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Paper presented at the 1999 International Symposium on Society and Resource
Management, The University of Queensland,
Brisbane, Australia: July 7 - 10, 1999



COASTMAN WORKING PAPER N°6

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COASTMAN is a research programme funded by
the EC Environment and Climate Research Programme,
Human Dimension of Environmental Change
(ENV-CT97-0045).

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SUMMARY

Based on research in the EU-COASTMAN project and within the UNESCO/CSI-Nordic/Baltic Research Network, this paper analyses the development of institutions for governing coastal resources in modern societies. Using a combination of historical and comparative methods, the study gives an overview of the current trends of institutional development in Norway, France and Greece. In addition, it provides contrasting examples from Sweden, Finland, Estonia and Latvia.

Common for most management of coastal resources in modern societies (except in Japan), has been a specialisation and rationalisation of both resource utilisation and the way this is governed by single sector oriented bureaucracies. Specialised single specie fisheries under quota regimes has increased the distance between coastal fisheries and coastal communities. Monocropping aquaculture with atlantic salmon has evolved from a multitude of community enterprises into the risk absorbing business of large, vertically integrated corporations. As a result of developing from coastal commons to a public domain, the modern coast is at an increasing rate characterised by property rights that give exclusive rights to limited groups of harvesters.

However, with an increasing number of cultivation and enhancing options in the coastal zone, («The Blue Revolution»), the competition for use of coastal and sea territories increase. The growth of mussel, oyster, lobster, halibut, turbot and arctic char, implies an integration of coastal activities that demands Integrated Coastal Zone Planning and Management. Then, in a search for governing institutions based on territoriality rather than sectoriality, the coastal commons is re-entering the institutional arena of modern societies. The nature of this institutional development is the central topic of the paper.

CONTENTS

The Challenges to European ICZM of the Blue Revolution	1
A new role for Coastal Commons	8

The Challenges to European ICZM of the Blue Revolution

Most of contemporary coastal zone planning has been based on the assumption that improved co-ordination between sectors and administrative levels would solve most of the problems in the coastal zone. However, a number of new challenges, subsumed under the heading “The Blue revolution”, shows that the coastal zone is more complex than at first thought. When questions of resource utilisation are gradually replaced by questions of resource transformation, the coastal ecology and socio-cultural environment becomes considerably more complex than its terrestrial counterpart.

Within the European Union a “European Demonstration programme for Integrated Coastal Zone Management” was started in 1997. This Programme was motivated by a realisation that the Coastal Problems were of a larger European Dimension and could not be solved by the member states alone. The Mediterranean, Baltic and North Sea are “Common Seas”, and fishers, pollutants, sediments, recreationists, tourists and marine traffic flows freely.

All the Policies of the European Union - (and of the states of the greater EEA) have massive influence on the development of the European coastal zones: the Regional policies with its development and support programmes, the Policies for transports planning, licensing and technical solutions, the Fisheries policies with its effects on the Common Pond, the Environmental Policies with rehabilitation of coastal landscapes (wetlands etc. from the 1st industrial revolution, the Agricultural policies with its support for fertiliser use and plowing practices, the Energy policies and its management of rivers and nuclear and thermal plants and the Industrial policies with support for location of new industries.

The European demonstration programme therefore placed great emphasis on the level of “Coordination, cooperation and consultation” and it was believed that a high level should secure the integrative character of coastal zone management, but that poor coordination was the general trend throughout Europe. In addition the principles of **subsidiarity** should be tested out in the programme, this would mean the preconditions for the local level to have secure authority and be able to take responsibility. The principles of **policy integration** should also be tested, i.e. the possibilities for the national sector agencies and the European Commission DG’s to integrate their policies with relevance to the European Coasts. The results of the Demonstration Programme are summed up in a Report on General Principles and Policy Options (EC 1999). It shows that there is still a long way to go for the EU to achieve a truly integrated multi-sectoral management of the coastal zone, and a number of institutional hurdles to be overcome. However, the report («reflection paper) has a valid and detailed analysis of the causes behind the lack of integrated coastal zone management in today’s Europe:

- Legislation and policy has been sectorally-based and uncoordinated
- Inappropriate and isolated sectoral planning decisions have often worked against the long term interests of sustainable management of the coastal zones
- Rigid bureaucratic systems have limited local creativity and adaptability
- Local initiatives in sustainable coastal management have lacked adequate resources and support from higher administrative levels
- Management of the coast has lacked vision and is based on a very limited understanding of coastal processes
- Scientific research and data collection have been isolated from end-users (EC 1999)

Against this sad state of affairs, the report lines up 7 general principles for reflection and discussion in the member countries:

- Take a Wide-Ranging Perspective
- Build on an Understanding of Specific Conditions in the Area of Interest
- Work with Natural Processes
- Ensure that Decisions Taken today Do Not Foreclose Options for the Future
- Use Participatory Planning to Develop Consensus
- Ensure the Support and Involvement of All Relevant Administrative Bodies
- Use a combination of Instruments (EC 1999)

The Commission of the EU will make their final recommendations only after a public debate and exchange of views with the European Parliament, but sees increased emphasis on ICZM as a valuable tool to implement the overall objective of integration of environment into all other policies (Amsterdam Treaty §6) and the objectives of regional cohesion, fisheries, social affairs, transport, energy and promotion of SME. As long as ICZM is the prerogative of the member states, the options for the EU is to partly define the framework for the ICZM by defining a set of guiding principles, partly to trigger ICZM through direct obligations or conditionality for funding in EU-programmes. It is also possible to stimulate integrated coastal zone management through direct support for certain ICZM activities or support for the development of tools and methodologies, including improved teaching and training programmes. With the historically derived diversity of the Member States' legal system, the EU cannot be too prescriptive in its long-term institutional design for promoting more integrated coastal zone management. In keeping with the legal competence of the EU and the principle of subsidiarity, article 189 of the European Treaty specifies 3 legislative instruments that can be applied as binding instruments:

- A EU directive on ICZM
- A Council Resolution on ICZM – a Code of Guidance
- A Council Decision on ICZM

These institutional complexities means that it will take considerable time before a Common European ICZM strategy is designed and accepted by all the member states. In the meantime, a number of sector policies will be worked out or revised, without being influenced by the emerging European ICZM Strategy. One such important field to most coastal regions is the revision of the Common Fisheries Policy in 2002. In the preliminary documents for this revision, e.g. the "The Common Fisheries Policy beyond 2002", there are few attempts to link the strategies for sustainable fishing to strategies for sustainable coastal development (European Parliament, 1997).

In Norway, who as a non-member only has to worry about internal policy integration, the Helgeland Project demonstrated that the hypothesis of "insufficient coordination" is correct. Even if co-ordination was achieved at the local level, it often broke down when questions were lifted to the regional level (Bennet & Skjerdal 1996). And even when coordination and co-operation were achieved, there were serious difficulties connected to practising the principles of subsidiarity and national/regional policy integration. Thus it is erroneous to think that improved co-ordination alone will solve all the problems of Integrated Coastal Zone Management. The other Norwegian entry, the three county wide coastal zone plans, showed

an improvement in coordination levels from the Helgeland cases, but still the sectoral way of thinking is prevailing. (European Commission 1999)

One of the most important lessons to be drawn from the European demonstration programme so far is that the ecological and social dynamics of coastal development, and its attached political processes, are far more complex than so far acknowledged. In the remainder of this paper we shall therefore try to give some insights into why this is so, and indicate some areas where scientific and analytical powers should be applied in order to be prepared for more fundamental changes in the coastal areas of Europe.

A lot of attention has in recent years been directed towards the struggle between single sector oriented bureaucracies and territorial planning approaches. The political objectives have been that the latter should gain hegemony over the former. Following the nation states' territorialisation of Coastal Waters (EEZ) after UNCED, the belief is that co-ordinated planning will automatically bring about co-ordinated action that will be beneficial to the coastal environment.

This could have become true for the limited access and harvesting regulations in those cases where these become based on territoriality rather than sectorality (e.g. fishing, hunting, gathering). But empirical experience so far points in the opposite direction; the mobility of fishers is so highly valued that it counteracts the political wish of territorially based resource management by coastal community involvement. Both the single sector oriented bureaucracies are strengthened and the concord between these and the professional fishers' association is strengthened. Attempts have also been done to integrate fisheries into territorially based coastal area management, but if no attempts are made to control industrialisation of fisheries, these attempts remain feeble (FAO 1995 §10).

Area based planning might be effective in preventing some obviously conflicting activities in the coastal zone, like for instance between polluting industry and fish farming. But planning does not guarantee that certain activities will actually take place on the coast. Activities are depending on initiatives from individuals, corporations, associations etc. And even if a plan permits certain activities, this is no guarantee that such activities will come about:

- ✓ It depends on available technology, knowledge and capital.
- ✓ It depends on available entrepreneurial capacity and the corresponding financial institutions' assessment of profitability and market and environmental risks involved. (Thus the role of insurance companies is becoming increasingly important in deciding the coastal environment).
- ✓ And it depends on the licensing authority - a plan "slot" does not imply a permission - or a licence. And a licence can specify or allow operating conditions that either strengthen or undermine the viability of the individual enterprise or the collective intent of the plan.

Even when all these preconditions are met, we find that ICZ planning procedures have serious shortcomings. Most planning procedures are based on the old contradiction between use and protection of environment – the purpose of the plan itself is to draw the boundaries between what can be "used" and what cannot be used. In the case of Rødøy in Northern Norway, the municipality refused to table the Coastal Protection Plan because:

"its restrictions would be so strict that they effectively would stop all local and traditional use of the areas and the coastal resources – in view of the fact that it is exactly through

such sustainable and responsible use by the property owners and the community members that the ecological values are created and the protection of a living nature is maintained” (Sandberg 1999, see also St.meld. nr. 43 1998-99).

This is mainly because a number of planning exercises fall short of specifying how a particular use shall be carried out and what tolerable consequences of such a use are. In many ways, contemporary ICZM lacks the conceptual tools to manage the coastal zone in a manner which would have been compatible with the ideas of Rødøy Municipal Assembly. One important reason for this is that the **transformation** of resources is fundamentally different from the harvesting of resources. Resource transformation adds a completely different dimension to resource management. Especially when dealing with the transformation of coastal resources, this often means transformation of coastal ecosystems into different coastal ecosystems. In such cases it is often hard to decide whether this is resource degradation or resource enhancement.

The wet part of the coastal ecology is usually a 3-dimensional environment - and vastly more complex than the terrestrial environment. This again means that it is highly insufficient with a single sector [industrial] approach to transformation of coastal resources. And it means a need to question the ability of conventional Integrated Coastal Zone Management competence to deal with these new and more complex questions:

- ✓ Can traditional Integrated Coastal Zone Management based on Planning Act Platforms deal with only use/harvest and protection issues related to Coastal Development?
- ✓ And if so, what does it take to enable modern ICZM to deal with cultivation, augmentation, rehabilitation and ecosystem enhancement in relation to Coastal Development.?

To answer these questions it is necessary to look at the more profound rationalities of resource transformation. The most fundamental idea is that the transformation shall be worth the effort. That means that the investments done must be profitable in relation to the expected harvest. Resources are usually transformed by human labour or by investment of knowledge, technology and capital. In very general terms we can distinguish between sowing, enhancing and investing. Sowing and harvesting has its own logic. In order to have an incentive to sow, one must be assured - with some probability - of a harvest. This creates a demand for property rights. (re: Proposed Law of Sea Ranching in Norway, NOU 1994:10).

The logic of investments, and the demands of rentability, leads to specialisation of production, technological optimisation, concentration of ownership and increasing scales in production.

The common experience is also that there soon appear externalities and diseconomies of scale in coastal cultivation that threatens the viability of enterprises. It also seems like the usual strategies for cultivators: monocultures and ecosystem simplification makes the cultures increasingly prone to diseases, parasites and predators and at a faster rate than in terrestrial environments. This is because ecosystem simplification as a rationale is difficult to achieve in a fluid environment where effective fencing is virtually impossible. The large concentrations of prey, quickly attracts both bacteria, parasites and predators and to a certain extent stimulates the growth of their stocks. It is therefore a need to develop new rationales for coastal bioproduction based on the opposite strategy – that of ecosystem complexification.

Only recently have new rationales of ecosystem complexification based on new theories of beneficial bio-diversity started to gain ground among marine cultivators. But so far, experiments with balanced multicultures are only in their infancy in the North Atlantic coastal environment.

So in the Norwegian case, there are empirical basis for assuming substantial externalities and diseconomies of scale in specialised coastal industrial cultivation and that this calls for regulations, the internalising of external costs – and/or balancing of complex biological processes in marine cultivation.

An overriding question in Norwegian coastal management has been whether the nation – and the coastal communities, would be better off by managing the wild multispecies environment in a better way rather than by spending increasing efforts in transforming the coastal resources through enhancement and cultivations?

This is not an isolated problem for a few large fisheries nations, but for the whole world. Today 1/3 of the world fish catches are “biomass fishing”, after the depletion of important and highly valued predator stocks has forced fishermen to fish further and further down in the food chain.

An increasing share of this biomass fishing is not used for human consumption, but as fodder for aquaculture organisms. Although this strategy is somewhat related to a 1000 year old tradition of transforming cheap marine protein from the Northern/Arctic seas into more refined and more highly priced protein for export to commercially more powerful markets in Central Europe, it is fundamentally different. In contrast to the traditional stockfish production and trade, the “biomass fishing” for marine cultures is “resource mining” in so far as it changes the multispecies composition of the ocean itself – it is thus a marine resource transformation that benefits only the emerging coastal cultivators. The effects of this resource management strategy is also well known: deprivation of food for sea-birds and sea mammals, and impoverishment of coastal people. Numerous attempts by coastal people to regain local control over fish resources exploited by industrial type fishing have in Northern Norway often been thwarted by fisheries sector managers, thus disempowering local coastal communities (Sagdahl ed. 1998).

But not all increased transformation of coastal resources in the form of marine cultivation have negative environmental impacts. A number of smaller and more integrated cultivation systems have unchallenged positive environmental effects. Best known among these are the traditional Asian mixed rice/fish/shrimp cultivation systems which closes the nutritional cycle and thus recycles agricultural waste into valuable protein food (Ruddle & Zhong 1988). Similar recycling of marine waste from fish processing was found in the “fodder-kitchen” of pioneer aquaculture in Northern Norway in the 1970s and 80s (Seierstad, Sagdahl & Sandberg, 1985). But with increasing rationalisation of Norwegian Salmon farming, this local recycling was replaced by biomass based factory feeds suitable for photovoltaic automatic feeders.

Another important aspect of the “Blue revolution” is the increased importance of marine plants. About half of the world’s marine aquacultural production is today made up of marine algae, kelp and seaweed. As most of these are immobile organisms in Northern Waters, the harvesting of kelp and seaweed tend to be sustainable. This is because unsustainable harvesting practises are so much more visible than for mobile organisms and because coastal

communities have a certain capacity to learn from past mistakes. Interesting examples are here found in kelp harvesting on Helgeland, where the crucial relations between property rights and incentives for sustainable harvest are demonstrated.

As coastal cultivation and enhancement increases, the competition increases for river mouths, estuaries, shallow waters and other areas that has a multitude of potential uses. As mentioned above, the area based planning model of LENKA has been tried in Norway – with carrying capacity as the crucial rationale for balancing the needs of marine cultivations, of spawning and feeding areas for juvenile stages of fish species. Ideally, this kind of planning process could bring clarity and consent in these kind of competing uses, but the lack of institutional infrastructure and non-use of the local marine management councils made LENKA mostly an academic exercise (Sagdahl ed. 1998).

An important part of the “Blue revolution” is the increased use of biotechnology in marine cultivation. The creation of transgenic organisms (fast growing, freeze tolerant or disease resistant) attracts research money and high quality researchers. There is also a potential for creation of sterile organisms that can reduce the potential hazards of mass escapes from aquaculture cages. But the overall assessment is that these transgenic organisms, especially if released into coastal waters by Sea-Ranching operations, will add further stress to marine ecosystems and should be prohibited. There is also a real danger that this kind of advanced technology with patented solutions will increase the marginalisation of coastal communities. However, the state of the art of genetic engineering of fish shows that this so far has been very inefficient and has only had very random success (Martinez 1998).

Like in terrestrial environments, there are also a number of hazards connected to enhancing and cultivating coastal and marine environments. In addition to the hazard of ecosystem simplification resulting from marine monocropping, there is also the danger that in the competition for key-stone environments, the marine wildlife is the one that tends to loose. The result is often local eutrophication and biomass concentration which have unexpected ecosystem effects in the form of degraded environments, mass escapes of cultivated organisms, blooms of algae or parasites and increased predator pressure on wild species. One example here is the massive increase in salmon lice that now appear as a result of 20 years of salmon farming in northern waters – a development that threatens to make a number of wild salmon stocks extinct.

Contrary to agriculture in the subarctic zone, coastal cultivation in the North involves marine ecosystem risks that are too large for local entrepreneurs. Such known negative effects of intensive, high density cultivation of fish is the accumulation of unconsumed feed and feces that can lead to local eutrophication, depletion of oxygen, spread of unicellular algae (some of them toxic) and pollution by pesticides and antibiotics. The danger of escapes of farmed organisms and their disturbance of the breeding of wild ones has been defined as the “wild salmon tragedy” of Norway. In 1994, 570.000 individual salmon escaped from caged aquaculture, in 1995 this had risen to 650.000 escapes and today approx. 42% of coastal fished salmon is of farmed origin.

In addition the danger of environmental degradation forces cultivators to change their location frequently or practice shifting cultivation. They therefore need large areas, thus the cages and enclosures can imply a loss of access for traditional fisheries to important spawning areas and fishing grounds.

The instability of intensive, specialised cultivation systems often means that local communities are unable to participate over longer period. The total loss of harvest in at least 1 in 10 years, maybe even in 2 out of 10 years means that only large corporations with many farms, and possibly larger diversity in production, can absorb this kind of risk. During a series of aquaculture crises – both market crisis and environmental crises, a large number of small Northern aquaculturalists have gone bankrupt and larger corporate concentrations and insurance companies has taken over as stakeholders in the field of coastal cultivation. As long as North Atlantic Aquaculture continue to imply ecosystem simplification with monocropping of high value species to supply the international markets, these processes of corporate concentrations are likely to continue.

Increased vulnerability is most likely to be the result of the high reliance on fodder based on “biomass fishing”, on few species in aquaculture (mostly salmonides) with a high vulnerability to both markets, parasites and diseases and few links with other forms of coastal harvesting or production. There is only a limited trickle-down effect from intensive corporate aquaculture to local coastal communities and these tend to become increasingly marginalised. At the same time the large profits from export gains of farmed salmon hide the environmental and social costs to coastal communities. A crucial question in relation to ICZM is therefore to what degree these corporate processes reduce the effects of local governance and coastal community co-management of coastal resources.

It is important to realise that access and harvesting rights are property rights on the operational level and that they in principle are sufficient for fishing operations – and it was thought – also for floating fish ponds. The important factor was that they did not transform the resource itself, the basic coastal ecosystem. But as mentioned above, the large floating pens and their shore infrastructure, plus the large “reserve areas” for shifting cultivation, are difficult border cases here. In Brittany (France), the oyster-cultures and the mussel-cultures have definitely transformed the ecosystem, with considerable effects on the property rights system in the area (Frangoudes & al. 1999)

When a cultivator wants to undertake investments, to enhance or transform a resource in order to reap profits later, this requires additional and more clearly defined property rights. These are management rights and exclusion rights on the collective choice level which are necessary in order to undertake investments or improvements with a long time-horizon.

Such rights (*de jure*) also implies duties, which in most cases are interpreted as the duty to enhance and not degrade the resource. Clearly defined property rights are thus a precondition for a resource transformation aimed at enhancing the resource – in opposition to resource mining, which often results from “open access” or poorly defined and/or poorly enforced property rights (Hardin 1998, Ostrom 1990). Such secure property rights are used as collateral for credit and are often crucial for an insurance coverage.

But the other side of the urge for secure property rights is that there develops a market for coastal property rights, also on the wet side. The demand for secure collateral also generates a demand for marketability and this leads to a demand for alienation rights, i.e. the right to sell-out. Therefore the ultimate consequence of issuing operational level property rights to enterprises that actually undertake transformation of coastal resources, is in the long run the same as giving away what was formerly coastal commons to private corporations. It is therefore of crucial importance that an ICZM-process faced with the “Blue Revolution”,

carefully specifies how the property rights are to be designed. A number of examples from the Norwegian coasts (Sandersen 1999), Danish coasts (Suadicani & Kragh 1999), as well as Baltic coasts (Rep. Of Lithuania 1998) and the coasts of Brittany (Frangoudes & al 1999) and Greece (Sevastaki 1999) shows that this is not commonly the case with contemporary Integrated Coastal Zone Management.

A new role for Coastal Commons

The main difference between coastal cultivations and ecosystem enhancement on the coasts is the nature of property rights. In a strict sense both kinds of activities are resource transformation. For cultivations, like e.g. localised mussels cultures or enclosed pens of farmed salmon, it is analytically interesting to investigate how legitimate and enforceable property rights are established in order to enable those who invest to a certain extent a secure harvest. Thus the “surplus” resulting from the resource transformation can be extracted and to some extent be reinvested by the owner. If the subtraction of this surplus is perceived as legitimate in a community – or in a wider region, the exclusion of non-owners will be a function of this kind of property rights. But even the limited occupation of coastal territory by marine cultivations is logically a subtraction by private users of parts of coastal resources from the common – or public use. The Subtractability Problem is thus the typical private goods problem; areas that are enclosed by private property rights cannot be accessed and harvested from by other users, e.g. fishermen harvesting from highly mobile fish-stocks. It has therefore often required the intervention of the State to issue licences for the use of specific locations of such cultivations. In order to do this, the state has to define coastal waters as public property rather than common property for people in a local coastal community – property has to be made public before in can be privatised.

On the other hand, for larger or smaller ecosystem enhancement efforts, the problem is the Exclusion Problem. This is a typical public goods problem where the difficulty of excluding some categories of users might jeopardise the whole enhancement effort. In Norway, this has been the case with both Salmon stock enhancement programs and Lobster stock enhancement programs. Potentially successful restocking programs become unsustainable because uncommitted bystanders are not legally prevented from harvesting from the improved stock or from the results of the restored habitat. Thus investments in restocking, stock augmentation, improved spawning habitats, artificial reefs, regrowth of seaweed etc. are discouraged and are in many cases not undertaken (PUSH 1998). Coastal ecosystem enhancement will as public undertakings always be depending on the willingness of tax-payers to spend public funds. In this respect the open access character often results in overuse and overharvest from an enhanced environment, and thus in “political failure”, thereby barring further use of public funds for this kind of enhancement efforts.

Analytically it is therefore a need to distinguish between public and common property rights: What is common to the inhabitants of a fjord or an archipelago, need not necessarily be treated as public property with open access for all citizens of a nation state – or of a union of states. And it need not be privatised in order to facilitate investments in cultivation or enhancement and secure the surplus for the investor. Still the organisation can be internally inclusive at the same time as it is externally exclusive. Experience shows that organisational strength thus can be achieved when all who live in a community or a region in principle are invited to participate in the enhancement effort (see also Jentoft, McCay and Wilson 1998). And it shows that by limiting the harvesting rights to those who show a credible commitment

towards the enhancement effort, it is possible to ensure both sustainability and legitimacy. However, this distinction challenges some fundamental doctrines in modern societies, which to a certain degree is built on the notion of a fundamental duality between public and private property rights where there is no room for common property rights. Therefore, for the purpose of practical institutional design beyond these contemporary doctrines, profound renegotiations of the “social contract” between state, individuals and various intermediary collectives is required. An important part of the COASTMAN project is therefore to investigate what form this kind of renegotiations takes in the process of ICZM in different coastal communities in different European countries. The preliminary findings from this project are that modern type commons institutions are suitable to handle a number of the management challenges arising from the technological and organizational developments in the “Blue Revolution” Further institutional development along these line is therefore required.

Linked to the problem of suitable property rights for resource transformation, is the old problem of cultivation versus harvesting from the wild nature. The surplus generated from the costs incurred in enhancement and sowing must always be weighed against the costs and benefits of regulation only or nature protection only. Some times the experience shows that the output from natural coastal and marine systems can be reaped far more efficiently than the output from man’s cultivations, provided the former are managed in a sustainable way. This was the case with cod in, where optimistic attempts to farm cod in coastal communities were soon rendered unprofitable by the high natural fertility of the cod and the vivid growth in natural stocks (PUSH 1998). In most cases, therefore, cultivations are only commercially viable if the wild stocks and their supporting natural ecosystem is harmed or modified to such an extent that the wild harvest cannot challenge the cultivated harvest in the market. And this has been a common phenomenon during the 10.000 years of agricultural revolution, with the help of humans, tame organisms tend to drive out wild organisms. In the coastal zone this is most strikingly the case with salmon, where the cultivation of salmon in cage aquaculture through various mechanisms prevents the regrowth of the wild salmon stocks in a large number of rivers in Norway (NOU 1999:9). In this perspective, cultivation in coastal environments is often not the result of a conscious calculation, but more a necessity resulting from a degradation of the wild ecosystems by human influence. The transformation of the coastal resource through cultivation is in such cases the short term solution close at hand, while the full restoration of the wild coastal ecosystem is perceived to be too long term to be economically and politically realistic.

Thus the management of coastal zones also involves difficult considerations in the field of political ecology: whether to transform the coastal resources into a production oriented “coastal cultural landscape” - or - to restore the full productivity of the wild coastal ecosystem for an optimal harvest. The wild, larger, marine ecosystem is of fundamental importance for all ecological processes on the coast and it is therefore of crucial importance, that fisheries issues are not treated in isolation from the coastal questions.

As this study has shown, and as the FAO Code of Conduct also points out, there is a strong need to integrate fisheries into Coastal area management (FAO 1995 §10). This means both that the fisheries sector and fishing communities are consulted in the coastal planning and management processes – and that these processes shall have an impact on the way the fishing industry conducts its business. In the case of both Norway and the European Union, the latter concern is probably the most problematic with the current institutional set-up.

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