas and their associated communities and industries. The

Commission's Demonstration Programme on ICZM (EC 1999) has shown that the best response to such complex situations is to adopt an integrated approach that both involves all the stakeholders, and addresses concurrently the many different problems an area faces.

With regard to the *ecosystem deficit* of aquaculture, participation is highlighted not only as a democratic objective, but also as a means of improving the ecological performance of the sector. The Commission recognised that insufficient involvement and consultation with relevant stakeholders, including members of the public, could lead to degradation and mismanagement of resources (EC 2000). Meaningful participation is, therefore, seen as a means of achieving sustainable management strategies (Kaiser and Stead 2002). The concept of ICZM, which received a lot of attention in Europe throughout the 1990s, was seen as a way of dealing with the severe environmental problems that exist in coastal areas, many of which impact directly on the aquaculture sector. These include, for example, ecological issues, such as the benthic impact of cage farming, sensitive ecology, and limited resources of fish stocks; social issues, such as a population shift from rural to urban areas and from the hinterland to the coast; and economic issues, such as declining traditional activities and limited employment opportunities. Concern over these issues led the Commission to launch a Demonstration Programme on ICZM in 1996, to examine the fate of coastal zones (EC 1999). The Commission was mindful of the facts that coastal problems often have a cross-national dimension, and may not be solvable by the Member States separately; that many EU policies (including fisheries and regional policies) impacted on the development of the coastal zones; and that there was a need for an exchange of experience and know-how in a field where successes are still rare, and where there is substantial public and political demand for the conservation of the coastal zones and their sustainable development.

The two main objectives of the ICZM Demonstration Programme were, therefore: 1) to address the democratic deficit, by stimulating a broad debate among stakeholders about issues of ICZM and the respective responsibilities of various actors; and 2) to address the ecosystem deficit, by providing technical information about sustainable management of coastal zones. This programme – 35 projects across Europe undertaken between 1996 and 1999 – sought to provide examples of good practice in ICZM in a range of socio-economic, cultural, administrative and physical conditions. The main conclusion from the findings of this initiative was that the sectoral approach to management (that is, self-regulation) does not meet the needs of managing complex issues in coastal areas. The ICZM initiative recommends that integrated planning management is the only way to solve problems in areas of intensive use and multiple pressures.

We can see these two dimensions of ICZM (addressing democratic and ecosystem deficits) in the very definition of ICZM. ICZM is defined as a dynamic, multi-disciplinary and iterative process that promotes sustainable management of coastal zones. ICZM brings together all those involved in the development, management and use of the coast within a framework that facilitates integration of their interests and responsibilities. Over the long-term, ICZM seeks to balance cultural, economic, environmental, recreational and social objectives in order to achieve common goals (adopted from definitions by Coastal Zone Canada Association (cited in Cordah 2001) and from EC 2000). The key notion is 'integration', which embraces four elements: democratic integration (that is, including all stakeholders); administrative integration (that is, involving all relevant authorities, to ensure joined-up policy-making); physical

integration (that is, treating the coastal area, terrestrial and marine, as one inter-connected whole); and disciplinary integration (that is, using a multi- and inter-disciplinary methodology).

In my view, the first element – democratic integration – is the key factor. To explain: poor and fragmentary information can lead to uncertainty which is often at the root of the problem by preventing the main issues that need to be addressed in coastal management from being clearly identified. Given the combined complexities of coastal ecosystems and aquaculture, inter- and multi-disciplinary-sourced knowledge needs to be used in a co-ordinated manner, if relevant information is to be adequately integrated into the formulation of policy. One way to achieve this is by bringing together stakeholders from all relevant backgrounds and encouraging their involvement in the decision-making process.

According to chapter 2 of the Commission's ICZM Recommendation (EC 2002a), there are eight fundamental principles of ICZM: 1) broad perspective; 2) long-term perspective; 3) adaptive management; 4) local specificity; 5) ecosystem approach; 6) stakeholder inclusivity; 7) administrative co-ordination; and 8) extensive policy-making. The last three principles address the democratic deficit; the first five principles address the ecosystem deficit.

Let us look at these two groups of principles in turn, beginning with the last three principles. Clearly, the sixth principle – stakeholder inclusivity – directly addresses the democratic deficit. It demands the involvement of all parties: including aquaculturists, local authorities, organisations representing coastal interests, non-governmental organisations (NGOs), scientists, and the business sector. Such involvement is deemed essential to ensure that the perspectives held by all relevant stakeholders are factored into decision-making; that the whole community shares responsibility for setting priorities and committing itself to implementing policies of sustainable development; and that scientists conduct their work in the midst of a social debate about the use of coastal resources. As we shall see, much effort has been devoted to improving stakeholder participation in coastal management through mechanisms such as local coastal forums and workshops.

The seventh principle – administrative co-ordination – requires that all levels of administration (local, regional, national and inter-governmental) co-operate in finding common ground in approaching coastal issues. One way of ensuring this cooperation is to establish pro-active partnerships, linking the various administrative units. Such partnerships promote stakeholder engagement and thereby reduce the democratic deficit. The eighth principle – extensive policy-making – refers to the need to reach beyond the traditional approach to aquaculture governance (sectorally-oriented, dealing with single issues) and embrace the interests of all coastal resource users. Stakeholder input is also essential to the implementation of this principle.

Turning now to the five principles that address the ecosystem deficit, the fifth principle – the ecosystem approach – is obviously directly linked. The International Council for the Exploration of the Sea (ICES) has defined the ecosystem approach as the integrated management of human activities based in knowledge of ecosystem dynamics to achieve

sustainable use of ecosystem goods and services and the maintenance of ecosystem integrity (RCEP 2004:170). DEFRA (2002) has described the ecosystem approach as a new and more strategic way of thinking than in past and current practice, emphasising the importance of maintaining a healthy ecosystem alongside appropriate use of the marine environment, for the benefit of current and future generations. In an ecosystem approach to aquaculture, full account is taken of the effects of fish farming on the marine ecosystem, and environmentally friendly farming methods are employed in order to protect, not only the ecological, but also the economic, social and cultural heritage of coasts.

The first four principles follow on from the fifth principle, in that they are each elements in the ecosystem approach. For example, the first principle – broad perspective – exemplifies the ecosystem approach, in that it requires that aquaculture policy makers consider the bigger picture of the whole coastal environment, taking account of ecological, technological, economic, social and cultural factors. It alerts us to the need to consider indirect and cumulative causes and effects of aquaculture, and the complex consequences of its onshore, inshore and offshore activities. The second principle – long term perspective – focuses on the needs of present and future generations of people in coastal areas, and entails adopting the precautionary principle to deal with uncertainties for the marine ecosystem, such as the impact of climate change, which could lead to a rise in water temperature, with significant consequences for species, including farmed species, in coastal waters.

The third principle – adaptive management – is also linked to the ecosystem approach, in that it urges policy makers to be flexible in the way in which they respond to coastal problems. Given the dynamic nature of coastal environments and systems, regular monitoring along with feedback of relevant data needs to be incorporated into management plans so that actions and/or supporting policies can be up-to-date and reflective of the current state of knowledge. Finally, the fourth principle – local specificity – reflects the fact that in diverse and sensitive coastal systems, one size does not fit all, and aquaculture activities must be adjusted to suit particular locations. It is important that a good understanding of the local characteristics of an area, including its strengths, weaknesses, opportunities and threats (SWOT analysis), are integrated into coastal management planning and strategic thinking. Local information can sometimes be difficult to obtain, particularly when language and cultural barriers need to be overcome, and time and resources should be made available to collect and apply informal-based information, such as indigenous knowledge, to decision-making processes.

Member States of the EU are being encouraged to implement the Commission's Recommendations for ICZM by 2006. It is important, therefore, that the aquaculture industry is closely involved in the implementation process. At present, Member States are drawing up national coastal strategies, and the UK recently completed a national stock-taking exercise where an analysis of major actors, laws and institutions that influence the management of the coastal zone is summarised (Atkins 2004). Participation in ICZM has been encouraged by the UK government, largely through the setting up of voluntary partnerships in the form of local coastal (and estuarine) forums. These have been established to persuade local stakeholders and the local community to participate in sustainable management (or 'wise use') of particular coastal areas. Scotland has been the most active in the UK in creating these local coastal

forums, compared to its counterparts in England and Wales. Indeed, even in the 1970s, there were developments in Scotland that can be classed as examples of ICZM in its infancy. These include the Zetland County Council Act 1974; the Highland Region's Framework Plans for Fish Farming; and the Scottish Natural Heritage's Firths work on the Moray Firth, the Firth of Forth and the voluntary Marine Reserve at St. Abbs Head (Burbridge 2001). In the 1990s, many more voluntary coastal management initiatives were developed throughout Scotland, including the Forth Estuary Forum, the Tay Estuary Forum, the Moray Firth Partnership, the Cromarty Firth Liaison Group, the Fair Isle Marine Environment Tourism Initiative, the Minch Project, the Firth of Clyde Forum, the Loch Ryan Advisory Management Forum, and the Solway Firth Partnership (Burbridge, 2001). Further illustrations of partnerships and coastal management initiatives are described in Atkins (2004) – some including stakeholder representation from the aquaculture sector.

An example of a partnership that specifically addresses the needs of aquaculture by building consensus between different resource users of the same coastal areas, is the Tripartite Working Group (TWG). Members of the TWG represent fish farming and local wild fisheries interests, and it was set up in 1999 by the Scottish Executive to help establish Area Management Agreements (AMAs) in Scotland. The creation of an AMA is a voluntary process, the main aim of which is to develop practical measures to promote the maintenance and management of wild and farmed fish stocks, largely salmon (*Salmo salar* L.) at the local level. There are currently nine AMAs in Scotland. The TWG, and the AMAs that have resulted from this initiative, supports many of the principles advocated by ICZM, and they have aided co-operative working to achieve mutual objectives, through facilitating dialogue between the participants involved. This is a good example of positive action taken to address the need for improved communication and understanding between two groups of coastal stakeholders (wild salmon fisheries and the farmed salmon industry), which have traditionally worked against each other in an environment of mistrust. The advantage of AMAs is that they can be flexible and tailored to specific local needs. It is important to retain this local specificity (the fourth ICZM principle), which is considered an important contribution to the success of AMAs, and is also credited as the ICZM principle which has been implemented most effectively in comparison to the other ICZM principles in the UK (Atkins 2004). There are further opportunities to extend the benefits offered by the existing AMAs to other resource users, thereby implementing the sixth ICZM principle.

The TWG process and associated AMAs are considered to be a more effective tool than the regulatory system alone, which is typical of the hierarchical mode of governance. However, success from these initiatives, in terms of developing effective ICZM models, does not occur overnight, and it is now well known that in order for such developments to attain substantive integrated management and planning, between 5 and 10 years is required (Humphrey and Burbridge 1999). This is because participation must be gradual, whatever approach is used, to build trust, understanding and confidence, (Kaiser and Stead 2002). Although there are many examples of positive experiences, such as some of the outcomes from the Local Coastal Forums in Scotland (McGlashan 2002), in practice, initiatives based on stakeholder participation usually underestimate the time and resources required for maintaining success in the longer term. Moreover, success is more likely to come from pro-active, rather than reactive, responses. For

example, the TWG initiative was a reactive response to the increasing level of conflict between the various interested parties from the two stakeholder groups, but it is better if partnership-based projects arise through anticipatory work rather than waiting until a problem has arisen or deteriorated.

To date, the success of ICZM initiatives in the UK has been variable. Although there are many examples of good practice in ICZM that the aquaculture industry can draw upon, it should be noted that some ICZM initiatives have failed to achieve success. Four key reasons for failure have been revealed by the extensive study conducted in the UK on ICZM. First, there is a lack of long-term funding. Participative initiatives cost money, and little progress can be expected if there is a dearth of funding provided. Second, and partly because of limited funding, there has been a lack of involvement with stakeholders. Despite the rapid increase in initiatives that have centred on promoting involvement of stakeholders, many have had limited success in making a long term difference in practice, especially in factoring information derived from stakeholders into the formulation of policy. In particular, there has been a failure to fully engage local communities (Fletcher 2003; McGlashan and Barker 2004).

From my own experience, there needs to be more effort focused on developing methodologies that not only promote the initial involvement of participants, but also sustain stakeholder participation. The participatory mechanisms used so far, such as local coastal forums, may not be sufficient to achieve this sustained commitment. The aquaculture sector needs to recognise this shortfall, and to try and improve the continuation of stakeholder participation. Clear and achievable goals are one way to help retain interest, along with a demonstration of transparent and democratic methods on issues such as membership composition and rationale for set-up. Another suggestion is the use of pilot case studies in which stakeholder participation plays a central part in determining which form of governance best supports coastal aquaculture activity along with the needs of other resource use and users. Also, consensus conferences (Kaiser and Stead 2002) and stakeholder-led dialogue initiatives, focusing on the characteristics of an area, its people, associated aquaculture activity and other resource users, could be more widely implemented. Past experiences of consensus conferences have attracted good media coverage, which can offer the opportunity to portray the industry in a positive light. However, this can only be achieved with support from resources at the local, national and international levels, along with the involvement of key actors and players.

Third, there lacks a suitable legal framework for Member States to establish participatory ICZM. For one thing, although the European Commission has issued ICZM recommendations (which they hope to be implemented by Member States by 2006), thereisnolegalrequirementforMemberStates to set them up. As a result of this ‘soft-law’approach,thereis little incentive for governments to prioritise ICZM over otherpolicyinitiatives If ICZMwereput on a statutory basis, we would see much more urgentgovernmental action to establish and support them. Moreover, without statutory status,participatoryformsof ICZM such as local coastal forums in the UK are weak in the face of developers. Let me explain this point. Each of the local coastal forums must have produced a management plan outlining the approach they wish to adopt to implement, and the majority of the members of these forums have usually agreed (at least in principle) to the content of the plan. However, as highlighted by McGlashan and Barker (2004), because these management plans carry no statutory recognition, if a

proposed development (for example, a business venture that could constrain aquaculture production) conflicts with the management plan, the local authority would find it very difficult to refuse permission for the development, and may even be open to a legal challenge if it rejected the plan. It is this lack of statutory powers, either forcing (or encouraging) all of the relevant stakeholders to participate, combined with the frustration of trying to implement a voluntary management plan with no specific funds, and a lack of sustainable funding, that is leading to low morale and high staff turnover in coastal forums in the UK. This is contributing to a negative perception about ICZM.

In the view of some critics, the problems with European marine aquaculture governance are largely attributable to a lack of coherent and specific EU legislation for aquaculture, combined with no overarching legislation for ICZM. These deficiencies arise because many aquaculture issues are regulated by national legislation, which is influenced by a number of horizontal Community Directives that can lead to competition distortions among producers from different Member States (EC 2002b). The 'Strategy for the Sustainable Development of European Aquaculture' (EC 2002b) compounds the problem, in that Member States are invited to promote stakeholders' participation in the process of policy planning for aquaculture, yet it leaves incoherence in aquaculture policies at the inter-governmental level. On the one hand, the Commission is pushing the problem back to the industry and its Member States to be solved; yet, on the other hand, the Commission is failing to clarify the legalities at the European level. It is clear there is a need to simplify and better integrate the complex body of legislation that influences aquaculture activities at the inter-governmental level, especially in relation to the formulation, implementation and monitoring of different policies, and to ensure that these policies complement those that exist, or are evolving, at the regional, national and local levels (Stead 2003).

Fourth, there is an assumption, always implicit, and sometimes explicit, in ICZM theory that stakeholder participation and the ecosystem approach are consistent with each other, and indeed, that the one is a pre-condition of the other. This assumption is based on the argument that the more people who are involved in decision-making about the use of a resource, the more likely it is that that resource will be well-protected. However, is this argument convincing? What is the empirical evidence that increasing the extent of stakeholder participation will ensure that the ecosystem approach is adopted?

10.4 Conclusion

In European aquaculture governance, there are elements of all three main modes of governance: 1) the hierarchical mode, evident in the limited and somewhat incoherent framework laid down at EU and Member State levels; 2) the free market mode, evident in the forces of supply and demand which drive aquacultural producers; and 3) the participative mode, evident in two forms: a) self-regulation; and b) ICZM. Because of the deficiencies of each of the first two modes – the hierarchical mode suffers from over-centralisation and inflexibility, while the free market mode suffers from a lack of accountability – the participative mode is the best option to ensure sustainable development of aquaculture. However, neither of the two forms of the participative mode, self-regulation and ICZM, is adequate on its own. Self-regulation, while excellent at the role of quality control over the industry, fails to take into account either the claims of other marine resource users, or the ecological impact of aquaculture on the

ecosystem. For its part, ICZM, while potentially designed to remedy both these failures (the democratic deficit and the ecosystem deficit), has little commercial discipline to offer the industry. My conclusion is that both self-regulation and ICZM are needed for the effective governance of the aquaculture industry. Since, at present, self-regulation is far more prevalent than is ICZM, the proper balance between them requires a great deal more investment in ICZM during the next few years. Unless this occurs, there is a danger that the EU will step in and introduce a much more severe strain of the hierarchical mode of governance.

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