Atlantic Coast (Wester Ross) Project

COMPARATIVE STUDY:

Coastal zone planning in Hordaland, Norway

Highland Council Planning & Development Service

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Introduction

PURPOSE OF THE STUDY VISIT

This report sets out the findings of a two-day study visit and workshop held in the Hordaland county of Norway in late August/ early September 2006. The event was conceived as part of the Atlantic Coast (Wester Ross) project which set out to develop and test – on a demonstration basis - an integrated coastal zone plan for the Two Brooms area in Highland. The Norwegian experience of coastal planning was referred to at various times in the early publicity and consultation phases of this project. This was to provide examples of what integrated CZ plans could look like in practice and to give a frame of reference against which the Two Brooms plan could be compared.

The purpose of the visit/workshop (a series of technical meetings over 2 days) was to discuss recent progress and new techniques in coastal planning with Norwegian experts in this field who are working at both regional and district levels. Particular attention was given to Highland Council's recent experience of preparing a new coastal plan for the Two Brooms area. The main interest in Norway was coastal plans recently prepared in the county of Hordaland and discussions around the lessons learned from each of the two regions.

Highland Council first established professional links with coastal planning specialists in Hordaland when the two councils worked together on the Interreg 2C Norcoast project during 1998-2000. A small member-officer group from Highland subsequently visited in 2003. Hordaland is one of the most advanced regions in Europe in terms of coastal planning practice and its geography and planning issues are similar to those of Highland. The Highland Council, for its part, has much experience of developing plans to deal with aquaculture. Through its local initiatives and contributions to national working groups it is seen in the UK as one of the pioneers in the now rapidly evolving field of coastal and marine policy. It is therefore worthwhile for these two regions to maintain contact and to exchange experience and ideas which can help to raise awareness and standards of practice on both sides of the North Sea. The fruits of this dialogue can, in turn, be relayed to other regions in the two countries and in the wider Atlantic Arc and North Sea areas.

FEATURES OF THE PROGRAMME

Day one of the programme started with an excursion to the Austevoll archipelago and municipality via the Krokeide to Hufthamar ferry. Issues discussed included examples of planning in the shoreline area, sites under pressure for development, and public outdoor recreation areas.

On the Austevoll archipelago there was a presentation about the Austevoll municipality's spatial plan. This was followed by a visit to Fiskarfagskulen (the college for navigation and education of fishermen) with a presentation by the college's director Håvard Rabben. Also in Austevoll a visit was made to the Institute of Marine Research which specialises in research for aquaculture and marine species. The Institute, set up after the collapse of herring stocks in the 1970's, is one of the largest and most advanced research facilities of its type in Europe. The visit concluded with an inspection of the coastal settlement of Bekkjarvik.

On day two there was a seminar in the Hordaland County Council HQ in Bergen which took as its theme 'Spatial planning in Norway and Scotland'. This was attended

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by officials from the county council and a range of other bodies. The seminar started with an introduction to spatial planning in the coastal zone of Norway and Hordaland by Marit Rødseth who is the group leader for municipal cooperation in Hordaland County Administration.

Colin Wishart and Angus McHattie provided an overview of the current state of coastal planning in Scotland, covering the range of ongoing initiatives and focusing in more detail on the experience of the Atlantic Coast (Wester Ross) Project.

The meeting then heard about wider experiences with coastal zone planning in Norway from Knut Bjørn Stokke who is a researcher at the Norwegian Institute for Urban and Regional Research. Håkon Kryvi, who works for the Environmental department at the county governor's office, provided an overview of environmental impacts in the coastal zone of Hordaland.

Rune Rosland from the University of Bergen provided some background information on education in coastal zone planning in courses run by the university.

Many sectors are involved in coastal management in Hordaland and the seminar heard from county officials Øivind Høiness, Jan Hausken, and Inge Døskeland how GIS is being developed as a decision support system for coastal zone planning and sustainable economic development in Hordaland.

The seminar concluded with discussions on the prospects for a new international project on developing best practice in coastal zone planning.

National overview - coastal planning in Norway

KEY FACTS ABOUT THE COUNTRY

Norway has a population of about 4.6 million, which is similar in size to that of Scotland but in a country with four times the area. It is a constitutional monarchy with a parliamentary system of government. The 165 members of the Norwegian parliament, the Storting, are elected from the 19 counties for 4-year terms according to a system of proportional representation. The county and municipality levels of administration have similar status, though complementary roles. Central government has the overriding authority and supervision of county and municipal administration.

The 19 counties consist of 434 municipalities which vary significantly in size, topography and population. More than half of them have less than 5,000 inhabitants; eight have more than 50,000 inhabitants. Around three quarters of the Norwegian population live on the coast, which is more than 83,000 kms in length due to the many long fjords and numerous small islands.

RESPONSIBILITIES OF THE DIFFERENT TIERS OF GOVERNMENT

The framework for the activities of the county councils and municipalities is laid down by the parliament (Storting) through legislation and decisions regarding local government financing. It also determines the division of functions between the different levels of government. Government can only assign new functions to local government by means of legislation or decisions made by the Storting, however, it is an important principle that the counties and municipalities may voluntarily assume tasks or functions which have not been assigned to others by law.

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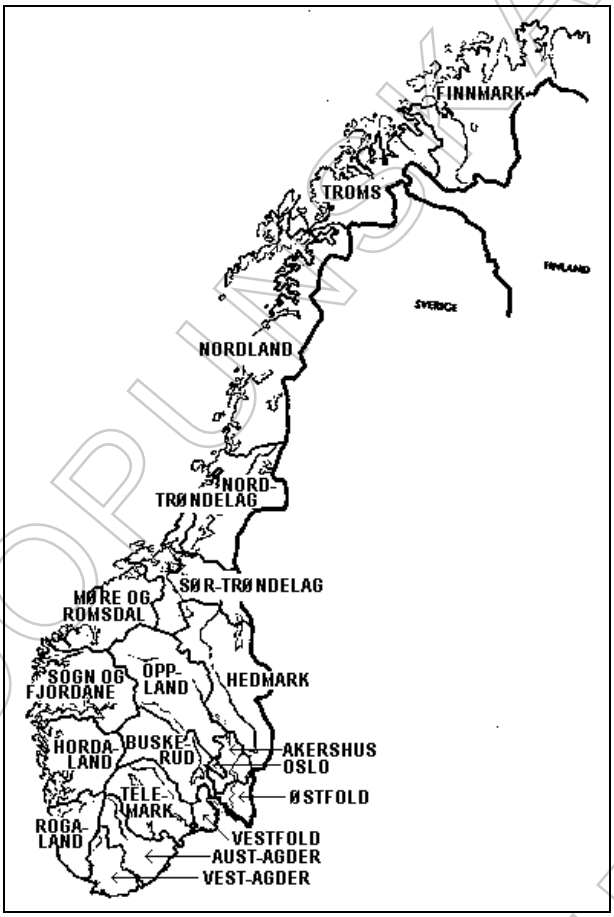
Diagram 1: Norway's counties



The county councils are responsible for regional development issues, upper secondary schools, specialist health services, dental care, children's welfare institutions and institutions for the care of drug and alcohol abusers, county roads, public transport and museums.

The municipalities are responsible for local development issues and the organisation of land use (eg allocation land for industrial/commercial use or housing), primary and lower secondary schools, nurseries/kindergartens, child welfare, public libraries, primary health care, financial support for welfare clients, care for the elderly and disabled, fire departments, harbours, municipal roads, water supply, sewage, and waste disposal

Since the 1960's considerable changes have been made to the distribution of functions between the three levels of government. The biggest of these changes has been the transfer of authority and functions from the counties to the municipalities. Local government services represent two thirds of Norway's production of public services and as such are an important factor in the country's economy. Further changes in the way that local government in Norway operates are anticipated, but specific details of how this may affect coastal issues were not available at the time of the visit.

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ECONOMIC FACTORS

Ever since Vikings left home waters in the ninth century, Norway has drawn strength from the sea. Today its merchant and oil-tanker fleets are among the world's largest, its fishing fleet lands Western Europe's biggest catch and it is the world's leading producer of farmed salmon. These facts reflect the scale and quality of Norway's coastal and marine natural resource as well as its culture of sea-faring. For example, Norway's total production of farmed salmon in 2005 was estimated at 582,000 tonnes. This compared with 129,600 tonnes in Scotland, which is the second largest European producer.

Wealth from oil and gas in the North Sea, first tapped in the early 1970's, subsidizes substantial public health and welfare programs in Norway. Recession required austerity in the 1980s, but since then Norway has enjoyed a higher economic growth rate than many other European countries. In 2002 Norway was the world's third largest oil exporter. However, abundance in other natural resources, particularly hydroelectric power and fisheries, has also helped to fuel this growth. In addition to petroleum products, its main exports are machinery and equipment, metals, chemicals, ships and fish. The country's main export partner is the UK and its main import links are with Sweden and Germany. As a percentage of GDP, Norway's public sector is among the largest in the world.

Table 1: Norway and Scotland compared – key statistics

	Norway	Scotland
Population	4,620,000	5,062,000
Coastline	Total = 83,281 kms (51,750 miles). Mainland = 25,148 kms (15,627 miles). Islands = 58,133 kms (36,123 miles).	Total = 16 490 kms (10,246 miles). Mainland = 9,911 kms (6158 miles). Islands = 6579 kms (4088 miles).
Land area	307,860 sq. kms	78 772 sq. kms
GDP per Capita (1)	£31,500	£17,100
Life Expectancy	79	75.35
Industry:	Oil and gas, food processing, shipbuilding, pulp and paper products	Banking and financial services, transport equipment, oil and gas, whisky, and tourism.
Local authority administrative areas	Two-tier system comprising 19 counties and 434 municipalities.	Single-tier system comprised of 32 local authority areas. Local authorities within the city regions prepare strategic development plans jointly.

(1) Based on 2005 IMF rankings for Norway and the UK. Assumes the same ratio between Scotland and the UK as indicated in the national statistics for 2003

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ENABLING MECHANISMS FOR COASTAL PLANNING

The main legislation which enables planning in the Norwegian coastal zone is the Planning and Building Act which was introduced in 1985 (hereafter referred to as PBA 85). Under this Act the municipalities have to make plans for the development of public services and for the use of land and other natural resources. Terrestrial development plans show areas allocated to uses such as housing with the accompanying roads, water mains and sewage system. The Act also granted the right to municipal authorities to establish legally binding plans for coastal waters immediately adjacent to the land area. Initially this was done by using an adapted type of the land-use planning approach with the sea area in municipal waters being zoned for various categories of use.

By encouraging coastal plan preparation and by indicating who to consult, the PBA therefore represents an important mechanism for integration. Other legislative interests are an important consideration because the local authorities do not have full autonomy. The Salt Water Fisheries Act regulates the main fishing activities and the Fish Farming Act controls the growing aquaculture industry. Both these Acts are administered by the regional branch of the state Fisheries Department (general limits for salmon farming leases are set down by the department, but the practical work is done regionally). Other state sectoral agencies also have their own policies, laws and regulations on sea transport, oil installations, natural resource management etc and they require to be consulted on local planning issues which may affect their interests to ensure that national policies are taken into account. The local authorities have access to formal arbitration processes if issues arise which cannot readily be resolved. The Ministry of the Environment takes the final decision on a CZ plan's content if the local municipality and sectoral interests or government departments can't agree.

Section 16 of the PBA 85 legislation facilitates the active participation of all stakeholders, with the intention of having a coastal planning system that is open, transparent, participatory and deliberative. In practice however this seems to vary from municipality to municipality.

The municipalities have a number of tasks relating to the preservation and use of natural resources as well as to the environment in general. They are required to draft plans and to make decisions regarding the use of agricultural land, uncultivated land, and areas for outdoor leisure activities; also for the use and protection of waterways and coastal waters, and the management of hunting and freshwater fishing.

The municipalities may lay out plots of land for housing and commercial or industrial purposes. They also have responsibilities regarding the applications for purchasing and running commercial or industrial activities.

According to the act regulating pollution control, the municipalities monitor local pollution. The costs of preventing or limiting pollution and of treating waste are to be covered by the person responsible for the pollution in the first place.

The municipalities are also responsible for the construction and running of wharfs and harbour installations within their boundaries. This also means installation and maintenance of lights and buoys within the harbour district. Harbour districts are defined by the Coast Directorate which is part of the Ministry of Fisheries.

At the start of 2006 some 154 coastal zone plans at district (municipality) level were either adopted or in preparation in Norway with 69 plans in rolling* use (see Diagram 2). 55 coastal municipalities were identified as having no plan in place.

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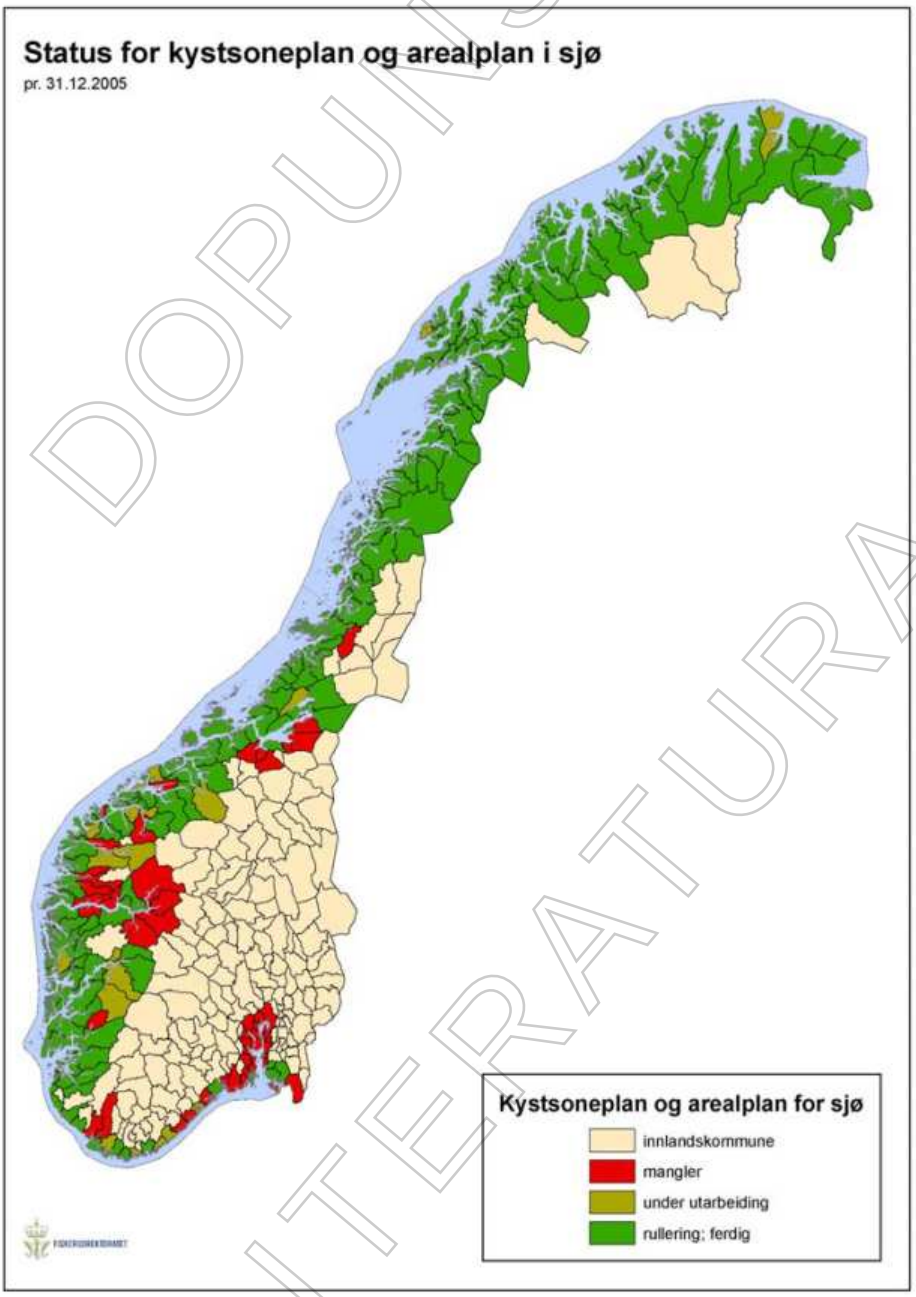
Hordaland had 13 plans in preparation and 19 in the rolling use phase with no areas identified as lacking a plan.

[** Plans are intended to last for 4 years before renewal and to have a 10-12 year horizon. However, their performance should be reviewed yearly. A plan can also be renewed without changes if the municipality is content to do that.*]

Diagram 2: Coverage of coastal / marine spatial plans in Norway



Rulering/ferdig = complete or in rolling use	*Under utarbeidung = in preparation*
Mangler = not started	*Innlandskommune = districts without a coast*

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Table 2: Progress in coastal plan preparation in Norway, by county (as at start of 2006)

County	*Adopted plans/plans in preparation*	*In rolling use**	*Not started*
Finnmark	16	1	0
Troms	6	18	0
Nordland	37	6	0
Trøndelag	17	9	7
Møre og Romsdal	22	9	5
Sogn og Fjordane	12	2	10
Hordaland	13	19	0
Rogaland	18	3	2
Øvrige fylker	13	2	31
Total:	154	69	55

Source: Directorate of Fisheries

KEY COASTAL PLANNING ISSUES

The main coastal planning issues relate to increased building pressure in the coastal areas (mainly for second homes or recreational use), aquaculture, and tourism. The number of second homes is growing faster on the coast than in the cities. Fish farming is economically important but perhaps not as popular locally as it used to be because the economic benefits now seem to go further afield as the industry becomes more globalised. Norway is proud of its fjord landscapes and keen to protect their scenic value for tourism (which is increasing in importance). It is also keen to retain a healthy resident population in these areas at a time when the long term migration trend is from the more remote upper fjord areas towards the more accessible coastal areas.

Nationally there is a drive towards key decision making in coastal planning taking place at the local level. The sectors and national agencies often find it difficult to agree as management responsibility tends to be divided and somewhat fragmented. During the preparation of plans there has been broad participation from local fishermen and local aquaculture firms. On the whole, commercial fishermen are becoming fewer and older in Norway, as in the UK.

County-level planning can help to develop integrated coastal zone planning by collaboration and networking in a situation where the municipalities lack strong instruments for co-ordination and implementation. Regional or county-level plans have been developed since the mid 1990's with the aim of 'co-ordinating the state, county municipal and the main parts of the municipal physical, economic, social and cultural activities', relating to section 19.6 of PBA 85. A county-level plan is not binding on either the state or local municipal governments. It merely provides guidelines for their activity.

Coastal zone planning in accordance with PBA 85 is still seen as the most important tool for coastal zone management in Norway. The main motivation to plan comes from the need to cater for the development of the aquaculture industry and to

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resolve conflicts of interest. Fisheries and aquaculture are generally well taken care of in the plans except in the south of Norway where tourism is more important and the area is less well suited to aquaculture. The fish farming industry is being challenged more at local level because it is becoming more centralised with fewer but larger companies. At the time of writing, fish farms can change hands for 50-100 million Norwegian kroner and independent companies are now under immense pressure to sell out.

In 2001 there was a decision nationally that new leases should only be granted when a coastal zone plan is in place. This has been a great stimulus to coastal plan production, particularly in the north of Norway. As a result, the industry is having to take coastal planning more seriously as a means of retaining its foothold and expanding.

Coastal planning is a flexible tool for the municipalities with different contexts and challenges. However, there are questions as to how aquaculture should be provided for in coastal zone plans. Should, for example, larger or smaller areas be allocated for this use ? And should there be more or less emphasis on dealing with individual applications ?

The regional branches of the Fisheries Department have been key players in the evolution of coastal planning. They are becoming more constructive partners and as a result are lodging fewer objections. Organisational changes within the department have however weakened this opportunity.

In common with the situation in Scotland, there is a lack of detailed knowledge of marine areas and this needs to be addressed to allow better municipal planning processes. In general, the precautionary principle is seen as being important and one which should be included in the municipal planning process. There is also an awareness that more participation is needed in marine planning processes, particularly from a wider range of local and government institutions, not just the Fisheries Directorate.

Network governance, which is a strategy for integration when dealing with complex problems and management situations, is suggested as being the answer. Pressure on the coast is encouraging interest groups to co-operate more, with a view to finding common solutions.

As in many other areas, good quality data to underpin detailed coastal plans is lacking. The Norwegians are well aware of this and are working to draw together whatever information is available into one source. Hordaland County Council has a project in place to provide a single web-based portal with the aim of providing a classification of different areas' suitability for aquaculture. At national level there is a highly detailed project, Mareano, which aims to survey and perform basic studies on the seabed's physical, biological and chemical environment. It also aims to systematise the information in a database which will cover Norway's coastal and marine regions. It is hoped that this study will provide information essential for ecosystem-based management of marine resources. The Mareano project is currently focussing on northern offshore areas of Norway so is not yet of practical assistance to areas like Hordaland.

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Regional case study - coastal planning in Hordaland

HORDALAND COUNTY

Hordaland is the third largest (by population) of Norway's counties and is home to 10% of the country's people. Topographically it is a rugged and complex area of hill and mountain plateaux in the interior interspersed with deep fjords and fertile valleys. Nearer to the open sea there are many islands and skerries. The county is close to the Norwegian average in terms of its land area but it is almost split in two by the Hardanger fjord, which is the second longest fjord in Norway. The majority of Hordaland's population lives in Bergen, which is the second largest city in the country, or in other coastal areas. The prevalence of islands and highly indented coast provides many areas of relatively sheltered inshore water and makes boat ownership and use more common than in many other parts of Europe. However this geography also requires many ferries, bridges and tunnels for the rapid transport of people and goods.

The county has a wide range of industry, mostly of a small-to-medium scale. Metallurgical industry and mining are important, as are shipping, fishing, aquaculture, offshore engineering and tourism.

The county Strategic Plan draws together the aims for the development of the county. The plan states "The potential for economic growth shall be released in industries where we have comparative advantages, such as marine, maritime, tourism, cultural and energy industries amongst others". Researchers at the Norwegian Institute for Urban and Regional Research regard Hordaland as one of the best examples of a regionally-co-ordinated approach to coastal planning.

Table 3: Hordaland and Highland compared – key statistics

	Hordaland	Highland
Population	445,060	208,914
Coastline	8,741 km	4,905 km
Area	15,449 sq km	25,464 sq km
Municipalities/Districts	33	3 operational areas
Councillors at county/region level	57	80
County council employees	4,400	9,847
Council budget in 2006	3,300mNOK(£330 m)	£500 million
Industry	Manufacturing, petroleum and gas, food processing, fruit production shipbuilding, electronics, aquaculture, fishing, tourism.	Service sector, tourism, manufacturing, agriculture, forestry and fisheries
No. of fish farms	155 (in 2003)	61 (in 2004)
Salmon farm production (2005)	102,100 tonnes	32,439 tonnes

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Diagram 3: Hordaland County and its constituent kommunes (districts)

The county council, Hordaland Fylkeskommune, has an important role in co-ordinating, guiding, and providing GIS information for coastal planning at regional and local level. Municipal master plans are revised every fourth year, as are local development plans. The County Council gives advice to the municipalities and looks after regional interests in local plans. If the county cannot reach agreement with a municipality over the content of its local plan (ie feels the local plan is not consistent with the regional development strategy in any significant respect), then the local plan has to go up to central government for resolution.

The County Master Plan for 2005-2008 contains general aims for fish and shellfish farming which seek to secure sufficient areas for this industry. This is to allow for healthy and environmentally sound production and to sustain Hordaland's position as the leading fish farming county in Norway. The county plan aims to influence the municipalities' decisions on the use of the shoreline by providing development guidelines and a set of regulations which are indirectly legally binding (in that they can be used as an argument for not approving a local plan). The County Plan for Hordaland also aims to establish 'a shore network' and a 'coastal board' which together will help in integrating the activities of the different state authorities to deliver the objectives of the plan.

The county sees collaboration and networking as the main way to deliver more integrated local coastal zone planning. This reflects the fact that the county level of government in Norway lacks "hard" legislative instruments for implementation and coordination and it is only the local-level plans which are binding. Each year the County has to respond to about 20 local plans in the adoption phase.

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KEY COASTAL PLANNING ISSUES IN HORDALAND

The main issues reflect the general Norwegian situation described above.

Aquaculture development - Hordaland is the leading county in Norway for aquaculture production. By the end of 2005 the Fisheries Directorate had issued 479 licences in Hordaland for salmon, trout and other species out of a national total of 2847. Rogaland is the next most important area with 255 leases. As the industry has expanded it has had to take closer account of other interests in the coastal zone, eg recreation/amenity and the need to conserve native populations of wild salmon and sea trout.

House building on the coast - There is significant pressure for building, both in the mountains and by the sea, and many exceptions to the plan are sought. The number of second homes is growing faster in coastal areas than in the cities and Hordaland County issues more building permits than any other county for construction on or near the shore. Consequently there is pressure from the Ministry of the Environment to make a shoreline strategy. Building on the coast tends to generate access issues because it means a patchwork increase in privatisation of the shoreline and this can conflict with recreation and environmental interests. There is growth in the area of marine natural heritage and problems associated with municipal sewage. Interest is growing in the development of nature reserves, bird reserves and marine conservation areas.

Fisheries management and development - The fishing industry plays an important role in the Norwegian economy as a whole and in the rural districts along the coast in particular. Cod, herring and mackerel are the most important commercial landings. The industry's potential to add value has received increased attention during the last few years. For the fishing industry to continue to play an important role nationally in the years to come, fish stocks need to be harvested in a sustainable way. Whilst mistakes may have been made in the past, Norway's current arrangements for management of fishing and fish stocks are considered to be among the best in the world.

Shell sand extraction - shell sand is dredged and used for improving agricultural land. Licences for extraction are issued by the County.

Recreation and tourism development - there is a big demand for harbours and mooring facilities for small boats. Recreational boating is increasing and there are more conflicts between kayakers and other boat users. Recreational diving is also increasing and Hordaland is recognised as having a leading role in the use and development of remotely operated undersea technology.

Space for industry - Industrial use of the coastal zone is important - for local transport links as well as international trade. Norway's merchant and fishing fleets are some of the world's largest with companies based in Hordaland's islands.

Anchorages - competition for anchorages is increasing as an increasing number of recreational boat owners and a developing aquaculture sector both tend to be interested in the most sheltered sites.

Other factors which have to be taken into account in the coastal zone include military interests, transport links and undersea cables.

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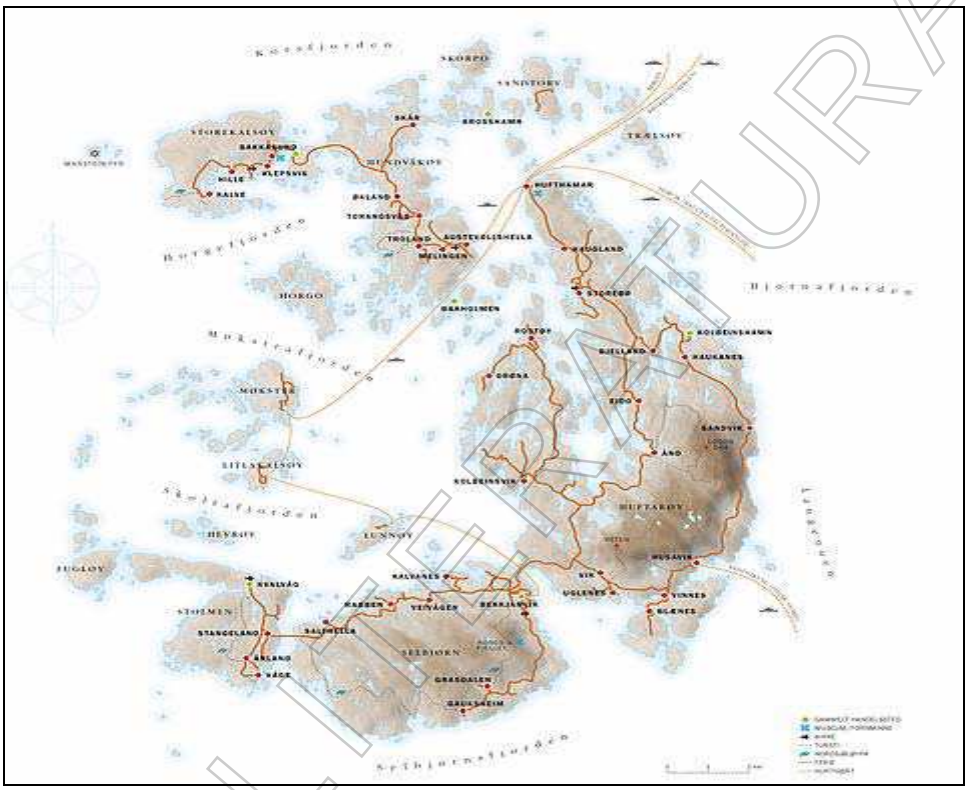
Local case study - Austevoll Kommune

CHARACTERISTICS OF THE AREA

The group of islands which constitute the Austevoll kommune lie about 20 kms south of Bergen. It represents an average-sized municipality in Hordaland and to put this in a Scottish context, the extent of the Austevoll kommune is about half that of the Two Brooms project area. If it were overlain on a map of the Two Brooms area it would extend from Reiff and Achiltibuie to Gruinard Island and Greenstone Point taking in all the Summer Isles, Cailleach Head, and Stattic Point. Within that area however, Austevoll has a population of about 4500 whereas the whole Two Brooms project area has only 3000 people. Ferries sail between the Austevoll islands and the Norwegian mainland (Krokeide, near Bergen) several times per day.

9 of the 600 or so islands within the Austevoll group are populated and it is a relatively prosperous area with a large offshore pelagic fishing fleet and shipping interests. The marine area around the islands sees a wide range of uses and aquaculture is important with 25 licensed sites. In addition to the council offices and a small shopping centre, there is a nationally important Marine Research Institute and a college in Austevoll. The college, which is comparable in scale to the one at Scalloway in Shetland, provides vocational education for young people wishing to enter the fishing, aquaculture, and maritime transport industries.

Diagram 4: The Austevoll island group



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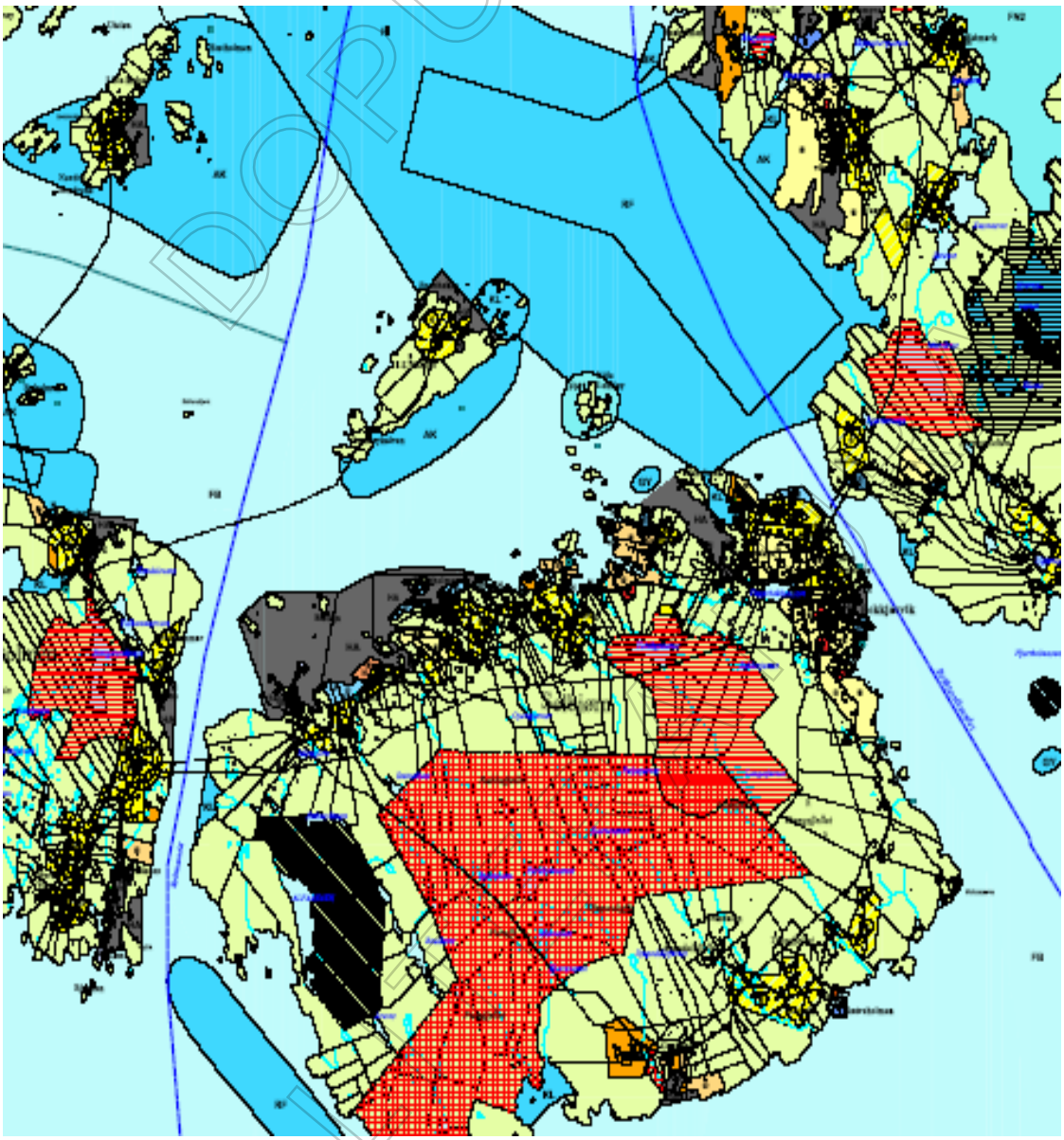
The main presentational tool for the municipality plan is a detailed 1:25,000 scale map which uses a standardised symbology linked to the PBA 85 standards (see map extract from PDF file below – Diagram 5). The recommended labelling system for policy zones in the coastal plans was set down by the Planning & Building Act of 1985 and in subsequent revisions of the Act. There is some scope for adding to and developing this, and some kommunes have done so, but the Fisheries Department tends not to favour detailed subdivision of the categories. No policy distinction is made between finfish and shellfish farming in the 'Aquaculture' category in the zoning system for the Austevoll plan.

Diagram 5: Extract from Austevoll Kommune's 3rd generation kystsoneplan (2003)



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The scale of map coverage provides fairly detailed guidance and uses a system of zones for different activities in the marine area which is based on priority use. The plan does not try to specify scales of operation. More detailed local regulating plans would be necessary for this (eg to indicate the maximum size of fish farm installations which would be acceptable within a given area) and it is not considered worth the additional effort at present. This is perhaps because scale factors can be taken into account when individual applications come forward for appraisal. Most of the detailed work at this stage is dealt with by the regional office of the Department of Fisheries under the sectoral legislation. Indicative separation distances are still used in Norway to determine how many fish farms are permissible within a given area.

Table 4: Policy Zone Categories Used in the Austevoll Coastal Plan

FI	Important fishing grounds (mobile gear)
RF	Prawn trawling areas
KL	Live fish-holding area
GY	Areas for juvenile fish
AK	Aquaculture area on the sea
AL/IND	Aquaculture or industrial area on land
SN	Nature area of high value (legally protected)
SF	Recreation area of high value (legally protected)
[*point symbol*]	Swimming/bathing area
SKJ	Areas for extraction of shell sand/gravel
HA	Harbour area
[*line symbol*]	Main sea route
[*line symbol*]	Important cables on seabed
MFU	Marine science/education
FIN	Fishing and nature conservation
FN	Recreation and nature conservation and transport
FB	Multi-use area

The Austevoll plan looks similar to other plans which have been obtained for study but it has not been possible to do a detailed analysis due to the language barrier. A detailed methodology for preparation of marine plans is seen as desirable but has not yet been forthcoming. The range of issues in the Austevoll area is similar to other areas, with pressure for house building on the coast causing possibly the most problems. Building of houses on remote stretches of coast is seen locally as more of a landscape issue than fish farm location because the former are seen as permanent while the latter are seen as temporary. Aquaculture production units are tending to become larger but they are also moving further offshore. Some of the local decisions

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on zoning have been overridden by central government when aquaculture licences have been considered.

EVOLUTION OF THE COMBINED TERRESTRIAL AND MARINE PLAN, KEY DRIVERS

The present Austevoll plan covers the period from 2002 to 2013 with a major review every 4 years. The present plan has evolved from earlier versions of the Austevoll Kystsone plan and now incorporates the terrestrial, harbour and marine plan in one overall map (see extract above). The first marine spatial plans developed in Austevoll in 1997 were prepared because of the need to manage competing claims for sea space from aquaculture, fishing, and harbour/navigational interests, and the need to regulate aquaculture following disease outbreaks. The present plan was adopted in 2003 following a period of public consultation and a high level of local political involvement. The process commenced with a public meeting without any map base. This was then followed 2-3 months later with a series of sectoral meetings using rough proposals maps.

Some of the lines on the maps are based on legal boundaries and some are notional. The lines on the map are legally binding. There is some concern however that the terrestrial part of the plan may be too detailed and this may happen to the sea area as well. Sectoral meetings allowed for lively debate, especially those featuring the aquaculture and fishing interests. Most of the owners of the fish farms in the Austevoll area live within the community and this makes it easier for them to get areas zoned for aquaculture. If they lived outside the area there would not be the same local perception of community benefit deriving from fish farming. After the sectoral meetings had taken place a second set of maps was produced with more scientific and landowner input. Stakeholder input was not uniform with the aquaculture and fishing organisations being more prominent and little input coming from nature conservation interests.

There was difficulty in reaching agreement between fishermen and the nature and recreation interests so allocation of areas to these activities had to be negotiated at a higher (regional) level. The Kommune has indicated that it doesn't want aquaculture in the areas zoned for multiple use and the maritime authorities here don't like municipalities setting rules about navigation corridors. These are issues that also have to be resolved through negotiations at a higher level.

Most of the changes to the plan resulted from comments relating to terrestrial issues. There were 68 comments on terrestrial issues and only 4 relating to marine concerns. Future changes to the plan are anticipated as a result of infrastructure projects such as bridges etc. and the Kommune intends to revise the plan in 2 years time. There is a proposal from the Kommune to move one of the large aquaculture areas outwards and to re-allocate the area to other uses/activities.

Conclusions, lessons learned

The development of coastal planning and policy in Norway has shown there is a complex management situation which demands close integration at both geographical, sectoral and administrative levels. The intricate character of much of the Norwegian coastline is part of this complexity but it is also represents part of the rationale for developing ICZM here - the land and sea are closely intermingled in many areas and there is a relatively high level of dependence on marine resources.

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Closer co-operation on preparing integrated plans seems to have taken place where there are real pressures on the coast, for example building pressure in the more accessible parts of Hordaland and fish health issues in Austevoll.

ROLE OF LOCAL AUTHORITIES AND CENTRAL GUIDANCE

The role (and potential role) of local authorities in coastal planning is important and increasing. Even though there is a legal basis for planning in Norwegian coastal waters as a result of PBA85, there is still however quite high reliance on voluntary agreements over zoning and on intervention (where necessary) from the largely remote central government. The involvement of local stakeholders is seen as important, but much of the detailed work of preparing plans falls to the local authority. Independent studies by the Norwegian Institute for Urban and Regional Research (NIBR) indicate there is a need for guidance from central government to facilitate regional integration and to engender wider participation of stakeholders. NIBR suggests there is a place for an institutional framework to support this form of co-operative work.

Work by local authorities at county level can help to develop integrated CZ planning, set standards for good practice in this field at local level, and encourage consistency in approach. Collaborative work with the districts, provision of GIS support, and networking can all help in situations where the counties lack strong legal instruments for co-ordination and implementation.

Good liaison with the national government departments and agencies is also important for the development of CZ planning. The Norwegian Coastguard agency is responsible for policing specific aspects of coastal planning, but at present the plans do not seem to be used by them much in any overt way. There also seems to be no centralised way of monitoring coastal plans for their effectiveness, and many projects are approved which are exceptions to the Local Plan. Up to 1000 exceptions are granted in Hordaland each year, mostly for terrestrial developments. These exceptions do not result in changes to the Local Plans. The County is in a position to encourage participation and help resolve conflicts, which mostly arise over issues relating to shore-line protection.

The plans are dynamic in that they are revised on a four-yearly cycle, although capacity issues for the local authority usually means that there is some slippage in the cycle.

THE TWO BROOMS COASTAL PLAN V. AUSTEVOLL KYSTSONEPLAN

The Two Brooms was chosen as a demonstration area partly because it had experienced significant development pressures but lacked a plan to guide development in the marine area. The area was also somewhat larger and encompassed a wider range of interests than the Council's aquaculture framework plans had dealt with hitherto. The main development pressures in this instance came from applications for aquaculture leases and the area's identification as a potential subsea route and landfall site for a major new electricity cable from the Western Isles. Inshore fishing and recreational boating are also key local interests. In both its scale and the range of interests/issues present it is comparable with areas in Norway which have produced plans to deal with coastal planning issues. Pressure for aquaculture development is still the main driving force for coastal planning in Norway – as it is in Highland.

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Public and Agency Involvement

In both the Two Brooms area and Austevoll, the local planning authorities made use of participative planning techniques which approached the initial public meetings with as blank a canvas as was realistically possible. This was followed by a phase of bilateral meetings with specific topic groups to gather more detailed information on the stakeholder interests and to explore their aspirations and concerns. The later phases involved a return to multilateral and wider public meetings to seek views on the draft plan and (later) the proposed amendments to the plan. Whilst there was active engagement in all phases in both the Two Brooms area and Austevoll, both sets of plan makers felt the level of public participation overall was lower than they would have liked. However, a certain degree of apathy and consultation fatigue is regarded as inevitable nowadays when there are an increasing number of claims on people's attention and public meetings can only be held in the evening or at weekends. A relatively low level of participation from some parts of central government was a more significant concern, though the distance which government officials have to travel to attend local meetings is a factor in this.

Information Base

Lack of data on marine resources and activities has hampered the development of coastal planning generally and the Norwegians are embarking on a number of initiatives which will aid coastal planners in the future. In the UK at national level similar actions, such as SEMAP etc, are taking place. However, it is unrealistic as yet to expect these initiatives to provide detailed information over a wide area.

INSTITUTIONAL FRAMEWORKS AND TRAINING FOR ICZM

Although PBA85 made it possible for local authorities in Norway to prepare statutory coastal plans, not all municipalities have approached this in the same way. The literature reviewed indicates that the process varies from place to place. Formal education in Coastal Zone Management is available at the University of Bergen and other centres of higher education in Norway. This may, over time, help to develop expertise amongst coastal planners which can complement the experience of "learning by doing" in the various districts and at county level. Formal training in this field is however somewhat lacking in Scotland, and the pool of experienced and qualified coastal planners here is still very small. Perhaps some level of co-operation could be established to allow active Scottish participation in the shared/international level of the masters qualification offered in English at the University of Bergen ? Coastal planners undoubtedly require a mix of skills, with elements of geography, marine biology, and terrestrial planning competence all being relevant.

Legislation was introduced in Norway in 1992 (revisions to the Local Authority Act) which gave local authorities the right to structure their internal organisation in any way they wished. One result of this is variation in where the central coastal planning function rests within each municipality. In one municipality it may reside in an economic development unit. In another it may reside within an environmental team. This can colour the approach to plan preparation in different districts, as can local variations in the mix of stakeholders which choose to get involved.

Although PBA85 provides a framework within which coastal planning has developed, the local authorities do not have the level of autonomy and resources which would

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allow them to fully control implementation of the plans. This is a similar situation to Scotland where various bodies of sectoral legislation and various levels of legislation cover marine issues.

Comparison of a non-statutory versus a statutory approach to coastal planning, as exemplified here, suggests that whilst the statutory approach has some important advantages, neither is wholly ideal. Depending on circumstance, elements of both may be required. Full stakeholder engagement is needed to ensure reasonably comprehensive buy-in to any plan, and this engagement is undoubtedly easier to achieve under a statutory system which is legally binding. Also a statutory system pulls in more resources generally than a voluntary system can usually achieve and provides a more stable long-term structure. However the downside of a statutory approach can be plan-preparation time and lack of flexibility. For the statutory approach to work and to work well some form of national framework and support mechanism is required. There also needs to be a culture of working together and political leadership which nurtures and encourages this.

Some sectors are naturally more pro-active in this field than others and experience in both Scotland and Norway suggests that the sectors which get most actively involved get most out of the exercise. In Scotland development pressure for aquaculture and the biodiversity agenda have been two of the main triggers for action in coastal planning. Indeed the aquaculture industry's vigorous engagement in the coastal planning process here contrasts with the diffidence or defensiveness of the fishing industry. In Norway the needs and aspirations of aquaculture and tourism have been key drivers in the coastal planning system and in both countries marine nature conservation is moving up the agenda. The challenge is to find the appropriate balance between these interests and the others.

Plans have to be robust enough to attract and sustain development (or activities) in places where it is (or they are) appropriate and desirable. Plans must also be robust enough to discourage non-conforming development proposals and stand up to appeals against the refusal of consents or operating licences. Exceptions to the plan should be just that. On the other hand, the plans should not stifle development and should be monitored effectively and subject to regular review.

Potential for further Scotland-Norway collaboration on coastal planning

The Hordaland coastal development team is considering embarking on another international project to promote the development of seafood production. This may include the development of mapping systems to identify potential new areas and species for aquaculture, eg clams. It is anticipated that funding could be sourced for an international project with 20% coming from outside the EU. [*Postscript: in mid-2007 the Hordaland team signed a development contract with the Norwegian Institute of Fishery Research and others to develop this*]

Several ideas for further international project work were suggested by the Highland delegation and discussed in outline during the study visit. One which seemed to have wide appeal was the idea of an international "alliance of fjordic countries" to develop coastal planning and management systems specifically suited to this type of coastline (which only occurs in a few areas of the world) and the range of opportunities it offers. It is not clear at this stage however, how funding might be arranged for a partnership project extending beyond Europe. Hordaland has already to an extent

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produced a "cookbook" of guidance on coastal plan preparation (in Norwegian) for its own municipalities.

The idea of a European coastal planning Special Interest Group would help to maximise existing expertise and disseminate knowledge and experience in this field. It could also provide a springboard for developing cutting-edge projects. Leadership and co-ordination of such a group would require long-term commitment and would be a big undertaking for one region at the outset. However, this role could subsequently be rotated amongst other regions within the group.

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