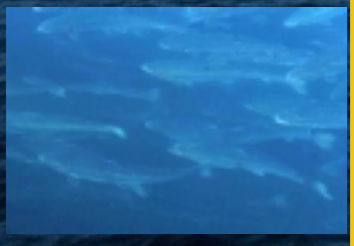
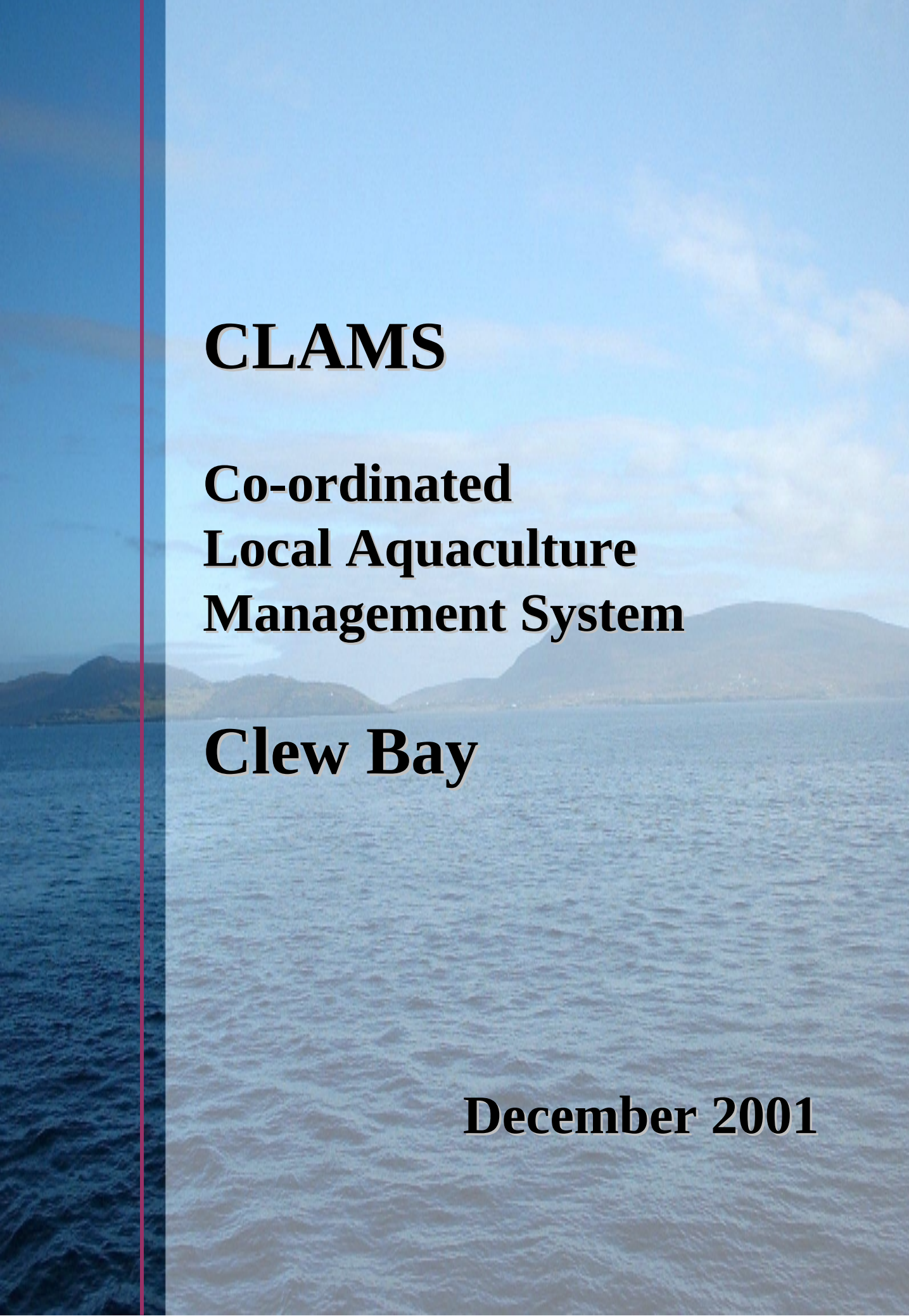


CLAMS

Co-ordinated Local Aquaculture Management Systems

Clew Bay, Co. Mayo

December 2001



CLAMS

Co-ordinated Local Aquaculture Management System

Clew Bay

December 2001

Minister's Foreword

Since the announcement of the setting up of Co-ordinated Local Aquaculture Management Systems (CLAMS) in late 1998, a number of CLAMS documents have been produced. CLAMS aims to ensure that the development of the Irish aquaculture industry is in keeping with the principles of Single Bay Management. It is distinct from national aquaculture policy and development programmes because it focuses on the local bay level, while still taking on board relevant national policies.

This CLAMS document for Clew Bay details both a management plan and a development plan for the bay while incorporating and extending the successful concepts of Single Bay Management to all farmed species (including extensive culture). Single Bay Management adopts an integrated approach to management. It was expertly designed to bring about improvements over a whole range of husbandry issues. It will lead to more efficient production by optimising conditions within the bay and it lays the foundations for co-operative ventures between operators in the same bay.

The publication of the CLAMS plan for Clew Bay provides an integrated management and development plan for the bay in one document. The Marine Institute and BIM have been crucial in supporting this plan which can be easily integrated into County Development Plans or other plans being developed for the management of Ireland's valuable coastal resource. The active participation of the Clew Bay Oyster Co-operative and the involvement of individual shellfish producers and fin fish producers in the bay, right from the outset, was the key to the development of this plan. It marks the start of an ongoing process of integrated management for the aquaculture industry in the bay.

The Clew Bay Marine Forum, with representatives of the Oyster Co-operative, shellfish producers, the finfish aquaculture industry and lobster fishermen, together with BIM, Marine Institute and National University of Ireland, Galway has been a major supporter of, and contributor to, the development of the CLAMS process in the Bay.

The commitment of the local CLAMS group and the ongoing practical and technical support from the Marine Institute and BIM are to be commended on the development of this comprehensive plan. This commitment will prove central to the future management and development of aquaculture and will ensure that the CLAMS process continues to develop to meet the needs of the industry in the bay.

Mr. Frank Fahey TD
Minister for the Marine
and Natural Resources

CONTENTS

Chapter 1.

INTRODUCTION AND BACKGROUND

1. INTRODUCTION AND BACKGROUND

In 1998 Minister of State with the Department of the Marine and Natural Resources (DoMNR) Hugh Byrne T.D. announced the setting up of a Co-ordinated Local Aquaculture Management System group, CLAMS. This concept of management will form a development plan for the bay incorporating and extending the concept of Single Bay Management. It will also be integrated with Coastal Zone Management policy and County Development Plans. Though CLAMS is integrated with these plans and the viewpoints of all interest groups are documented, the process is driven by the aquaculture producers working within the framework of national policy. BIM and the Marine Institute have presented a joint document to the DoMNR on the CLAMS concept, as both agencies have been charged with the responsibility for developing the CLAMS framework at local level.

The CLAMS process is a non-statutory management system, which is anchored in the national marine policy and development programmes. It is envisaged that CLAMS will highlight issues in a bay and co-ordinate the industry and relevant bodies to deal with them. It is separate to licensing issues and is not going to solve or take responsibility for all issues. The concept focuses at local bay level while still taking on board relevant national policies. The object of this process is to formulate a management plan for the bay, which incorporates and extends the concepts of Single Bay Management to all farmed species.

This is a CLAMS document for Clew Bay. It is one of a series of such plans that are being established country-wide. The CLAMS group is composed of representatives of all *bona fide* aquaculture interests such as the producers, liaison officer, and relevant regional BIM, DoMNR, MI and Údarás officers. Developing and implementing a CLAMS plan for Clew Bay should incorporate a strategy to encourage further integration of associated activities, *i.e.* fisheries enhancement/management programmes (including river systems), marine tourism and angling.

What is the aim of CLAMS?

CLAMS provides a concise description of the bay in terms of physical characteristics, history, aquaculture operations, future potential, problems *etc*. It also allows various Codes of Practice to be customised and integrated with the aquaculture industry operating in the bay. In addition to this it provides the framework from which a management and development plan for aquaculture in the bay can be drawn.

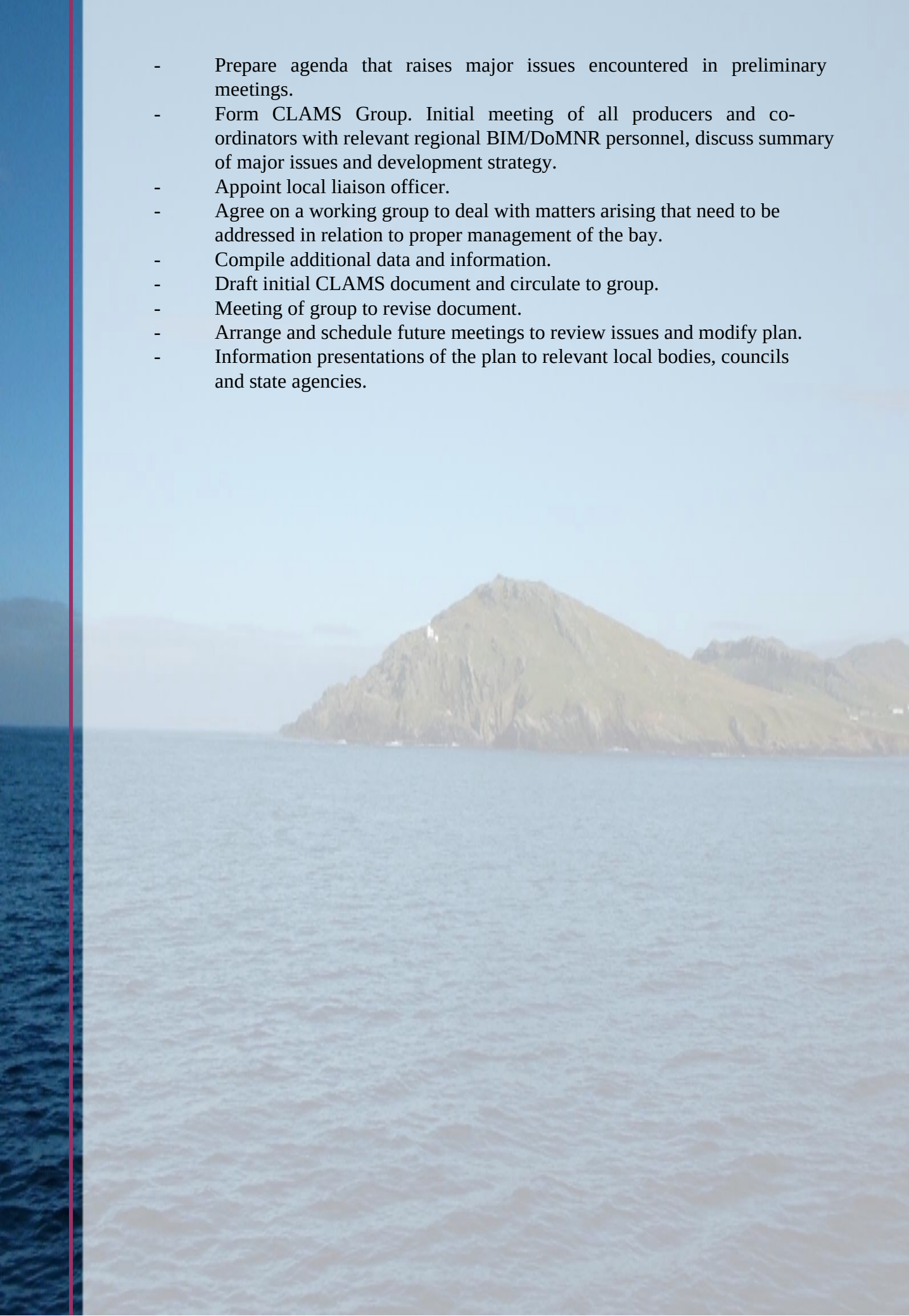
Another important aspect is the fact that this process acts as a focus group for the local community. This will then provide an information channel from local to national level and vice versa. It is envisaged that this will provide a process for addressing issues that affect or are affected by aquaculture activities and streamline the resolution of these situations.

What are the steps in establishing CLAMS?

The following steps are undertaken each time the CLAMS process is established in a bay:

- Define specific area.
- Consult with DoMNR on relevant policy and licensing issues for the area.
- Identify local CLAMS officer and local resources.
- Download relevant information on existing production and licensing from GIS/database. Input additional relevant positional data into GIS/database and verify locations *etc*.
- Meet with all existing producers individually in the area to discuss CLAMS.
- On a regional basis meet with third parties for input into the process.

- Prepare agenda that raises major issues encountered in preliminary meetings.
- Form CLAMS Group. Initial meeting of all producers and co-ordinators with relevant regional BIM/DoMNR personnel, discuss summary of major issues and development strategy.
- Appoint local liaison officer.
- Agree on a working group to deal with matters arising that need to be addressed in relation to proper management of the bay.
- Compile additional data and information.
- Draft initial CLAMS document and circulate to group.
- Meeting of group to revise document.
- Arrange and schedule future meetings to review issues and modify plan.
- Information presentations of the plan to relevant local bodies, councils and state agencies.



Chapter 2.

DESCRIPTION OF CLEW BAY

2. DESCRIPTION OF CLEW BAY

Geographical and Physical:

Clew Bay, is situated on the West Coast of Ireland in Co. Mayo (Map 1). It is 25km long and 12.5km wide and covers an area of c.31250ha. It is open to westerly swells and winds from the Atlantic with Clare Island giving a small amount of protection. The drumlin landscape of the inner bay was formed during the last ice age, when sediments were laid down and smoothed over by the advancing ice. The sea has since inundated this area, creating a multitude of islands and a complex series of interlocking bays. The popular belief is that Clew Bay contains 365 islands, one for each day of the year. The inner bay is relatively shallow (average 10m) with the southeast area being the shallowest. Further seawards, depths increase progressively to in excess of 40 metres, with an average of about 20 metres. The seabed composition is a mixture of sand, mud, gravel, boulders and cobbles. The mean tidal range for the bay is c.5m. There are 14 rivers flowing into Clew Bay: Buncladdy River, Murrevagh River, Bunnahowna River, Owengarve Rriver, Carrowsallagh River, Burrishoole River, Black Oak (Newport) River, Rossow River, Owennabrockagh River, Moyour River, Carrowbeg River, Owenwee River, Owenglasbreen River, and Bunowen River. Five of these rivers could be classified as important salmonid rivers. All of the rivers flowing into the bay are short and run off poor quality soils typical of mountainous regions. Although they generally have good quality water, they are susceptible to increases in acidification and sedimentation from aforestation and over grazing. Salmon stocks in the five main rivers are reasonably healthy and somewhat comparable to historical levels, however sea trout stocks have decreased below these levels.

The largest island is Clare Island at the mouth of Clew Bay with a population of 219. The island is 8 km long and 4.8 km wide and is an imposing feature of Clew Bay. Ferries from Roonagh and Achill Island as well as a post boat service the island. The island has an ancient abbey, a modern church, shop, hotel, community centre, helipad and a lighthouse/guesthouse, along with several B&B's and some cottage style industries. There is one harbour on the east side of the island with two other ancillary piers, one on the south and another on the east near the old lighthouse, both of which have difficult approaches and are not suitable for large boats. The main activities on the island are sheep and cattle farming, salmon farming, fishing, marine services and tourism. The population of the inner islands of Clew Bay has declined from a recorded high in 1841 of 830 inhabitants on 11 islands, to its current low of 23 inhabitants on 7 islands. Whilst there has been a little 'holiday home' activity on some of the islands, the general trend has been one of emigration and resettlement on the mainland. Two of the islands recently had their electricity supply switched on. The one remaining inhabited island without power is to receive it in the near future. The main occupations of the islands residents are centred around farming, fishing and marine transportation and services. Of the reputed 365 islands, approximately 85 are of substantial size.

Infrastructure:

Main towns and populations 1996.

Westport	4,253
Newport	956
Louisburgh	662
Mulranny	635
Clare Island	219

The main towns on the shores of Clew Bay are Westport, Newport, Mulranny and Louisburgh which are serviced by a network of secondary (N59), regional (R335), and third class roads.

Traffic is carried from Dublin on the N5 and from Galway and Roscommon on the N84 and N60 respectively. The two main harbours in Clew Bay are Newport in the northeast corner and Westport in the southeast, both of which are tidal and with approaches that can prove difficult without experience or prior knowledge. Both of these harbours cater to a range of vessels including fishing boats, charter boats, pleasure boats, ferries and transport ships. There are a number of smaller piers around the bay; Mulranny, Roigh, Roscahill, Rosmoney, Murrisk, Lecanvey, Old Head, Carrowmore and Roonagh. With the exception of Roonagh, all of these piers are tidal. Whilst the majority of the piers are primarily used in summertime, Roigh pier and Rosmoney are less tidal and weather dependent and are widely used all year round by fishermen, fish farmers, charter boats, island farmers, divers, marine services, island residents, shellfish gatherers, seaweed harvesters and pleasure boats. Clew Bay does not have any all-weather deepwater facilities to offer ships and boats.

Inflows to the Bay:

There are 14 rivers flowing into Clew Bay. With the exception of one, the EPA consider all of the rivers to be unpolluted. The Carrowbeg River which runs through Westport is currently classified as moderately polluted and this is due to the lack of adequate sewage treatment works for Westport town.

The following are the details regarding the sewage treatment plants, which are, or will be discharging into Clew Bay from the four main towns in the area.

Westport

Whilst delays were experienced in choosing the best location for the facility, a new sewage treatment works is currently underway to handle Westport waste and this is expected to be operational in 2003.

Newport

At present Newport does not have a second stage sewage treatment facility and discharges are made into the estuary of the river. Funds have recently been allocated to provide a second stage treatment works and although this is only in the planning stage, it is anticipated that this should be in place for 2004.

Louisburgh

Works on a second stage treatment facility are expected to be completed by mid 2002.

Mallaranny (known locally as Mulranny).

Second stage treatment has been in place in Mulranny since 1986/7 and this facility is due for a further upgrade in early to mid 2002.

Environmental Status:

Inner Clew Bay was originally designated as an Area of Scientific Interest in the early 1990's. In 1996/7, Inner Clew Bay was designated by Dúchas (The Heritage Service) as a proposed Natural Heritage Area (NHA); this is an area which is important to the conservation of wildlife and nature. In addition the inner Bay has been nominated by Dúchas, under the Habitats Directive 92/43/EEC, for inclusion in a list of proposed Special Areas of Conservation (SAC); for certain natural habitat sites and listed species of flora and fauna. SAC's that contain habitats and species that are in danger of disappearance are given 'priority' status and are subject to a higher level of protection. Map 2 illustrates the extent of the area designated as a proposed NHA in the Clew Bay area and also the area proposed as an SAC.

Traditional and Fishery activity:
Trawling takes place all year round mainly outside the Inner Bay, primarily for whitefish by boats fishing out of Cloghmore Pier, Achill Island. During the winter herring fishing sometimes takes place in the outer part of the Bay. Some of the smaller boats occasionally tow for flatfish in the area between Clare Island and the inner islands. There has long been a tradition in Inner Clew Bay of dredging and the principle species targeted has been the native oyster (*Ostrea edulis*), although scallops (*Pecten maximus*) have also been dredged between the inner islands and Clare Island from time to time. The main fishing activity of many of the boats in the bay is potting. A variety of species are fished at different times of year, the foremost of these being lobster and shrimp and to a lesser extent, crab and prawn. During the salmon season some drift and draft net fishing takes place on the outer-bay shores and river estuaries. Some boats have also carried out trials with gurdy jigging rigs for mackerel. Clew Bay has a long tradition of shellfish gathering and the principle species involved is the periwinkle. During periods of good strands (low water spring tides), gathering winkles takes place for sale to the French market.

Seaweed:
The harvesting of seaweed began originally as a source of natural fertiliser for the growing of potatoes. In the 1960's, two seaweed factories were established in Newport and three in Westport and local people began to harvest seaweed from the shores of the bay and its islands commercially. Initially, the seaweed was required in a dried state and harvesting took place primarily during the summer months so that the weed could be spread out and turned in the sun, much like a crop of hay, before being delivered to the factory. The weed was then dried further and milled for use as an additive in cattle feed throughout the country. In the late 1960's, the remaining factories installed larger drying machines so that the weed could be delivered direct to the factory in its wet state, for drying, processing and export. As the domestic market for seaweed declined a market for algenites was established in Scotland and large transport ships came into Newport to collect the weed from outside the doors of the factory, which was located on the quay. The last seaweed factory in Newport closed in 1996, following the loss of its principle market and although efforts at a revival were made, it has since been converted to apartments. Arra Mhara, who are a semi state body in partnership with Kelco (the principal seaweed product manufacturer), currently own a site in Newport which is suitable for the re-establishment of a seaweed facility in Clew Bay. Between 1998 and 2001 seaweed from Clew Bay was transported to Donegal for processing. Since the recent closure of the Arra Mhara seaweed processing plant in Donegal seaweed harvested from the Bay is transported to the Arra Mhara facility in Kilkieran, Co. Galway.

Shellfish Buyers:
There are currently a number of approved shellfish dispatch centres in the Clew Bay area operated by shellfish buyers and producers. The Department of Marine and Natural Resources administers approval numbers to the centres under the EU Directive 91/492. The shellfish buyers located in Clew Bay are listed in Table 2.1. Three of the buyers are also licensed shellfish producers (pacific oyster, clam & mussel) of which one is also a processor. The majority of the products are exported primarily to the French market.

Table 2.1 List of major shellfish buyers in Clew Bay

Name Of Company	Species
Carrowholly Shellfish Ltd. Carrowholly, Westport, Co. Mayo	Mussels, native flat oyster, pacific oyster, periwinkle, shrimp, lobster, crab and clams.
Connemara Seafoods Ltd. - P. Mulloy Shellfish Ltd. Kilmeena, Westport, Co. Mayo.	All types of shellfish, lobster, crayfish, brown crabs, velvet crabs and spider crabs. Also processes mussels.
Roscahill Seafoods, Roscahill, Kilmeena, Westport, Co. Mayo.	Periwinkles, native oyster, pacific oyster, mussels, lobster, salmon, brown crab and scallops.
Croagh Patrick Seafoods Ltd. Roslaher, Newport, Co. Mayo	Native oysters, pacific oysters and clams.
Triskell Seafoods Ltd. 20 The Fairways, Westport, Co.Mayo.	Pacific oysters and clams.

Local Fishery and Aquaculture Organisations:

There are four local bodies representing fishermen and their interests in Clew Bay: -

The Clew Bay Oyster Co-operative Society Ltd. (known as CBOC) was incorporated in 1979 when it was granted an Oyster Fishery Order by the then Minister for Fisheries, the late Brian Lenihan. Map 3 shows the extent of the Oyster Order Area. The CBOC is a registered member of the Friendly Societies of Ireland, and now represents over 300 members. Over the past 21 years CBOC has managed the annual native oyster fishing season, and ensured the continuity of stocks by instigating fishing rotation and fallowing of beds and by succeeding in raising the minimum landing size on a nationwide basis to three inches (75mm). CBOC also limits the number of fishing days to prevent over-fishing, has collectively managed the local approval of Aquaculture Licence applications where all aquaculture licence applications within the area of the Oyster Fishery Order must provide a letter of approval from CBOC before the Department of Marine & Natural Resources will process the application. The Co-op. has developed native oyster spat recruitment techniques on native oyster beds, has monitored stock levels, spatfall levels and disease control and has co-ordinated catches to obtain optimum market price. Much of this work has been done on a voluntary basis although development officers have been in place at different times over the years.

The Clew Bay Potfishermen's Association (CBPA) was set up in 1998 to deal with issues relating specifically to the inshore fishing sector. The first V-notching programme for the release of female egg bearing lobsters has been completed and restocking of juvenile lobsters has taken place in 2001. This organisation is purely voluntary and the membership numbers about 30 fishermen.

The Clew Bay Marine Forum Ltd. (CBMF) was also set up in 1998 with representatives of the CBOC, shellfish producers and lobster fishermen together with BIM, Marine Institute and National University of Ireland, Galway. Today it also incorporates representatives of the finfish aquaculture industry, to allow all views to be represented and expressed. One of the main objectives of the Forum is to facilitate a broad range of marine activities. Funding of the Forum was and is gathered from Industry, Leader II Programme, BIM and the MI.

Currently a full-time project officer works for the Forum and provides a number of services to industry, both aquaculture and inshore fisheries. The Forum provides a weekly water and shellfish

sample collection service to the aquaculture industry. It initiated this very comprehensive sampling regime in late 2000 with the MI and the Department of the Marine and Natural Resources. It facilitates its members with projects where it is involved in conservation and stock enhancement measures for commercially fished species, and diversification trials with new species in conjunction with Bord Iascaigh Mhara. In addition the Forum officer is actively involved with the expansion of the Forum membership to include other bay users and in liasing with the various state agencies and Mayo County Council regarding for example, infrastructure requirements, waste disposal and protection of shellfish waters. The Forum's ultimate objective is to achieve integration, consensus and implementation of an Integrated Coastal Zone Management Plan for Clew Bay.

Single Bay Management Group. This group has been meeting since 1995, and is made up of the finfish producers in the bay. Single Bay Management implements integrated management practices rather than treatment to control disease and parasites. The process is a locally based initiative. The implementation of SBM concept consists of a practice of single generation sites and the early harvest of two sea winter fish combined with effective co-ordinated lice treatments. The exchange of information on fish health and relevant management practices is essential for the success of SBM. As a tool it is not specifically designed to simply tackle one problem (e.g. lice) rather it has the potential to lead to improvements over a whole range of husbandry issues. It is a particularly useful tool in the control, and in some cases the elimination of disease and parasites.

Aquaculture activity:

Aquaculture is a substantial industry in Clew Bay involving the farming of finfish and shellfish species such as salmon, trout, native oysters, pacific oysters, mussels, scallops and abalone. Appendix 2.1 shows the licensed aquaculture operators in the bay and the species they farm. Recent figures (Table 2.2) show that production in the year 2000 for the two sectors was 3,448 tonnes with a first sale value of approximately IR£8.8m (€11m). Appendix 2.2 shows a more detailed breakdown of these figures. The industry employs on a part-time and full-time basis approximately 165 people in the area. See Appendix 2.3 for a detailed table on employment in each sector. In addition there are people employed in the processing sector and in the service industry such as haulage and materials supply.

Table 2.2 Clew Bay Finfish & Shellfish Production, Volume and Value

Year	Species	Volume (tonnes)	Value IR£ (€)
1998	Shellfish	1,872	1,623,750 (2,061,737)
	Finfish	2,488	6,637,489 (8,427,872)
	Total	4,360	8,261,239 (10,489,609)
1999	Shellfish	1,553	1,678,070 (2,130,709)
	Finfish	2,063	5,927,265 (7,526,074)
	Total	3,616	7,605,335 (9,656,783)
2000	Shellfish	695	593,204 (753,213)
	Finfish	2,753	8,195,000 (10,405,503)
	Total	3,448	8,788,204 (11,158,717)

Details of licensed sites for production are shown in Map 3. Total area of Clew Bay, including Clare Island, that is under aquaculture and foreshore licence is 247 hectares, 70 hectares under finfish and 177 hectares under shellfish. Not all licensed sites are in operation. The CBOC Oyster Fishery Order is estimated at a size of just over 16,000 hectares and covers all of the inner Bay, that is, to the east of a line drawn from Old Head, Murrisk in the south, to Gubbaun Point, Dooghbeg on the northern shore. Map 3 shows the limit of the Order and the extent of the native oyster beds.

Finfish Production:

Finfish (salmon) farming began in Clew Bay 1976. There are currently two finfish farms operating in Clew Bay growing Atlantic salmon (*Salmo salar*) and sea-reared rainbow trout (*Salmo gairdneri*). Clare Island Seafarm operates two sites for the production of salmon, a smolt site east of Clare Island Harbour and a production site at Portlea. They are currently producing a high percentage of organic salmon using organic feed produced by Nutreco in Westport. Seastream Ltd. operates three sites for the production of rainbow trout, Inniscannon, Inniscorraigh and Carrickahaash. Open Sea Ireland Ltd. has a Rainbow trout licence at Inishlongfield Island (shown as *Inishlaughil* on the marine chart) which is not currently in production.

The farming of both species involves the transfer of young fish or smolts to sea. Smolts and young rainbow trout are transported in specially aerated tanks on trucks and boats or by helicopter to the sea farm. These fish weigh approximately 50g. By harvest time, one to two years later, they will have reached a market size of two to six kg. These fish are sourced from freshwater hatcheries in Ireland. The fish are grown to market size in various types of nets and pens. Each finfish farm currently undergoes rigorous water sampling programmes and disease and parasite monitoring, overseen by the Dept of Marine and Natural Resource, in accordance with the five monitoring protocols, namely Benthic Monitoring, Water Column Monitoring, Sea Lice Monitoring and Control, Audit of Operations and Fallowing.

Shellfish Production:

Intensive farming of shellfish began in Clew Bay in the 1970's, and today the industry involves the production of native flat oysters (*Ostrea edulis*), Pacific or Japanese (Cupped) Oyster (*Crassostrea gigas*), Mussel *(Mytilus edulis*), King Scallop (*Pecten maximus*), Manilla Clam (*Tapes semidecussatus*), and the European (*Haliotis tuberculata*) and Japanese (*H. discus hannai*) Abalone. All the shellfish species farmed in Clew Bay with the exception of the abalone are bi-valve molluscs. Bi-valves filter feed plankton and other nutrients from the sea while abalone are grazers that feed on numerous local naturally occurring seaweed. The native oyster, mussel and scallop are the only three from the above that are capable of naturally reproducing in the waters of Clew Bay. The other species are sourced from hatcheries here in Ireland, or from hatcheries in Britain or France. Native oyster spat and scallop spat can also be sourced from Irish hatcheries.

Native Flat Oyster: The natural flat oyster beds in Clew Bay are of both national and international importance. They are one of only nine such national native oyster beds in the country. The Clew Bay Oyster Co-operative Society Ltd. (CBOC) manages the naturally occurring beds of native flat oysters and scallop in Inner Clew Bay. The commercial fishing of the oyster beds date back to the 19th century when licences were issued for areas or plots within the Inner Bay. Only one such licence exists to the present day.

The Co-op. was incorporated in 1979 principally to manage the oyster fishery which in the mid to late seventies was extremely productive, but which was at that time in danger of being over-exploited. The founder members of the CBOC have, through their efforts, ensured that there is still an active native oyster fishery being worked today. One of the most significant conservation measures achieved by CBOC in the early days was the raising, on a national basis, the minimum oyster shell size from $2^1/_2$ inch to 3 inch (75mm) at which a native flat oyster could be landed and sold. In addition the CBOC made representations to the Department of Marine & Natural Resources in the 1980's regarding the ban on use of the antifoulant paint - tri-butyl-tin (TBT) in the Irish marine environment.

The native oyster can change sex several times a year and is unlike other bi-valve shellfish, in that fertilization takes place internally with the egg being retained in the gill cavity and the sperm being released free into the sea, before being drawn by the current into waiting female oysters. After fertilization and brooding the eggs enter a planktonic stage in the sea for 8 –14 days before finding a suitable hard surface where they settle. Weathered mussel shell, known as cultch is often used as a suitable settlement material in oyster fisheries. The flat oyster needs a sea temperature of between 14° and 22°C for successful spawning and settlement to occur.

The oyster fishery has always depended on the natural spatfall for recruitment of young stock, and surveys carried out in 1983 identified the Inishloy area as the most appropriate area to merit tight control by the CBOC. By restricting the fishing in the Inishloy area, a known broodstock of oysters was maintained, and this broodstock was kept at a level sufficient to produce adequate spatfalls in years with favourable summers. The broodstock bed was changed from Inishloy to Rosbarnagh in 1998.

The fishing of the native oyster involves the use of a four-foot dredge, which is fished from the side or back of a boat. Boats of all sizes, shape and horsepower fish the oyster fishery during the fishing season, which is usually in November. There is a limit on number of days and hours fished, landing size and areas fished each year. Development plans in the past have always focused, in the main, on broodstock and nursery management and the spreading of mussel shell as the most cost effective way of enhancing recruitment of young stock to the fishery. B.I.M. has assisted in funding these development plans over the years through various grant schemes with CBOC's proportion of the funding generated by controlled fishing within the Inishloy area.

The positive identification of *Bonamiasis ostreae* in February 1994 in the Inishloy area, by the Marine Institute's routine monitoring programme, has meant that CBOC has had to carefully manage its stocking densities

Pacific / Japanese Oyster (*Cupped oyster*)
As the name implies, the pacific oyster is not a native of Ireland but has been farmed successfully in Clew Bay since the completion of the first trials in 1984. It requires temperatures above 18°C, usually in the range of 21 –23°C, to spawn, therefore it is unable to reproduce in our colder Irish waters. Seed is sourced from hatcheries here in Ireland, Britain and France. The seed are put in mesh bags that are attached to steel trestles and placed near the low tide mark on the seashore in licensed sites. Tractors and trailers are used to access these sites at low Spring tide times. Bags are shaken and turned at these times. When oysters need to be graded, thinned and/or sold, they are brought ashore to the handling facilities. The oysters generally take 24 - 30 months to reach market size. Oysters are filter-feeding animals deriving their nutrients from the natural phytoplankton and therefore require no artificial feeding.

There are 26 licensed oyster sites and producers in Clew Bay who normally produce up to 1000 tonnes per annum with a first sale value of approximately £1m (€1,269,738). The majority of the sites are located on the northern and southern shores of Clew Bay, where producers have located their onshore handling and packing facilities. The bulk of production is exported locally through the local shellfish buyers, primarily to France.

Mussels
The mussel is a mollusc found all around the Irish Coast. Trials on rope mussel farming began in Clew Bay in 1979, and initially generated only a few tonnes. There is one rope mussel producer in the Bay and an established producer from another area plans to start up on his licensed site in the

Bay by the end of 2001. Production increased and fluctuated over the years and reached over 500 tonnes in 1997 and 1998, levelling to approximately 300 tonnes by 2000. Increase in detection of biotoxins in recent years has curtailed any expansion into rope grown mussels in the Bay.

The method of production used is a long-line and rope suspended culture system. This involves the placing of naturally collected mussel seed into mesh stockings, which are then suspended from floating rope long-lines in the water. This produces, within about 18 months, thin-shelled, sand free mussels with high meat contents and clean shell. Growth rates are comparable to other areas and Clew Bay has the advantage of a natural spat settlement.

One licensed producer has also carried out trials in growing mussels on the seabed. This is an extensive culture method and involves transporting seed mussels from spat fall areas, e.g. East Coast Ireland, and placing them in plots where they grow to market size within three years. The mussels are then fished from the seabed, usually by large dredger boats.

Scallops

Initial trials on scallop farming began in 1993 and continued until 1997 when successful methods were established. Seed scallops that are sourced from natural wild settlement or from a hatchery, are initially put into protective enclosures or suspended on long-lines until they are half grown and then they are placed on the seabed in frames until they reach maturity. This produces marketable scallops within a four to five year period. The finished product is then harvested with the assistance of divers.

Abalone

The abalone is not native to Ireland and it will not breed in our colder waters. It looks like a limpet, in that it has one shell. Both the European abalone and Japanese abalone have been introduced into Ireland. Trials began on abalone in the early 1980's and Clew Bay is host to the only on-growing sea site in Ireland. The juvenile abalone are put into protective containers and cages and are fed *Laminaria* (kelp) and *Palmaria* (dillisk), by divers, every two weeks in summertime and every four to six weeks in the winter. The growth cycle is about five years and the principle market, other than the established local market, is for Irish hatchery broodstock, although abalone is a much sought after product in Japan.

Lobsters

Trials have commenced in 2001 using aquaculture techniques to assist with determining survival rates of juvenile lobsters released into the wild for the restocking of the existing natural lobster fishery. Broodstock from Clew Bay are being used to produce juvenile lobsters at a hatchery in Co. Wexford. These will be released onto the seabed using natural reefs and artificial reefs which are deployed on an existing aquaculture site in the Bay where monitoring diving takes place regularly.

Classification of the Bay:

Clew Bay is currently divided into three areas for water classification. (Map 4).

(1) Clew Bay North is north of a line westwards from Cushalogort intersecting a line from Mulranny Pier to Old Head.

(2) Clew Bay South is south of a line westwards from Cushalogort intersecting a line from Mulranny Pier to Old Head, excluding the waters defined for Westport Bay.

(3) Westport Bay is east of a line from Carrowcally to West side Annagh Island.

Clew Bay North and South have been designated by the Minister for the Marine and Natural Resources as A classification waters. This means that live bivalve molluscs can be collected from

this area for direct human consumption. Westport Bay waters currently have a B classification, as determined by the classification system set out by the Minister for the Marine and Natural Resources in accordance with Regulation 8.1 of the European Communities Directive 91/492 (Health Conditions for Production and Placing on the Market) Regulation, 1996 (S.I. No. 147 of 1996). This means that live bivalve molluscs must be purified in an approved premises or go for heat processing before being made available for human consumption. The S.I. 200 (Quality of Shellfish Waters Regulations) of 1994 prescribe quality standards for shellfish waters and designate the waters to which they apply, together with sampling and analysis procedures, to be used to determine compliance with the standards. Clew Bay has been designated under this instrument. These regulations give effect to Council Directive No. 79/923/EEC of 30th October 1979 on the quality required of shellfish waters.

Live bivalve molluscs taken from an area with A classification must meet the requirements set out in Chapter 5 of the Council Directive (91/492/EEC). These conditions are that samples must have less than 230 *Escherchia coli* per 100g of mollusc flesh or less than 3 faecal coliforms per gram of mollusc flesh. For live molluscs taken from an area with a B classification the requirements are between 3 and 60 faecal coliforms per gram of mollusc flesh. Appendix 2.4 shows the classification of shellfish producing waters. This status may change from time to time arising from the test results and it is expected that Westport Bay will achieve A classification when the sewage treatment plant for Westport waste comes on-stream in 2003.

Biotoxin and Phytoplankton Monitoring:

The Department of the Marine and Natural Resources (DoMNR) is contracted by the Food Safety Authority of Ireland (FSAI) to implement the Marine Biotoxin Monitoring Programme in Ireland. The Marine Institute (MI) is the National Biotoxin Reference Laboratory and carries out marine biotoxin testing on behalf of the DoMNR. The primary aim of this Programme is the protection of human health with the view to maintaining an excellent reputation for the shellfish industry.

Biotoxin monitoring involves both the screening of water samples for the identification of naturally occurring harmful phytoplankton species and the testing of product toxicity. Shellfish are tested in the Biolabs Europe laboratory in Ballina and in other laboratories throughout the country, in accordance with protocols under the EU Directive 91/492/EEC. The tests cover a range of biotoxins, including Paralytic Shellfish Poison (PSP), Diarrhetic Shellfish Poison (DSP), Amnesic Shellfish Poisoning (ASP) and Azaspiracid (AZP). Sampling is conducted for the industry by the Clew Bay Marine Forum Ltd. under the direction of the DoMNR according to the following procedure:

Monthly analysis for microbiological criteria.
Weekly analysis for phytoplankton in relevant production areas.
Weekly analysis for shellfish biotoxins (twice weekly analysis is required during periods of closure).
Annual analysis to maintain a profile of production in respect of other criteria.

The permitted levels under the EU directive 91/492/ECC are: -

PSP: not more than 80 microgrammes of toxins per 100g of flesh.
DSP: not detected by bioassay.
ASP: not more than 20 microgrammes of toxin per gramme of flesh
Additional to this directive:
AZP: not more than 0.16 microgrammes per gramme of flesh

As part of regular monitoring it is routine practise that areas be closed down from time to time as a precautionary measure. The regime of sampling and testing is currently under review and the Clew Bay Marine Forum Ltd. are working closely with the Marine Institute and DoMNR to ensure that the new regime provides the highest level of protection to the consumer and producer alike. Details of regulatory limits are to be found in Appendix 2.5. The current Biotoxin Sampling Programme in Clew Bay consists of 7 phytoplankton sites and 3 weekly sampling locations for farmed shellfish, 3 locations for native species and additional sites for farmed shellfish species prior to them being harvested, which are shown on Map 4.

Tourism and Recreational Use:

Sea Angling Tourism

The relatively calm inshore waters of Clew Bay provide excellent angling for ray, bullhuss, monkfish, dogfish and the occasional tope. Large skate (over 45kg) are regularly encountered. These are tagged and released as part of a conservation and research programme. During good weather productive fishing may be had over reefs and sand banks in the outer bay. This provides such species as cod, ling, pollack, coalfish, whiting, wrasse, pouting, squid and gurnard. Blue shark can also be taken in the deeper waters to the west of Clare Island.

There are currently seven approved angling vessels operating within Clew Bay:

“Shamrock 1”	Skipper - Mary Gavin
“The White Seahorse”	Skipper - Austin Gill
“Restorick”	Skipper - Padraic Conlon
“Lady Helen”	Skipper - Reg Royan
“Finnaun”	Skipper- Martin O’Donnell
“Lady Clare”	Skipper- John Johnson
“Saoirse”	Skipper- Pat O’Malley

Other users of the bay include Glenans Sailing Centre, Cullenmore Island. Glenans provide residential sailing courses. Rosmoney, Westport is the base for Mayo Sailing Club. There are currently 154 members sailing this picturesque cruising ground which exists among the islands in the east of the bay. The Atlantic Adventure Centre, which offers many water-based activities, is situated in Lecanvey, on the southside of the bay. Aside from the organised groups there are many private boat users, windsurfers, surfers, shore anglers and divers who avail of this natural amenity. The bay also boasts some of the finest beaches in the country. Old Head, Bertra and Mulranny have all been awarded the EU Blue Flag status.

Chapter 3.

MANAGEMENT PLAN

3. MANAGEMENT PLAN

All licensed aquaculture operators are bound by the terms of their licences to carry out their operations in accordance with certain limits and procedures. The Management Plan for Clew Bay is designed to build on these requirements and ensure that aquaculture operators in all sectors operate to best practices. In particular special emphasis has been placed on environmental management, mutually beneficial co-existence with other resource users and the minimisation of conflict.

The aquaculture producers within Clew Bay have long recognised the rich and varied nature of the flora and fauna in the bay. The natural flat oyster beds in Clew Bay are of national and international importance. These beds have been under the stewardship of the Clew Bay Oyster Co-operative since it's inception in 1979. The Co-op. and all the producers in the bay are committed to the maintenance of these natural oyster beds as well as the conservation of the indigenous species in the bay. The quality of the marine environment is a prerequisite for the sustainable development of a vibrant aquaculture industry and is a primary goal of the management plans for all sectors of the industry in the bay. This commitment is both in keeping with, and predates, the proposed SAC and proposed NHA status of the bay.

The CLAMS Group regard a hydrographic study and baseline data study on the biota in the bay as being of prime importance as a management tool for the bay. A subgroup of the CLAMS committee is developing a detailed specification of the various components of such a suite of studies together with a work plan and timetable for their completion. The provision of detailed up-to-date data on hydrography, environmental parametres and biota will enhance the groups ability to ensure the bay is managed in the most efficient and sustainable way. A priority for the CLAMS Groups' work plan for 2002 is the initiation of a programme to address the provision of this key data. Support is being sought from the relevant state agencies, including BIM and the Marine Institute, to ensure the timely completion of this work plan.

Site Management

The CLAMS Group have agreed that efforts will be made to ensure that all aquaculture sites and installations are well kept. Environmental and aesthetic factors are recognised as being of the utmost importance. Disposal and/or storage of waste will be achieved without interfering with the environment or destroying the scenic beauty of the area.

Producers have agreed to re-cycling programmes for disused equipment and packaging.
The following details are recommended to all aquaculture operations in Clew Bay:

- Prompt removal of disused equipment and other waste from the site.
- Keep onshore site clean and tidy.
- Piers should be kept free from obstruction for other users and the general public.
- Use only one access route to trestles and minimize journey times.
- Keep noise levels as low as possible and fit mufflers on tractors and machinery.
- Refrain from moving boulders and beach material.
- Keep domestic pets away from the site.

Producers have been made aware of relevant publications such as the DoMNR 'Guidelines for Landscape and Visual Assessment of Marine Aquaculture' and BIM's 'Aquaculture and the Environment' booklet, which includes best practices to minimise habitat disturbance and visual impact of aquaculture activities.

Finfish Farms – Stock Management:
Currently, there are two fin-fish producers in Clew Bay, Seastream Ltd. and Clare Island Seafarm. Seastream Ltd. operates three sites for the production of rainbow trout; Inniscannon, Inniscorraigh and Carrickahaash. Clare Island Seafarm operates two sites for the production of salmon, a smolt site and a production site at Portlea.
See Appendix 3.1 for the Management Plan for Seastream Ltd.
See Appendix 3.2 for the Management Plan for Clare Island Seafarm.

Formal Single Bay Management plans have been in place for Clew Bay since 1994. The original plan was developed under the aegis of the Department of the Marine with the help and co-operation of the ISGA and in consultation with the WRFB & NWRFB, the local shellfish growers and the fishery owners. This current plan seeks to build on the progress made in previous plans and to improve on the integration of finfish production management within the bay.

The plan is a locally based initiative to develop an integrated approach to the management of finfish farming in the bay. Its goals are fourfold: -

- The control and elimination of disease.
- The optimisation of environmental conditions within the bay.
- More efficient production.
- Co-operation and harmonisation with other users of the bay.

These will be achieved by co-operative ventures including: -

- A formal agreement on the exchange of information.
- An agreed code of practice.
- Effective separation of generations.
- Annual fallowing of all production sites.

Details of the plan, including an emergency plan and code of practice are appended (Appendix 3.3). Appendix 3.4 shows the Fallowing Plan for Clew Bay.

Both Clare Island Seafarm and Seastream Ltd. have joined the Irish Salmon Quality Scheme which was launched in April 2001. The Scheme is held in trust for BIM by Irish Food Quality Certification (IFQC). IFQC is an EN45011 accredited organisation and the EN45011 accreditation status demonstrates the integrity of structure, accountability, management and technical competence behind certification. The scheme ensures that all Irish farmed salmon approved under the scheme will meet the highest standards of quality and food safety, also ensuring traceability of the product from the hatchery to the packing station.

Shellfish Farms – Stock Management:
Native Flat Oyster: All native (*Ostrea edulis*) oysters are grown within the area encompassed by the Clew Bay Oyster Fishery Order 1979, which is vested in the Clew Bay Oyster Co-operative Society Ltd. Accordingly, individual shellfish and finfish producers located within the Oyster Order Area are required to seek the permission of the Co-operative before applying to the Department of Marine & Natural Resources for an Aquaculture Licence and Foreshore Licence. All licence holders must comply with their individual licence regulations. In addition all producers within the Oyster Fishery Order area must comply with the Rules and Regulations set out by the Clew Bay Oyster Co-operative (Appendix 3.5, 3.6, and 3.7). The Co-op. and all oyster producers must comply with the details set out in the Fisheries Amendment Act 1997. In addition the DoMNR have regulations for the operation of each individual aquaculture licence. The CLAMS group will facilitate the implementation of National policy. All individual producers and, in the case of companies, a named member of the company, are members of Clew Bay Oyster Co-operative Society Limited.

Clew Bay Oyster Co-operative Society is a Registered Co-operative, which is recognised by all institutions of the State as the legitimate custodian of the oyster fishery order. It is managed by an elected committee / board of directors. The Co-op.'s principle function is to manage, sustain and develop the wild flat oyster fishery in Clew Bay. In recent years the Co-op. and its development officers have introduced various development plans where direct measures were used to enhance juvenile recruitment and increase landings during the fishing season.

The Co-operative have introduced various fishery management measures, such as:

(a) minimum landing size of 3 inches (75mm),
(b) limit on number of fishing days and fishing hours,
(c) 1 x 4ft. dredge per boat,
(d) cultch spreading,
(e) use of nursery beds.

The positive identification of *Bonamia* in 1994 forced the Co-op. to change their management and development plans. Since then they have concentrated on disease control and bed management. Today there are two bed types, categorised on the basis of disease, and managed accordingly. Fishing is carried out on a bed-by-bed basis, thus ensuring that production of each bed is limited and avoids over-fishing in any one area. The bed at Rosbarnagh is now the Co-op.'s broodstock bed.

Research projects have been carried out to produce cheap spat by use of floating spatting ponds and eyed larva. These projects involved obtaining eyed larva from a hatchery and placing them in a pond where they would settle on mussel shell suspended in the pond in oyster bags. Results to date have been variable.

Pacific Oysters (*Crassostrea gigas)*: Pacific oyster producers in the bay have been made aware of the BIM publication 'Product Quality Guidelines for Irish Oyster (*Crassostrea gigas*)' and have adopted the BIM – Industry Code of Practice for Quality Irish Oysters. To ensure productivity, producers monitor on a regular basis growth rates, meat content and seed survival throughout the production cycle and performance of site locations.

Rope mussel (*Mytilus edulis*): The one mussel farm in the bay manages its stock using various stocking densities and stock management techniques and regularly adapts new growing systems to suit their operation.

Health Management:

Though no major disease outbreak among the shellfish stocks has been recorded in Clew Bay, apart from *Bonamia* in the native oyster stocks, it is important that producers are vigilant for any significant increase in mortality rates. Co-operative regulations are in place and as a precaution against disease producers have agreed:

- No importation of seed without disease free certification.
- All hatchery grown seed to be certified free from disease.
- All equipment and machinery used for the cultivation of shellfish from outside the bay will be disinfected prior to use within the bay.
- Monitoring and recording of mortalities.
- Notification to the DoMNR Co-op. and CLAMS Group of any significant increase in mortality.

Pollution Incidents:

The threat of pollution or contamination is constant and could pose a serious health risk. If a potential threat is identified the following procedure should be carried out:

- Notify the DoMNR, MI, BIM, NWRFB and WRFB, and Mayo County Council.
- A sample from the contaminated site should be collected in accordance with the specified protocol detailed in Appendix 3.8
- Consult with the Co-op. & CLAMS Group to decide whether to have the sample processed.
- The County Council and the CLAMS Group should decide on the relevant course of action to be taken.

In cases of new outflows or changes to existing outflows in the bay, it is requested that the County Council should forward the details to the CLAMS Group prior to this taking place. The CLAMS Group should also be notified if the presence of the antifoulant paint tri-butyl-tin (TBT) is detected in any part of the harbour.

Communications:

Liaison officers in consultation with the CLAMS group will prepare a report for each quarterly meeting covering a review of current issues and concerns, work in progress, results of monitoring programmes and other relevant information.

The CLAMS group has agreed to exchange information under the following headings;

1. Stock information on fish farms.
2. Lice loading and disease status on farms.
3. Origin of stock.
4. Stock information on shellfish farms.
5. Existing or new development plans for salmon farming, shellfish farming and wild fisheries in the bays.
6. Other developments likely to impact on the above.
7. Accurate and up to date catch statistics.
8. Details of certification of stock for stocking/restocking.

The CLAMS group will act as a focus for communications with State agencies, local interest groups and other stakeholders.

Review Procedure:

The local CLAMS Group will continue to meet on a regular basis to keep up to date on the issues in the Bay area. Formal meetings of the group will take place quarterly or more frequently as required. Issues and/or development which may affect aquaculture operation in the bay will be brought to the attention of the CLAMS committee through the Chairman or liaison officers. Formal arrangements for consultation will be set up by the CLAMS group with relevant State agencies and interested parties.The CLAMS Document will be reviewed on an annual basis.

Chapter 4.

DEVELOPMENT PLAN

4. DEVELOPMENT PLAN

Shellfish Production:

The majority of shellfish producers would envisage increasing production in the future. The 2000 production figure for shellfish production in the Bay was 695 tonnes, which was significantly down on previous years due to biotoxin closure, at first sale value of £593,204 (€753,213). Producers have identified production costs, static sales price and biotoxins as limiting factors to future development. In recent years many pacific oyster producers have built onshore handling facilities and purchased new machinery to reduce labour costs and improve product quality.

Native Oysters: With the steady decline of native oyster stocks the Clew Bay Oyster Co-operative plan to reactivate an enhancement and stock management programme. This programme will include settlement trials using bag and trestle system, spatting ponds, oyster larvae and *Bonamia* monitoring. A review of current stock management will be carried out and will involve consultation with Co-op. members to assess current practices and gather suggestions. Aspects of stock management will include fishing season and time of year to best avail of markets, relaying undersize oysters in specific plots, holding onto damaged oysters until recovered, monitoring the splitting of small oysters off larger ones, and the relaying of cultch. At present CBMF and CBOC are conducting trials in bottom cultivation of Pacific oysters. These trials are being conducted on under-productive native oyster beds. One of the benefits of this is that the Pacific oyster shell may provide an extra cultch for native oyster settlement.

Pacific Oysters: Producers plan to increase production from 1000 tonnes (normal production level) to just under 1800 tonnes per annum over the next five years. To increase sale value, producers will implement site and stock management programmes, involving strict grading and quality control. It is also the intention of the producers, particularly new producers, to investigate the performance of their sites, seed survival and growth rates at different locations on their sites and assess the best stock management system for their particular site.

Rope Mussels: Currently the annual production of rope mussels is less than 500 tonnes and is carried out by one producer. This producer plans to farm the sites less intensively in future, implementing various stock management techniques, such as using small seed that is graded from market size stock. There are plans for another producer to start farming a more exposed site to produce 150 tonne per annum by the year 2003. Existing technology and new technology will be employed at this site to assess viability of exposed site locations. This producer is participating in the process of drafting the Irish Quality Mussel Standard with BIM.

Scallops: At present the CBMF on behalf of the Co-op. are engaged in a scallop spat settlement trial, involving the use of local stock to produce larva – pediveligers, in a shellfish hatchery in Co. Clare. The larva were transported to Clew Bay and deposited in a floating pond, a mesocosm, where the larva settle on collector bags which are suspended in the mesocosm. If successful it is hoped that this system of spat collection will be used in the future to supply local scallop farmers and other areas for inshore fisheries stock enhancement programmes. In addition, a small trial has taken place where Clew Bay settled spat has been transported on mesh in mesh bags from the hatchery at very small size and deployed on a longline in Clew Bay. Initial growth rates and survival from this trial are positive and it is envisaged that a more substantial trial will be carried out in 2002.

Other Species: With relation to abalone cultivation the consistent supply of spat and lack of growth trials to investigate the most efficient method of cultivation are the main limiting factors to any investment and expansion of this species. It is planned that seaweed growth trials will be carried out on long-lines to ensure continued supply of food for the abalone and to reduce labour costs in the gathering of the seaweed. It is also envisaged that a study to quantify and subsequently develop the native seaweed resource will be carried out in the bay in 2002. Pacific oyster producers have expressed an interest in rejuvenating clam production trials at various locations around the Bay.

Stock and Site Management:
A review will be undertaken by BIM of current systems of quality control, site management and product handling with a view to making recommendations on the establishment of stock management and quality control procedures to all shellfish growers in the Bay. Comprehensive codes of practice for stock and site management will be formulated with the producers by mid – 2002, which will build on present recommendations described in the management plan. These cover topics such as visual impact on-site, trestle alignment, equipment and waste disposal, visual impact, safety at on-shore handling and storage facilities, other bay users, mortalities, and seed importation. Suggestions for on-shore site management code of practice include site screening to reduce visual impact, restricting access, placing at entrance of warning signs, and the importance of health and safety standards.

Fin-Fish Production:
Seastream Ltd. has increased its production of rainbow trout by approximately 30% in the last three years and is currently one of the larger employers in the Clew Bay area. Together with its sister company Curraun Fisheries Ltd., Seastream Ltd. has plans to significantly increase the number of people employed by them over the next five years.
See Appendix 3.1
Clare Island Seafarm, would like to consolidate and expand its organic salmon production in Clew Bay in the coming years
See Appendix 3.2
Opensea (Ireland) Ltd. has a trout farming licence for a site south of Inishluaghil in Newport Bay and also shore-base facilities at Rosmindle, Kilmeena. Opensea lodged a Trial Licence application for a salmon farm in the mid Clew Bay area in September 2000. However, subsequent to negotiations with the other two fin-fish operators in Clew Bay it has agreed to withdraw the Trial Licence application in favour of a joint approach to the licensing of two new locations for salmon and white fish production in the mid Clew Bay area. A joint EIS will determine whether the mid Clew Bay area is suited to this approach and if so, where the best locations for the two shared sites might be.

Opensea also favours a joint approach by all three fin-fish companies towards the building of a major fish packing and processing plant in the area. Opensea believes that in the future the main purpose of fish farming will be to provide raw material for processing into sophisticated consumer products.

Finfish and Shellfish Production:
Increases in Production:
The CLAMS Group has agreed that all proposed increases in Aquaculture production or applications for new licences should first be raised within the group as part of the agreed protocol on information exchange. The Group envisages that increases in production in all sectors will be carried out in an incremental manner, based on the best available information and in line with best practice.

Technology & Research Development:
The CLAMS Group has identified the importance of research and the need for improved technology is essential for the future sustainable development of the finfish and shellfish industry in Clew Bay. Producers will seek assistance in researching new cultivation methods and species diversification, in association with research on stock management and native oyster seed settlement.

In addition to the development of production techniques, the improvement of new technology is essential to the future of aquaculture, as it is important to address the shortage of labour and improve efficiency and improve product quality.

Clare Island Seafarm are participating with BIM in a pilot project to test the effectiveness of new cage technology, the 'Ocean Spar system'. This system has been designed to suit the exposed environment at Clare Island and trials are ongoing to test cage performance, and operability growth rates and viable stocking densities.

Water Monitoring:
The shellfish and finfish producers in conjunction with the Marine Institute and Department of the Marine & Natural Resources have co-ordinated a comprehensive weekly water and shellfish monitoring and sampling programme over the year 2000 - 2001. It is the intention that this programme and monitoring of existing sources of pollution will continue. The Clew Bay Marine Forum on behalf of the finfish and shellfish producers intends to work with the Mayo County Council and the EPA to identify potential threats, establish a risk assessment programme and implement a management programme to handle a pollution incident.

In addition the CBMF facilitates the CBOC in collecting on a weekly basis water samples from eight sampling points in the Inner Bay. The Co-op. assesses these samples to identify the presence and quantify the number of native oyster larva in the water.

Training:
It is envisaged that the training courses (listed below) will be run to suit the specific needs of the producers and that they will be certified. Many of these topics are modules, which are provided by Bord Iascaigh Mhara as part of the National Vocational Certificate Level 2 in Aquaculture. The modules can be given locally by BIM's Coastal Training Mobile Unit and/or through the assistance of the local BIM Aquaculture Development Officer and the Marine Institute. It is envisaged that assistance will also be obtained from the local Mayo VEC in running some of the modules and local groups such as Meitheal Mhaigh Eo Teó. and South West Mayo Development Company Ltd.

Training Courses:
- Safety at Sea
- Small Boat Handling
- Marine Engineering Operations
- Radio Courses
- Forklift handling
- Tractor maintenance
- Site and Stock management, environmental awareness
- Quality assurance and Codes of Practice
- Marketing, product development, sourcing new markets,

- New Technology, technology transfer, including overseas educational trips
- EU Directives and Biotoxin monitoring
- Basic Business and Book-keeping skills
- IT Skills, e-commerce

Sales and Marketing:
To assist with improvement in quality and in sale value, it is envisaged that workshops will be co-ordinated locally to cover topics such as stock management, quality assurance schemes, site management and codes of practice.

Finfish: Both finfish farms are participating in the Irish Salmon Quality Scheme. Clare Island Seafarm are producing organic certified salmon for the European market.

Native Oysters: The Clew Bay Oyster Co-operative has participated in annual BIM-Guinness Quality Oyster Awards and have on two occasions won the best native oyster award. The year 2000 annual production of native oysters in Clew Bay was approximately 14 tonnes with a first sale value of £42,000 (€53,329). The vast majority of the produce is sold to four local shellfish buyers who export primarily to the French marketplace. The CBOC feel that a more co-ordinated approach is needed on a national level regarding quality, value added products and sourcing new markets. It is hoped that meetings of all the Irish native oyster co-operatives will resume and continue to occur on a bi-annual basis.

Pacific Oysters: The annual production of pacific oysters in the bay has varied from year to year. Production in the year 2000 was 398 tonnes at a first sale value of £414,204 (€525,930). The majority of oysters produced are exported in bulk, primarily to France where they are on-grown, re-immersed, re-packaged and redistributed for final sale. Pacific oyster producers have attended various workshops in the past and have taken part in the annual BIM-Guinness Quality Oyster Awards. They are aware of BIM booklet 'Product Quality Guidelines for Irish Oysters' and intend to participate in future workshops that will address their specific needs and will assist them in producing a quality oyster and achieving high market price. At present BIM are drafting a Quality Standard for packed oysters.

Rope Mussels: The vast majority of rope grown mussels in the bay are sold to Irish processors. Currently BIM are drafting the Irish Quality Mussel Standard for both the rope and bottom mussel industry.

Infrastructure Development:
The improvement and development of existing piers and landing facilities is needed. These improvements will facilitate producers in handling their product and with effective management of farms. Recently the Westport Harbour Commissioners and Mayo County Council commissioned an integrated development plan report for Westport Harbour. Funding is being sought to carry out a more in-depth study to further investigate the potential of the Harbour. It is intended that the CLAMS Group will continue to liaise with the CBMF, DoMNR, Mayo County Council and other relevant parties on pier development and navigational hazards. It is the intention of the CLAMS group to liaise with the Mayo County Council, DoMNR, CBMF and other relevant agencies to introduce a code of practice for piers. The CLAMS group and the CBMF together with the DoMNR and Commissioners for Irish Lights will discuss and agree the buoyage marking and lighting requirements for aquaculture sites, for navigational channels and hazard and foul ground. CLAMS will address requirements and take responsibility for the aquaculture sites.

New Pier Develpoment at Rostrunk:
A site has been identified for the development of a deep-water pier which could accommodate the aquaculture industry's requirements and expand the tourism angling and commercial fishing potential of the bay. Such a strategic approach to the development of the Clew bay north shore would constitute a major step towards the support and establishment of a number of sustainable industries, and facilitate the optimisation of the resource use. In addition to which it would complement the development of Westport harbour.

A well-planned development of Westport harbour and the provision of a new deep-water pier at Rostrunk will be advantageous to industrial and leisure user alike. It is important that all future development should take into consideration the needs of the different users and so ensure that all sectors will benefit.

Integrated Coastal Zone Management:
To ensure that a general consensus and co-ordinated approach to an integrated coastal zone management strategy for the Clew Bay area will be achieved, it is the intention of the CLAMS group to continue to have open communication with other Bay users and with the Clew Bay Marine Forum Ltd. The CLAMS group will integrate with associated programmes and activities such as fisheries enhancement/management programmes, marine tourism, leisure activities and sea-angling. The CLAMS process will complement the 'Inshore Fisheries Committee' process for the fishery sector. The CLAMS Group will present this document to Mayo County Council, Mayo County Development Board and all other relevant state and semi-state bodies. It is hoped that this Document will be incorporated into the Mayo County Development Plan and the Mayo County Development Board Strategy Document.

Chapter 5.

MANAGEMENT ISSUES

5. MANAGEMENT ISSUES

Attainment of "Best Practice"

The Clew Bay CLAMS Group accepts that there is a degree of interaction between all sectors of the aquaculture industry in the bay and between the industry & other stakeholders in the Clew Bay resource. The Group recognises the need to codify husbandry practices in line with accepted "best practice". To ensure the development of a systematic approach across a range of husbandry issues the Group has agreed that codes of practice will be developed to compliment and where necessary review those already in existence. These will address interactions between all aquaculture operators and between the industry and other stakeholders. The preliminary list of headings for additional codes of practice is as follows:

- Visual impact amelioration.
- Navigation.
- Water Quality preservation.
- Amelioration of impacts on tourism and leisure.
- Use of public access piers.
- Waste Management.
- Nature Conservation.

A subgroup of CLAMS has been appointed to formulate these codes. It is intended that a working draft of these codes will be completed within six months as part of the on-going CLAMS process.

Pollution:

Even though the majority of waters in Clew Bay have an A Classification status, producers feel that all possible pollution threats continue to be monitored and highlighted. Threats include:

- Increased or uncontrolled discharge, including industrial, into any part of Clew Bay.
- Increased housing projects and development in the surrounding villages and town would increase the level of sewage discharge directly as there is only primary and secondary treatment at present in these areas.
- Other contamination that may affect the quality of shellfish and finfish, such as oil spills, quarry outflow, slurry and the inappropriate / excessive use of fertilisers on surrounding agricultural land.

Producers wish to be informed and updated through the CLAMS group and the CBMF of any pollution incident or any threat to their operations.

Navigation Hazards:

Clew Bay probably has more natural hazards than any other Bay in the country. The majority of these have never been marked. The two main harbours, Westport and Newport, do not have navigation markers that enable safe passage. Many of the other piers have dangerous approaches and are unmarked. Shipping in Clew Bay for passenger and material transportation has increased in the Bay, involving some night work and also transportation of fish food to fish farms. Leisure use is also rising and the Bay has seen a big increase in sailboats and in particular fast powerboats. It is essential that the marine environment of inner Clew Bay be made as safe as possible.

A study has been completed by the CBMF Ltd. to identify the navigational hazards in the bay and to recommend marker types, ascertain seabed composition and anchorage requirements. Map 5 shows the location and type of markers required.

The results of the study indicate that approximately 26 starboard and 33 port markers will be required to mark safe passage into two harbours and two piers in Clew Bay, namely Newport and Westport harbours, and Rosmoney and Roigh piers. A requirement for six additional Cardinal marks has been identified. In addition approximately 22 markers are required to put on the areas of foul ground. Another 6 markers will be required to mark an important tidal channel between Newport and Westport Bays. It is likely that additional tidal channels and pier approaches will be identified as this process gets underway. It will also be necessary to have spare markers for replacement purposes.

Breakdown of areas for proposed new markers.
The accompanying numbered map (Map 5) identifies the markers that are required for Clew Bay. The latitude and longitude positions are recorded in Appendix 5.1. Appendix 5.2 contains details of the marker categories.

Pier Issues:
A survey was undertaken, by means of a questionnaire, for the following piers in the Clew Bay area in Co.Mayo:

Ach Aneal
Carrowmore
Ce beag
Clare Island
Cloughmore
Inniscuttle
Roscahill
Lecanvey
Mulranny
Murrisk
Newport
Old Head
Roigh Pier
Roonagh
Rosmoney
Westport Quay

The purpose of the questionnaire was to determine the standards and services available at the various piers. The outcome of this survey point to the fact that upgrading is required for many of the piers in Clew Bay.

- It is apparent that there are hazards in the approach to many of the piers, several of which are unmarked.
- A high percentage of the piers are lacking in many important facilities. Whilst ladders and steps are at most piers, the state of tide required to use them needs examination. Ladders need to be at the end of piers to ensure that the tidal piers can be used as soon as there is sufficient water.
- All of the piers east of the very mouth of Clew Bay (east of Ach Aneal/Corraune and Roonagh) are unusable at low water – Mulranny, Roigh, Newport, Roscahill, Inishcuttle, Rosmoney, Westport, Murrisk, Lecanvey, Carrowmore and Old Head. There is an additional need for Westport Harbour to be deepened and for a deep-water pier facility to be provided on the north shore of the bay.
- Whilst many piers have a slipway, half are only useable at high water, half are usable at mid water, and none are usable at low water. There is a real shortage of easy access slipways which is a problem considering the increase in the number of tourists and others trailing their own boats for launching from slipways. Existing slipways would need to be lengthened, many need widening, some are in need of upgrading and the turning access to others is a problem.
- There is a recognised need for more adequate berthage, as well as a need for visitor moorings. In addition, road access, parking space, tidiness, telephone access, toilets and distances to shops are particularly relevant to the tourist sector. This applies both as a destination for visiting boats and as a departure point for marine tourists. Access from the local road infrastructure is also important from an industry perspective.

• There is a real lack of access to maintenance facilities for boats in Clew Bay. Welding, electrical, engine fitting and engineering and maintenance services do not exist at any onshore (easy boat access) location in the County. Many of the larger steel and timber workboats are forced to travel to Killybegs for overhaul. The only other option is to use Galway docks.

• The age of the Piers highlights the fact that marine infrastructure has suffered from a lack of investment this century. Seven of the 16 Piers are known to have been built in the 1800's. Despite the fact that many of the Piers have been added to since they were built, and that 3 have been added to in 2000, a lot more work needs to be done. Roigh Pier, for example, which was added to in 2000, still requires an immense amount of investment to bring it up to standard.
The results of the survey can be found in Appendix 5.3.

Biotoxin Monitoring:
The sporadic closures of the Bay due to DSP toxins, have resulted in substantial market losses for both mussel and pacific oyster producers. Producers have expressed frustration at the difficulties at reconciling the requirement to comply with biotoxin closures with the ability to plan commercial harvesting operations. Suggested aids to improving the situation include the development of an early warning system, reliable chemical testing and a targeted phytoplankton and biotoxin research programme.

Sales & Marketing:
All producers would like to be constantly updated of the overall market situation in relation to current prices. Market trends was identified as a priority by all producers in the bay, to enable them to maximise profitability and inform harvest schedules.

Infrastructure:
Producers of shellfish and finfish, have expressed the need for infrastructural development at a local level. Producers are anxious that the DoMNR and Mayo County Council will take onboard the recent study that identifies the infrastrutural needs in Clew Bay in terms of piers, facilities at piers and slips, navigational hazards and marking of channels. It was also expressed that there is a necessity for improvements to road access to piers, sites and general road system in the Clew Bay area.

SAC Designation:
The designation of the inner Bay as a proposed SAC site is of concern to all producers who feel that future development of aquaculture and infrastructure will be curtailed. The producers are concerned that there should be adequate consultation on the issues of implementation of the SAC. There is a general feeling that, to date, consultation has been totally inadequate.

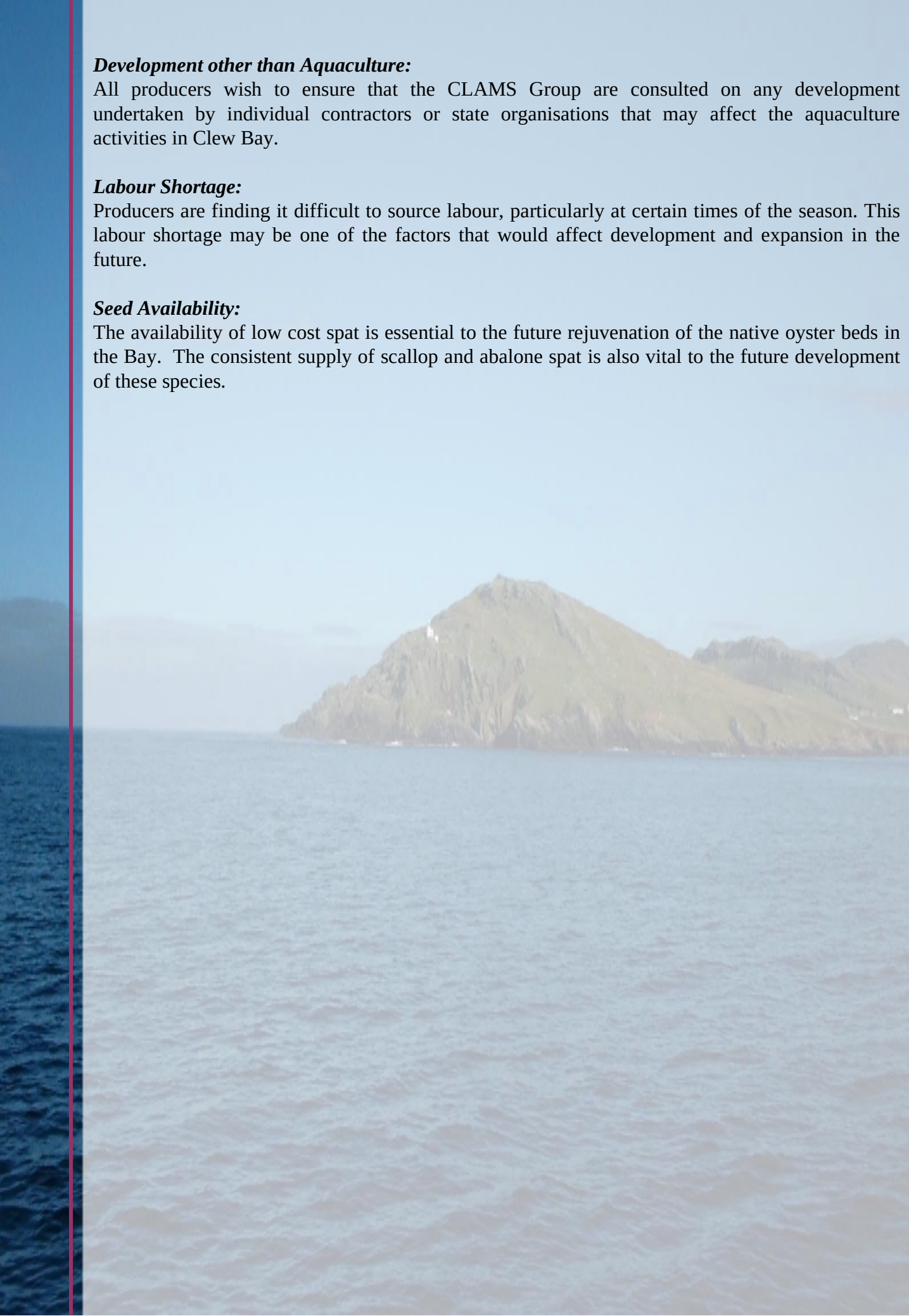
Improved Technology:
All shellfish and finfish producers wish to be kept up to date with the latest technology relating to production and management. Producers expressed particular interest in workshops concerning the following topics:

- EU Directives and Biotoxin monitoring.
- Health & Safety.
- Management, Small Enterprise and Business Skills.
- Quality Assurance, Codes of Practice.
- Product Development.
- New Technology, technology transfer, (including overseas educational trips).

Development other than Aquaculture:
All producers wish to ensure that the CLAMS Group are consulted on any development undertaken by individual contractors or state organisations that may affect the aquaculture activities in Clew Bay.

Labour Shortage:
Producers are finding it difficult to source labour, particularly at certain times of the season. This labour shortage may be one of the factors that would affect development and expansion in the future.

Seed Availability:
The availability of low cost spat is essential to the future rejuvenation of the native oyster beds in the Bay. The consistent supply of scallop and abalone spat is also vital to the future development of these species.



Chapter 6.

CONSULTEES ISSUES

6. CONSULTEES ISSUES

In line with the CLAMS hand book an extensive Consultation Process was carried out. Initial contacts were made with officials in all the State agencies and DoMNR, local aquaculture interests, and Mayo County Council and local authorities. Following on from these initial consultations a full consultee list was drawn up. Eighty seven groups and individuals were sent individual letters and information packs, and were invited to make written or verbal submission to the CLAMS group. Follow up telephone calls were made to many of those on the list. In addition, public notices were placed in two local newspapers, namely The Mayo News and the The Connaught Telegraph, inviting submissions. A series of interviews were also conducted with key local groups.

As a result of this extensive and detailed process a total of 12 written submissions were received. In addition to the written submissions there were numerous oral submissions.

A full list of consultees can be found in Appendix 6.1.

Summary of Responses:

The results of the Consultation Process has been reviewed and collated and are summarised below:-

- Without exception those consultees who submitted responses welcomed the CLAMS process and expressed a willingness to participate fully in the ongoing process of consultation and information exchange.
- Conservation of native species and habitats was identified as a major priority by a wide range of consultees**.**
- The maintenance of the environmental status of the bay was identified as a priority by many.
- Many groups voiced concerns regarding the potential impacts of future development on both visual amenity and environmental quality.
- Both consultees and aquaculture producers raised a wide range of issues regarding navigational safety.
- The availability of up to date relevant information was raised as a priority and the desirability of a facility for communication was flagged as a requirement.
- A variety of specific concerns relating to various aspects of site management/on-farms practices were cited.
- Concerns regarding escapes from finfish aquaculture were expressed and assurances sought on the implementation of corrective measures.
- The desirability for codes of practice to cover waste disposal and the use of potential contaminants such as anti-foulants and animal remedies was a concern shared by both aquaculture producers and consultees.

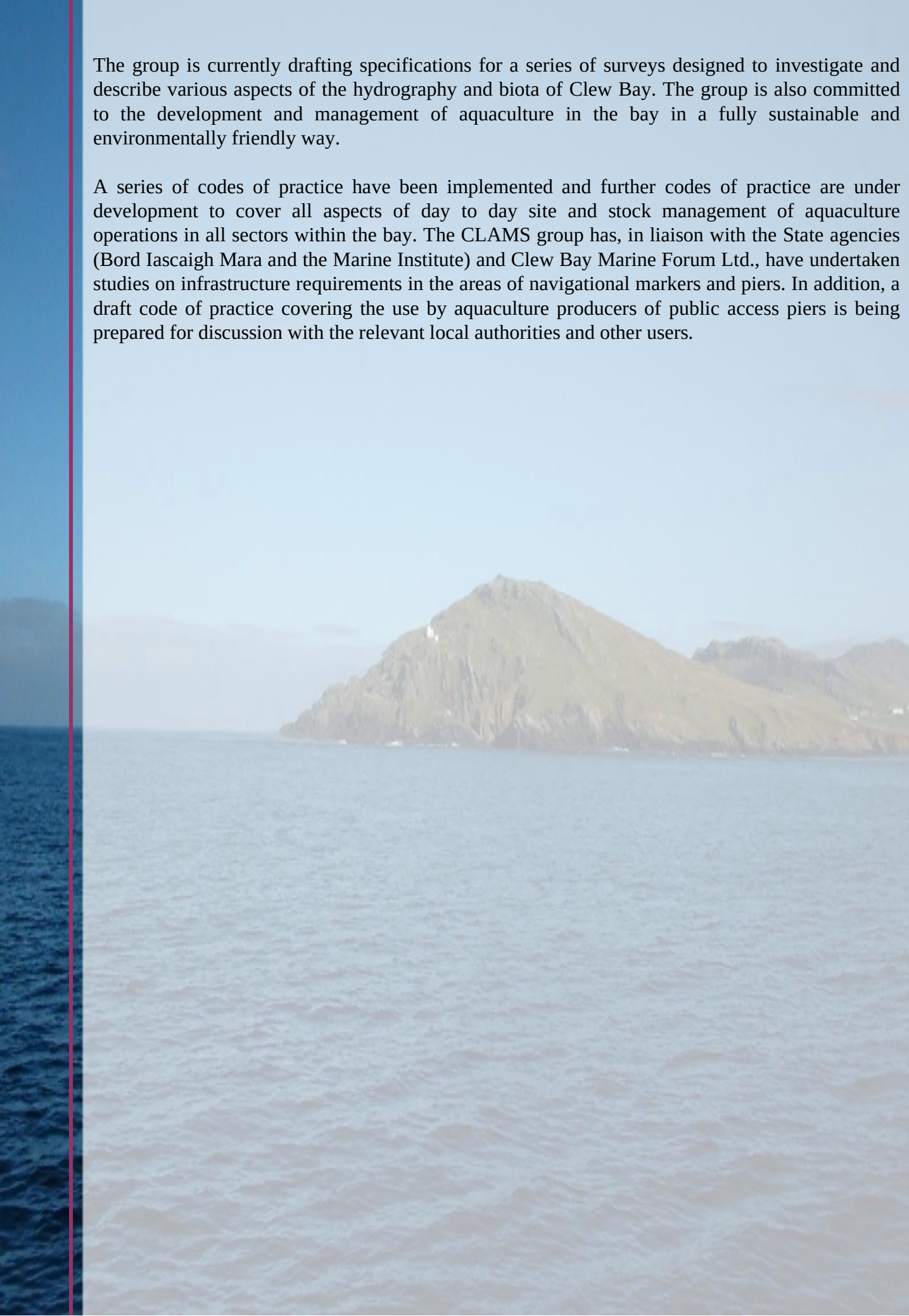
Actions:

It is important to note that CLAMS is not a regulatory process and has no statutory force. The group was heartened by the very positive response to their efforts at consultation with other stakeholders. The Clew Bay CLAMS group has resolved to attempt to address and solve industry problems through consultation and dialogue where possible. The management plan, as currently laid out in this document, has taken on board the issues raised through the consultation process.

On the question of native species and habitats the management plan reflects the groups commitment to the protection of environment quality in Clew Bay and in particular the protection and conservation of its flat oyster (*Ostrea edulis*) beds.

The group is currently drafting specifications for a series of surveys designed to investigate and describe various aspects of the hydrography and biota of Clew Bay. The group is also committed to the development and management of aquaculture in the bay in a fully sustainable and environmentally friendly way.

A series of codes of practice have been implemented and further codes of practice are under development to cover all aspects of day to day site and stock management of aquaculture operations in all sectors within the bay. The CLAMS group has, in liaison with the State agencies (Bord Iascaigh Mara and the Marine Institute) and Clew Bay Marine Forum Ltd., have undertaken studies on infrastructure requirements in the areas of navigational markers and piers. In addition, a draft code of practice covering the use by aquaculture producers of public access piers is being prepared for discussion with the relevant local authorities and other users.



Chapter 7.

CONTACT NAMES AND ADDRESSES

7. CLAMS GROUP CONTACT NAMES AND ADDRESSES

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Chapter 8.

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8. BIBLIOGRAPHY

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Monitoring Protocol No. 2 for Offshore Finfish Farms - Water Column Monitoring. DoMNR 2000.

Monitoring Protocol No. 3 for Offshore Finfish Farms - Sea Lice Monitoring and Control. DoMNR 2000.

Monitoring Protocol No. 4 for Offshore Finfish Farms - Audit of Operations. DoMNR 2000.

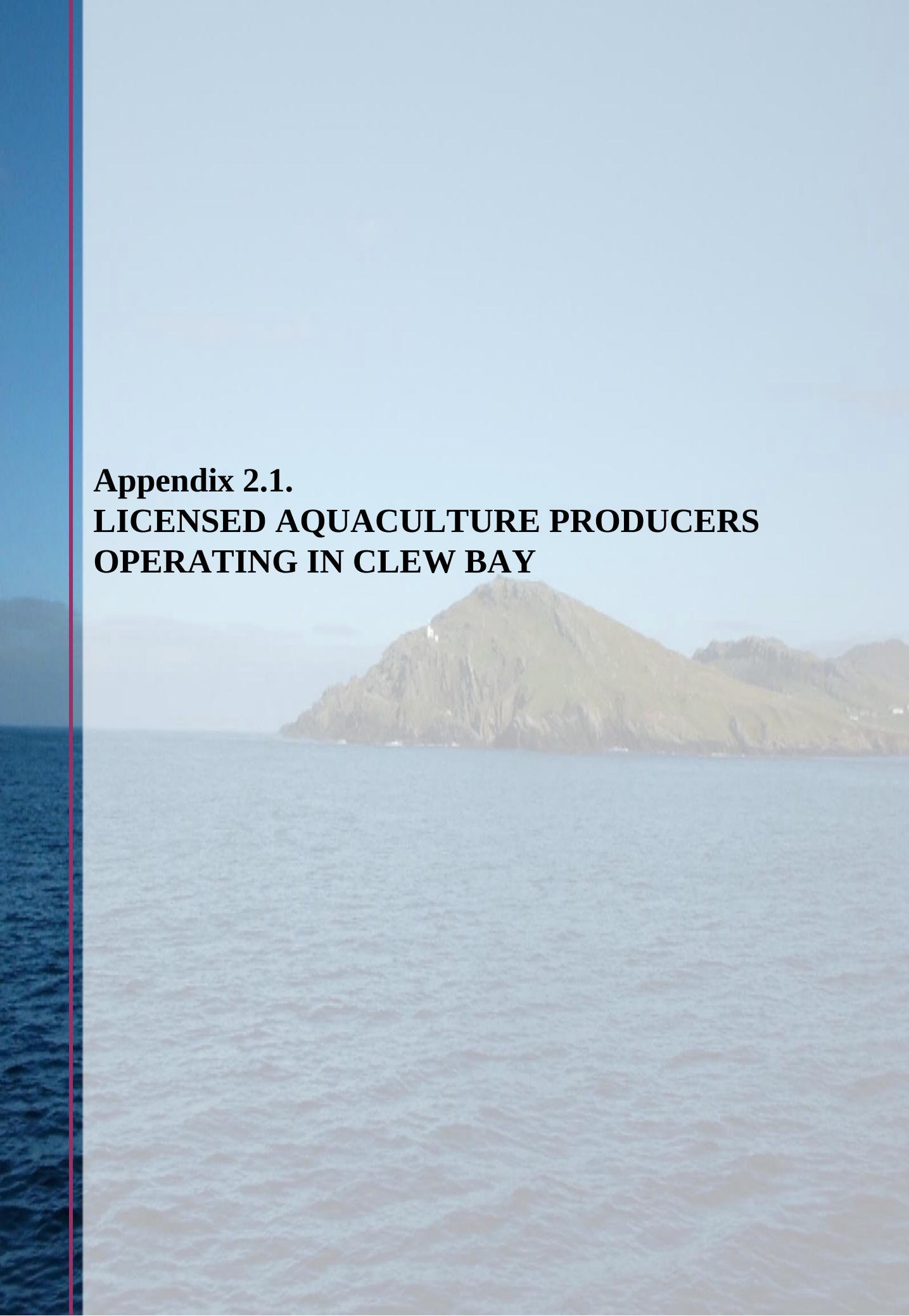
Protocol for Fallowing at Offshore Finfish Farms. DoMNR 2000.

Chapter 9.

MAPS

Chapter 10.

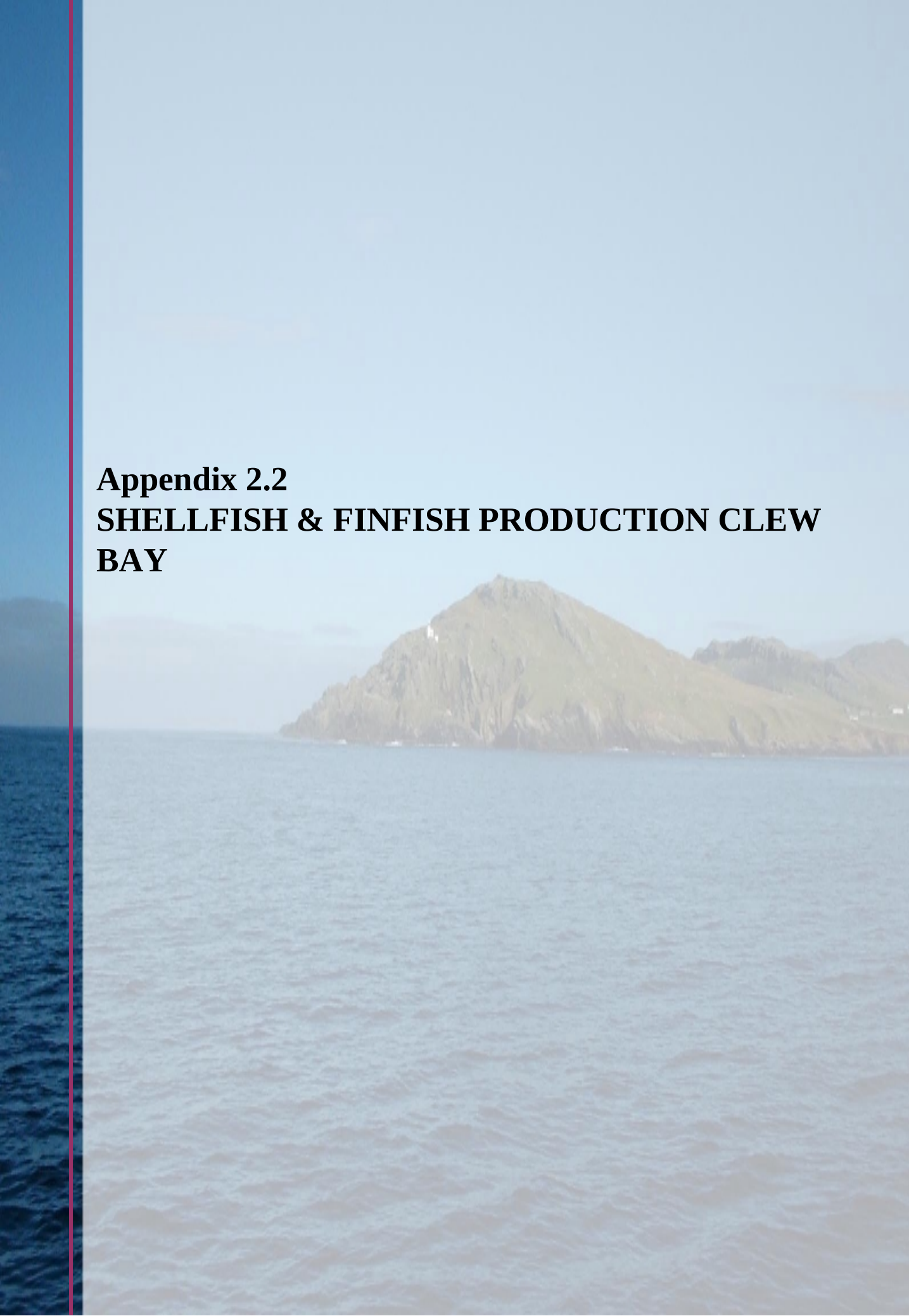
APPENDICES



Appendix 2.1.
LICENSED AQUACULTURE PRODUCERS OPERATING IN CLEW BAY

Producer	Species	Address
Feirm Farraige Oileán Chliara Teo. trading as Clare Island Seafarm	Salmon	Cloghmore, Achill, Co. Mayo
Curraun Fisheries Ltd./Seastream Ltd.	Rainbow Trout Salmon	Mullranny, Westport, Co. Mayo
Opensea (Ireland) Ltd.	Rainbow Trout	Quay Hill, Westport, Co. Mayo
Blackshell Farm Ltd.	Rope Mussels	The Quay, Westport, Co. Mayo
Maitias Burke & Innishilra Seafoods Ltd	Pacific Oysters Clams	Aughagowla, Fahy, Newport, Co. Mayo
William Budd & Kevin O'Reilly / Clew Bay Scallops	Scallop	The Harbour, The Quay, Westport, Co. Mayo
Carrowholly Shellfish Ltd.	Bottom Mussels Pacific Oysters	Carrowholly, Westport, Co. Mayo
Michael Carolan	Pacific Oysters	Murrivaugh, Westport, Co. Mayo
Connemara Seafoods Ltd.	Pacific Oysters	Kilmeena, Westport, Co. Mayo
Colm Cronin	Pacific Oysters	Belclare, Westport, Co. Mayo
Donhar Teo.	Pacific Oysters Clams	Rosgollive House, Mullranny, Newport, Co. Mayo
Sean Donnelly & Jim Fair	Pacific Oysters	Murrisk, Westport, Co. Mayo
Mary Fahey	Pacific Oysters	Moneen, Castlebar, Co. Mayo
Padraig Gannon, Croagh Patrick Seafoods Ltd.	Pacific Oysters Clams	Roslaher, Newport, Co. Mayo
Patrick Gavin	Pacific Oysters	Clynish Island, Clew Bay, Co. Mayo
Thomas J. Groden	Pacific Oysters Clams	Newport, Co. Mayo
Aidan Lavery,	Pacific Oysters Clams	Seaview Lodge, Newport, Co. Mayo
Brian Masterson & Danny McNulty	Rope Mussels	3 Castlehill Park, Turlough Road, Castlebar, Co. Mayo
John MacManamon	Pacific Oysters	Carrowbeg, Tiernaur, Newport, Co. Mayo

Producer	Species	Address
Martin MacManamon	Pacific Oysters Scallop	Rockfleet, Newport P.O., Co. Mayo
Gerard & Martin McNulty	Pacific Oysters	Knockloughra, Newport, Co. Mayo
Mulloy Oysters Ltd.	Pacific Oysters Clams	Kilmeena, Newport, Co. Mayo
Sean O'Grady, Murrisk Shellfish	Pacific Oysters	Murrisk, Westport, Co. Mayo
Niall O'Boyle, Innishoo Industries Ltd.	Scallop	Knockbreaga, Newport, Co. Mayo
Rosmoney Shellfish Ltd.	Pacific Oysters Clams	Rosmoney, Carrowholly, Westport, Co. Mayo
John Salmon & Company	Pacific Oysters Clams	Mulranny, Co. Mayo
Quay Cottage Seafoods Ltd	Abalone Scallop	Quay Cottage, Westport Harbour, Co. Mayo



Appendix 2.2
SHELLFISH & FINFISH PRODUCTION CLEW BAY

Native Oysters

Year	Production (tonnes)	Value IR£ (€)
1997	15	34,500 (43,805)
1998	20	50,000 (63,486)
1999	10	26,000 (33013)
2000	14	43,000 (54598)

Gigas Oysters

Year	Production (tonnes)	Value IR£ (€)
1997	570	764,600 (970,841)
1998	1328	1,312,950 (1667102)
1999	1309	1,343,595 (1,706,013)
2000	398	414,204 (525,930)

Rope Mussels

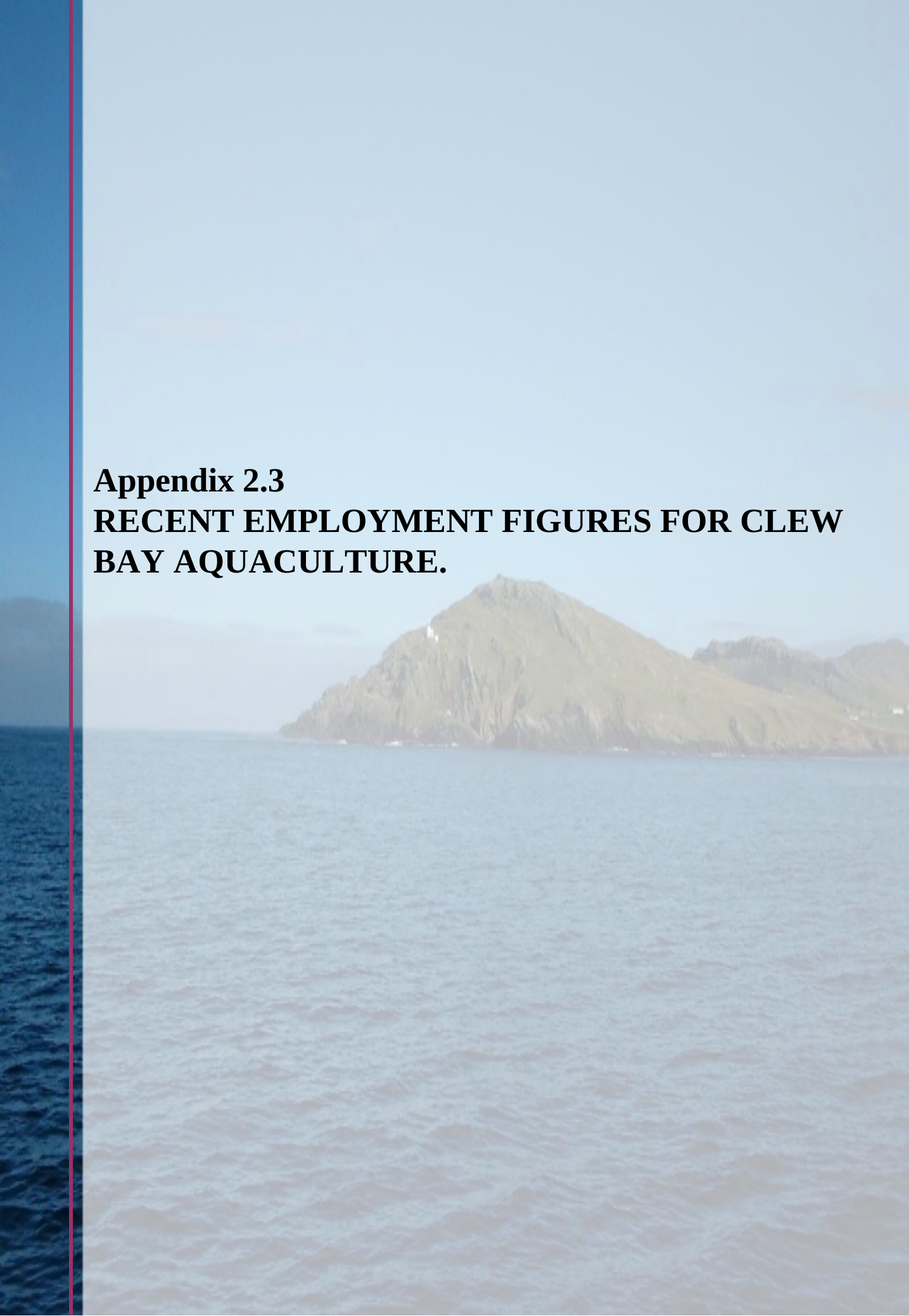
Year	Production (tonnes)	Value IR£ (€)
1997	508	225,400 (286,198)
1998	524	235,800 (299,404)
1999	234	110,975 (140,909)
2000	283	133,000 (168,875)

Salmon

Year	Production (tonnes)	Value IR£ (€)
1997	511	1,277,500 (1,622,090)
1998	1,492	4,395,432 (5,581,047)
1999	1,046	3,283,000 (4,168,550)
2000	1,453	4,525,000 (5,745,564)

Sea reared Trout

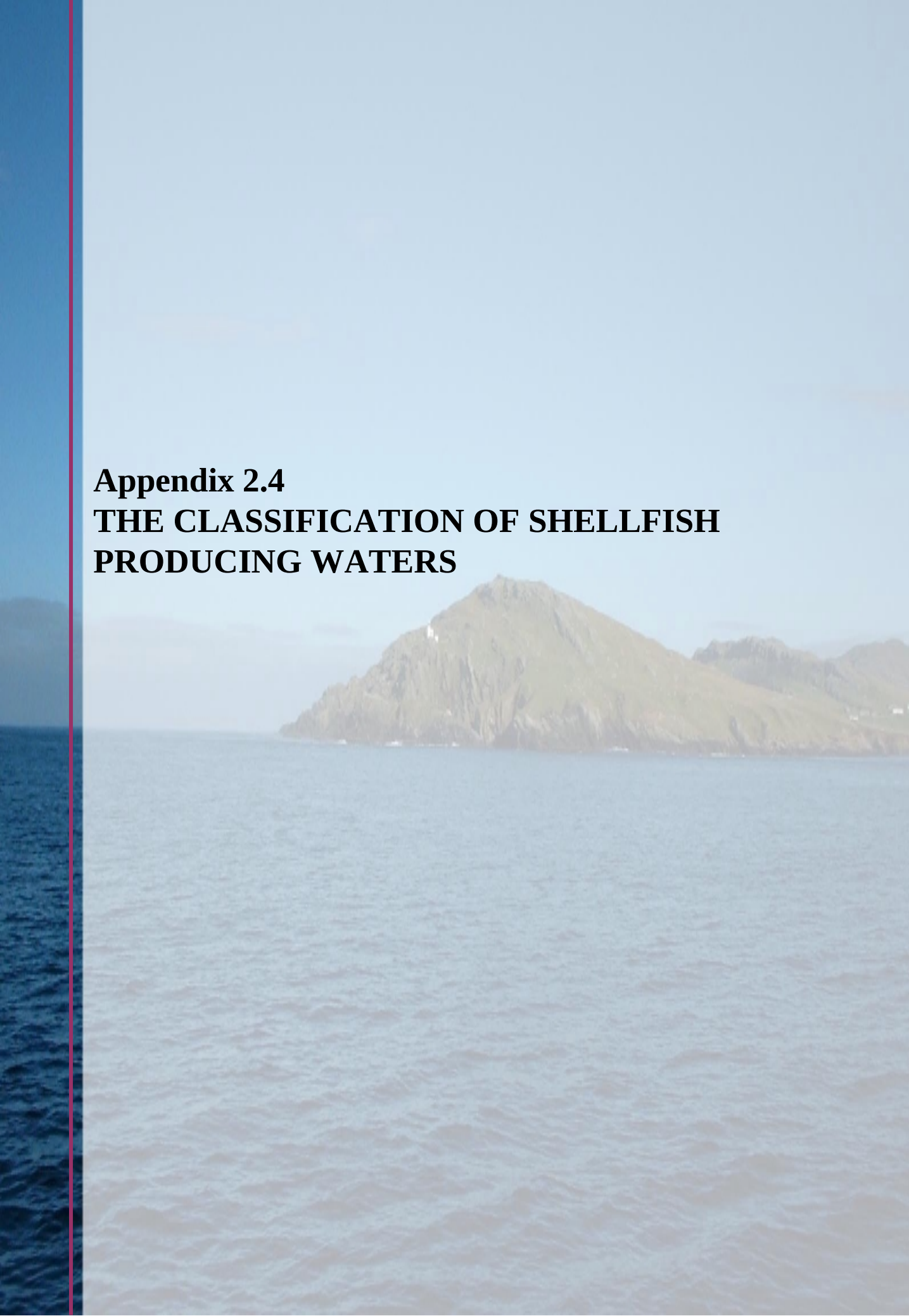
Year	Production (tonnes)	Value IR£ (€)
1997	900	1,890,000 (2,399,804)
1998	996	2,242,057 (2,846,825)
1999	1,017	2,644,265 (3,357,523)



Appendix 2.3
RECENT EMPLOYMENT FIGURES FOR CLEW BAY AQUACULTURE.

Year	Category	Full-time	Part-time	Casual	Total
1998	Shellfish	52	22	59	133
	Finfish	20	25	0	45
	Total	72	47	59	178
1999	Shellfish	51	20	40	111
	Finfish	35	40	0	75
	Total	86	60	40	186
2000	Shellfish	14	12	55	81
	Finfish	28	51	5	84
	Total	42	63	60	165

(Source: BIM 2001)



Appendix 2.4
THE CLASSIFICATION OF SHELLFISH PRODUCING WATERS

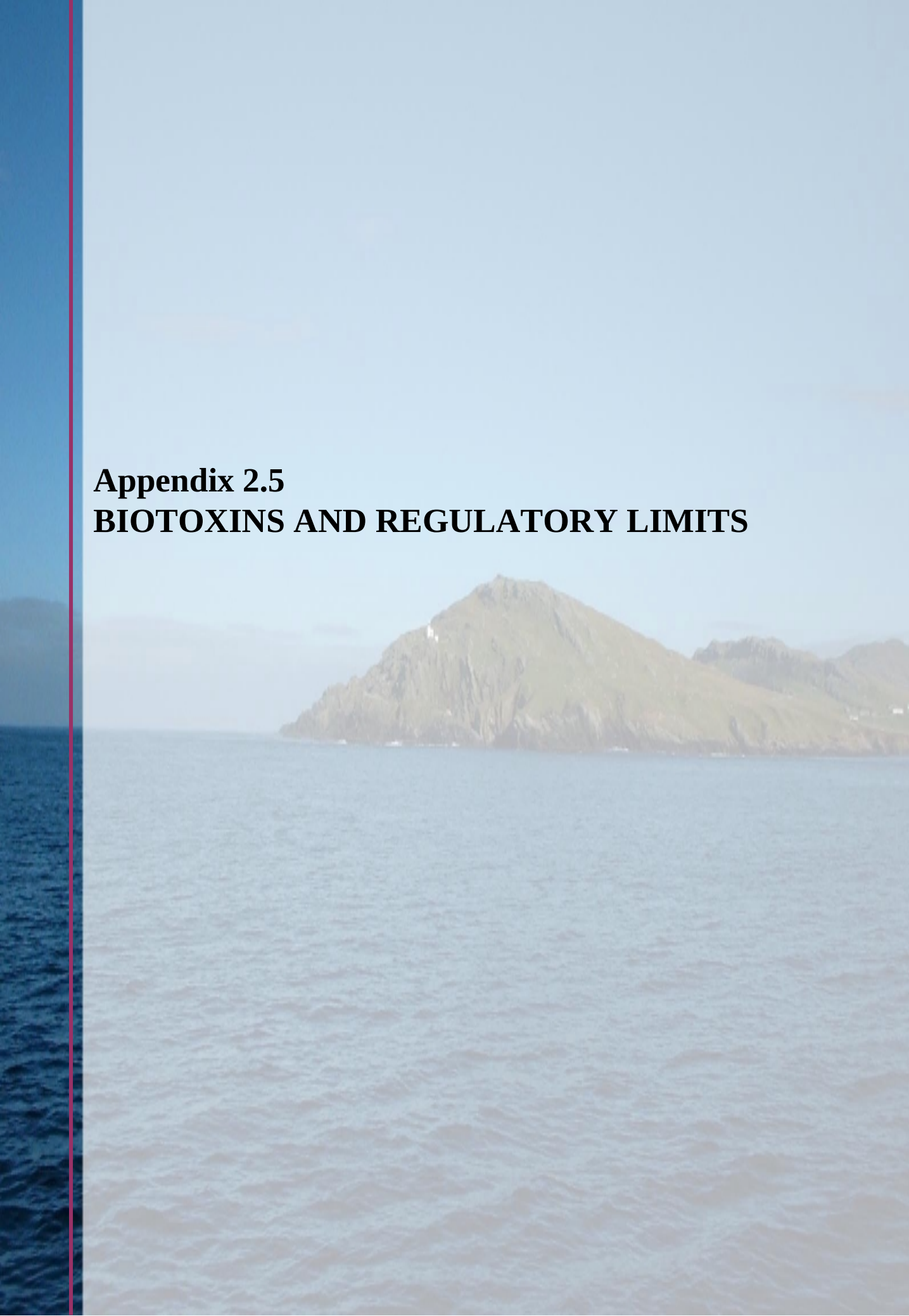
The classification of shellfish producing waters

- Classification A:
Areas where shellfish contain less than 3 faecal coliforms per gram and are allowed to go for direct human consumption

- Classification B:
Areas where shellfish contain between 3 and 60 faecal coliforms per gram and must be purified in an approved premises or go for heat processing

- Classification C:
Areas where shellfish register between 60 and 600 faecal coliforms per gram and must go for heat processing or a period of relaying for a minimum period of two months

Appendix 2.5
BIOTOXINS AND REGULATORY LIMITS



Biotoxins and Regulatory Limits

BIOTOXIN	REGULATORY LIMIT	TEST METHOD
DSP	Must not be Positive	Mouse Bioassay
	* <16 µg Okadaic acid equivalents/ 100g	LCMS
	Chemical HPLC	
PSP	Must not be Positive	Mouse Bioassay
	< 80 µg Saxitoxin / 100 g flesh	Chemical -AQAC
ASP	< 20 µg Domoic Acid / 1 g flesh	Chemical HPLC
AZP	< 0.16 µg Azaspiracid / 1 g total tissue	Chemical LCMS
	Mouse Bioassay	

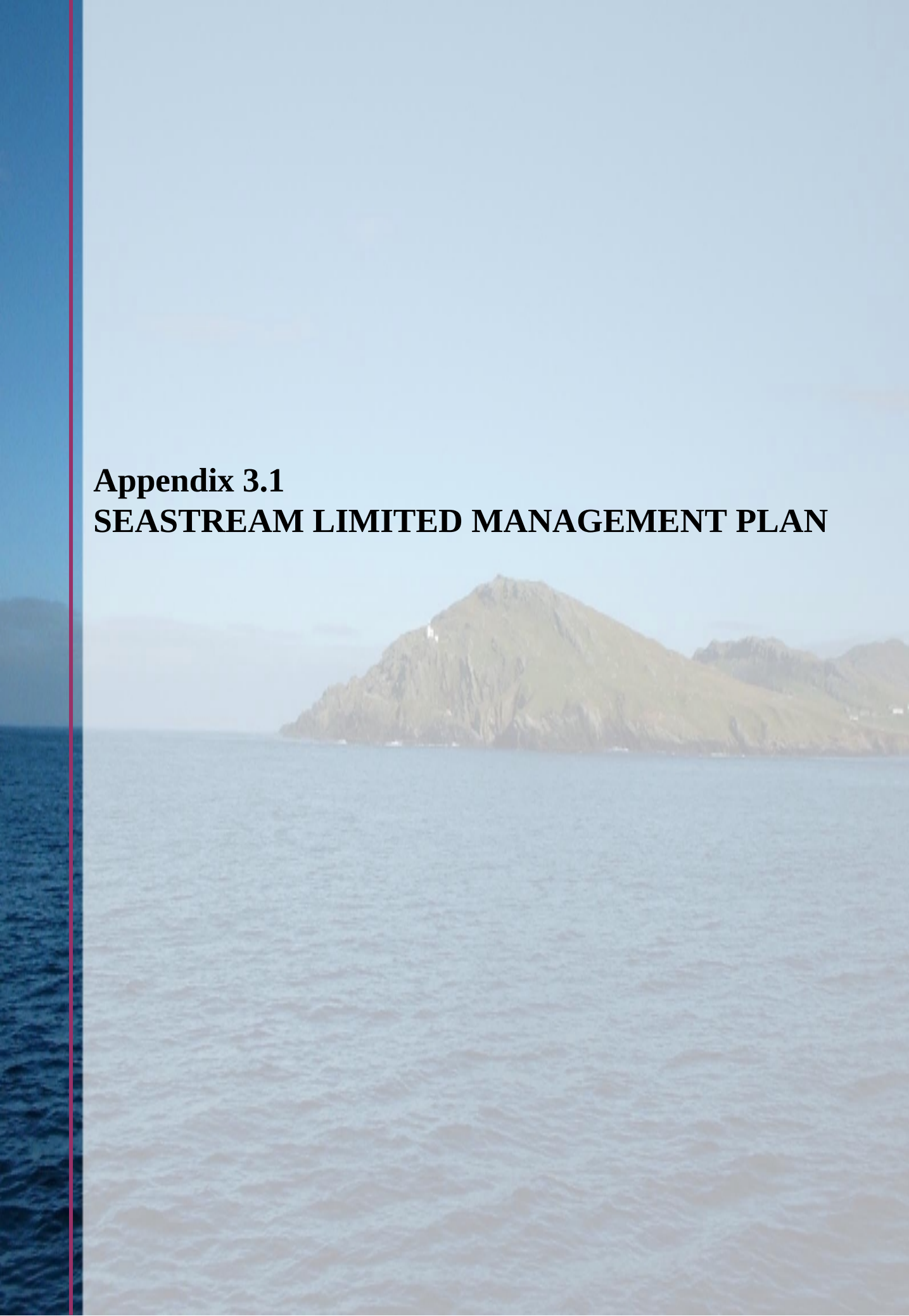
*Indicative levels only

Samples for testing are taken by the industry and by the Area Officers of the DoMNR according to the following procedure:

- Weekly analysis for microbiological criteria
- Weekly and bi-weekly analyses for phytotoxins in relevant areas before and during harvest periods
- Annual analyses to maintain a profile of production in respect of other criteria, such as heavy metals, trace elements and viruses e.g., vibrios.

In April 2001 the following procedure was introduced.

1. A di ethyl ether extraction , 24-hour observation mouse bioassay will be performed once a week from all open bays.
2. Samples will also be collected form all open production areas once a week to be chemically analysed to determine the ***Azaspiracid*** concentration.
3. All positive results form the mouse bioassay will result in closure of the production area.
4. All negative results that have a corresponding level of ***Azaspiracid*** less than 0.16µg/g of total tissue will be open and harvesting permitted.
5. After examination of the results of the mouse bioassay and ***Azaspiracid*** test, the Marine Institute will determine the status of the production area and will circulate the results to the producers without delay.



Appendix 3.1
SEASTREAM LIMITED MANAGEMENT PLAN

Introduction

In October 1994, Seastream Limited purchased the site and assets of Seaqueen Limited situated in Clew Bay. This site has strategic importance given its location adjacent to existing sites owned by Curraun Fisheries Limited, a sister company of Seaqueen Limited sharing common Shareholders and Directors.

When the site was acquired a twelve-month operating strategy was formulated to access the site's long-term viability. Due to the close proximity of this site to Curraun Fisheries other sites in Clew Bay, the promoters were well aware of potential risks and advantages associated with growing sea reared trout on the site. Overall the combined site represented a viable production unit.

To improve survival and growth rates new work practices were put in place immediately. These generally centred on areas of feeding practice and stocking levels. New feeding patterns were devised, stocking densities lowered and production cycle shortened. In the first year of operation the company produced 397 tons of product.

The site performance in financial and production terms exceeded expectations and the company entered the commercial stages of its development, which involved substantial capital investment in production facilities, and equipment, which significantly enhanced fish husbandry practices on the site.

Simultaneously, Curraun Fisheries Ltd., significantly upgraded its fish handling facilities at Doughill. A new packing unit complete with Chill room, Ice plant and new packing equipment was constructed to service in house Salmon production and Trout production in Clew Bay. This plant has the capacity to handle 125 tons of product weekly, and it is fully operational from March-October annually.

In 1996, Seastream, in conjunction with the I.S.P.G who market the trout under Seaqueen brand label began to explore the possibility of developing a market for commercial frozen product. The objective of this strategy was to prolong the length of the selling season and allow for staged sales into selective markets.

In 1998-1999 Seastream extended its harvesting season from May-October. Generally there is a critical point in mid summer when temperatures are high and conditions comparatively stressful for fish, which dictates that fish are harvested within a relatively short time span, freezing capacity is essential for such situations.

In 1999-2000 the company completed phase 1 of a major investment in blast freezing and cold storage facilities at a Greenfield site identified at Cushlecka, Mulranny which is within 1km of the processing facilities at Doughill.

Sea Sites – Clew Bay

Carrickahaash/ (Area 2 ha)
Inniscorraigh/ (Area 2 ha)
Sites owned by Curraun Fisheries Ltd.,
Licence No AQ 163 (Block 67A / 67B)
Licenced capacity 350 tons
Larger Bridgestone cages used to produce Trout in relatively exposed conditions on Carrickahaash site. Innersite comprises of a block of turmac cages.
Inniscannon/ (Area 7 ha)
Licence No Aq 166 (Block 54 ABC)
Licence Capacity 800 tons
Five Bridgestone cages occupy this site

Environmental Data

Water sampling is carried out by an Independent Consultant on a monthly basis. Samples are taken at three depths, surface, mid-water and just above sediment. A sample is also taken from inside the cages at a depth of two metres.

The following parameters are measured: -
Temperature, Salinity, Dissolved oxygen, Ammonia, Nutrients, Chlorophyll, Phytoplankton and Water Clarity.
To date there has been no deterioration of water quality at the Clew Bay sites.

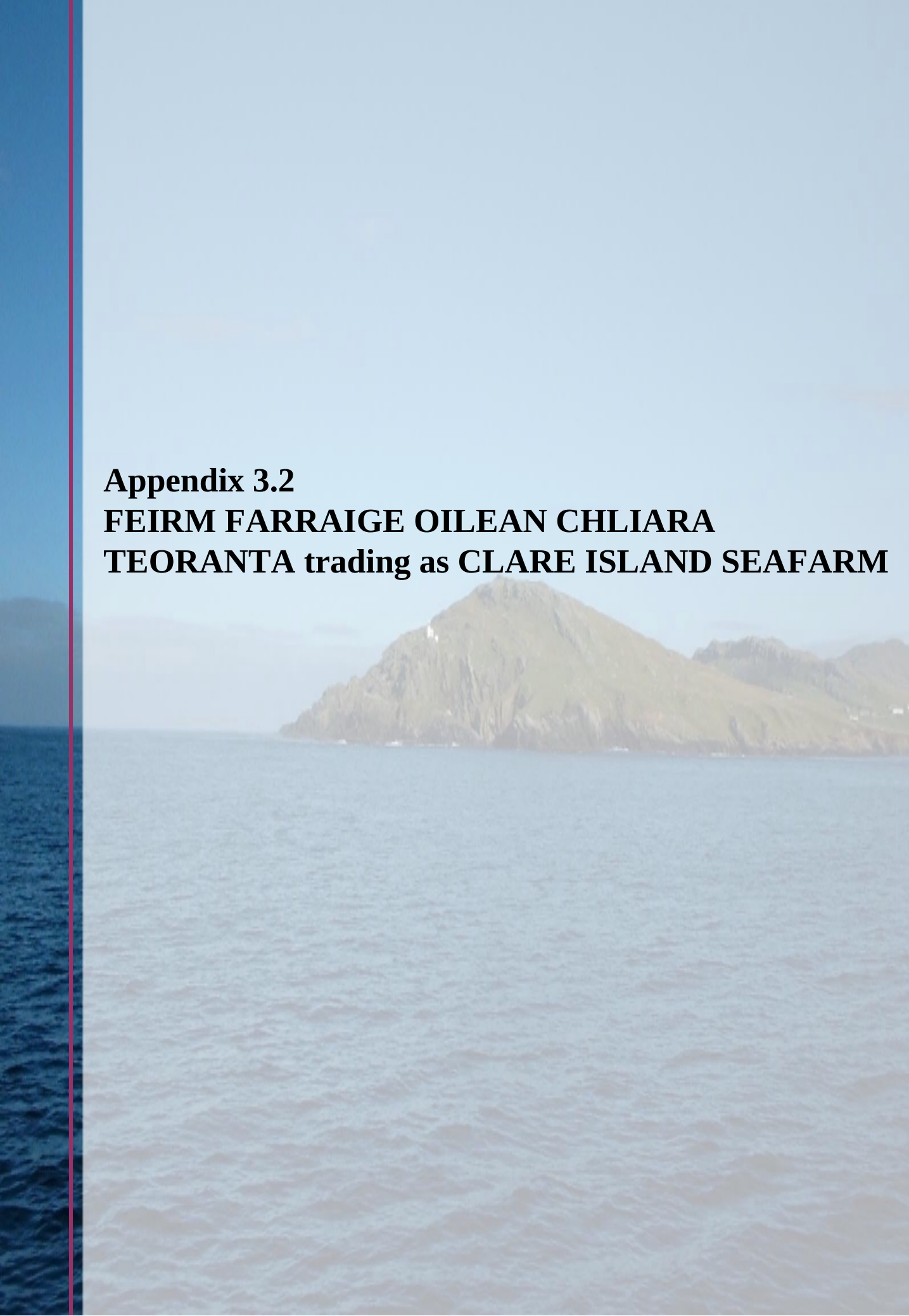
Disease Control
Seastream Ltd employs the services of a licensed veterinarian to advise in all areas of fish health. Preventative treatments are administered by way of vaccination for ERM/*Vibrio* prior to fish being transferred to sea.
All cages are inspected by divers on a weekly basis. The divers inspect and report on both the stock and the equipment. Any mortalities are removed and stored before being sent for rendering.
The company also works to a Single Bay Management Plan. This allows for the fallowing of the sites.

Future Plans
Seastream/Curraun operations have significantly contributed to local employment. The combined operations currently employ a combined workforce of 69 people including shore based and packaging staff. Job creation is budgeted to expand to 109 people over the next five years.

Clew Bay Staffing

YEAR	FULL-TIME	PART-TIME
2000/01	8	8
2001/02	8	9
2002/03	11	10
2003/04	12	11
2004/05	12	12

Significant capital expenditure has been made each year of operation to upgrade and expand site facilities. The company has operated a deliberate policy of re-investment of profits to introduce modern fish husbandry practices. Seastream Limited has recently applied to increase its tonnage on the existing sites.



Appendix 3.2
FEIRM FARRAIGE OILEAN CHLIARA TEORANTA trading as CLARE ISLAND SEAFARM

Clare Island Seafarm operates two sites in outer Clew Bay. These sites consist of a 'smolt site' and a 'grow out site'. The Company operates from a shore base located at Cloghmore, Achill, County Mayo. Feed boat contractors operate from Clare Island harbour.
The locations of these sites are:

Smolt site:		Irish National Grid Reference Point	
	A	74000 , 285400	to Irish National Grid Reference Point
	B	74770 , 285400	to Irish National Grid Reference Point
	C	74770 , 285100	to Irish National Grid Reference Point
	D	74000 , 285100	to the first mentioned point

Aquaculture licence number: AQ 678

Portlea grow out site:	Irish National Grid Reference Point	
	071250 , 287560	to Irish National Grid Reference Point
	071730 , 287050	to Irish National Grid Reference Point
	071310 , 286860	to Irish National Grid Reference Point
	070850 , 287350	to the first mentioned point

Aquaculture licence number AQ 277

The total licensed production for the farm is 3,166 tonnes. p.a.

The current production strategy centres on the stocking of S1 smolts in the spring, usually during the months of February, March and April. These smolts are sourced from smolt production units within Ireland.
The S1 smolts are transferred to the 'Smolt Site', where they will remain until December of the same year.
They are usually transferred into flexible rubber hexagonal cages, each with a volume of 10,000m^3. The existing licence allows for eight of these cages to be used on the 'Smolt Site'.

During December, the salmon are transferred to the on-growing site at Portlea. The transfer usually involves the towing of each hexagonal cage from the 'Smolt Site' to the Portlea site. The fish are then transferred from the hexagonal cages to larger octagonal flexible rubber cages, with a volume of 20,000m^3.
Once on the Portlea site, the fish are on-grown throughout the winter and the following spring.
The fish are then graded in the Spring of their second year at sea.
Following the grade the fish are on-grown further until they reach an average size of approximately 3.6kg to 4.6 Kg.
Harvesting of the large fish is usually planned to commence in May/June and to continue through until October. The site at Portlea would then be fallowed for the month of November, in preparation for the transfer of fish from the Smolt Site in December. Because of the exposed nature of the sites this plan is contingent on weather conditions suitable for harvesting prevailing. CISF introduced a novel wellboat harvesting system in 2001 to make harvesting less weather dependent.

Traditionally the harvested fish have been brought to Cloghmore where they have been processed in the Company's processing facility. This facility is licensed under the EC directive No 91/493/EEC and operates in accordance with HACCP (Hazard Analysis Critical Control Point). Because of under-capacity in the company's Processing and Effluent Treatment Plant, the 2000 year class have seen the introduction of temporary changes to the preferred traditional processing arrangement.

Once harvested, fish and blood-water are transported by tankers from Cloghmore to larger licenced processing plants out of the county. The company's own Processing Plant and Effluent treatment system are being evaluated for capacity upgrading to cope with the planned doubling of production in the sea. Company policy is to maximise local employment and this will involve as much as possible added-value work, such as processing including filleting and freezing, being kept within the locality, subject of course to technological and financial feasibility. The company expects this could result in a further 20 to 30 jobs.

All harvested fish are marketed and sold by the Irish Seafood Producers Group, (ISPG), located in Kilkerrin, County Galway.

The Company currently employs 26 full time and 1 part time staff. During harvesting and processing an additional 20 part staff are employed.

During the course of the production cycle, divers inspect the cages on a weekly basis at a minimum. During these inspections the condition of both the stock and the equipment is evaluated on an on-going basis.
Equipment inspections include examination of the cage net, the net weights and the moorings.
Stock inspections include, feed monitoring, general health and behaviour observations and mortality removal.
Mortalities are brought to the shore base at Cloghmore where they are ensiled and stored for collection.
Three vessels based at Clare Island carry out the feeding of the fish daily. These vessels use air cannons to blow the feed from the boats adjacent to the cages. Trouw Aquaculture, based in Westport, supplies the majority of the feed used.
The waste feed packaging is brought ashore to Cloghmore where it is stored for compacting and recycling.

The Company has a contractual arrangement with a licensed practicing veterinarian, who provides information and advice on a wide range of topics e.g. fish health, general husbandry, dietary requirements and disease management.

A recent development at Clare Island Seafarm is the production of organically certified fish for the European market. Clare Island Seafarm was the first salmon farm in the world to be accredited fully organic under EU Regulation No. 2092/91 by the German Certification Agency "Naturland Verband"

Regular Water Quality Monitoring has been carried out by independent consultants, Glan Uisce Teo. under the DoMNR Protocols. They conclude in their 2001Report "*The water column data collected to date at these sites indicate that the fish farm has had no measurable impact on the surrounding water quality*".

Aqua-Fact International Services Ltd. carried out Benthic Monitoring under the DoMNR Protocols and conclude in their 2001 Report "*Benthic conditions at both the smolt and grower sites show little signs of impaction. In both cases, the bottom has a healthy appearance with relatively deep redox levels.*"

Development Plans.
FINFISH
The following table details recent and proposed production figures for Clare Island Seafarm [CISF].

Year class	Tonnes
1996	512
1997	1,134
1998	919
1999	1,446
2000	2,040
2001	2,251
2002	3,030

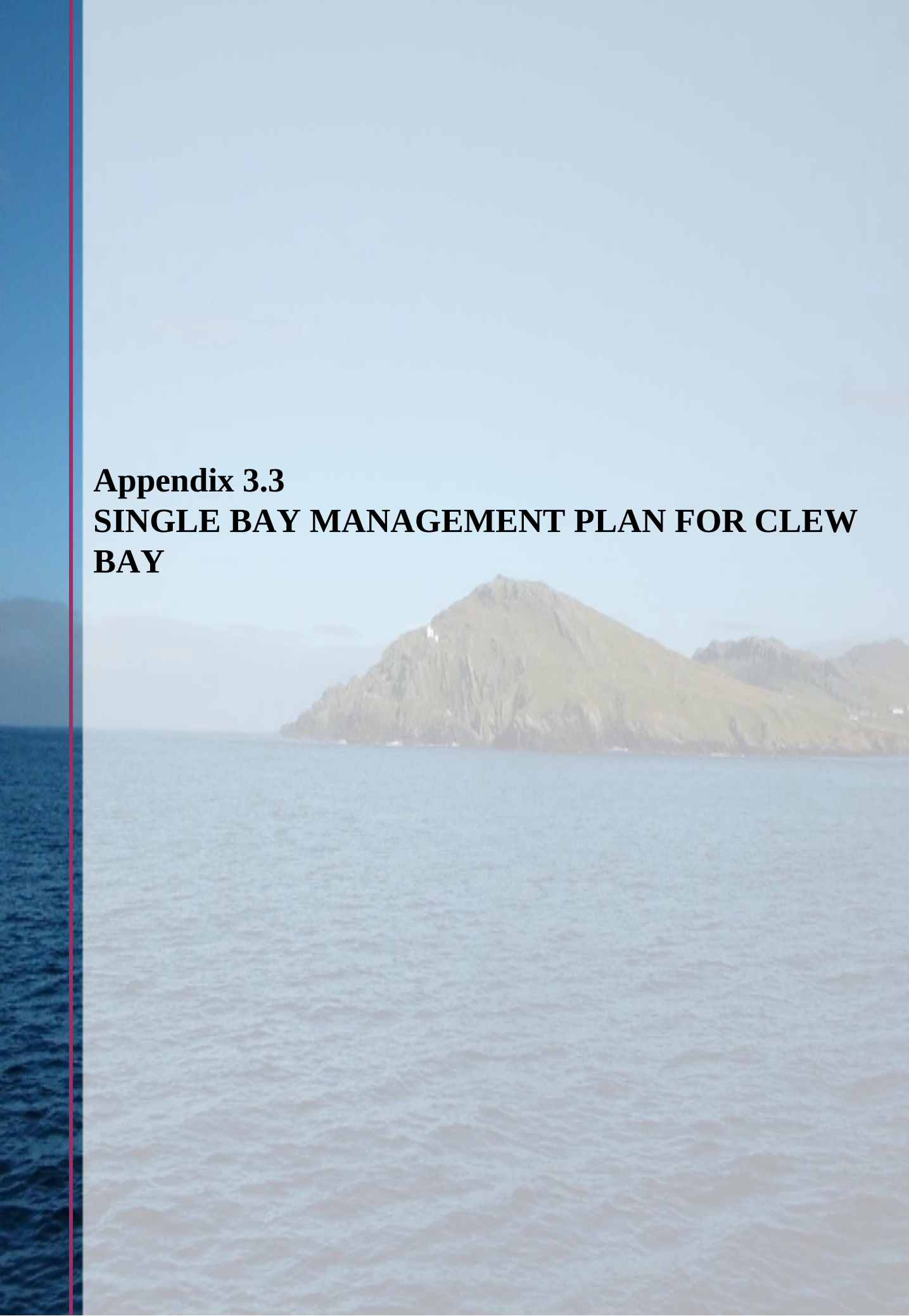
In order to properly plan for sufficient flexibility to allow for both weather and market contingencies which may impinge on the timing of the company's annual harvest plan, a third "Intermediate Site" is urgently required. This would cater for harvesting up to Christmas as required by the unique organic market or as a result of weather delays, while also facilitating proper fallowing at all sites. To achieve this objective an application for new "Intermediate Sites" was made by CISF to DoMNR. Subsequently, in order to address public concerns elicited during the Environmental Impact Assessment Scoping Process during the summer of 2001, the company has modified its application to DoMNR from long term and expanded licences to short term Trial Licences involving no increase in licenced tonnage, for these two candidate sites within the mid Clew Bay area. It is proposed to carry out once-off short term over-winter [4 month] trials at each of these sites to allow comprehensively informed judgements to be made by all interested parties on their long term suitability with reference to the following:-

- operability
- impact from wastes
- visual impact
- biological performance of fish
- lice control

A comprehensive Environmental Impact Assessment of the proposed Trial Licences will be carried out by the Zoology Department U.C.C. and published as part of the Licence Application vetting procedure. Subject to these trials being successful the company would then submit a new Application for long term occupancy of one or both of these candidate sites. This would involve another round of public consultation and a new Environmental Impact Assessment. This will be part of a joint approach with the other two licensed fin-fish producers in Clew Bay for the identification and development of not more then two (shared) sites in mid Clew Bay.

As already stated the company's own Processing Plant and Effluent treatment system are being evaluated for capacity upgrading to cope with the planned doubling of production in the sea. Company policy is to maximise local employment and this will involve as much as possible added-value work, such as processing including filleting and freezing, being kept within the locality, subject of course to technological and financial feasibility. The company expects this could result in a further 20 to 30 jobs.

CISF has also investigated the feasibility of installing holding tanks on the foreshore at Cloghmore. These tanks would consist of a self contained water recirculation system with capacity to chill the water. Live fish would be transported from the Portlea site to the tanks using a wellboat . The live fish would be held in these tanks until harvest, when they would be pumped up to the factory at Cloghmore for slaughter and processing. The DoMNR has issued Foreshore and Aquaculture Licences for these tanks. No date has been set yet for the installation of these tanks.



Appendix 3.3
SINGLE BAY MANAGEMENT PLAN FOR CLEW BAY

Introduction

Formal Single Bay Management Plans have been in place for Clew Bay since 1994. The original plan was developed under the aegis of the Dept. of Marine with the help and co-operation of the ISGA and in consultation with the WRFB & NWRFB, the local shellfish growers and the fishery owners. This current plan seeks to build on the progress made in previous plans and to improve on the integration of finfish production management within the bay.

The plan is a locally based initiative to develop an integrated approach to the management of finfish farming in the bay. Its goals are fourfold: -

- The control and elimination of Disease.
- The optimisation of environmental conditions within the bay.
- More efficient production.
- Co-operation and harmonisation with other users of the bay.

These will be achieved by co-operative ventures including: -

- A formal agreement on the exchange of information.
- An agreed code of practice.
- Effective separation of generations.
- Synchronous annual fallowing of all production sites.

Details of Agreement

Description of area and parties to agreement

For the purpose of this plan Clew Bay is defined as the bodies of water, including Clew Bay proper, from Achill south to Roonagh including Clare Island The farms/organisations party to this agreement are: Clare Island Seafarm and Seastream Ltd.

Code of Practice

Information Exchange

The exchange of information between fish farmers concerning disease, lice treatments and their co-ordination and other husbandry matters will be handled through facilitators, whose responsibility it will be to ensure the dissemination of information by the most appropriate and efficient means. The ISGA and the Marine Institute will have a key role in this regard. The Single Bay management Group will meet regularly and at least twice each year to discuss and agree details of the implementation to the SBM plan.

Management of mortalities and runts

Farmers will remove mortalities on a frequent and regular basis (weekly or more frequently as required) and store them in covered and watertight containers until such time as they are disposed of hygienically in accordance with the law. Runts will be regularly culled to reduce the potential for their becoming a reservoir for disease or parasites.

Harvest Water

Harvest water will be strained to prevent the re-introduction of external parasites into the environment. All bloodwater will be disinfected and disposed of in accordance with the ISGA/DoM&NR guidelines.

Lice Treatments

Farmers will undertake such lice treatments as are appropriate to reduce lice numbers in the autumn to a minimum on all fish that are to be over-wintered. During the period January – May numbers of ovigerous lice will be maintained as close to zero as possible on all farmed fish (by the use of appropriate treatments where necessary). Farmers will co-ordinate treatments both on farm and between farms to maximise their effectiveness. There is an agreed lice control protocol in place for the bay.

Lice Protocol

1. *All fish farm companies operating in Clew Bay commit to this protocol.*
2. *The Marine Institute will circulate, after each lice check, all lice results for all sites inside and outside the bay to all companies in the bay.*
3. *All companies commit to synchronous lice treatments for all sites with stock when required.*
4. *All companies commit to having all smolts treated and as clear of lice as possible before transfer from one site to another.*
5. *All companies commit to having one named person appointed to liase with The Department of the Marine and Natural Resources in giving effect to the above protocol.*

Health status of incoming smolts

All smolts coming into the bay will be certified as free from disease and will be vaccinated with an effective vaccine against furunculosis and vibriosis.

Separation of generations

Farmers will maintain only one year class of fish per site. All sites will be fallowed for a minimum period of one month prior to restocking. This is to reduce vertical transmission of pathogens and parasites between generations. There will be an effective spatial separation between sites stocked with different generations of fish to ensure that biological interactions between the generations are minimised.

Fallowing

All production sites in the bay will be synchronously fallowed for a minimum period of one month in accordance with the attached schedule. All smolt sites will be fallowed annually for a minimum period of two months.

Implementation

This plan, or a modified plan drawn up under the aegis of the single bay management group to take account of changed circumstances, will form the basis of on farm practices and production schedules for the parties to the agreement during the lifetime of the plan.

Emergency Plan & Code of Practice.Fish Mortalities

In the event of significant mortalities, the Department of the Marine and Natural Resources will be informed by fax as soon as they occur. The mortalities will be immediately removed by diver. The cause of the mortalities will be ascertained and if it is found that the mortalities were due to non-infectious causes e.g. physical injury, the fish will be rendered by an approved plant and sent for inclusion in animal feeds. Alternatively, all mortalities due to bacterial, viral or unknown causes will be disposed of under an agreed Disposal Plan as follows:

On experiencing unusually high levels of mortalities the responsible managers will:

Identify the cause of mortalities using on-site professional biologist or the farms currently contracted vet or fish health consultant.

Inform all other farmers covered by this code of practice of the problem.
Inform the Department of Marine Aquaculture Section & ISGA of the problem.
Contact a transport company with details of the event, the expected volume of mortalities and the deadline beyond which the first fish brought ashore will begin to decompose.
Contact an approved rendering plant (list approved by the Department of the Marine and Natural Resources) to confirm their acceptance of a load of fresh, unlimited fish.

The transport company is obliged to arrive at the farm no later than 24 hrs from first contact, including weekends and holidays to remove mortalities (the transporters should be informed if, during the interim, mortalities increase or decrease dramatically so that the appropriate vehicle(s) are used). Each load of mortalities will be loaded and transported in such a way as to prevent any spillage of material during the journey to the rendering plant.
The farm will inform all other code of practice farmers in the bay, the Department of Marine Aquaculture Section and the ISGA when the mortality event has ended.

Fish Escapes
In the event of there being an escape, the farm will follow the procedures as recommended by the Salmon Growers Association and as outlined in the EIS. This will include that the Department of the Marine and Natural resources and the North Western andWestern Regional Fishery Board will be immediately informed by fax which will include details such as date of escape, fish species, year-class, average size, estimated numbers and stock origin. Permission will be immediately sought from the North Western and Western Regional Fishery Board to employ gill nets for recapture.

Chemical Spills
The finfish operators in the bay do not carry significant stocks of any dangerous chemical. Dangerous chemicals will be stored in a locked area on the various company's property. In the event of an accidental spillage that might occur, the spill will be contained and will be immediately mopped up in accordance with the safety regulations for that chemical.

Other
The Department of the Marine and Natural Resources will be informed of any other unusual event, which may occur on the farm sites. Each of the companies in Clew Bay must abide by the I.S.G.A. Code of Practice.

Fish Health Management Protocol
Guiding principle
Prevention is better than cure. Every effort will be made to ensure that the fish are provided with as ideal an environment as possible.
This implies the following:
-Stocking density will routinely be maintained below 15kg/m^3 and must never be allowed to rise above 25kg/m^3.
-Cages will be moored to ensure the maximum amount of water exchange.
-Nets will be kept reasonably clean at all times.
-Nets will be held in position by weights and other means at all times in order to avoid current induced reduction of cage volume and resulting stress on fish.
-Proper tensioning of nets is also important in preventing seal attack. Bird nets must be employed at all times.

-Counting and grading procedures will either be avoided altogether or kept to an absolute minimum and will only be carried out when temperatures are low.
- Feeding will be according to appetite and will be kept to a strict daily schedule in order to avoid stressing the fish.
-The sea bed will be monitored by divers on a regular basis in order to ensure avoidance of feed-waste build-up.
-The annual Environmental Audit will include careful scrutiny of sea bed conditions.

Other disease prevention measures
Vaccination: All relevant vaccines will be employed on a routine basis and will be applied well in advance of smoltification.

Smolt Selection: Only top-quality fast growing smolts will be used. Smolt suppliers will be instructed to eliminate poor quality smolts at vaccination stage.

Feed Quality: Only top-quality feeds will be used.

Health Monitoring:
-Fish behaviour in every cage will be monitored on a daily basis. Unusual behaviour will be immediately acted upon.
-Fish from each cage will be individually inspected by the Husbandry Manager on at least a monthly basis. This inspection will reveal growth and condition index, parasite levels, eye and gill condition and presence or absence of external lesions etc.
-Mortalities will be checked and retrieved by divers 2 or 3 times per week during May to October and once per week from November to April. Divers will be alert for unusual behaviour or symptoms and report accordingly. They will also report on such items as cage fouling and inadequate weighting. In the case of increasing mortalities dive-check frequency will increase. The Husbandry Manager will inspect all mortalities.

In the case of unusual symptoms or behaviour, histological samples and / or live fish will be sent for examination to a recognised laboratory.
-Water quality will be checked routinely by temperature and oxygen checks. Farm staff will report immediately on unusual quantities or types of jellyfish.

Confirmation of disease outbreak
In the case of confirmation of a disease outbreak, mortalities will be monitored on a daily basis and daily consultations will occur between the farm (Managing Director, Site Manager, Husbandry Manager) the farm vet and the laboratory. The Department of the Marine and Natural Resources Veterinary Service will be informed as soon as confirmation occurs or in the event of high unexplained mortalities. The Service will continue to be informed as events unfold. The decision as to whether or not to medicate will depend on consultations between all of these parties and on the developing situation.

Code of Practice Transport & Disposal

Transport Of Harvested Fish
Full care and attention will be paid at all times to preventing spillage of bloodwater from bins during transport by sea and road from the harvest site to the packing station. All farms will use sealable plastic fish bin liners or bins with sealable lids, or bulk transport systems such as well boat and/or tankers.

Transport & Disposal Of Mortalities

Normal small amounts of trade mortalities will be disposed of primarily by ensilation or burial in slake-limed pits at a distance of no closer than 20 metres from the nearest fresh-watercourse.

If a farm experiences unusually high levels of mortalities then the Disposal Plan should be activated.

Disposal Plan

On experiencing unusually high levels of mortalities the responsible managers will:

Identify the cause of mortalities using on-site professional biologist or the farm's currently contracted vet or fish health consultant.

Inform all other farmers covered by this code of practice of the problem.

Inform the Department of Marine Aquaculture Policy Section & ISGA of the problem.

Contact a local transport company with details of the event, the expected volume of morts and the deadline beyond which the first fish brought ashore will begin to decompose.

Contact a rendering plant as approved by DoMNR to confirm their acceptance of a load of fresh, unlimed fish.

The transport company must be in a position to arrive at the farm no later than 24 hrs from first contact, including weekends and holidays to remove mortalities (the transporters should be informed if, during the interim, mortalities increase or decrease dramatically so that the appropriate vehicle(s) are used). Each load of mortalities will be loaded and transported in such a way as to prevent spillage of material during the journey to the rendering plant. The farm will inform all other farmers in the bay, the Department of Marine Aquaculture Section and the ISGA when the mortality event has ended. This code will be in force until such time as a national State-operated scheme for the collection and disposal of fallen animals is available in this region.

Code of Practice Signatories

Clare Island Seafarm.

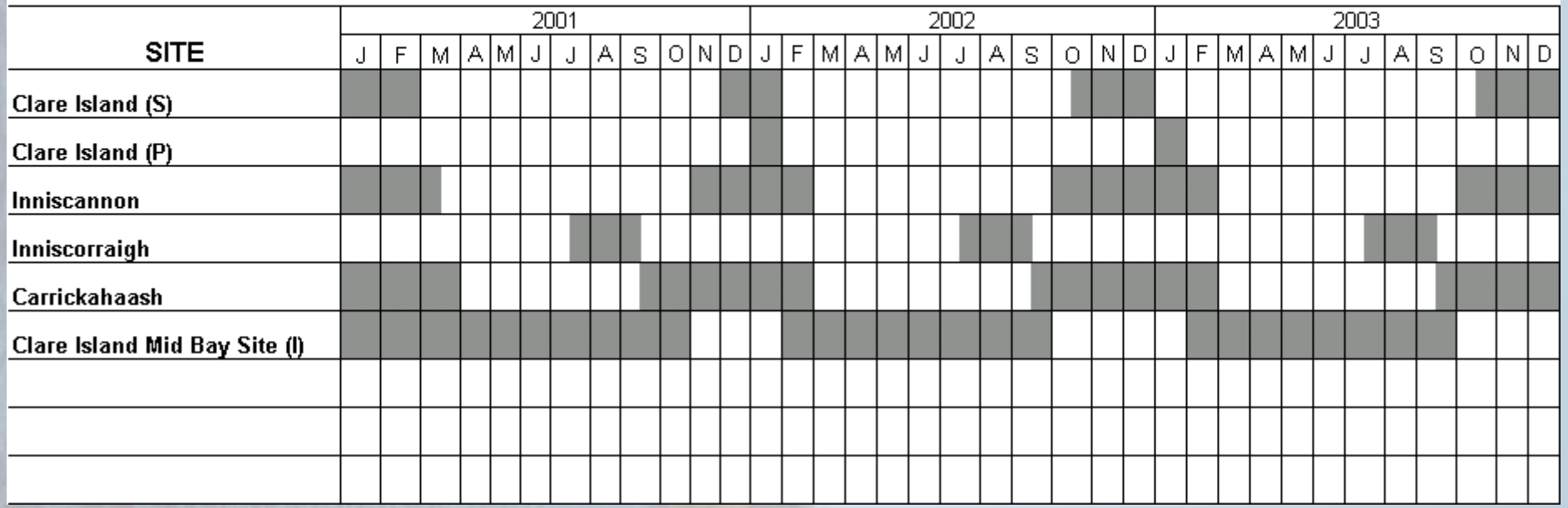
Seastream Ltd.

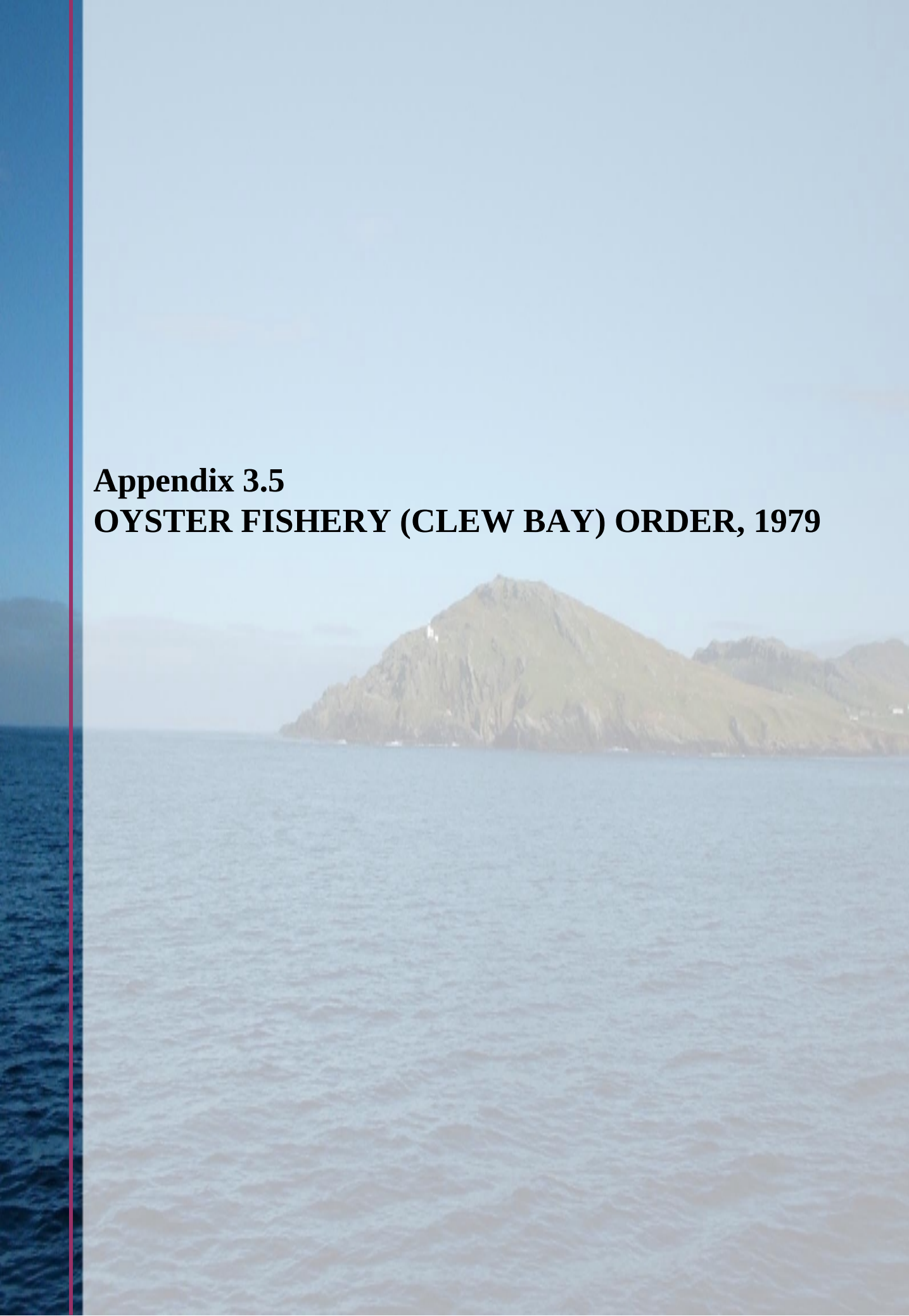
Appendix 3.4
FALLOW PLAN FOR FINFISH PRODUCTION SITES

= Fallow Period

P = Production site
S = Smolt site
I = Intermediate site

FALLOWING SCHEDULE FOR CLEW BAY





Appendix 3.5
OYSTER FISHERY (CLEW BAY) ORDER, 1979

[Extract from *Iris Oifigiúil*, 27 July, 1979]

DEPARTMENT OF FISHERIES AND FORESTRY

FISHERIES ACTS 1959 to 1978

OYSTER FISHERY (CLEW BAY) ORDER, 1979

DUBLIN:
PUBLISHED BY THE STATIONERY OFFICE
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OYSTER FISHERY (CLEW BAY) ORDER, 1979

I, BRIAN LENIHAN, Minister for Fisheries and Forestry, in exercise of the powers conferred on me by Sections 256 and 260 of the Fisheries (Consolidation) Act, 1959 (No. 14 of 1959), and the Fisheries (Transfer of Departmental Administration and Ministerial Functions) Order, 1977 (S.I. No. 30 of 1977) (as adapted by the Fisheries (Alteration of Name of Department and Title of Minister) Order, 1978 (S.I. No.195 of 1978)), and after compliance with Sections 257 to 260 of that Act, do hereby, with the consent of the Minister for Tourism and Transport, order as follows:

1. (1) This Order may be cited as the Oyster Fishery (Clew Bay) Order, 1979.
(2) This Order shall come into operation on the 25th day of August, 1979.

2. (1) Subject to Section 267 of the Fisheries (Consolidation) Act, 1959 (No. 14 of 1959), and to the Foreshore Act, 1933 (No. 12of 1933), the Clew Bay Oyster Co-Operative Society Limited (hereinafter referred to as the Grantee) of Inniscuttle, Kilmeena, Westport, Co. Mayo, is hereby granted, within the limits of the oyster fishery described in the Schedule to this Order, the exclusive right of depositing, propagating, dredging and fishing for and taking oysters, and, in exercise of that right, may, within the limits of the said fishery, make and maintain oyster beds, and at any season collect oysters and remove them from place to place and deposit them as and where the Grantee thinks fit, and do all other things which the Grantee thinks proper for obtaining, storing and disposing of the produce of the said fishery or for the regulation of the said fishery subject only to the following conditions, that is to say:

(a)The Grantee shall not permit any person, within the limits of the oyster fishery described in the Schedule to this Order, to:

(i) use more than one dredge from a boat at any particular time;

(ii) use any dredge the mouth of which exceeds four feet measured along its longest side;

(iii) take or remove oysters during the period in each year commencing on the 15th day of February and ending on the 15th day of October;

(iv) have on board any boat, during the period specified in subparagraph (iii) of this paragraph, any dredge or other instrument for taking oysters;

(v) take or remove, by any means whatsoever, any oysters between sunset and sunrise;

(vi) remove or take oysters by any means other than by dredge;

(vii) take or remove oysters by any means whatsoever during the period commencing at 6.00 p.m. on Saturday in each week and ending at 9.00 a.m. on the next following Monday;

The version of this Bye-law in the Irish language officially prepared is printed on the opposite page

(viii) throw into the sea any ballast of any boat or any other thing injurious or detrimental to the said oyster fishery;

(ix) remove, sell, expose for sale, give, transfer, purchase, receive, carry or have in his custody or possession any oyster which has been taken from or caught on the said oyster fishery and which measures less than three inches at its greatest dimension;

(b) the Grantee shall ensure that:
(i) all oysters which axe taken or caught shall be culled;
(ii) any oyster which measures less than three inches at its greatest dimension shall not be taken away but shall immediately be thrown back into the sea;
(iii) all gravel and fragments of shell raised or taken shall immediately be thrown back into the sea;
(c)the conditions referred to at paragraphs (a) and (b) of this Article shall not apply in any case where a person is authorised in writing by the Grantee to carry out any work as part of a programme of development of the oyster fishery.
(2) The Conditions specified in paragraph (1) of this Article shall remain in force until the 14th day of February, 1992.
3. (1) The rules relating to membership of the Clew Bay Oyster Co-operative Society limited shall not be such as would preclude any resident of the State from membership of the Society and shall not impose different conditions for member-ship on different classes of people.
(2) Membership of the Clew Bay Oyster Co-operative Society Limited shall not be refused to any resident of the State who complies with the Society's rules relating to membership.

4. If the Grantee does not comply with the provisions of Article 3 of this Order, the Minister for Fisheries and Forestry may by order determine this Order and thereupon all the rights and privileges thereunder shall be absolutely determined and shall be null and void.

5. (a) Whenever the Minister for Fisheries and Forestry, after consultation with the Minister for Tourism and Transport, is satisfied that it is in the public interest so to do, he may, by order, either determine this Order or amend the limit and extent of the oyster fishery granted by this Order.
(b) Whenever this Order is determined by an order made under paragraph (a) of this Article or the limit and extent of the oyster fishery granted by this Order is amended by such an order, the Grantee shall be entitled to compensation for any money he has reasonably expended:
(i) within the previous six years, or
(ii) since the coming into operation of this Order, whichever period is the lesser, on such part of the oyster fishery granted by this Order as may be specified in the order made pursuant to paragraph (a) of this Article.
(c) The amount of any compensation due to the Grantee pursuant to paragraph (b) of this Article may, in the case of any dispute, be referred for decision to an Arbitrator to be agreed by the Minister for Fisheries and Forestry and the Grantee or, in default of such agreement, to such person who may be nominated as Arbitrator by the President of the High Court.

6. The Grantee shall, as soon as practicable and subject to the prior agreement of the Minister for Fisheries and Forestry, make regulations for the holding of oysters for sale in parks or other impoundments by persons authorised by the Grantee in writing so to do.

7. The rights granted under this Order do not include the right to erect any structure which might obstruct navigation or curtail in any way normal navigational activities.

SCHEDULE LIMIT AND EXTENT OF OYSTER FISHERY GRANTED BY THIS ORDER

That area of seashore above or below, or partly above and partly below, low water mark in that part of Clew Bay and the tidal rivers, creeks and inlets thereof (other than any area which is the subject of an existing oyster bed licence) which lies east of a line drawn from the most northerly point of high water mark at Old Read in the town-land of Old Head, barony of Murrisk, to the most easterly point of high water mark at Gubbaun Point in the townland of Dubhhbeg, barony of Burrishoole, and continuing thence to terminate at high watermark of the said townland of Dubhbeg, all in the county of Mayo.

GIVEN under my Official Seal, this 23rd day of July, 1979.

BRIAN LENIHAN Minister for Fisheries and Forestry.

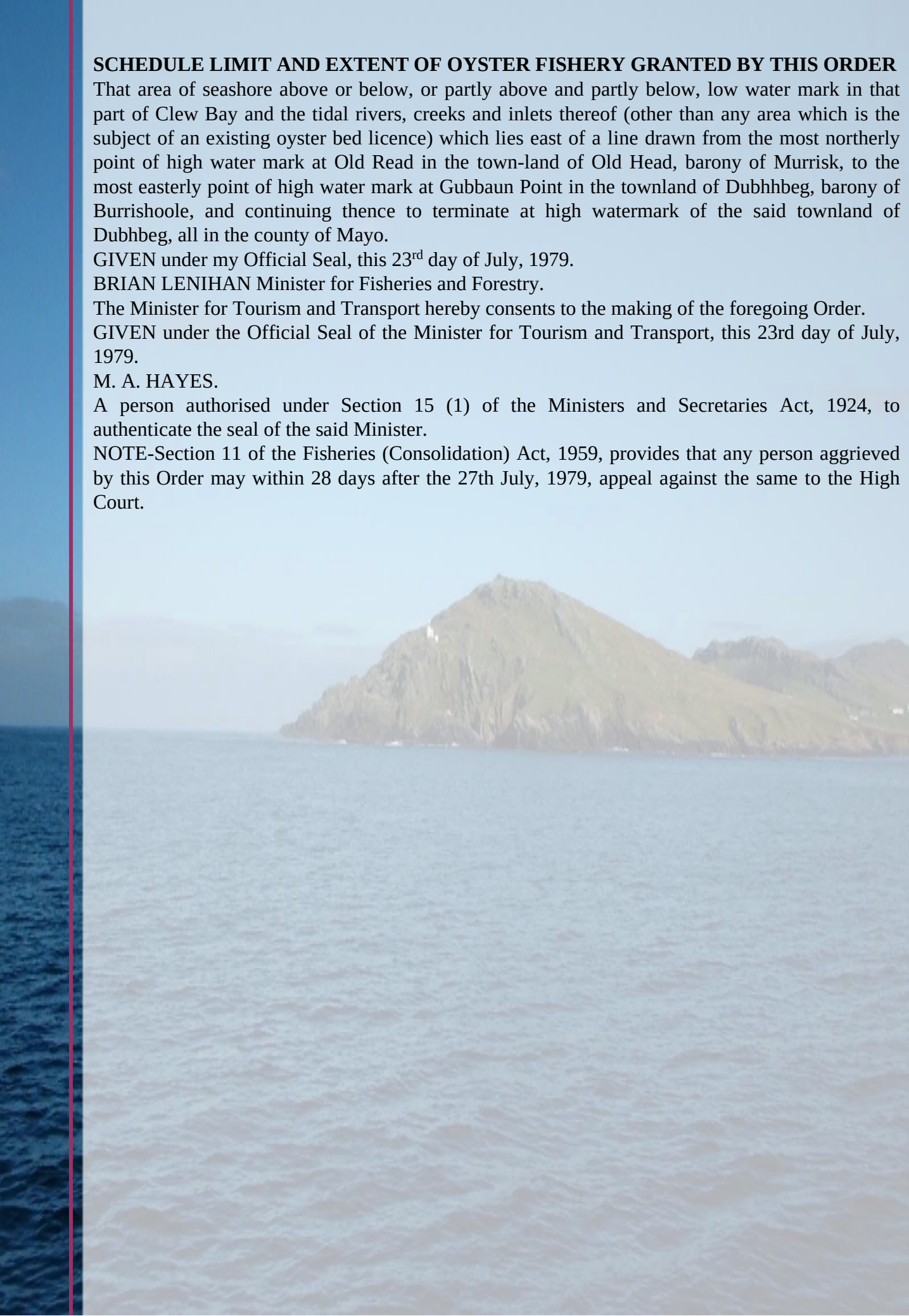
The Minister for Tourism and Transport hereby consents to the making of the foregoing Order.

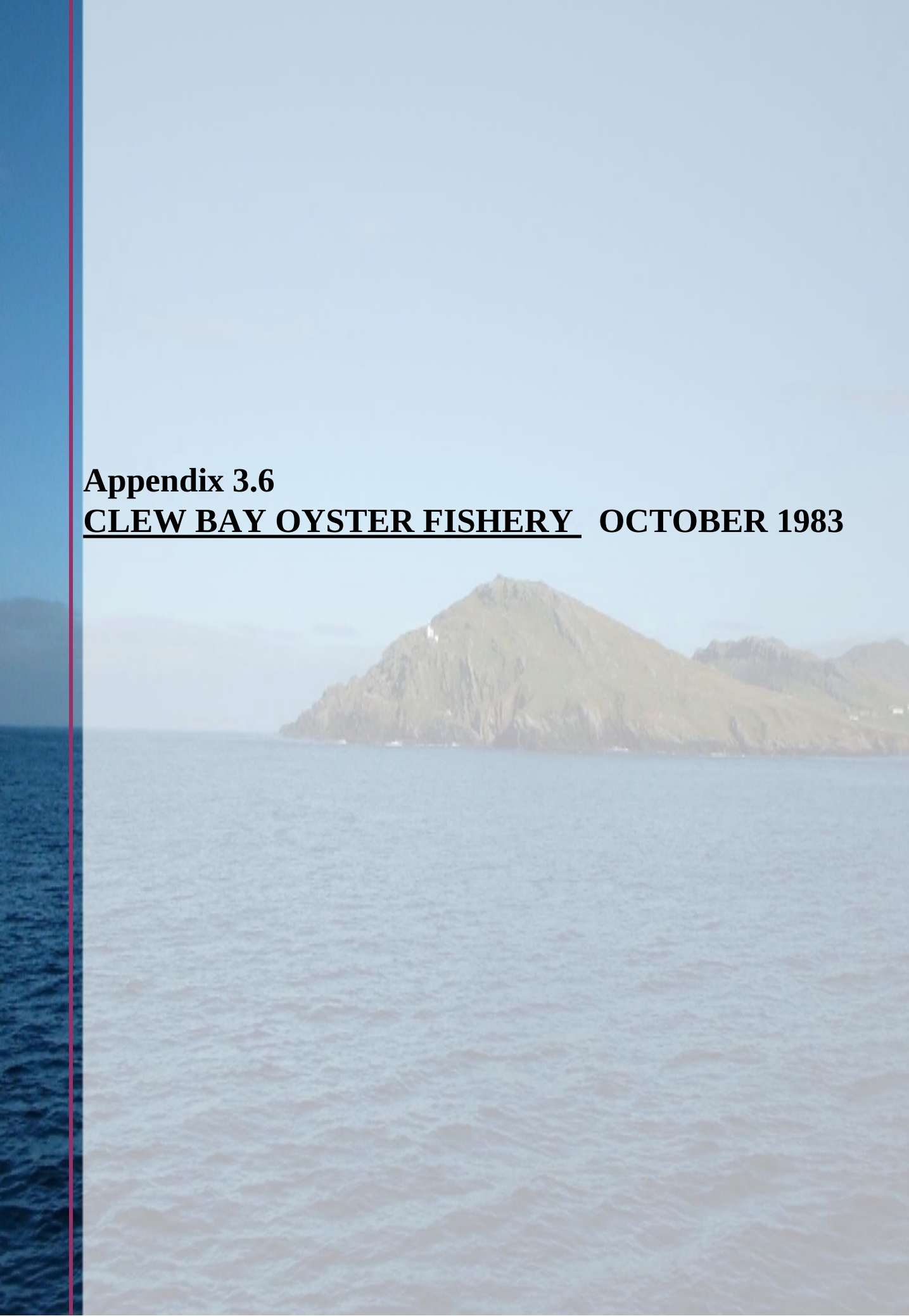
GIVEN under the Official Seal of the Minister for Tourism and Transport, this 23rd day of July, 1979.

M. A. HAYES.

A person authorised under Section 15 (1) of the Ministers and Secretaries Act, 1924, to authenticate the seal of the said Minister.

NOTE-Section 11 of the Fisheries (Consolidation) Act, 1959, provides that any person aggrieved by this Order may within 28 days after the 27th July, 1979, appeal against the same to the High Court.





Appendix 3.6
CLEW BAY OYSTER FISHERY OCTOBER 1983

CLEW BAY OYSTER FISHERY **October 1983**

Rules which are binding on all members of the Clew Bay Oyster Co-Operative Society.

(A) Members shall not be permitted to: -

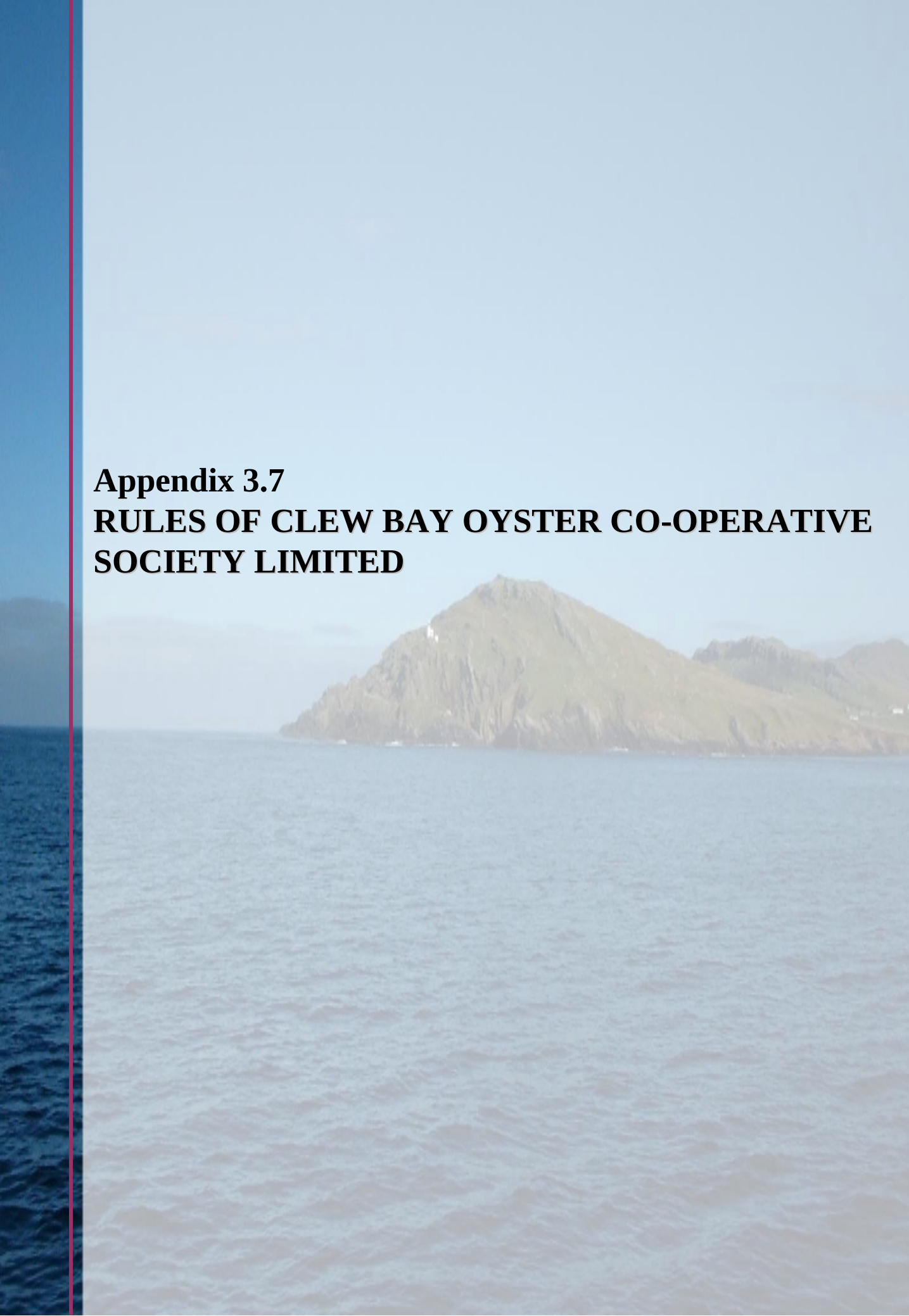
1. Use more than one dredge from a boat at any particular time.
2. Use any dredge the mouth of which exceeds four feet, measured along its longest side, and the bag of, the dredge exceeds two feet six inches measured from the back of the blade.
3. Take or remove oysters during the period in each year commencing the 15th day of February and ending on the 15th day of October.
4. Have on board any boat during the period specified in sub-paragraph (iii) of this paragraph any dredge or other instrument for taking oysters.
5. Take or remove oysters by any means what so ever other than by dredge.
6. Take or remove oysters by any means what so ever during the period commencing at 4.00p.m on Friday in each week and ending on the next following Monday at 9.00a.m.
7. Take or remove by any means what so ever any oysters between 4.00p.m.and 9.00a.m.
8. Throw into the sea any ballast of any boat or any other thing injurious or detrimental to the said oyster fishery.
9. Remove, sell, expose for sale, give, transfer, purchase, receive, carry or have in his possession any oyster which has been taken or caught in the said fishery and which measures less than 76 millimetres at its greatest dimension.
10. Use any boat for the purpose of dredging for oysters if the members Clew Bay Oyster Co-Operative Society's Shares Registration Number is not visible and clearly displayed thereon.
11. Allow any other person to fish under his Clew Bay Oyster Co-Operative Shares Registration Number.

(B) (i) All oysters which are taken or caught shall be culled.

(ii) Any oyster which measures less than three inches at its greatest dimension shall not be taken away but shall immediately be thrown back into the sea.

(iii) All gravel and fragments of shell raised or taken shall immediately be thrown back into the sea.

(C) The conditions referred to in paragraphs (A) and (B) of this article shall not apply in any case where a person is authorized in writing by the Society's board of management to carry out any works as part of a program of development of the Oyster Fishery.



Appendix 3.7
RULES OF CLEW BAY OYSTER CO-OPERATIVE SOCIETY LIMITED

Rules Of Clew Bay Oyster Co-Operative Society Limited(I.A.0.S. 1976 EDITION)

As approved by theIrish Agricultural Organisation Society Limited.

Clew Bay Oyster Co-Operative Society Limited, Inniscuttle, Kilmeena, Westport, Co. Mayo.

I. - INTERPRETATION

CONSTRUCTION OF RULES

In construing these Rules, the following words and expressions shall have, respectively, the meanings herein stated, provided that such meaning does not conflict with the subject matter of the rule of context: -

(a)Words importing the singular or plural number include the plural and singular numbers.

(b)Words importing the masculine gender shall include the feminine gender.

(c)"Member" shall mean an individual or a society or a corporate body duly admitted to membership of the Society and holding the requisite number of shares.

(d)"The Society" shall mean the Society to which these Rules refer.

(e) The "Special Members" shall mean the signatories to the original application for registration of the Society.

(f) "The Board" shall mean the Board of Directors of the Society for the time being.

(g) "The Acts" shall mean the Industrial and Provident Societies Acts, 1893 to 1971.

(h) "A Society" shall mean a Society registered under the Acts.

(i)The expressions "he," "him," and "person" shall include a society, or other corporate body.

(j) "Registrar" shall mean the Registrar of Friendly Societies for Ireland.

(k) "Special Resolution" shall mean a resolution passed in accordance with Section 51 of the Act of 1893.

(l)The "I.A.0.S." shall mean the Irish Agricultural Organisation Society Limited.

(m) "The Regulations" shall mean the Regulations under any Act relating to the Industrial and Provident Societies for the time being.

(n) "the Department" shall mean the Department of Agriculture.

(o) "Share" shall, unless otherwise stated or implied, mean "Ordinary Share".

(p) "The Corporation" shall mean the Agricultural Credit Corporation Limited.

(q) "The Standing Orders" shall mean the Standing Orders (if any) adopted by the Board for the purpose of regulating procedures at General Meetings and Board Meetings.

II. - NAME, REGISTERED OFFICE. AND OBJECTS

2 NAME. The name of the Society shall be the Clew Bay Oyster Co-operative Society Limited.

3 REGISTERED OFFICE. The registered office of the Society shall be at lnniscuttle, Kilmeena,Westport, Co. Mayo. but may be changed by the Board. Notice of any change in the situation of the registered office shall be sent to the.

Registrar within fourteen days after such change, in accordance with the Regulations.

4. OBJECTS. The objects of the Society shall be: -

(a)To develop and improve the industry of fishing in Ireland by the introduction of the most approved methods, including the cultivation of and sale of oysters, mussels and other fish species.

(b)To buy, sell and deal generally, wholesale and retail, in live and dead fish and all sea produce or by-products including seaweed, sea-rods, and carageen moss and the transport of same by land, sea and air.

(c)To carry on all or any of the businesses of fish-merchants, ship owners, carriers by land or sea ice-merchants, refrigeration store-keepers, warehousemen, wharfingers, and general traders, and to buy, sell, prepare for market, deal in and distribute fish and to establish fish depots and stores and markets throughout Ireland.

(d)To carry on the business of trawler-owners, fishing boat and fishing smack owners.
(e)To erect and build freezing houses, warehouses, sheds and other buildings and landing facilities necessary or expedient for the purposes of the Society and to build tanks for the preservation of oysters and other fish.
(f)To carry on the business of ship riggers and contractors, and to provide stores, provisions, equipment, appliances and implements to fishing boat owners.
(g)To manufacture for any of the above businesses.
(h)To promote and encourage insurance by members.
(i)To conserve fish stocks in the area serviced by the Society.
(j) To acquire such sea areas and tidal waters as are suitable for the cultivation and development of Oysters, Clams, Mussels and other fish species.

III. - MEMBERSHIP

5 ADMISSION OF MEMBERS. (I) The Society shall consist firstly of the special members as defined in General Rule 1 (e).
(II) Membership of the Society shall be open to all residents of the State, to all Companies registered in the State under the Companies Acts and to all Societies registered in the State under the Acts.
(III) The Board of Directors of the Society shall admit members to the Society and membership of the Society shall not be refused to any such resident, Company or Society which complies with these rules.
(IV) Applicants for membership shall subscribe for one or more shares in the Society as the Board of Directors may from time to time prescribe. Different numbers of shares shall not be prescribed for different classes of people. No member other than a society registered under the Acts shall hold an interest exceeding £1,000 (€1,296.74) in the shares of the Society or such other maximum amount as may be prescribed by statute from time to time.
(V) Every Society and Company admitted to membership may be represented by one delegate at the Annual General Meeting of the Society. The appointment of a delegate shall be in Form V] prescribed in the Appendix to these rules.
(VI) No member shall fish for Oysters with more than one boat and dredge at any one time.

IV. - MINORS, NOMINATIONS, DEATH, INTESTACY, BANKRUPTCY AND INSANITY

6. MINORS. A person under the age of 21 but above the age of 16 may be a member of the Society and enjoy all the rights of a member (except as by the Acts provided) and may execute all instruments and give all acquittances necessary to be executed or given under the Rules but shall not be a member of the Board or hold office in the Society.
7 NOMINATION OF MEMBERS. (a) Every member of the Society not being under the age of 16 years may, by writing under his hand delivered at or sent to the registered office of the Society during the lifetime of such member or made in any book kept thereat, nominate any person or persons to or
among whom there shall be transferred at his decease such property in the Society as may be his at the time of his decease (whether in shares, loans, deposits or otherwise) or so much thereof as is specified in such nomination, if the nomination does not comprise the whole. If on the death of the nominator the amount of his property in the Society comprised in the nomination exceeds £1,000 (€1,269.74) the nomination shall be valid to the extent of the sum of £1,000 (€1,269.74) but not further or otherwise. Provided that a person so nominated shall not be an officer or servant of the Society unless such officer or servant is the husband, wife, father, mother, child, brother, sister, nephew or niece of the nominator.
(b) A nomination so made may be revoked or varied by a subsequent nomination signed and delivered or sent or made as aforesaid or by any similar document in the nature of a revocation or variation under the hand of the nominator so delivered, sent or made as

aforesaid, but shall not be revocable or variable by the will of the nominator or by any codicil thereto.
(c) The Society shall keep a book wherein the names of all persons so nominated and all revocations or variations (if any) of such nominations shall be recorded, and the property comprised in any such nomination to an amount not exceeding £1,000 (€1,269.74) shall be payable or transferable to the nominee although the Rules of the Society declare the shares not to be transferable.
(d) The marriage of a member of the Society shall operate as a revocation of any nomination made by him before such marriage, provided that, in the event of an officer of the Society having transferred any property of a member to a nominee, in ignorance of a marriage contract subsequent to the date of the nomination, the receipt of the nominee shall be a valid discharge to the Society, and the Society shall be under no liability to any other person claiming such property.
8. NOTICE OF RIGHT TO NOMINATE A notice of the right of nomination shall be sent to every individual member who has not exercised this right with the report of the first ordinary business meeting in each year of which a report is circulated among the members, and shall be otherwise given as such meetings may direct.
9. FEE ON NOMINATION REVOCATION OR VARIATION The member shall pay for the recording or registering of every nomination, revocation or variation, whether or not accompanied by a fresh nomination, and nomination, revocation or variation, if more than one.
10 PROCEEDINGS ON DEATH OF MEMBER. (a) On receiving satisfactory proof of the death of a nominator, the Board of the Society shall, subject to the limitation on amount herein before mentioned, either transfer the property comprised in the nomination in the manner directed by the nomination, or pay to every person entitled thereunder, the full value of the property given to him, unless the shares comprised in the nomination, if transferred as directed by the nominator, would raise the share capital of any nominee to a sum exceeding £1,000 (€1,269.74) in which case they shall pay him the value of such excess.
(b) Where a nominee who is nominated under the provisions of the Acts is under 16 years of age the Society may pay the sum nominated to either parent, or to a guardian of the nominee, or to any other person of full age who will undertake to hold the same for his benefit and whom the Society may think a fit and proper person for the purpose, and the receipt of such parent, guardian, or other person shall be a sufficient discharge to the Society for all moneys so paid.
(c) If any member entitled to property in the Society in respect of shares, loans or deposits not exceeding the whole, at his death £1,000 (€1,269.74) dies intestate, without having made any nomination thereof then subsisting, the Board may, without letters of administration, distribute the same among such persons as appear to them, on such evidence as they deem satisfactory to be entitled by law to receive the same. If any member is illegitimate, and leaves no widow, widower or issue, the Board shall deal with his property in the Society as the Minister for Finance shall direct.
(d) Upon the death of a member who has an interest in the Society exceeding£1,000 (€1,269.74) and a notice in writing being given by his executors or administrators to the Secretary to the Society stating the death of such member, and the Christian name, surname, profession or business of such legal representative and specifying the nature and amount of his interest or claim; and the production, if the case requires, of the Probate of the Will of such member, or letters of administration of his estate, and of such evidence (if any) of his death as may be required by nomination made by such member shall either transfer the shares or other interest of the member specified in such notice in the books of the Society to his legal representative or shall pay to him the sum which represents the full value thereof, and may make such transfer or payment at their discretion, unless the transfer would increase

the share capital of the transferee in the Society to more than£1,000 (€1,269.74) in which case they shall make the payment of any such excess in money.

11. INSANE OR LUNATIC MEMBER If a member or person claiming through a member becomes insane and no committee of his estate or trustee of his property has been duly appointed, the Society acting through its Board may, when it is proved to the satisfaction of the Board of the Society that it is just and expedient so to do, pay the amount of the shares, loans and deposits belonging to such member to any person whom they shall judge proper to receive the same on his behalf whose receipt shall be a good discharge to the Society for any money so paid.

12 PAYMENTS OR TRANSFERS MADE TO OR ON BEHALF OF A DECEASED OR INSANE MEMBER. All payments or transfers made by the Board under the above provisions, with respect to payments or transfers to or on behalf of a deceased or insane member to any person who at the time appears to the Board to be entitled thereunder shall be valid and effectual against any demands made upon the Board or Society by any other person.

13 TRANSMISSION BY BANKRUPTCY. If any member becomes bankrupt, his property in the Society shall be transferable or payable to the trustee of his property or to his assignee in bankruptcy.

14 TRANSFER TO MAKE MEMBERSHIP. Every nominee or other person to whom any share is transferred under this section shall thereby become a member of the Society, if not previously a member.

15 JOINT HOLDERS OF SHARES. On the decease of a joint holder of shares, the shares shall be transferred into the name of the survivor or survivors on his/her or their application.

V. - EXPULSION

16 PROCEDURE. A Member may be expelled if found guilty of conduct detrimental to the Society, provided: -

(a) That he shall have received, in writing, one month previously, complete particulars of the charge alleged against him; and

(b) That two-thirds of the members present and voting at a Special General Meeting vote for his expulsion.

The full amount paid or credited upon the shares held by an expelled member, less such sums as may be due by him to the Society, shall be paid to him on expulsion and an entry of the cancellation of his shares shall be made thereupon in the Share Register.

17. RE-ADMISSION. An expelled member shall only be re-admitted by the vote of two-thirds of the members present and voting at a General Meeting and on a motion of which fourteen days' notice has been given.

18. CESSATION OF MEMBERSHIP. Any member, all of whose shares have been transferred or cancelled, or a member who shall cease to be eligible for membership under Rule 5, or otherwise, shall there-upon cease to be a member of the Society. A member shall not otherwise be entitled to withdraw from the Society.

VI. - UNCLAIMED SHARES OF DECEASED MEMBERS

19. If (a) within twelve calendar months from the date upon which the Board shall have recorded in the Minute Book of the Society a resolution that the Board from its local knowledge is unanimously satisfied of the death of a member, whether such death has been formerly proved or not, and (b) the Secretary has certified in writing to the Board either that no claim has been received by the Society either from the personal representative of such member or any relative of such member for the transfer of the Shares in the Capital of the Society held by him, or that such claim having been made the Shares have not been accepted by the party entitled thereto, it shall in such event be lawful to the Board to serve upon such persons as in the opinion of the Board are the personal representatives or the nearest of kin (if any) a notice in writing to the effect that unless such personal representatives or next of kin apply within six calendar months from the date of such notice to the Society requesting

transfer and accept such transfer, the Board may cancel the said Shares and transfer to a Capital Reserves Account of the Society, all moneys paid or credited as paid up thereon. Upon the expiry of the said period of six months, without any claim having been received, or if a claim is made without the Shares being accepted by the person appearing to the Board to be entitled thereto then and in such event it shall be lawful to the Board by resolution to cancel the said shares and upon such resolution being passed the said Shares shall be deemed for all purpose to have been cancelled and annulled and no claim shall lie against the Society by any person in respect thereof and all moneys paid up or credited as paid up thereon shall be transferred to a Capital Reserves Account of the Society.

VII. - CAPITAL

20. ORDINARY SHARES.

The capital of the Society shall consist of ordinary shares of £1.00 (€1.27) each. An Ordinary Share or Shares may be held by an individual or by a Society or by a Corporate body. The full amount due on each Ordinary Share shall be paid in cash on allotment. The Board shall have power to decide the number of Ordinary Shares which any person must apply for, subject to section 4 of the Acts; but no person shall be admitted to membership of the Society who has not first applied for at least 100(one hundred) shares.

21. INTEREST AND LIABILITY The rate of interest of Ordinary Share Capital shall be determined from time to time by the Annual General Meeting of the Society on the recommendation of the Board subject to any statutory limitation in regard to the rate of interest, but shall not be calculated on fractions either of £1.00 (€1.27) or of a calendar month. The liability of members shall be limited to their Ordinary Shares.

22. APPLICATIONS FOR SHARES, HOW MADE. Applications for shares shall, in the case of individuals, bemade in Forms 1, prescribed in the Appendix. Societies seeking admission shall make application in Form 11, prescribed in the Appendix.

Applications shall be considered by the Board as soon as practicable, and notice of admission or otherwise shall be duly notified to the applicant after the Board Meeting at which the application is decided on. Where an application for shares is rejected, the Board shall not be required to give the applicant any reason for such rejection.

23. REGISTRATION OF SHARES. A share register book shall be kept by the Secretary in which shall be recorded the names, places of residence, and description of the members of the Society, the date of admission to the Society of each member, the number, description and value of the shares held by him, the date or dates when he acquired such shares, and the amount paid or agreed to be considered as paid on such shares, and when he ceased to retain same. Every transfer of a share shall be registered in the same way. If persons are registered as the joint holders of any shares one of such persons only may exercise the right to vote at general Meetings of the Society but any of such persons may give effectual receipts for any profits paid in respect thereof. The holders of joint shares shall notify the Secretary as to which of the joint holders will exercise the right to vote on behalf of the joint shareholders at General Meetings of the Society.

24. TRANSFER OF SHARES. Shares shall be transferable as hereinafter mentioned. A member may apply to the Board to transfer Ordinary Shares to any person on the prescribed share transfer form which must be duly completed. In no case shall the consideration for a transfer of shares exceed the amount standing to the credit of such shares in the Society's books.

All transfers shall be in Forms Ill and IV prescribed in the Appendix, and shall be duly stamped.

The Board shall not be bound to assign any reason for refusing to sanction any transfer of shares.

No share shall be withdrawable.

25. LIEN ON SHARES. The Society shall. subject to Rules 20, 26 and 27 have a first lien on the Ordinary Shares held by any member and may set off any sum credited thereon towards

the payment of any debt due by the member to the Society, provided, however, that no right shall obtain on the part of any member to set off any payment made on foot of his shareholding against any debt due by him to the Society.

26. SALE OF SHARES TO PAY DEBTS. The Board may sell and transfer any Ordinary Share standing in the name of a member who is indebted to the Society, provided a fortnight's notice in writing has been given to the defaulting member and apply so much of the proceeds as may, be necessary to the discharge of the debt due together with the necessary expenses incidental to its recovery. A member in arrear with the calls duly made on his shares shall forfeit all rights of membership, including attendance at meetings, during the period of his default.

27. RECOVERY OF DEBTS. All moneys payable by a member to the Society, whether in respect of shares or otherwise, shall be debts due from such member to the Society and shall be recoverable as such either in the Circuit Court of the District in which the registered office of the Society is situated or in that of the district in which such member resides, at the option of the Society, and the Board may take legal proceedings for the recovery thereof.

28. BORROWING POWERS The Board may raise or borrow for the purpose of the Society such sum or sums of money as shall from time to time be considered necessary by the Board on such terms and conditions as the Board shall agree, provided that the aggregate amount of all moneys so raised or borrowed shall not at any time exceed such amount as may be fixed by Resolution in General Meeting of the Society and in the absence of any such limits being fixed as the Board may from time to time determine and any moneys so raised or borrowed as aforesaid and remaining owing by the Society may be secured by the issue of debentures, debenture stock, mortgage, charge, bonds, agreements, promissory notes or lien upon all or any of the property or assets of the Society both present and future, including its uncalled capital, and the Board may also guarantee or by similar debenture, debenture stack, mortgage, charge, bond, agreement, promissory note or lien secure the debts or obligations of any other society, corporation, body or person having dealings with or interests similar to the Society.

The Board may procure that the Society shall guarantee or by similar debenture, debenture stock, mortgage, charge, bond, agreement, promissory note or lien, secure the debts or obligations of any other society, corporation body or person having dealings with or interests similar to the Society.

LOANSTOCK (a) The Board, in addition to other borrowings in relation to the business of the Society, may from time to time borrow such further sums as may be authorised by an Annual or Special General Meeting of the Society from time to time by means of Loan Stock from shareholders, suppliers and other persons. The method of borrowing and terms and conditions attached to the Loan Stock to be determined by the Board from time to time.

The following conditions shall apply to the Loan Stock: -

(I) The loan stock shall carry interest on the amount for the time being paid up thereon, payable at a rate of interest as the Board may from time to time decide.

(II) All interest payments shall be apportioned and paid proportionately to the amounts paid or credited as paid on the loan stock during any portion or portions of the period in respect of which interest is paid but shall not be calculated in factions either of £1 (€1.27) or of a calendar month.

(III) Certificates sealed by the Society showing the amount and designation of loan stock standing to the credit of the holders thereof shall be delivered to the holders of the loan stock.

(IV) The Board shall keep a register of the holders of loan stock for the time being containing such particulars as the Board may from time to time direct.

(V) The same rules shall apply to the transfer of loan stock as apply to the transfer of shares.

(VI) The Board shall be entitled at any time, and from time to time, when fixing the price payable by the Society for fish supplied to it by members of the Society and others to determine that part thereof shall be applied in the purchase at par of loan stock on behalf of

the member and others. Such loan stock shall be deemed to have been issued on the date when the balance of the price shall be paid.
(VII) The Board shall be entitled at any time and from time to time to pay a bonus to members of the Society and others for fish supplied by them or trade carried on by them with the Society and may decide to pay such bonus by way of a purchase at par of loan stock on behalf of such persons of such amount as it may determine on fish supplied to or other trading carried with the Society by such persons.
REVOLVING CONVERTIBLE LOAN STOCK.
(b) The Board in addition to other borrowings in relation to the business of the Society) may from time to time borrow such further sums as may be deemed necessary from time to time by means of the issue of revolving convertible Loan Stock in units of £1 (€1.27) each to be issued to members, suppliers, and other persons who may agree to advance moneys upon and subject to the following conditions: -
(I) The Revolving Convertible Loan Stock shall carry interest on the amount for the time being paid up thereon at a rate as may be determined by the Board from time to time.
(II) All interest payments shall be apportioned and paid proportionately to the amounts paid or credited as paid on the Revolving Convertible Loan Stock during any portion or portions of the period in respect of which interest is paid, but shall not be calculated on fractions either of £1 (€1.27) or of a calendar month.
(III) Any revolving convertible loan stock deemed to be issued by the Society in the year 1976 shall be designated revolving convertible loan stock 1976 and any revolving convertible loan stock subsequently issued by the Society shall be similarly designated by reference to the year in which the same is deemed to have been issued.
(IV) The revolving Convertible Loan Stock shall be redeemed by the Society on the 31st day of December next following the fifth anniversary of the date an which such revolving Convertible Loan Stock was deemed to have been issued or, at the discretion of the Board, within twenty one days of such Anniversary save in-so-far as any part thereof may have been converted into shares in the capital of the Society in accordance with the provisions in that behalf hereinafter contained.
(c) A holder of Loan Stock as referred to in sub-clause (a) hereof and/of revolving convertible loan stock as referred to in sub-clause (b) hereof (hereinafter collectively referred to as 'Convertible Loan Stock").
(a) Who is already a member of the Society; and (b) If a non-member of the Society, subject to Rule 5 hereof and the other provisions in these Rules relating to minimum subscriptions on admission to membership.
Shall be entitled from time to time and at any time prior to the commencement of the winding up of the Society to convert part or all of the Convertible Loan Stock held by him into shares in the capital of the Society subject to the following conditions: -
(I) The Convertible Loan Stock will be convertible in amounts and multiples of £1(€1.27) at the option of the holder into fully paid shares of the Society.
(II) A holder wishing to convert any Convertible Loan Stock shall deposit with the registered office of the Society not less than twenty eight days notice (hereinafter called a "Conversion Notice") in writing to the Secretary stating his intention to convert such amount of Convertible Loan Stock held by him as is specified in the Conversion Notice into the like number of fully paid up shares in the capital of the Society.
(III) The said holder shall deposit with the Conversion Notice, the Certificate or Certificates relating to the Convertible Loan Stock to be converted.
(IV) On the first day of January in every year following receipt of the Conversion Notice as aforesaid ("the Conversion Date") the Convertible Loan Stock comprised in such Conversion Notice shall automatically be converted into shares in the capital of the Society and shall thereupon rank pari passu in all respects with the existing shares for the time being in the capital of the Society with rights to participate in full in all dividends declared on the shares

after the conversion date provided, however, that any such shares (as converted in accordance with this sub-clause (IV)) shall not been titled to any dividends on shares which are declared wholly or in part in respect of a period prior to the conversion date.
(V) Forthwith upon any such conversion the Society shall issue to the holder free of charge, a new Certificate for the amount of Convertible Loan Stock so converted into shares and if the Notice of Conversion does not relate to all the Convertible Loan Stock comprised in the Certificate so deposited the holder shall be entitled free of charge to a Certificate for the balance of the Convertible Loan Stock retained by him.
(VI) Notwithstanding anything herein contained a holder of Convertible Loan Stock shall not be entitled (unless it is a registered society) to convert the same if such conversion would result in the holder becoming entitled to an interest exceeding £1,000' (€1,269.74) in the shares in the Society.
(VII) Certificates sealed by the Society showing the amount and designation of the Convertible loan Stock standing to the credit of the holders thereof shall be delivered to the holders of Convertible Loan Stock.
(d) (I) The Board shall keep a register of Holders of Convertible Loan Stock for the time being containing such particulars as the Board may from time to time direct.
(II) The same rules as apply to the transfer of shares in the Society shall apply to the transfer of Convertible Loan Stock.
(III) Members and other persons may hold an interest in Convertible Loan Stock exceeding £1,000 (€1,269.74).
(IV) In the event of the Society being wound up for any reason whatsoever any surplus remaining after the payment of the debts of liabilities of the Society and the costs and expenses of the liquidation shall be applied in there payment of the capital for the time being paid up or credited as paid up on the Convertible Loan Stock and all interest due thereupon to the commencement of the liquidation in priority to the shareholders but the holders of the Convertible Loan Stock shall not be entitled to participate further in the surplus assets of the Society.
29. PERSONAL LIABILITY OF ANY MEMBER OF THE BOARD FOR ANY DEBT INCURRED ON BEHALF OF THE SOCIETY Should any member of the Board become personally liable for any debt incurred on behalf of the Society he shall not be removed from office or be subject to retirement without his prior consent in writing unless either (a) his liability has ceased or (b) the Board shall, prior to the date on which his retirement or removal from office would otherwise become effective have obtained from the creditor or creditors whose debts have been guaranteed by such member an absolute release of all the obligations of such member and under his guarantee.
30. DEPOSITS The Board may also receive money on deposit from members and others for such amounts, at such rates of interest and on such terms as regards withdrawal, as may be determined from time to time by the Board subject to any Acts of the Oireachtas.
VIII. - INVESTMENTS, LOANS. ETC.
31. INVESTMENTS. The Board may invest any portion of the Society's capital as follows: -
(I) In any security in which Trustees are for the time being by law authorised to invest.
(II) In the shares of, loans to, or deposits with any other registered society or company, provided such society or company shall be one with limited liability.
(III) As loans to credit societies registered under the Friendly Societies Act or to Societies registered under the Industrial and Provident Societies Acts.
(IV) In advances to members of the Society in accordance with the provisions of the Industrial and Provident Societies Act, 1893, and of any Act altering or amending the same.
32. VOTING RE INVESTMENTS Notwithstanding the provisions of section (G) of Rule 49 the Board may, subject to the Rules or 1 articles of Association of the body to which loans have been made or in which capital has been otherwise invested, appoint one or more of their

number to vote on its behalf at meetings and to sit on the Board of any Society or company in which portion of the Society's funds are invested.

IX. – MEETINGS

33. GENERAL MEETINGS

General meetings of the Society shall be Ordinary or Special. An ordinary General Meeting of the Society to be called the Annual General Meeting, shall be held at least once in each financial year at such time as shall be fixed by the Board.

34. NOTICE OF ORDINARY GENERAL MEETINGS. Board Notice of every Ordinary General Meeting shall be given at least fourteen days before the day fixed for the meeting. The may, as they determine, have such notice sent by post or otherwise to each member or, alternatively, they may publish such notice in such papers as they decide.

The notice of every such meeting shall state the time and place at which it shall beheld. Any claim however, by a member to the effect that he has not received such notice shall not invalidate the meeting or any business transacted thereat.

Every meeting of the Society shall be held at such place as the Board shall decide.

At every Annual general Meeting of the Society, Standing Orders shall be adopted and shall remain in force until the next ensuing annual general meeting of the Society. The following business shall be transacted at every annual general meeting of the society.

(a) The minutes of the immediately preceding Annual General Meeting and of every. if any other unconfirmed general meeting held subsequent thereto during the period intervening between the two Annual General meetings, shall be read by the Secretary, if present, or if the Secretary be absent by such other person as may be appointed by the presiding Chairman of the meeting and when the meeting confirms the minutes as read or as altered by the meeting they shall be signed by the presiding Chairman.

(b) The transactions of the Society, its condition or state of its affairs generally, or in any particular, shall be made the subject of a statement, either written for circulation amongst the members or otherwise, to the meeting by the Chairman, or if at the instance of the Board, by the Secretary or other person appointed by them, and the meeting may take such action thereon as it may decide; provided that no resolution on such statement shall take precedence of the adoption/ of the Balance Sheet.

(c) The Statement of Accounts and Balance Sheet, as prepared by the Society's Auditor for the immediately preceding statutory financial year or period and for such other periods or years in respect of which any audit may have been made and which has not been already submitted to a general meeting of the Society and adopted thereat, shall be read, or if circulated previously amongst the members, may be taken as read, and if correct, shall be adopted.

(d) An auditor, in accordance with law, the regulations and Rule 67, shall be appointed to carry out the statutory audit of the Society's accounts for the financial year then current, and to do such other auditing or accountancy work as the meeting or the Board may deem necessary. During the currency of any loan made by the Department, the Corporation or Bankers to the Society, and until the amount thereof shall have been repaid in full, the appointment of such auditor may be subject to the approval of the Department the Corporation or Bankers. In the event of the failure or omission of the meeting to make the appointment, it shall be competent for the Board to make it subsequently. The Board may for like reason arrange or fix the auditor's remuneration and expenses for such work as he may been engaged to do. The Board shall have power to fill any vacancy in the office of auditor occurring between any Annual General Meeting and another, whether occurring because of the refusal of the Department, Corporation, or Bankers to approve of the appointment made at any Annual General Meeting, or from any other cause. During the currency of any loan made by the Department, Corporation or Bankers to the Society, and until the amount thereof shall have been repaid in full, any such appointment by the Board may be subject to the approval of the Department, Corporation or Bankers.

(e) The authorisation of the Board to raise money on loan or by way of deposit, subject to Rules 28 and 30. Provided, however, that the omission of such authorisation shall not debar the Board from obtaining such loan or deposit capital as may be necessary for the conduct of the Society's business from time to time.
(f) Any other business arising that may be deemed by the meeting proper and expedient, subject to Rules 66 and 76, provided the Secretary has received at least five days' notice of it beforehand, but the members of the Board present at the meeting may, if they think fit, waive this proviso and concede to the meeting such right of discussion and action in reference to any matter raised under this heading at any Annual General Meeting as they may consider adequate.
35. SPECIAL MEETINGS. A special meeting may be convened by the Committee at any time on their own authority, or upon a requisition addressed to the Committee, Chairman, or Secretary, signed by half the number of members of the Society for the time being, if not more than forty, and twenty if forty, or upwards, and stating the purpose of such meeting, on receipt of which requisition the meeting shall be called by the Secretary or other person appointed by the Committee for the purpose. If he shall fail, for three days, to convene a meeting, after the receipt of such requisition, the signatories thereto may convene same at the expense of the Society. Provided that the Society shall not be liable for any legal costs incurred by the requisitionists in connection with any meeting proposed or held or otherwise.
36. Notice, stating the time, place and purpose of every Special General Meeting shall be given or sent to each member not less than eight clear days before the date of such meeting, except where, in cases of exceptional urgency, the Committee shall resolve to convene a Special General Meeting on shorter notice, provided that in no case shall the notice given be less than four clear days.
No business shall be transacted at Special General Meetings save that for the purpose for which the meeting is convened and of which full particulars shall be given in the notice convening every such meeting.
Notice of a General Meeting shall be deemed to have been duly given, if left at or posted to the registered address or place of residence of members, in due time before such meeting - subject to the provisions of Rule 33.
37. No meeting of the Society shall proceed to business unless at least eight (eight) persons entitled to vote thereat as members of the Society, shall be present within one hour of the time of the meeting; otherwise such meeting if it be or is to be considered an Ordinary General Meeting of the Society or if it is a Special General Meeting convened by the Board shall stand adjourned to that say week at the same time and place, but if it be convened by notice upon a requisition from members, shall be absolutely dissolved. No meeting shall be rendered incapable of transacting business by want of a quorum after the chair has been taken, provided that the meeting shall be adjourned should the attendance fall below five (5).
38. Any General Meeting may be adjourned from time to time by the Presiding Chairman for any period not exceeding twenty-eight clear days. No business shall be transacted at an adjourned meeting except what relates to the original agenda of such meeting. If a Special General Meeting be adjourned, not less than four clear days' notice shall be given to the members of the date fixed for the adjourned meeting.
39. An Ordinary General Meeting may, at the conclusion of its ordinary business, be made Special for any purpose of which notice has been duly given.
40. The Chairman of the Board for the time being shall be entitled to preside as Chairman at every meeting of the Society. In his absence, the Vice-Chairman of the Board for the time being shall be entitled to preside as Chairman at any meeting of the Society. In the absence of both the Chairman and Vice-Chairman of the Board, each meeting shall choose a Chairman who shall be one of the Board if any be present.

41. If at any meeting the votes are equal the Chairman of the meeting shall have a casting vote. All questions shall be decided in the first instance by a show of hands, unless twenty members present demand a ballot, in which case a ballot shall be taken. Each member present and entitled to vote shall have only one vote, except the Chairman of the meeting, when entitled to give a casting vote. Any member who is in arrear for payment of any call or calls due and payable on his shares shall not be entitled to attend any meeting nor may he vote until his liability be discharged.

42. No voting by proxy shall be admissable.

X. - BOARD OF DIRECTORS AND CHAIRMAN

43. SELECTION OF BOARD The Board shall consist of such persons elected by and holding its appointment from the Annual General Meeting or from a Special General Meeting held in accordance with the rules which comprise Chapter IX thereof. The number of Directors shall be determined from time to time by the Annual General Meeting or by a Special General Meeting.

Until the first Board has been appointed as provided for in these Rules the Special Members shall constitute the Board of Directors and shall have all the powers of such Board.

44. POWERS OF THE BOARD The business and affairs of the Society shall be directed and controlled by the Board of Directors, who shall have the control of all business carried on by or on account of the Society. The Board may exercise all such powers of the Society as are not by the Act, or by these Rules, required to be exercised by the Society in General Meetings.

45. SUB COMMITTEES The Board may delegate any of the powers hereby given to it to a Sub-Committee, or Sub-Committees, composed of such persons and in such manner as it determines, who shall, in the exercise of the powers so delegated, conform in all respects to such instructions as may be given to them from time to time by the Board.

46. ROTATIONAL RETIREMENTS. A number of Directors shall retire annually which shall be decided by the Annual General Meeting. The retiring members shall be eligible for re-election. The order of retirement shall be decided by the Annual General Meeting.

47. CASUAL VACANCIES. Any casual vacancy occurring in the Board of Directors may be filled by co-option, but any person so co-opted shall retain his office only until the next Annual General Meeting of the Society, when he shall retire, but shall be eligible for re-election.

48. NOMINATION FOR BOARD MEMBERSHIP Notice of the intention to nominate any person for election to the Board other than a retiring member shall be given to the Secretary not less than five days before the date fixed for the meeting at which such election shall take place.

The nominated person must sign the nomination form and the nomination must be witnessed by two members of the Society other than the nominated person. Nomination forms shall be made available by the Secretary of the Society to Any member seeking them.

A retiring member eligible for re-election in accordance with the provisions of these Rules shall be deemed to be re-elected in the absence of any valid nomination. In the case of casual vacancies on the Board, and where the number of nominations does not exceed the number of such vacancies, the nominated person shall be deemed to be elected to the Board.

49. QUALIFICATION AND DISQUALIFICATION. No member shall be eligible to become a member or to continue as a member of the Board –

(a) If he holds any office or place of profit under the Society or if he be, or become, a contractor to the Society for non-agricultural business.

(b) If he becomes bankrupt or insolvent or compounds with his creditors.

(c) If he becomes of unsound mind or becomes a lunatic.

(d) If he ceases to be qualified as a member of the Society.

(e) If he be convicted of an indictable offence other than an offence under the Road Traffic Acts.

(f) If he exceeds the credit facilities of the Society as determined from time to time by the Board.

(g) If he becomes a member of the Committee/Board of any Society or business organisation which is in competition with the Society, subject to the provisions of Rule 32.

(h) If he is not in a position to sign such letters of guarantee as may be required from time to time from the Board Members.

(i) In the event of any member of the Board absenting himself from more than one-quarter of the Board Meetings in any calendar year without a medical certificate, said member shall cease to be a member of the Board and an election to fill the vacated seat shall take place within sixty (60) days.

The attendance of all members of the Board shall be published annually.

(j) If he does not support the Society in all its trading activities and avail of all the services 1 supplies offered to him by the Society in his area.

After lst January, 1980, a member who has reached the age of 65 years shall not be eligible to become a Director or be re-elected.

But, any act done in good faith by a Director, whose office is vacated as aforesaid, shall be valid unless prior to the doing of such act, written notice shall have been served upon the Secretary and communicated to the other members of the Board or an entry shall have been made in the Minute Book of the Board stating that such Director has ceased to be a member of the Board.

50. REMOVAL OF BOARD MEMBERS. Any member or members of the Board of Directors may be removed from office by a two-thirds majority vote of the Directors present and voting at a Special Board Meeting of which 48 hours notice has been given, or by a two-thirds vote of the members present and voting at a Special General Meeting of the Society.

51. ACTS DEEMED VALID. All acts done by any meeting of the Board or by any Sub-Committee of the Board of [Directors, or by any person in his capacity as a member of the Board, shall, notwithstanding that it shall afterwards be discovered that there was some defect in the appointment of any member of the Board or any Sub-Committee thereof or person acting as aforesaid, or that they or any of them were disqualified, be as valid as if every such person had been duly appointed and qualified.

52.CONFLICT OF INTEREST. A member of the Board who is anyway directly, or indirectly, interested in a contract, or proposed contract, with the society, other than a contract made by members in the ordinary course of trading with the Society shall declare the nature of his interest at a meeting of the Board as soon as the matter comes forward for discussion. A member of the Board shall not vote in respect of any contract, proposed contract, or agreement, in which he is so interested, and if he shall vote, his vote shall not be counted.

53.MEETINGS. The Board shall meet together for the dispatch of business at least four (4) times per annum, and may adjourn, and otherwise regulate its meetings and proceedings, as it thinks fit, and may determine the quorum necessary for the transaction of business. Until otherwise determined by the Board, four Directors shall be a quorum.

Special meetings may be held at any time on the request of the Chairman or Secretary, or the Secretary at the request of one-third of the members of the Board for the time being giving 24 hours notice in writing to each member. In the case of a meeting convened by the Secretary at the request of one-third of the members of the Board for the time being, such meeting shall be convened for a date not later than seven (7) clear days from the date on which the Secretary first received such request, and if the Secretary shall fail the members may proceed to convene the meeting themselves. A Special Board Meeting shall transact no business other than that appearing on the Agenda paper which shall accompany the notice convening the meeting. An Ordinary Board Meeting may, at the conclusion of its ordinary business be made special for any purpose of which notice has been duly given.

54.DUTIES AND REMUNERATION OF BOARD MEMBERS. Board members shall attend meetings as often as effective management of the Society requires it. They shall give careful consideration to, and make decisions based on the information at their disposal in the best interests of the Society. They shall be responsible to the shareholders to ensure that all management information used in making decisions is adequate and correct. They shall be compensated for their services so that they shall not be at any disadvantage by their efforts for the Society. The amount of such compensation shall be decided by the Society's Auditor, from time to time.

55.MINUTES The Board shall cause Minutes to be duly entered in books provided for the purpose, and any such Minutes of any meeting of the Board signed by the Chairman of such meeting or by the Chairman of a subsequent meeting, shall be receivable as prima facie evidence of the matters stated in such Minutes.

56.CHAIRMAN. The Board shall elect one of their body as their Chairman, The person so appointed shall also be Chairman of the Society. He shall have such functions and powers as may be agreed upon by the Board.

He shall hold office for one year and shall be removable by the vote of two-thirds of the members present and voting at a Special Board Meeting, of which notice shall have been duly given in accordance with these Rules.

He shall be eligible for re-election by the Board for a maximum of four (4) consecutive one-year terms after which he shall not become eligible again until after the expiry of one (1) year.

He shall be entitled to vote at all meetings of the Board and shall have a casting vote whenever there is an equality of votes an any question.

The Board shall also appoint one of their body as a Vice-Chairman. Any person, so appointed, shall take the place of the Chairman in the latter's absence. He shall retire annually but shall be eligible for re-election. He shall hold office in accordance with the same provisions as those which apply to the Chairman but shall not be bound by the conditions applying to paragraph 3 hereof.

In the absence of both the Chairman and the Vice-Chairman from any meetings of the Board, a member of the Board shall be elected as Chairman for such meeting by the Board. Such member while presiding at the meeting shall enjoy all such powers or privileges as the Chairman would have enjoyed if he were presiding the meeting.

57.The Chairman and Vice-Chairman shall be appointed at the first meeting of the Board after the annual elections to the Board have been completed.

XI. - THE MANAGER, EMPLOYEES, SECRETARYAND OFFICIALS

58.The Board may appoint and remove a General Manager, who shall have such functions, powers, and remuneration as they shall from time to time decide, provided, however, that the Manager may only be dismissed by the vote of two-thirds of the members present and voting at a Special Board Meeting, of which notice shall have been duly given in accordance with Rule 53.

The Board may give authority to a General Manager, under such conditions as they may determine, to appoint and remove subordinate employees of the Society and fix their remuneration provided that, if he exercises this authority, he shall subsequently report any such appointments and removals to the Board.

The Board shall appoint and may remove all employees of the Society and fix their remuneration.

59. SECRETARY The Board may appoint and remove a Secretary who may also be a member of the Boards, subject to Rule 49 or may make such other provisions as they deem expedient for the discharge of secretarial work, and arrange the terms of remuneration, if any, therefor. The Secretary shall have such functions and powers and remuneration as the Board shall from time to time decide. The procedure in the case of the dismissal of the Secretary

shall be identical with that laid down by Rule 58 for the dismissal of a Manager. The offices of Manager and Secretary may be held by the same person.

60.SECURITY All officials and employees of the Society having charge of money or property belonging to the Society shall provide such security as the Board deem adequate, and in such form as they may approve.

61.ACCOUNTS. The Board shall have power to open and to operate as they may determine accounts with any banking companies of which they approve.

XII. - AFFILIATION AND LEVIES

62. I.A.O.S. The Society shall contribute annually to the I.A.0.S. an affiliation fee in accordance with the Rules of the I.A.0.S. The Board may make such arrangements as appear to them to be desirable for the collection of these amounts.

63. LEVIES The Board may introduce levies or such other methods of deducting -monies from members, and/or fish suppliers provided always that the terms and conditions of such levies or deductions shall have been approved by the Society in General Meetings.

The Board may, however, at all times deduct whatever monies or levies the Society is obliged to pay by reason of its membership of any Organisation whose Rules or Articles of Association oblige the Society to pay such moneys or levies, and the Board may make such arrangements as appear to them to be desirable for the collection of these amounts.

XIII. - STATUTORY OBLIGATIONS ANDMISCELLANEOUS

64.SEAL. The Society shall have its name engraved in legibile characters upon a seal which shall be in the custody of the Secretary. It shall only be used under the authority of a resolution of the Board, and shall be attested by the signatures of two members of the Board and the Secretary.

65.NAME The registered name of the Society shall be painted or affixed and dept painted or affixed on the outside of every office or place in which the business of the Society is carried on, in a conspicuous position and in letters easily legible, and its registered name shall be engraved in legible characters on its seal, and such name shall be legibly stated in all notices, advertisements, correspondence and other official publications of the Society, and in all bills of exchange, promissory notes, endorsements, cheques, and orders for money or goods purporting to be signed by or on behalf of the Society, and in all bills of parcels, invoices, receipts and letters of credit of the Society.

66. CHANGE OF NAMES ETC. The Society may, in accordance with the provisions of the Acts:-

(a) Change its name.

(b) Amalgamate with or transfer its engagements to another Society or Company or accept a similar transfer.

(c) Convert itself into a Company.

(d) Voluntarily dissolve by resolution to wind up under the Companies Acts, or

(e) Wind up by an instrument of dissolution signed by three-fourths of the members for the time being.

67. AUDIT AND ACCOUNTS. The accounts of the Society, together with a balance sheet showing the receipts, expenditure, funds and effects of the Society, and all necessary vouchers, shall be submitted once every year for audit to one of the Public Auditors appointed by the Minister for Industry and Commerce for the purpose of the Acts, who shall be selected in accordance with Rule 34. The Auditor shall have access to all books, deeds, documents, vouchers and accounts of the Society, and shall present statements of accounts in such form and for such periods as are prescribed by the Acts. He shall duly fulfil the obligations imposed and enjoy the rights conferred on Public Auditors by the Acts and regulations, including the certifying of the triennial return of shareholders required by Section 4 of the Industrial and Provident Societies (Amendment) Act of 1913.

The Auditor shall not hold any other office in connection with the Society. He shall be appointed annually by the Annual General Meeting and shall be eligible for re-appointment in accordance with Rule 34.

68. ANNUAL RETURN. The Board shall, before the 31st day of March in each year, forward to the Registrar the form of Annual Return covering the period and in the manner prescribed by the Acts and the Regulations, accompanied by a copy of every Auditor's report and balance sheet made during the period included in the return.

69. TRIENNIAL RETURNS OF SHAREHOLDERS. The Board shall, once at least in every three years, make out and send to the registrar, together with the Annual Return for the year, a Special Return, signed by the Auditor, showing the holding of each person in the Society (whether in shares or loans) at the date to which the said Annual Return is made out, provided that where such persons are in the list of members kept by the Society distinguished by numbers it shall be sufficient if they are distinguished in the Special Return by such numbers and in that case it shall not be necessary to specify their names.

70.MEMBERS AND RETURNS. A copy of each Annual return shall be delivered gratuitously on application to every member or person interested in the funds of the Society.

71.BALANCE SHEET. A copy of the last annual balance sheet for the time being, together with the Auditor’s report, shall be kept hung up in a conspicuous place in the Society's Registered Office.

72.RULES A copy of the Society's rules shall be supplied to any person demanding it and paying for it the sum of 5 pence.

73.INSPECTION OF ACCOUNTS BY MEMBERS. Any member or person interested in the funds of the Society may inspect his own account and the register of members during business hours at the Society's Registered Office.

74.INSPECTION BY REGISTRAR. Any ten members may, in accordance with Section 18 of the Act, apply to the Registrar to appoint an accountant to inspect the books of the Society and to report thereon.

75.APPLICATION TO REGISTRAR. Members may make application to the Registrar in accordance with the Acts:-

(a) To appoint one or more inspectors to examine into and report upon the affairs of the Society or

(b) to call a Special Meeting of the Society.

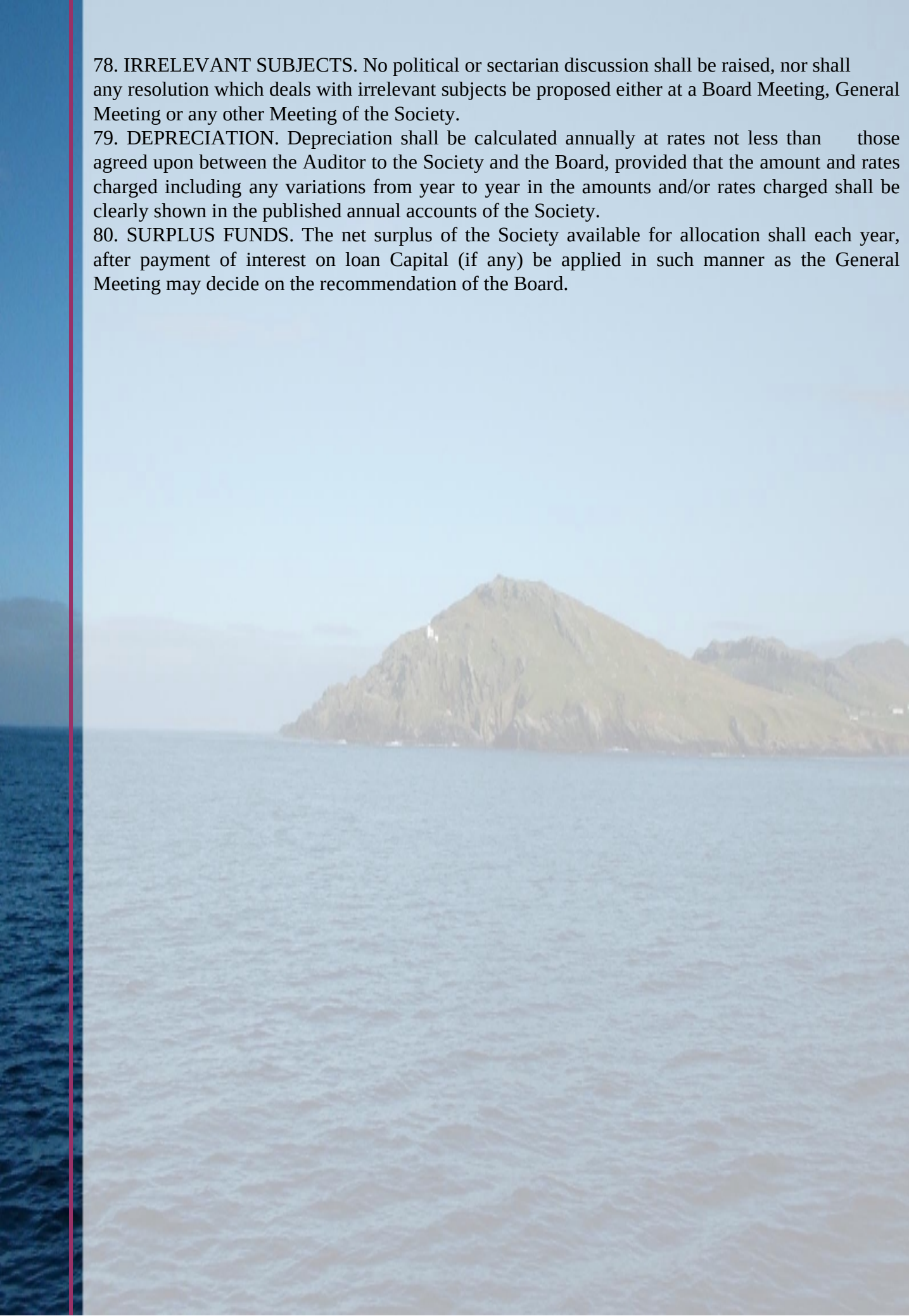
76.ALTERATION OF RULES. Rules may, subject to the written consent of the I.A.0.S. as laid down in the prefatory notice to these rules, be made, altered, rescinded, or amended by a majority of two-thirds of the members present and voting, at a Special General Meeting called for the purpose. Every alteration or amendment shall be duly registered and on registration issued with the rules of the Society of the time being. No new rule shall be made, nor shall any of the rules be repealed or altered, until the consent of the I.A.0.S. has been obtained, in writing, nor unless the text of the proposed new rules or amendments shall have been circulated with the notice convening the meeting.

77.DISPUTES AND ARBITRATIONS. Every dispute between the Society and a member of the Society or any person aggrieved who has for not more than six months ceased to be a member of the Society or any person claiming through such member or person aggrieved or claiming under the rules of the Society, and the Society or an officer thereof, shall, unless amicably adjusted, be submitted for arbitration to the Committee of theI.A.0.S. who may either arbitrate the case themselves, or appoint some person or persons to arbitrate on their behalf. The costs of arbitration shall be borne as the Committee of the I.A.0.S. directs, and such sum as said Committee decides shall be deposited prior to the hearing of the case. The award so made on every such arbitration shall be final and binding on all parties without appeal and shall not be removable into any court of law or restrainable by injunction and application for the enforcement thereof may be made to the Circuit Court. No dispute shall be referred to the Registrar.

78. IRRELEVANT SUBJECTS. No political or sectarian discussion shall be raised, nor shall any resolution which deals with irrelevant subjects be proposed either at a Board Meeting, General Meeting or any other Meeting of the Society.

79. DEPRECIATION. Depreciation shall be calculated annually at rates not less than those agreed upon between the Auditor to the Society and the Board, provided that the amount and rates charged including any variations from year to year in the amounts and/or rates charged shall be clearly shown in the published annual accounts of the Society.

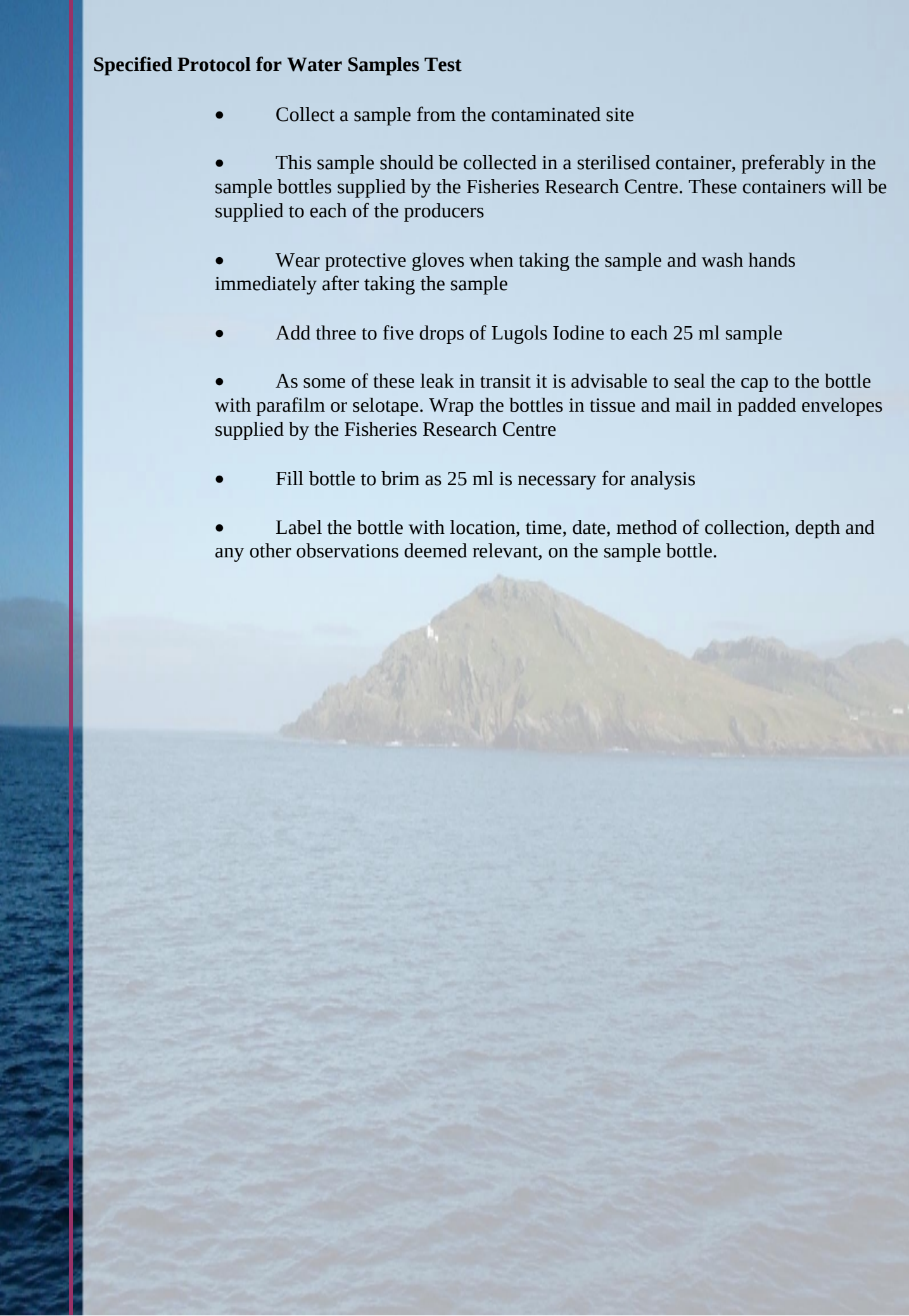
80. SURPLUS FUNDS. The net surplus of the Society available for allocation shall each year, after payment of interest on loan Capital (if any) be applied in such manner as the General Meeting may decide on the recommendation of the Board.



Appendix 3.8
SAMPLING PROTOCOL FOR POLLUTION INCIDENTS

Specified Protocol for Water Samples Test

- Collect a sample from the contaminated site
- This sample should be collected in a sterilised container, preferably in the sample bottles supplied by the Fisheries Research Centre. These containers will be supplied to each of the producers
- Wear protective gloves when taking the sample and wash hands immediately after taking the sample
- Add three to five drops of Lugols Iodine to each 25 ml sample
- As some of these leak in transit it is advisable to seal the cap to the bottle with parafilm or selotape. Wrap the bottles in tissue and mail in padded envelopes supplied by the Fisheries Research Centre
- Fill bottle to brim as 25 ml is necessary for analysis
- Label the bottle with location, time, date, method of collection, depth and any other observations deemed relevant, on the sample bottle.



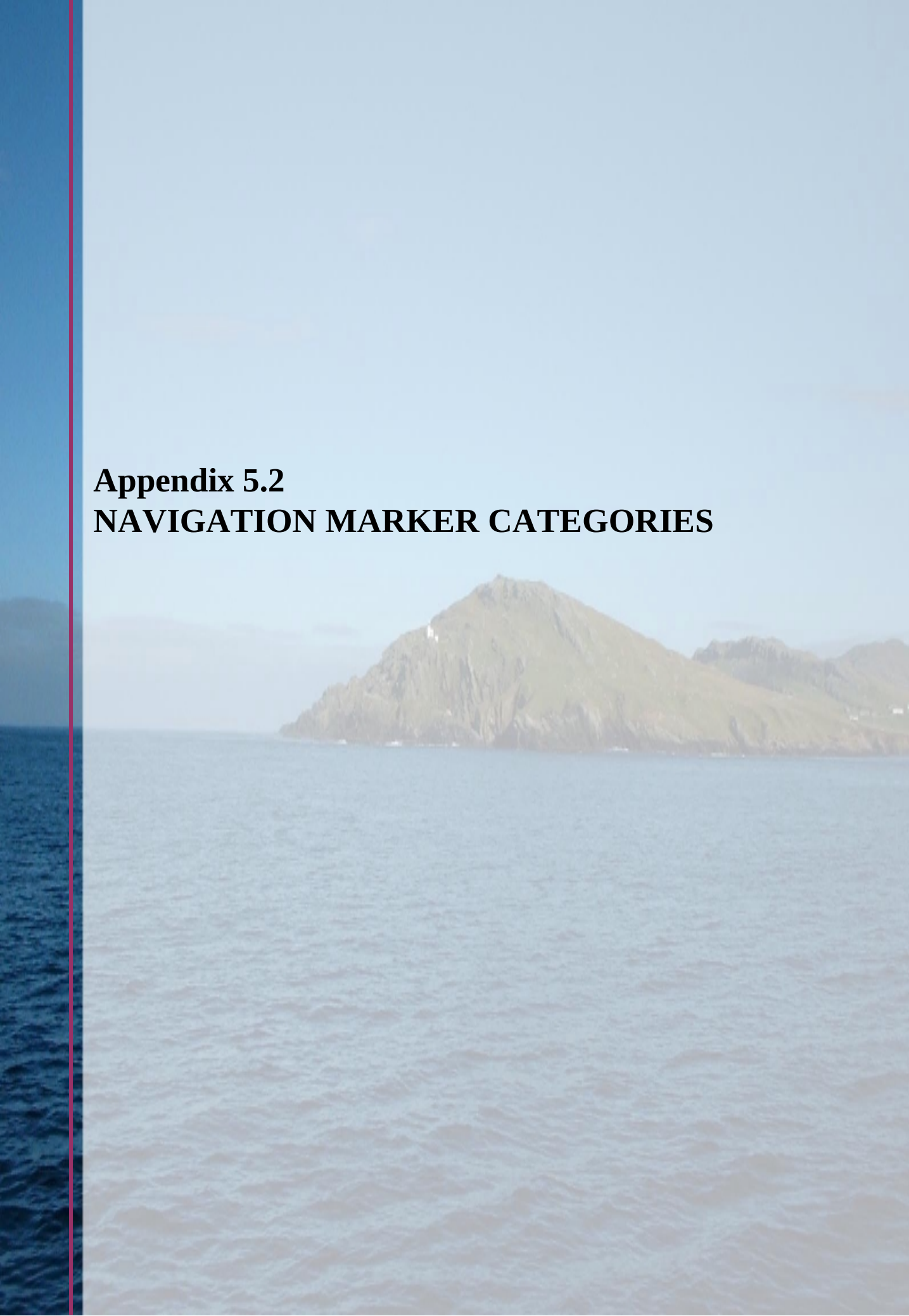
Appendix 5.1
LATITUDE AND LONGITUDE OF NAVIGATION MARKER REQUIREMENTS.

Latitude and Longitude of navigation marker requirements.

Number	Comment	LAT_DMS	LONG_DMS
1	port lat pearch 4m north	N 53 48 05	W 09 33 02
2	port lat	N 53 48 10	W 09 33 20
3	port lat 3m north	N 53 48 11	W 09 33 31
4	port lat	N 53 48 08	W 09 33 51
5	port 10m n lats added later	N 53 47 59	W 09 34 20
6	port lat	N 53 47 54	W 09 34 35
7	port lat	N 53 47 54	W 09 35 04
8	port lat	N 53 47 53	W 09 35 57
9	port lat 10m sw	N 53 47 58	W 09 36 26
10	30m n port lat	N 53 48 20	W 09 37 27
11	20m n port lat	N 53 48 36	W 09 38 59
12	port latteral	N 53 48 45	W 09 39 31
13	star lat	N 53 48 10	W 09 33 41
14	star lat	N 53 48 05	W 09 33 56
15	star 5m s port 10m nlats	N 53 47 58	W 09 34 20
16	star lat	N 53 47 55	W 09 34 26
17	star lat	N 53 47 53	W 09 34 49
18	star lat	N 53 48 10	W 09 37 02
19	star lat	N 53 48 25	W 09 37 45
20	starbord lateral 15m west	N 53 49 07	W 09 39 48
21	port lat	N 53 48 04	W 09 37 56
22	port lat	N 53 48 03	W 09 38 39
23	port lat	N 53 48 02	W 09 39 09
24	star lat s 40m	N 53 48 01	W 09 38 53
25	port lat	N 53 49 37	W 09 37 20
26	port lat	N 53 49 33	W 09 37 53
27	port lat	N 53 49 38	W 09 38 36
28	star lat	N 53 49 36	W 09 37 37
29	star lat	N 53 49 38	W 09 39 14
30	port lat	N 53 52 57	W 09 36 07
31	port lat	N 53 52 50	W 09 36 31
32	port lat	N 53 52 29	W 09 37 25
33	port lat	N 53 52 17	W 09 38 07
34	port lat	N 53 52 17	W 09 38 25
35	port lal	N 53 51 54	W 09 38 55
36	port lat	N 53 51 53	W 09 38 55
37	port lat	N 53 51 48	W 09 39 08
38	port lateral	N 53 51 45	W 09 39 30
39	star lat	N 53 52 48	W 09 36 06
40	star lat	N 53 52 46	W 09 36 31

45	star lateral	N 53 51 38	W 09 39 10
46	star lateral	N 53 51 34	W 09 39 32
47	port lateral	N 53 52 59	W 09 38 59
48	star lat	N 53 53 05	W 09 38 48
100		N 53 48 16	W 09 37 32
101	foul mark rocks	N 53 49 36	W 09 37 25
102	250 70 10m either side	N 53 50 10	W 09 37 42
103	10m at 70 added later	N 53 50 10	W 09 37 40
104	west 15m	N 53 50 36	W 09 37 25
105	west 15m	N 53 50 46	W 09 37 33
106	rock20m east	N 53 50 58	W 09 37 53
107	rock 10m west	N 53 50 57	W 09 38 01
108	frenchmans rock 10m east	N 53 50 57	W 09 38 05
109	hazard approx area	N 53 50 40	W 09 41 23
110	rocks 10m east	N 53 52 14	W 09 35 58
111	approx 30m east rocks	N 53 52 17	W 09 35 57
113	rocks	N 53 52 02	W 09 39 30
114	rock 30m east approx	N 53 52 08	W 09 39 41
115	rocks	N 53 52 03	W 09 40 04
116	rock of inish cannon 20m east	N 53 52 11	W 09 40 15
117	rocks	N 53 52 00	W 09 41 00
118		N 53 52 06	W 09 42 28
119	roy pier entrance	N 53 53 00	W 09 38 59
120	roy pier entrance	N 53 53 02	W 09 38 55
121	roy pier entrance	N 53 53 09	W 09 38 53
200	west cardinal	N 53 48 12	W 09 42 46
201	south cardinal	N 53 48 13	W 09 42 11
202	north cardinal	N 53 48 35	W 09 42 11
203	south card	N 53 51 59	W 09 43 47
204	west cardinal	N 53 52 02	W 09 43 58
205	north card	N 53 52 12	W 09 43 53

Appendix 5.2
NAVIGATION MARKER CATEGORIES



The navigation markers fall into the following categories: -

1. Westport Harbour primary channel approach markers numbered 1 - 20
2. Westport Harbour secondary channel approach markers numbered 21 - 24
3. Rosmoney Pier approach markers numbered 25 - 29
4. Newport Harbour primary channel approach markers numbered 30 - 46
5. Newport Harbour primary inner channel approach markers unnumbered but represented by a blue line from Rosmore point eastwards to Newport. The number of port and starboard markers that will be required is estimated at a maximum of 10.
6. Roigh pier approach numbered 47 - 48.
7. Bifurcation mark numbered 100 indicating a crossing point to secondary Westport channel and 29 indicating a route to Rosmoney from the main Wesport channel.
8. Pier approach hazard Rosmoney numbered 101.
9. Westport Bay to Newport Bay channel numbered 102 - 103 and marked by a blue line extending northwards. The total number of markers required for this channel is estimated at a maximum of six.
10. Single foul or shallow ground hazard markers numbered 104 - 121.
11. Cardinal marks indicating safe passage routes around foul ground numbered 200 - 205.
12. Pier head marks.
13. Additional navigation lights to aquaculture sites.

Marker types and locations.

Westport Harbour main channel.

1 - 12 Port lateral markers.

Floating red buoys with can shaped indicators, 1 metre high with red lighting. Bottom tackle suited for sand or mud.

13 - 20 Starboard lateral markers.

Floating green buoys with cone shaped indicators, 1 metre high with green lighting. Bottom tackle suited for sand or mud.

Westport Harbour secondary channel.

21 - 23 Port lateral markers. (Note no.23 should be further west, just south of carrickatraha)

Floating red buoys with can shaped indicators, 1 metre high with red lighting. Bottom tackle suited for sand or mud.

24. Starboard lateral marker.

Floating green buoys with cone shaped indicators, 1 metre high with green lighting. Bottom tackle suited for sand or mud.

100. Bifurcation mark.

Floating red striped green buoy with cone shaped indicator, 1 metre high with green light. Bottom tackle suited for sand or mud.

Rosmoney Pier approach.

25 - 27 Port lateral markers.

Floating red buoys with can shaped indicators, 1 metre high with red lighting. Bottom tackle suited for sand or mud.

28 Starboard lateral marker.

Floating green buoy with cone shaped indicator, 1 metre high with green lighting. Bottom tackle suited for sand or mud.

29. Bifurcation mark.

Floating red striped green buoy with cone shaped indicator, 1 metre high with green light. Bottom tackle suited for sand or mud.

101. Isolated danger marker.

Floating black and red pillar buoy with two black spherical indicators, 1 metre high with white lighting. Bottom tackle suited for rock or boulder.

Newport Harbour main channel
30 - 38 Port lateral markers.
Floating red buoys with can shaped indicators, 1 metre high with red lighting. Bottom tackle suited for sand or mud.
39 - 46 Starboard lateral markers.
Floating green buoys with cone shaped indicators, 1 metre high with green lighting. Bottom tackle suited for sand or mud.
Newport Harbour main inner channel.
Five Port lateral markers.
Floating red buoys with can shaped indicators, 1 metre high with red lighting. Bottom tackle suited for sand or mud.
Five Starboard lateral markers.
Floating green buoys with cone shaped indicators, 1 metre high with green lighting. Bottom tackle suited for sand or mud.
Roigh Pier approach.
47 Port lateral marker.
Floating red buoy with can shaped indicator, 1 metre high with red lighting. Bottom tackle suited for sand or mud.
48 Starboard lateral marker.
Floating green buoy with cone shaped indicator, 1 metre high with green lighting. Bottom tackle suited for sand or mud.
119 - 121 Shallow ground hazard markers. (120 should suffice)
Floating black and red pillar buoy with two black spherical indicators, 1 metre high with white lighting. Bottom tackle suited for sand or mud.
Newport Bay to Westport Bay Channel.
102 &103 mark the southern entrance and the blue line northwards indicates the route of the channel. It will require: -
Three Port lateral markers.
Floating red buoys with can shaped indicators, 1 metre high with red lighting. Bottom tackle suited for sand and cobble.
Three Starboard lateral markers.
Floating green buoys with cone shaped indicators, 1 metre high with green lighting. Bottom tackle suited for sand and cobble.
Foul and Shallow ground.
104 - 118 Single foul hazard markers.
Floating black and red pillar buoy with two black spherical indicators, 1 metre high with white lighting. Bottom tackle suited for rock or boulder.

200 - 202 Cardinal markers.
Dillisk Rocks
Floating yellow and black pillar buoys with NSW, markings, 2 metres high with white lighting. Bottom tackle suited for sand or mud.

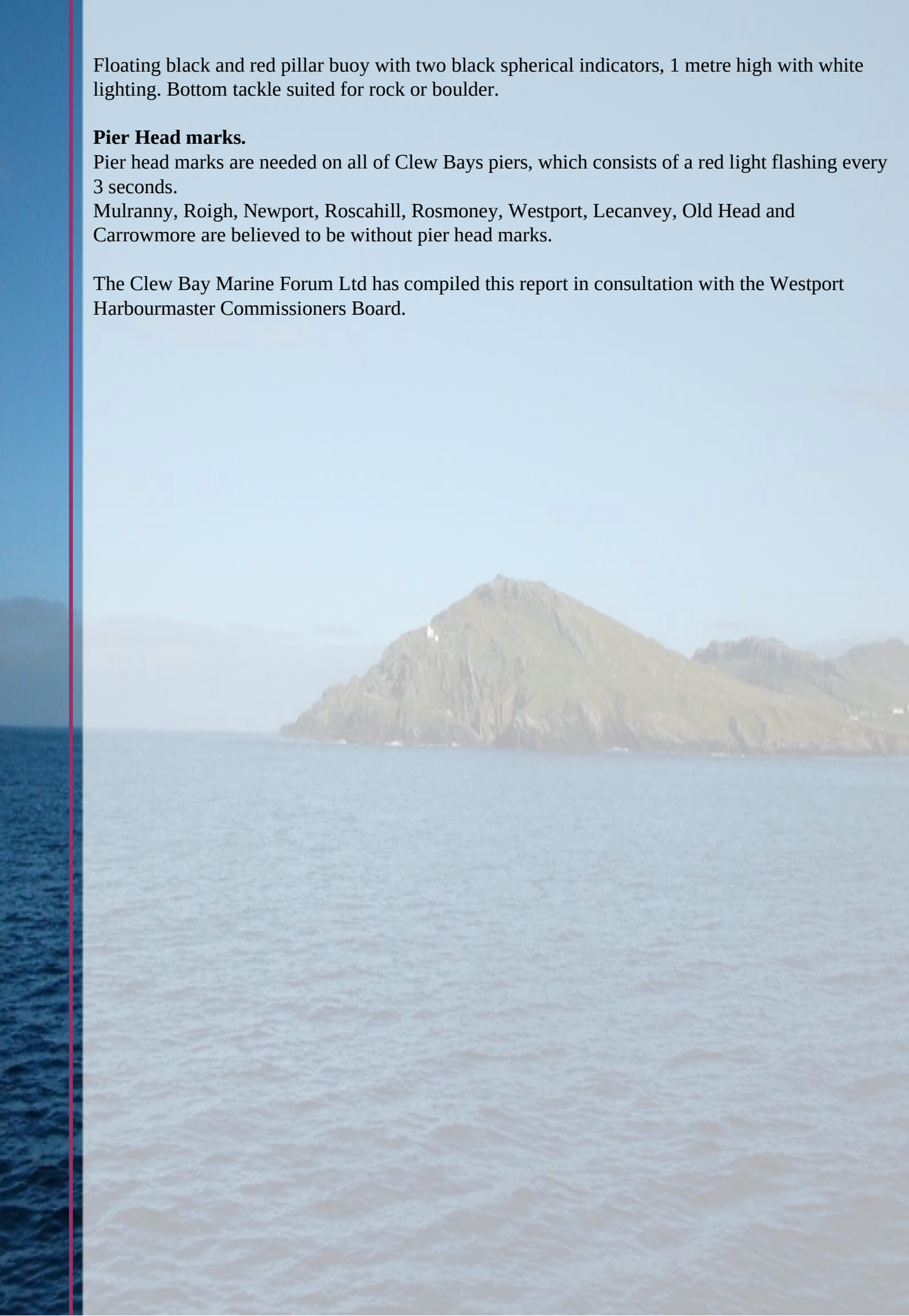
203 - 205 Cardinal markers.
White Mare Rock
Floating yellow and black pillar buoys with NSW, markings, 2 metres high with white lighting. Bottom tackle suited for sand or mud.

Additional markers
Single foul hazard markers.
Required for Carrickahaash Nth, Carrickahaash Sth, and Carrickwee (2 areas).

Floating black and red pillar buoy with two black spherical indicators, 1 metre high with white lighting. Bottom tackle suited for rock or boulder.

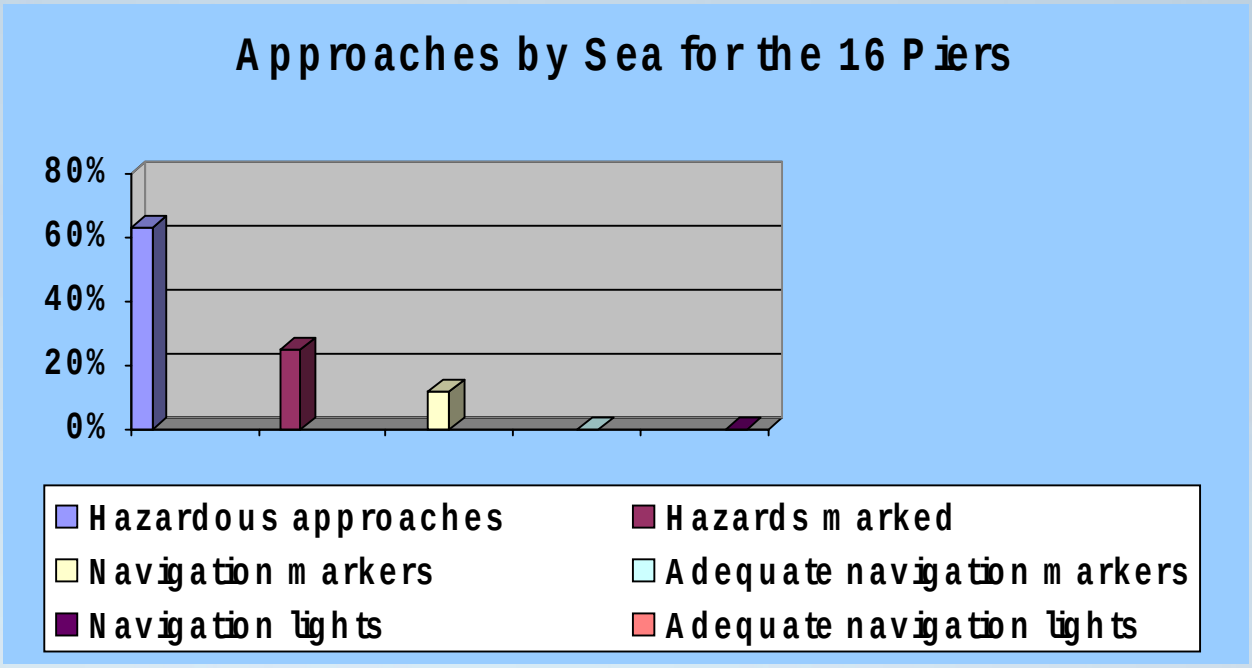
Pier Head marks.
Pier head marks are needed on all of Clew Bays piers, which consists of a red light flashing every 3 seconds.
Mulranny, Roigh, Newport, Roscahill, Rosmoney, Westport, Lecanvey, Old Head and Carrowmore are believed to be without pier head marks.

The Clew Bay Marine Forum Ltd has compiled this report in consultation with the Westport Harbourmaster Commissioners Board.



Appendix 5.3
PIER SURVEY ANALYSIS

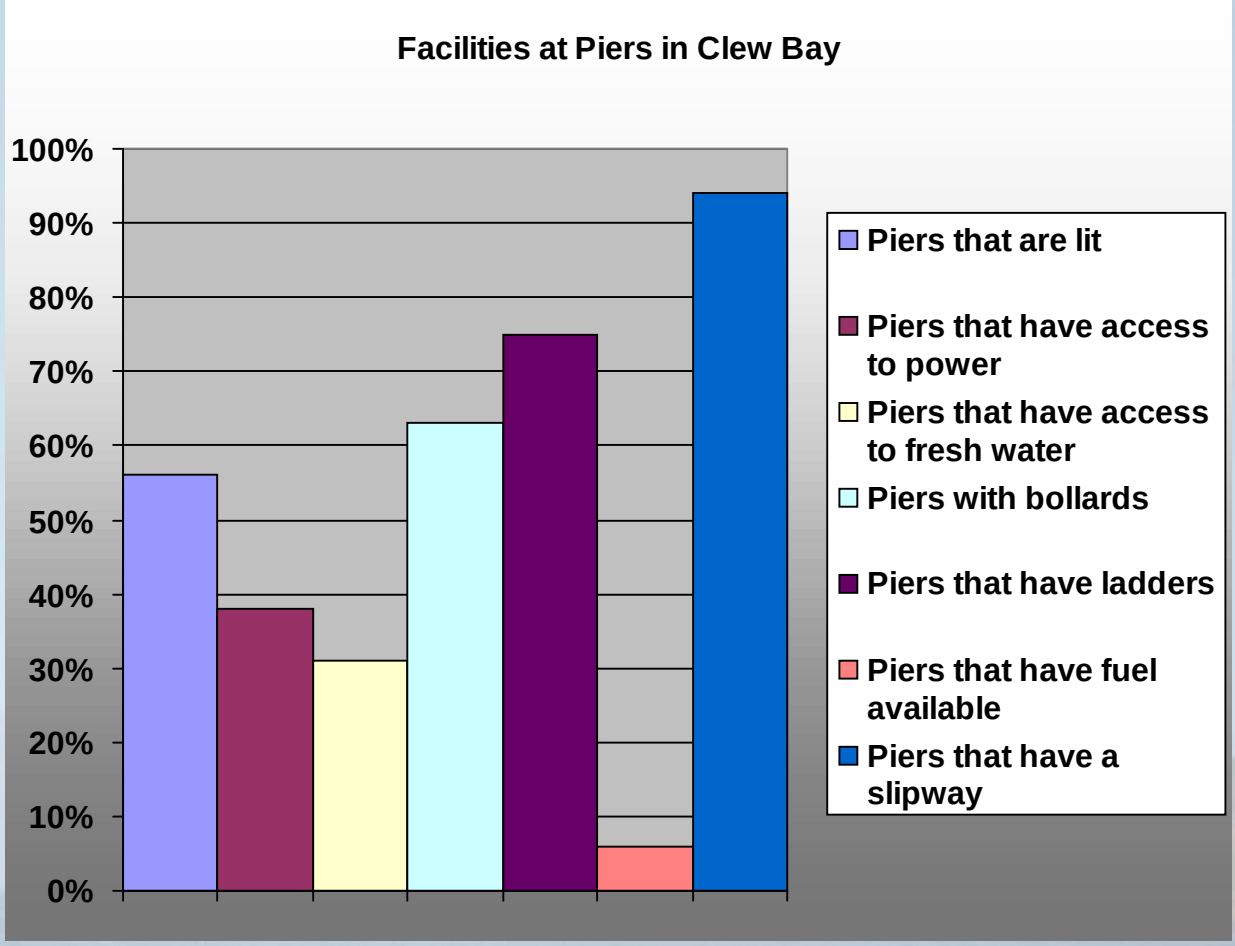
Figure 1



- 63% of the piers surveyed have hazards in the approach to the pier.
- The majority of piers have hazardous approaches, at only 4 of the 16 piers (25%) are the hazards marked.

Only 12% of the piers have navigation markers. Significantly, none of the piers surveyed are considered to have adequate navigation markers. None have adequate navigation lights.

Figure 2



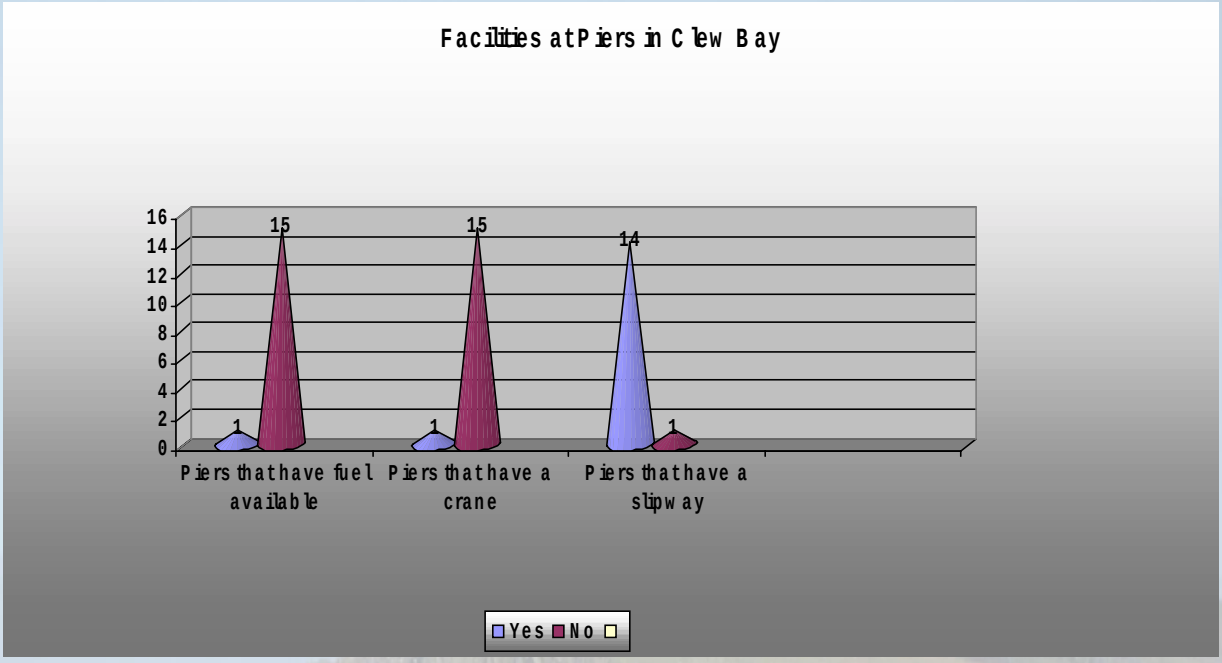
- The survey revealed that 56% of the piers are lit. Only 38% have access to power with 31% having access to fresh water.

- 10 of the 16 piers (63%) have bollards, while 75% have ladders.

- Most of the piers lack the availability of fuel. Fuel is only available at 1 pier.

- 94% of the piers have a slip-way. The only Pier that does not have a slip-way is Carrowmore.

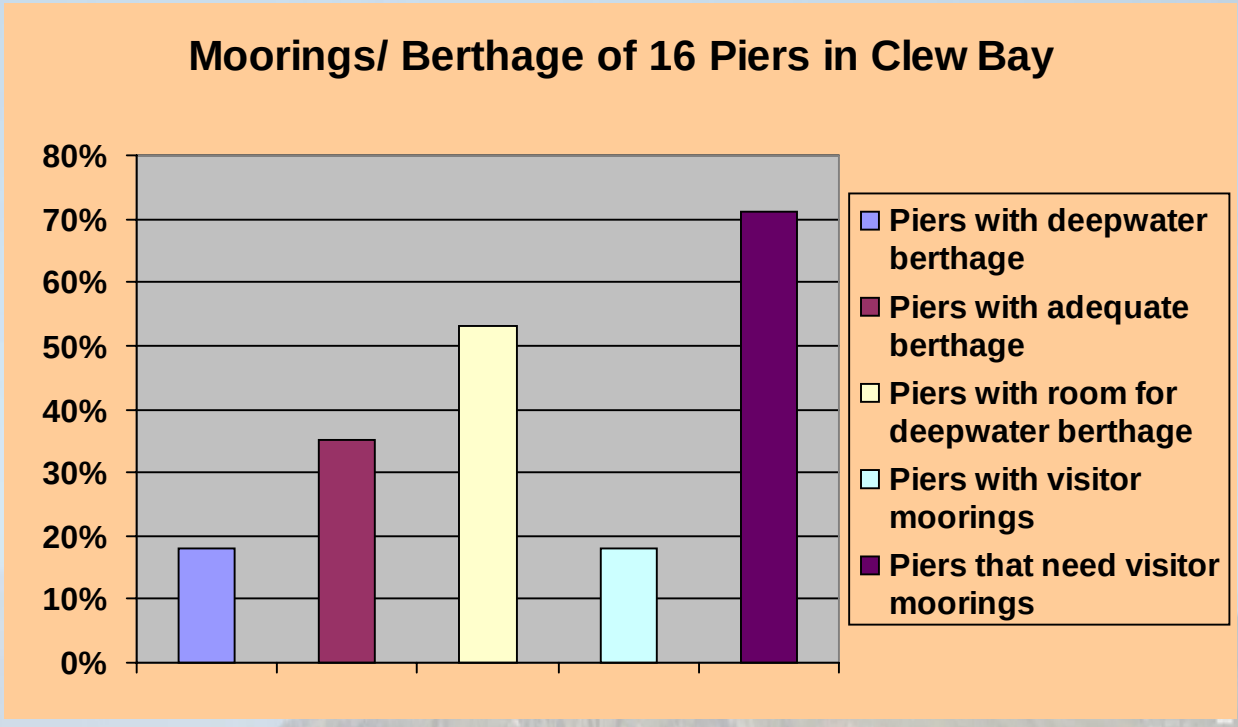
Figure 3



➢One of the piers has fuel available.

The survey also revealed that only 1 of the piers has a crane.

Figure 4

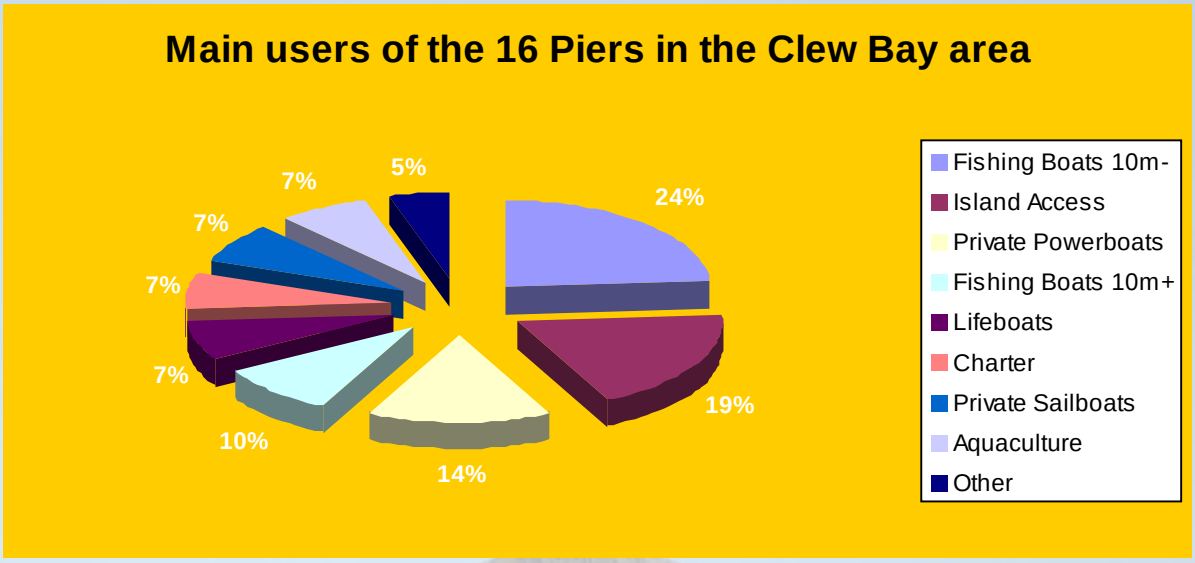


➢19% of the piers have deepwater berthage, while only 31% of piers are considered to have adequate berthage.

➢ 50% of the piers have room for deepwater moorings.

➢Only a small percentage (19%) have visitor moorings, while the vast majority have confirmed the need for visitor moorings.

Figure 5



The main pier users were identified as follows:

- Small fishing boats were identified as the greatest pier users followed by Island access boats which is indicative of the numerous Islands in and around the Clew Bay area.

- Evidence from the survey also shows a frequent use by private powerboats. These users came within the top 3 pier users.

- The Charter boats are also main users, which reflects the important impact of tourism in the area.

- Aquaculture, lifeboats and private sailboats are also important users of the pier areas.

Appendix 6.1
CONSULTEE LIST

Northwest Regional Fisheries Board
Western Regional Fisheries Board
DoMNR
EPA
Mayo County Council
County Development Board
Westport Tourism Group
Mayo Environmental Group
Westport Urban District Council
Mayo Naturally
South West Mayo
Development Ltd.
Western Regional Tourism Organisation
Duchas
Udaras na Gaeltachta
Commissioners of Irish Lights
Clew Bay Potfishermen's Assoc
Westport Harbourmaster
Westport Harbour Action Group
Westport Chamber of Commerce
Westport Harbour Business Group
Westport RNLI
Seatec Maritime Training (RTE)
Newport and District Development Co Ltd
IFA Island Farmers
Clew Bay Marine Forum Ltd.
Clew Bay Protection Agency
Clew Bay Marine Services
Chartered Skippers
Newport Angling Club
Westport Angling Club
Westport SAC
Clew Bay Ladies SAC
Newport SAC
Allergan SAC
Mulranny SAC
Glenans Sailing School
Mayo Sailing Club
Diving/Adventure Centre
Murrisk Development
Louisberg Development
Mulranny Development
Local Senators, TD'S & Politicians
An Taisce
Glenisland Co-op.
Newport House Fishery.

Belclare Fishery
West Mayo Fishermans Co-op.
Cliara Development Company Ltd.
Dolphin Divers
Ireland West Tourism
Westport Clothing Ltd.
Louisburg Traders Association
All Island Residents
ISGA
Comhairle Fo Thuinn

Chapter 11.

ABBREVIATIONS

ASP	**Amnesic Shellfish Poisoning**
AZP	**Azaspiracid**
BIM	**Bord Iascaigh Mhara**
CBMF	**Clew Bay Marine Forum Ltd.**
CBOC	**Clew Bay Oyster Co-operative Society Ltd.**
CBPF	**Clew Bay Potfishermen's Association**
CLAMS	**Co-ordinated Local Aquaculture Management System**
DSP	**Diarrhetic Shellfish Poisoning**
EIS	**Environmental Impact Statement**
EPA	**Environmental Protection Agency**
MI	**Marine Institute**
MCC	**Mayo County Council**
NHA	**Natural Heritage Area**
PSP	**Paralytic Shellfish Poisoning**
SAC	**Special Area of Conservation**
SPA	**Special Protection Area**
TBT	**Tri-butyl-tin**


Marine Institute
Foras na Mara


BIM
Bord Iascaigh Mhara
Irish Sea Fisheries Board


Department of the Marine
and Natural Resources


NDP
NATIONAL DEVELOPMENT PLAN