THE CROSS-BORDER AQUACULTURE INITIATIVE TEAM (CBAIT)

PROGRESS REPORT
AUGUST 2008
“The Aquaculture Initiative is dedicated to providing a range of support services for the sustainable development of the aquaculture sector, increasing volume, value and employment in the six counties of Northern Ireland and the six border counties of the Republic of Ireland.”
FOREWORD

I hope that this report will showcase the impressive range of activities which are now being carried out by the Aquaculture Initiative EEIG. Since its inception in 1998 the Initiative has evolved from the concept stage to where it is today, an essential aquaculture development organisation delivering direct benefits to the aquaculture sector in the cross-border region.

With the benefit of hindsight, it gives me great satisfaction to see how far, we as a sector and the Aquaculture Initiative as an organisation, have travelled. New aquaculture species are now being produced in the region, the CLAMS process has been rolled out throughout the Peace Region, to mention just a few of the important achievements the Initiative has helped to bring about.

Through the work of the team, new and existing aquaculture producers are receiving valuable support, which helps them to be more competitive and encourages vital investment into the sector.

This report also sets out to sign-post the key areas that remain to be worked on for vital competitiveness to be maintained and for the sector to rise to the challenges of the future. By utilising the natural resources available and through implementing Quality Assurance Schemes it will be possible to provide pure safe and traceable seafood products which will command a premium price both at home and abroad.

As Chairman I am proud to say that the Aquaculture Initiative operates throughout every county of its remit area, engendering progress on both sides of the border and across every aspect of aquaculture: freshwater and marine; shellfish and finfish; on-growers and hatcheries. The Initiative responds to the whole spectrum of issues critical to our local aquaculture businesses. The Initiative’s work on the technical, financial, environmental and legislative topics of the day, and its commitment to a business-friendly approach will always be the core values of the unique Cross-Border Aquaculture Initiative Team.

DONAL MAGUIRE
Chairman, Aquaculture Initiative
Manager Aquaculture Division BIM

TEAM LEADERS REPORT

Having been Team leader with the Cross-border Aquaculture Initiative EEIG since its inception and seeing the organisations progress over the years, I am delighted to present the following progress report on behalf of the Team Members. Notable progress has been made over the last number of years at the Aquaculture Initiative and our focus will remain on assisting the industry where ever possible.

The regional officers based outside the main Dundalk office are now based in Lisburn, Co. Antrim and Killybegs, Co. Donegal. Funding since the groupings inception has been primarily through Peace Initiatives and has included Peace I, Peace II, Peace II Extension as well as slippage funds arising from Peace II. Notable in the Extension period was the contribution of exchequer funds from both jurisdictions to provide match funding and the establishment of service contracts with BIM to carry out specific work within the working brief of the grouping.

The Resource Development Section has continued to assist existing producers expand their business and develop quality-led products as well as working on the expansion of new markets. Developing new operations is a key objective of the section especially in areas where, until now, aquaculture activity has been small or non-existent. This work has particularly focused on introducing new species including Char, Perch and Freshwater Crayfish.

Seven CLAMS Groups have been established in the major producing bays and Loughs and have demonstrated the potential for producers to work together in a cohesive manner.

The Environment and Quality section has focused efforts on educating industry and the public alike on the benefits of sustainable aquaculture. The implementation of ECOPACT and the various Quality Assurance Schemes is also well under way. The section has also focused on maintaining communication between the industry and regulators to encourage best practice in aquaculture production and policy formation and implementation.

The Team’s overall performance has been heightened by the constant communication with other relevant agencies and the links being built, will benefit the industry in the future. This report highlights some of the many and varied activities and achievements of the team in the recent past. It is my hope that “The Cross-border Aquaculture Initiative EEIG” will continue to assist the industry in the remit area, adding value, volume and employment into the future.

MICHAEL F. MURPHY
Team Leader
AQUACULTURE INITIATIVE STRUCTURE

The Cross-Border Aquaculture Initiative (CBAIT) was formed in 1998. It is a European Economic Interest Grouping, established as a joint venture between Northern Ireland and the Republic of Ireland. An Bord Iascaigh Mhara (BIM) and Northern Ireland Seafood (NIS) act as the main shareholders with additional board representatives from both DAFF (formally DCMNR) and DARD (the two departments with responsibility for the implementation of government policy as it relates to aquaculture) and the Loughs Agency. The Initiative commenced operations in 1999 and is headquartered in Dundalk, Co. Louth with sub offices in Lisburn, Co. Antrim and Killybegs, Co. Donegal.

The Aquaculture Initiative operates in the six border counties of the Republic of Ireland and Northern Ireland. The joint venture was originally established out of the Peace and Reconciliation Programme (http://www.seupb.org). It is uniquely positioned to provide a range of support services for the sustainable development of the aquaculture industry in the cross border area.

Aquaculture Initiative Structure

The team advise the aquaculture industry on financial, technical and strategic issues, in order to provide effective support to new and existing aquaculture ventures.

The specific objectives of the Aquaculture Initiative are:

- To assist the sustainable growth of the industry taking into account issues such as environmental accreditation, Coastal Zone Management and Quality Assurance Schemes.
- To significantly increase the output and growth of both existing and new aquaculture businesses in the remit area.
- To liaise between funding organisations and fish farming producers in order to secure financial support for expansion within the aquaculture sector.
- To promote and encourage the highest standards of farm husbandry, production and quality.
- To promote investment in aquaculture from the private sector.
- To encourage economic and technical co-operation within the aquaculture sector.
- To assist the industry and its governing bodies to allow rapid and effective processing of site licenses and applications.

The Aquaculture Initiative has received funding primarily from the Peace and Reconciliation funds with some match funding received from DAFF and DARD. A key component of this funding has been the Initiatives ability to work on a cross-border basis delivering equal levels of service across community, geographical and social boundaries. The Initiative will continue to provide assistance to rural and coastal communities often isolated from other employment opportunities.
Aquaculture in the border counties and Northern Ireland is concentrated in rural and peripheral coastal areas, offering jobs where there are few alternative employment opportunities. Working in this industry often compliments employment in inshore fishing, tourism and small-scale agriculture and can make a valuable contribution to social cohesion, as the income at times from other activities are not sufficient to sustain a livelihood. Quite often the indirect benefits are forgotten in terms of additional jobs supporting the industry through upstream and downstream businesses. To date aquaculture has been seen as the poor relation to sea fisheries and although global fisheries production has doubled over the last thirty years, demand for fisheries products outstrips supply. It is predicted that output from world capture fisheries will remain relatively static at 95 million tonnes, while market requirements are expected to reach 180 million tonnes by 2030 (FAO, 2006). Aquaculture production is expected to play a crucial role in forthcoming decades in compensating for stagnant capture fisheries and in meeting increased consumer demand.

Modern aquaculture on the Island of Ireland began its development in the early 1970’s and has become an important contributor to rural economies, generating incomes in many areas where there are little other job opportunities. In 2006, total aquaculture production on the Island of Ireland was 68,523 tonnes, valued in excess of €136 million, supporting 2,275 jobs in coastal and rural areas.

The importance of aquaculture in the remit area of the Aquaculture Initiative is clearly illustrated by production and employment statistics below. In 2006 aquaculture production in the region accounted for 55%, by volume, of total production on the Island of Ireland.

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (t)</th>
<th>Value €</th>
<th>Value £Stg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>29,796</td>
<td>41,774,304</td>
<td>28,512,090</td>
</tr>
<tr>
<td>2004</td>
<td>24,759</td>
<td>32,768,737</td>
<td>22,365,548</td>
</tr>
<tr>
<td>2005</td>
<td>29,969</td>
<td>52,471,809</td>
<td>35,813,428</td>
</tr>
<tr>
<td>2006</td>
<td>26,613</td>
<td>50,912,463</td>
<td>34,749,133</td>
</tr>
</tbody>
</table>

The aquaculture industry in the border counties and Northern Ireland has a mix of businesses, the majority being micro-businesses and small and medium sized enterprises (SME’s). However, the industry in the area does include the largest finfish and scallop producers on the Island along with some of the largest pacific oyster farms and bottom mussel production areas. The species produced include Salmon, Rainbow Trout, Sea Trout, Arctic Charr, Perch, Rope Mussels, Bottom Mussels, Pacific Oysters, Native Oysters, Scallops and Clams.

The majority of the clients of the Aquaculture Initiative are operating in an extremely competitive environment with little influence on price and markets. Many of the companies lack the necessary critical mass and generate sub optimal profit levels both as a consequence of the competitive forces and their own company dynamics.

Some of the major challenges for the Aquaculture sector in the future are:

- Small operators in the sector have weak bargaining power, high distribution costs and supply chain inefficiencies, making it very difficult to access high value markets.
- Overheads are increasing, particularly the cost of insurance and fuel.
- Aquaculture is not perceived to be an attractive career. Therefore recruitment of quality staff is particularly difficult.
- A more positive image of aquaculture needs to be developed.
- The emergence of significant competition from other countries with low cost/large-scale aquaculture industries competing on traditional EU markets.

In addition to these challenges, there is concern within the industry with respect to the burden of regulation on the sector."

"Source: Aquaculture Initiative North West Strategy 2008 (draft)"
The following is a brief overview of some of the activities of the Resource Development section.

These activities translate as supporting the existing long established aquaculture ventures, while also providing the crucial guidance and practical support which is needed by investors looking to aquaculture as a start up business. Currently the initiative provides the only dedicated aquaculture development support in Northern Ireland. This is particularly important as the aquaculture industry in Northern Ireland has historically been underdeveloped when compared to the Republic of Ireland. The section consists of four officers each of whom are based regionally to maximise their effectiveness. Officers are based in Donegal, Louth and Antrim. The work of the Section encompasses many technical aspects such as site evaluation, stock enhancement, technical advice and assistance with grant and licence applications. The Resource Development section assists producers across a wide variety of species and production methods.

The following is a brief overview of some of the activities of the Resource Development section.

**Finfish**

**Salmon**

The majority of salmon within the remit area is currently produced on the Donegal coast, with one farm off the Co. Antrim coastline, and sold mainly through European fresh fish markets. In 2006 the European Council adopted definitive anti-dumping measures in the form of Minimum Import Price (MIP) for farmed salmon originating in Norway. When the MIP was introduced this helped to bring some price stability and price rises for the salmon finfish sector particularly in Co. Donegal, indirectly positively affecting the freshwater smolt sector, which had been experiencing downward price pressures.

This stability facilitated industry investment in improved production and processing facilities, which in turn allowed producers to enter Quality Assurance Schemes and in some cases convert to organic status. Such initiatives resulted in a significant increase in product value. This emphasis on increasing product value now protects the industry following the recent removal of the MIP.

**Arctic Charr**

Arctic Charr is a native freshwater fish which inhabits glacial lakes in the Northern hemisphere. All but extinct in Ireland except for a few unique locations, the species is now farmed commercially at a number of sites in Ireland. Cloonacool Arctic Charr was established in 2005 in Co. Sligo and is now Ireland’s foremost supplier of quality Arctic Charr. The fish are produced in a state of the art recirculation system which is both environmentally friendly and sustainable. The company has received assistance from the Aquaculture Initiative from its inception.

Described by the Irish times as “the bible” of Irish food, the eighth edition of John and Sally McKenna’s Food Guide listed Cloonacool Charr in its publication for 2007/08. The Aquaculture Initiative in conjunction with BIM has also recently technically supported a series of smoking taste trials, which have proven to be very successful at this farm.

During this period the Initiative worked on creating extra capacity of smolt production through the conversion of existing under used trout rearing facilities. A trial has also commenced on a new underwater light system developed by Inishowen engineering in conjunction with BIM, the AI and a local salmon farm. Underwater lights are known to have a good effect on shoaling, growth and delaying sexual maturation. To date this trial has had very encouraging results.

**Trout**

During 2004 the eight largest trout farms on the Island of Ireland formed a cohesive grouping, the Irish Trout Producers Group (ITPG). In producing a business plan for the co-operative venture, the ITPG asked BIM to carry out a detailed survey of the sites in production within the group and also to assist in preparing a farm development plan detailing how each site could improve husbandry practices and measures aimed at farm modernisation. The Initiative assisted in this process in the remit area.

Site visits of all trout farms on the Island of Ireland were carried out in order to gather data on husbandry practices and fish growth. The data generated allowed for a direct and comparative analysis of each table trout production site on the Island of Ireland to be undertaken. This was the first time a full comparable dataset had been generated for all trout farms on the Island and the information gathered allowed further discussion on how to achieve the full production potential of each participant in the ITPG. A site specific report was produced for each farm, along with an overarching report analysing the situation for the group as a whole and making twenty two recommendations. This report was finalised in summer 2006 and individual site reports were distributed to the relevant producers.

Resource Development Officers have also worked closely with the Environment and Quality section on the Northern Ireland Discharge Consent Cost Recovery Scheme and the recent abstraction licensing process (Page 16).
Other Finfish Species

The Aquaculture Initiative staff have assisted numerous projects at planning stage for a number of different promoters on species as diverse as Barramundi and Turbot. A number of these projects such as Kilkeel Flatfish & Aqua Fresh fish are still at the licensing stage and the AI will continue to give assistance where possible. These species have the potential to significantly expand both the range of species but also the value of product and employment within the remit area.

Shellfish

Oysters

Some of the largest oyster farms on the Island of Ireland are located within the remit area of the initiative particularly within Donegal Bay and Carlingford Lough. The markets for oysters are dominated by the bulk French market with some producers accessing the more stable, home and UK markets.

In 2004 the Initiative in co-operation with a number of producers instigated the Cross-Border Shellfish Marketing Project (see page 19) in response to an imbalance in the ex-farm prices received by producers and the prices obtained in the French markets. The project resulted in a 20% increase in the prices received by the producers both within and outside the group in its first year of operation and has continued to strengthen producers position with regard to sales and marketing.

Production has increased significantly over the last four years, however problems such as algal toxins and delays in licensing have restricted growth in the industry. The initiative has been proactive in assisting producers with licensing queries, mapping of sites, developing navigational plans for sites through the CLAMS groups and encouraging a greater focus on the quality of product produced. Following a fact finding trip to Marennes, France, in 2006, the Aquaculture Initiative produced a quality manual for all producers in the remit area. The increasing focus on the quality of the produce has also resulted in an effort to develop a brand identity for oysters from the North West region.

Further areas of work engaged upon by the team include the implementation of Environmental Management Systems, assisting producers in responding to site specific development pressures, the sourcing of grant aid for equipment and the development of Hazard Analysis Critical Control Point (HACCP) plans for purification centres.

Bottom Grown Mussels

The bottom grown mussel sector has been the most successful component of aquaculture on the Island of Ireland over the past six years. Indeed the sector has increased its output volume thirty-seven-fold since its inception in 1974 (C-MAR Workshop, 2007) and the overall trend is one of increasing output and increasing product value. Given that the majority of Bottom Grown mussels produced on the Island of Ireland are exported in bulk to the Netherlands, it is reasonable to assume that the increasing prices observed are as a result of increasing demand from the Netherlands where there has been a sharp shortfall in production in recent years. Bottom grown mussels from the Island of Ireland are needed by Dutch dealers to satisfy the demands of their traditional distribution networks into the large Belgium and German markets.

The Aquaculture Initiative has also been proactive in a European CRAFT project “Percatech” Serving as the SME co-ordinator, the AI were a central lynch pin of the grouping over the two year project. The applied research was of particular benefit in progressing technical issues such as broodstock selection, out of season spawning and nutrition. The research was disseminated at a Percid workshop in Namur, Belgium in January 2008. The workshop was a great success with 130 delegates from 22 countries represented. The AI chaired the opening session and presented their work on perch in the remit area.

An AI staff member was the key author in a new Perch production manual recently published by BIM. The manual focuses on juvenile production of perch and covers areas such as broodstock selection, larval rearing, fish health and economics of juvenile production. The AI’s work in the future will continue on the development of improved growth strains increased survival amongst juvenile producers and assisting the new ongrowing units in the remit area.

Located within the border counties of the Republic of Ireland and Northern Ireland are four of the major bottom mussel production areas: Loughs Swilly, Foyle, Belstar and Carlingford with a small amount of production also taking place in Dundrum Bay and Lorne Lough. In 2006 production from these areas exceeded 25,000t accounting for 75% of the production on the Island of Ireland. Problems faced by the industry in the recent past include the lack of a reliable seed resource, a lack of enforceable legal protection for stocks on aquaculture sites and a number of regulatory issues with site and boat licensing.

Over the last number of years, the Aquaculture Initiative has been working with the bottom mussel industry on a number of site specific and regional issues, the majority of which are highlighted and addressed through the CLAMS process. Work has focused on areas such as seed supply, efficiency of production, the Shellfish Waters Directive and hygiene classification.

Increasingly the sector is coming under scrutiny from an environmental perspective and the Aquaculture Initiative has been proactive in introducing the environmental regulators to the activities of the sector. As a result there is likely to be an increasing demand both form industry and regulators for the implementation of Environmental Management Schemes.

Rope Mussels

Rope Mussels are farmed in Mulroy Bay and Strangford Lough. Mulroy Bay is the most significant aquaculture production site for Scallops on the Island of Ireland, with seed from this area being the foundation for the activities in Strangford. Currently three companies operate in Mulroy Bay producing over 50 tonnes of mature scallop for the market every year. Scallops are harvested in a sustainable manner by divers, a method that ensures there is no disturbance of the seabed. The production cycle from settlement to harvest usually takes between five and six years. All producers in Mulroy are members of the Mulroy Bay CLAMS Group and have been assisted with site specific and bay scale issues.

Scallops

Scallops are farmed in Mulroy Bay and Strangford Lough. Mulroy Bay is the most significant aquaculture production site for Scallops on the Island of Ireland, with seed from this area being the foundation for the activities in Strangford. Currently three companies operate in Mulroy Bay producing over 50 tonnes of mature scallop for the market every year. Scallops are harvested in a sustainable manner by divers, a method that ensures there is no disturbance of the seabed. The production cycle from settlement to harvest usually takes between five and six years. All producers in Mulroy are members of the Mulroy Bay CLAMS Group and have been assisted with site specific and bay scale issues.
DISCHARGE CONSENT, COST RECOVERY SCHEME AND ABSTRACTION FEES

December 2003 saw the introduction of an additional cost to trout farmers in Northern Ireland, in the form of a Discharge Consent Monitoring Cost Recovery Scheme administered by the Northern Ireland Environment Agency (formally EHS). The Environment Agency is the body with responsibility for monitoring discharge effluent compliance, and the introduction of the charge was an effort to recover their cost of monitoring fish farm effluent. As fish farms are monitored twelve times per year, for a number of parameters including BOD, suspended solids and ammoniacal nitrogen, the new charge amounted to a new cost burden of £1,050 per discharge point to fish farmers.

The trout production sector operates to very tight profit margins and so the addition of a further cost was of serious concern to producers, particularly when such a high level of compliance had already been demonstrated through existing monitoring results.

The initiative had been aware of the serious implications that this type of scheme could have and had made representations to the Environment Agency as early as January 2001. With considerable encouragement from the sector, the initiative and the aquaculture farmers worked together and made representations to the Environment Agency regarding the impact this scheme was having on their businesses.

The initiative facilitated the establishment of the Environment Agency-Finish Aquaculture Working Group which met regularly in an effort to devise a scheme that was satisfactory to both industry and regulators. This was a long process but one that has had some worthwhile outcomes. As a result of this process the Environment Agency reviewed the scheme and finally by 2007 a revised scheme had been agreed.

This scheme recognises the low risk to the environment that the freshwater fish farms represent, and a key issue is that farms with a track record for good compliance will need to be sampled less often and therefore will be liable for a reduced cost recovery fee. This scheme is a more equitable and acceptable one than that previously proposed and serves to encourage and reward good compliance by reducing costs to the sector while still ensuring the aquatic environment is protected.

In February 2007 a new abstraction license regulated by the Environment Agency came into effect. This is a license for the abstraction of water from a water body. Once again, a series of representations were made by the Aquaculture Initiative and fish farmers to the Environment Agency through the working group. The central point being that fish farming is a non-consumptive water user, therefore volume of discharge directly correlates to volume of abstraction and that monitoring was already in place for this parameter through the Discharge Consent Scheme. Once again direct liaison with the Northern Ireland Environment Agency has paid off for aquaculture and the proposed cost recovery scheme for the abstraction license has been set by the Environment Agency (NI) at the minimum annual charge rate of £30 per year.

PERCH DEVELOPMENT

The development of perch farming is a recent development in Irish aquaculture. Since 2001, the Aquaculture Initiative has been working closely with a number of producers across the border area establishing hatchery and growout units. Four of Ireland’s five licensed farms are now in the remit area including PDS Irish Waters Perch and Key Water Fisheries, two of Europe’s leading perch hatcheries. A new 50t recirculation unit has also just opened in Ballyboy, Co. Monaghan and further projects are planned.

The development of perch farming in the remit area came about after the native species was identified by the Aquaculture Initiative as one with potential. Perch are highly sought after in the Swiss, Italian, French and German markets and grow particularly well in recirculation systems. Many of the new units that have been developed have been constructed in former mushroom houses which are ideal for recirculation systems. In the most recent round of the National Development Plan Aquaculture Funding, four of the recirculation systems given grant approval were Aquaculture Initiative clients, and the work continues with these novel businesses to deliver a sustainable and viable employment opportunity in the remit area.

The pond based hatchery systems initially developed with the AI during the period 1999-2004 have now developed into state of the art hatcheries with broodstock, larval, nursery and live food production capability. Mesocosm systems have also been successfully trialed and a measure of the success and advancement of these units is the long list of international experts from France, USA, Belgium, Sweden, Czech Republic etc. who have travelled to the remit area to see at first hand the progress being made with this species.

The Aquaculture Initiative has also been proactive in a European CRAFT project “Percatech”. Serving as the SME co-ordinator, the Aquaculture Initiative was a centrallynch pin of the grouping over the two year project. The applied research was of particular benefit in progressing technical issues such as broodstock selection, out of season spawning and nutrition. The research was disseminated at a Percid workshop in Namur, Belgium in January 2008. The workshop was a great success with 130 delegates from 22 countries represented. The AI shared the opening session and presented its work on perch in the remit area.

An Aquaculture Initiative staff member was the key author in a new Perch production manual recently published by BIM. The manual focuses on juvenile production of perch and covers areas such as broodstock selection, larval rearing, fish health and economics of juvenile production. The AI’s work in the future will continue on the development of improved growth strains increased survival amongst juvenile s and assisting the new ongrowing units in the remit area.
ENVIRONMENT & QUALITY

Environment

The environmental focus of the Initiative incorporates an extensive work programme which incorporates a diverse range of activities such as consultation on the implementation of new legislation, implementation of Environmental Management Systems, advising on site selection and related consents, and environmental education. The section has had particular involvement in the following areas.

Environmental Management Systems

The Environmental Code of Practice for Aquaculture Companies and Traders (ECOPACT), initially developed by BIM, became an all-island initiative when launched by DARD in NI in 2004, with the Initiative assigned the role of implementation in Northern Ireland and the border counties. ECOPACT is designed to ensure the widespread introduction of Environmental Management Systems (EMS) throughout the aquaculture industry which in turn promotes responsible and sustainable development of fish and shellfish farming.

ECOPACT is the precursor to the Irish Quality Eco-Standards which are awarded to growers and processors who adhere to stringent environmental management practices in all aspects of their business and meet a number of externally audited key criteria. The standard guarantees that products have been produced with due care for the environment, above and beyond all existing requirements. The Aquaculture Initiative provide assistance and advice to those wishing to enter these schemes within the remit area. To date eco-standards have been developed for Irish Quality Eco-Salmon and Irish Quality Eco-Mussels, with the Irish Quality Eco-Trout scheme currently being trialed on a farm in Northern Ireland.

Water Framework Directive

The Water Framework Directive (WFD) is the most significant piece of European water legislation for over twenty years. It will update most of the existing water legislation including that relating to abstraction and discharge control, shellfish waters and the requirements for protected aquatic habitats and species. The WFD will have a huge impact on both the type and location of aquaculture operations in the future.

ICZM

The objective of Integrated Coastal Zone Management (ICZM) is to establish sustainable levels of economic and social activity in our coastal areas while protecting the coastal environment. ICZM seeks to reconcile the different policies that have an effect on the coast and resolve the competition for space and resources that exist in the coastal zone. In Northern Ireland the Department of the Environment launched an ICZM Strategy in 2006. It is important that the aquaculture sector through the CLAMS process is represented in the implementation of this strategy going forward.

Industry-Regulator Liaison

Compliance with environmental legislation at all stages of aquaculture development and operation requires regulatory understanding of the day to day operations of aquaculture business and industry knowledge of the requirements of environmental legislation. The Aquaculture Initiative facilitates liaison between the industry and regulators in this regard.

Quality

Consumers, quite rightly, expect the very highest standards in food production and want to know the origin of the food they eat. They demand, and look for, proof of excellence from growers through to suppliers across all food sectors. High quality produce results in a greater consumer demand and increased prices, therefore it is necessary for producers to distinguish their product from others in the market.

Increasingly this is being achieved through Quality Schemes.

In order to prepare producers for entry into quality schemes the Aquaculture Initiative has produced trout and oyster quality log-books. These log-books give producers an introduction into quality requirements of certification bodies and also ensure full traceability of aquaculture product on farms.

The BIM Quality Seafood Programme assures consumers that the products from the Island of Ireland carry the programme symbols meet the highest standards throughout every stage of production. It assures trade that they can expect the very highest standards when they purchase Quality Seafood products and it acts as the vehicle for communicating quality achievements in the marketplace from production to consumer level.

Quality certification is complemented by eco-certification. In tandem these schemes distinguish the Irish Aquaculture Product on the global market, while positively managing the local environment that sustains the sector. To date there are Quality Standards in place for oysters, mussels, trout and salmon with eco-standards in place for trouts and mussels. The Irish Quality Eco-Trout scheme is currently being trialed on a farm in Northern Ireland.

The Aquaculture Initiative (EIG) is involved in the development and certification of the quality standards and assisting with the implementation of these schemes on individual farms in our remit area.

HACCP

Article 5 of Regulation (EC) No 852/2004 of the European Parliament and of the Council on the hygiene of foodstuffs, requires food business operators to put in place, implement and maintain a permanent procedure based on Hazard Analysis and Critical Control Point (HACCP) principles. Due to the scale and nature of some aquaculture businesses, they may not be required by the regulations to implement HACCP, however such a system is generally considered to be a useful tool in order to control hazards that may occur in food production, and is viewed favourably by customers.

The Aquaculture Initiative (EIG) has assisted a number of businesses in Northern Ireland and the Republic of Ireland to develop and implement HACCP and HACCP like systems.
SHELLFISH WATERS DIRECTIVE

The aim of the EC Shellfish Waters Directive is to protect or improve shellfish waters in order to support shellfish life and growth, therefore contributing to the high quality of shellfish products directly edible by man. It sets physical, chemical and microbiological water quality requirements that designated shellfish waters must either comply with or endeavour to meet. The Directive is designed to protect the aquatic habitat of bivalve and gastropod molluscs, including oysters, mussels, cockles, scallops and clams. This Directive was first transposed into Law on the Island of Ireland by the Surface Waters (Shellfish) (Classification) Regulations (Northern Ireland) 1997 and the Quality of Shellfish Waters Regulations (Republic of Ireland) 1994.

Northern Ireland

The Aquaculture Initiative, CLAMS groups and other industry members in Northern Ireland have long been concerned that the majority of active shellfish aquaculture sites had not been designated in the ten years since the enactment of domestic legislation (a delay that is contrary to European law). In the absence of the protection provided by the Shellfish Waters legislation, there is no legal framework to specifically protect water quality at shellfish sites and thus no legislation to specifically protect the livelihood of shellfish producers who play an important part in the rural coastal economy of Northern Ireland.

Following extensive lobbying by the Aquaculture Initiative, a review of the designations in Northern Ireland was initiated in 2007. This review is expected to be presented for consultation in Autumn 2008 and it is hoped that following this, the whole of the shellfish industry in Northern Ireland will be provided with full protection as required in European and domestic legislation.

Republic of Ireland

At present, there are 14 areas designated as shellfish waters in the Republic of Ireland – two of which fall within the remit area of the Initiative, Malroy Bay and the southern side of Carlingford Lough. These areas were designated in 2006 following an extensive data collection exercise undertaken by the Aquaculture Initiative on behalf of BIM. The Initiative and the local CLAMS groups have since been proactive in publicising these designations for the benefit of the shellfish sector and the wider aquatic environment. The value of the designations to the aquaculture sector in these areas is illustrated by the strict water quality requirements placed on developments and dredging activities in these areas by the regulatory authorities. The regulatory authorities have also become proactive in their consultation with the local CLAMS groups and the Initiative in relation to developments in the vicinity of shellfish growing areas.

In 2007 the government announced that it had selected 54 further areas to be designated as shellfish waters, 11 of which fall within the initiatives remit area. Again the Aquaculture Initiative undertook the data collection exercise associated with the designation of these areas. It is hoped that all shellfish producing areas will be afforded full legal protection in the coming year.

CROSS BORDER SHELLFISH PROJECT (INCO)

The issue of product marketing has always been to the forefront in producer raised issues. Exploring the opportunity for collective marketing of shellfish across the region, the Aquaculture Initiative has been proactive in a number of innovative programmes since its inception. Most significant of these for the shellfish sector was the Northern Shellfish Joint-Marketing Development Project. The Resource Section successfully applied for Peace and Reconciliation funding through Co-operation Ireland in Belfast for a grant of €22,000. This allowed for the exploration of the viability of joint marketing and included:

■ Individual meetings with all oyster producers in the remit area.
■ A general meeting for all producers within the 12 counties.
■ An Oyster Quality and Marketing Workshop.
■ A technology-transfer visit to France for oyster growers (including La Trinite Sur Mer trade fair).
■ A comprehensive professional business plan for the proposed shellfish group.
■ A professional marketing report.
■ An end of project general meeting of producers.

The findings of the study highlighted how elements such as shortage of critical mass in terms of tonnage, limited product range, lack of regional identity and co-ordination of supply were hindering economic growth within the sector.

In response to these issues the Aquaculture Initiative, together with Tánaiste Mara Téa and the local producers agreed to seek funding so that they could change the way shellfish were produced, handled and marketed from the region. The AI in conjunction with its project partners secured further funding totalling €422,100 from Co-operation Ireland. A producers group known as ‘Irish North Coast Oysters’ (INCO) was subsequently formed and a Marketing and Production Manager employed. A Steering Committee was quickly elected to manage the group activities and premises were secured in Donegal. Overall the project surpassed its objectives in terms of technology transfer, producer representation on both sides of the border and quantitative outputs in relation to tonnages and employment levels. The INCO project allowed producers from both sides of the border to increase the value of their production and opened up new markets to the region as a whole.

Post funding INCO has become self-sustaining with the current level of resources and overhead costs, and continues to offer valuable services to the oyster industry in Northern Ireland, the border counties and beyond.
The bottom grown mussel sector, on all parts of the island of Ireland, has undergone many changes over the last ten years. Overall, this has been a successful period, characterised by strong market demand for the product and significant inflows of investment. It is now a valuable industry generating significant value from an indigenous resource that undoubtedly has scope for further positive development. This success has created pressures on the regulatory arrangements and on the infrastructure supporting the sector and has led to demand from producers for a wider ranging review in clear recognition that reform of many aspects of the administration and regulation of the sector was urgently needed.

The Rising Tide Review, initiated in Autumn 2006 was carried out by a review group drawn from BIM, DARD, DAFF and the Loughs Agency, under a Terms of Reference set by the ministers in the two jurisdictions and supported by a Secretariat provided by the Aquaculture Initiative. The initiative was also given responsibility for conducting the industry consultation process and compilation of the Review report.

Following the release of the Rising Tide report in Spring 2008, the review group requested that the Aquaculture Initiative continue in its role as secretariat and initiate the formation of the Bottom Grown Mussel Consultative Forum (BGMCF) Speaking at the Ministerial launch of the report Minister Michelle Gildernew MLA said “This is a great example of effective all-island co-operation in action and I look forward to working closely with my southern colleagues in the future on issues such as this, which benefit all the people of the island.”

The former Minister of State at the Department of Marine, John Browne TD added: “We feel that the Review Group has done a thorough job, both in teasing out the critical issues that surround the sector and in ensuring that the views of the mussel fishermen and farmers themselves were heard and reflected in the recommendations. It was most impressive to see the degree of consultation and it was also heartening to see industry participating, sharing their knowledge and expertise in the process. In particular, I wish to highlight the contributions made by the Loughs Agency and Board lascaigh Mhara (BIMA) and to thank the Cross Border Aquaculture Initiative (CBARI) for its role in facilitation and for providing the secretariat to the process.”

The initial phases of the formation of the BGMCF are now complete and the inaugural meeting of the forum will be held in Autumn 2008. It is envisaged that the BGMCF will be a discussion forum for policy development, a clearinghouse for information dissemination and a co-ordinating body to organise necessary industry collective actions. The BGMCF will also have the function of being a central point of contact between the industry and the regulators and to co-ordinate collective activities.

The Cross-Border Crayfish Project is a co-operative venture between two aquaculture farms, Moneycarragh Trout Farm in Dundrum, Co. Down and PDS Irish Waters Perch Ltd in Arvagh, Co. Cavan. This venture allowed two aquaculture producers to share technological know-how, share facilities and to improve their competitiveness and develop new products for new markets.

Agriculture project management expertise was provided by the Aquaculture Initiative. Agriculture RTD (Research, Technology, Development) expertise was provided by the Research Institute of Fish Culture and Hydrobiology (RIFCH) at Vodnany in the Czech Republic. The Aquaculture Initiatives role ensured that progress was made as efficiently as possible providing additional technology transfer and support throughout the tight timeframe of the 14 month long project. This project’s central objective was to establish an innovative efficient hatchery technique for crayfish. Funding was secured in 2007 from INTERREG IIIa funds administered by the East Border Region. The project has progressed well and attracted significant interest and publicity, including an article on the project appearing in the Irish Times in 2007. The project’s findings were recently presented in Finland at an International Conference held in August 2008.

Further work on this interesting species is expected to continue. Information from the project on hatchery methods and the growth rates that can be achieved by white clawed crayfish under controlled conditions has created a new opportunity for aquaculture in Ireland. The Dundrum hatchery now has the capacity and the know-how to restock rivers with crayfish and the impressive growth rates achieved by the species may also make production for the table economically viable. The project again demonstrates the interest in aquaculture companies embarking on joint initiatives if the right support platforms are put in place. The initiative is well placed to provide this support and develop real business opportunities on a cross-border basis.


EDUCATIONAL ACTIVITIES

Aquaculture education is integral to the long term sustainable development of the sector. Educational activities have been tailored to the particular needs of industry and other stakeholders.

The Aquaculture Initiative provides:

- Strategic assistance and expert advice to existing and potential producers.
- A framework for technology transfer.
- Promotional documentation, articles, reports and educational field trips.
- A central contact and dissemination point for policy decisions which may impact on the sector in our remit area through liaison with other agencies, departments and NGO’s.

In order to achieve this, the Initiative has invested in the continuous professional development of team members. This professional development programme is responsive to the developing needs of the industry. Training tailored to the particular needs of industry in CLAMS areas has also been delivered through the Initiative.

The following section provides a sample of the educational activities undertaken by the Initiative.

Strategic Assistance and Expert Advice

The Environmental & Quality Section and the Regional officers deliver projects tailored to the particular needs of industry. Assistance and expert advice is provided for both active and potential producers at all stages of project development and farm operation.

In the project planning stage the Initiative is proactive in organising meetings between regulators, planners and project promoters to identify areas of concern with potential aquaculture operations. This has proved to be a very worthwhile activity that serves to expedite the issuing of licenses and permits.

The Aquaculture Initiative organises and participates in workshops and seminars for each sector of the aquaculture industry. In the past the Initiative has organised events focussing on water quality, the shellfish sector, future areas of concern to the finfish sector and emerging species and technologies. Single issue workshops are also organised on an ongoing basis with recent focus on Abstraction and Discharge consents in Northern Ireland and industry consultation.

The Initiative has also facilitated the engagement of expert advice when required by industry members. In Carlingford Lough a proposed development was highlighted by industry members, as having the potential to adversely affect their businesses. Through the CLAMS process the Initiative secured funding from the Loughs Agency and BIM to engage a Sedimentologist and a Hydrologist to comment on the proposed development. Another key area of the Initiatives work programme is the preparation of newsletters and reports on arising issues and technologies. A list of publications is provided in the Appendices.

Technology Transfer

The Initiative recognises that the most effective way of communicating production and processing techniques is through first hand observation. To facilitate this producers are brought to other aquaculture farms, processing facilities and industry events. Industry experts have also been invited to make presentations to the industry. The Initiative has been involved in a large number such events including:

- Technical visits for two rope mussel producers from Northern Ireland to a rope mussel farm in Clew Bay. The focus of this visit was methods of restocking mussels.
- Site visits to Carlingford Lough associated with a pacific oyster nursery project.
- New client visits to the scallop sites in Mulroy Bay.
- Trip by Charr producers to the Lynn Aquaculture recirculation facility in Wales.
- Joint Aquaculture Initiative – BIM presentation at the Lycee de la Mer et du Littoral. event in France.
- Cross-border visits to a mussel processing facility in Bantry, Co. Cork by a processor interested in setting up a mussel processing plant in Northern Ireland.
- Assisted BIM with a site visits by French coco rope suppliers. This technology was trialed for mussel spat collection.
- Trip to Lucas Perche and Esox in France by perch producers. Producers had the opportunity to see similar operations and share knowledge.
- Trip to Mareines region of France with a representative from INCO to meet with French Oyster Buyers and discuss quality requirements for future sales.
- Site visit for a potential seaweed producer to C-Mar in Portaferry and their trial site on Strangford Lough.
- Multiple visits by existing and potential producers and regulators to the Perch and Charr sites in Cavan, Monaghan, Roscommon and Sligo.
- Facilitated French producers from Arcachon in their presentation on off shore techniques for rearing giga’s at a workshop in Sligo.

Promotional documentation, articles, reports and educational field trips

The public image of the sector is very important for the sourcing and expansion of markets for aquaculture produce. Common criticisms of the aquaculture sector relate to environmental concerns and sustainability. The Initiative is proactive in negating these concerns through education of both the public and other stakeholder as to the activities of the sector. An example of this is the recent fact finding trip by representatives of the Initiative, BIM, DAFM, DARD and the Loughs Agency to Yerseke in the Netherlands. The aim of this trip was to investigate the management of the Bottom Grown Mussel Industry in the Netherlands, the formation and financing of the Producer Organisation (PO) and nature conservation elements of the seed mussel fishery.

The Initiative has also organised multiple field trips by primary, secondary and third level students from schools in Ireland and elsewhere in Europe, to aquaculture sites.
The Initiative alone and in cooperation with other agencies produces a range of publications of relevance to the industry and other stakeholders. Publications include Northern Ireland and North-Western Newsletters, articles in national, international and trade press, CLAMS plans and technical guidance reports. (See Appendices).

The Aquaculture Initiative has also participated in a number of trade shows. The Initiative hosted a stand at the Balmoral show in 2005 in association with DARD Fisheries Division and Northern Ireland Seafoods. Freshwater and marine aquariums were set up to demonstrate some of the species being reared in aquaculture with information packs compiled for distribution to the general public and potential clients. More recently, in June 2008 the Initiative had a stand promoting aquaculture in the North West at the Killybegs Fisheries Conference in County Donegal.

**A central contact and dissemination point for policy decisions which may impact the sector in our remit area**

Through a range of working groups and committees the initiative keeps up-to-date and is involved in policy development. The Initiative is committed to keeping producers informed of policy changes and possible impacts on their day to day activities. Team members sit on a number of groups including:

- A number of national and regional groups associated with the Water Framework Directive.
- The Northern Ireland Coastal Marine Forum.
- Two Biodiversity Delivery groups.
- The CMAR and SMILE Advisory Forums.
- Trout Quality Scheme Technical Advisory Committee.
- Seed Mussel Advisory Committee.
- The Irish Eco-standard Implementation Committee.
- Donegal – Marine Sectoral Forum.
- Northern Ireland Inshore Stakeholder Advisory Group.

DARD has also requested that the Aquaculture Initiative facilitate the establishment of an aquaculture sub group for the European Fisheries Funding in Northern Ireland.

**Professional Development**

Professional development has focused on stakeholder engagement, fish welfare, Depuration, HACCP, Mapping techniques as well as boat handling, radio usage and sea survival for team members. The group also attend a range of conferences associated with the development of the sector particularly in the area of new technologies.

---

**SHELLFISH SEMINAR**

The Aquaculture Initiative hosted an information seminar for Northern Ireland Shellfish producers. The event focused on two European Directives “the Shellfish Waters” and “the Shellfish Hygiene” explaining the differences between the two and the importance of these in protecting the industry, the environment and human health.

This seminar was organised in response to various queries from shellfish producers, and a general increase in awareness of water quality issues. It was also felt that examining practices in The Republic of Ireland, Scotland and England would present the opportunity for industry members and regulators to learn from others and provide a stimulus to the Northern Ireland Shellfish Aquaculture sector, to establish an appropriate representative organisation.

A range of speakers took part in the event including Claire Vincent, Principle Officer dealing with the Shellfish Waters directive, from the Environmental Policy Division of DOE, and Gerry McCrudy Principle EHO with the Northern Ireland Food Standards Agency who administer and implement the Shellfish Hygiene directive in Northern Ireland. From further afield there were talks from Richie Flynn of the Irish Shellfish Association and Lorna Murray form the Scottish Executive both of whom relayed how the shellfish industry was managed in their respective areas.

The seminar was very well attended by Northern Ireland’s Shellfish Licence holders and delegates from the various agencies and government departments in Northern Ireland and beyond.

In response to a question on the value of the seminar an oyster producer in Carlingford Lough stated “I learned a lot today about the two directives. My licensed area is a designated shellfish harvesting area and also lies within designated shellfish water meaning that the DOE are obliged to maintain and improve water quality in my area.”

Michael Murphy, Team Leader added that, “it is hoped that information provided will help stimulate the development of a Northern Ireland Aquaculture producers group that will bring the sector together with a single voice and provide effective and efficient representation, something that is lacking in the sector here”. Talks on the value of such groups were provided by Richie Flynn of the ISA, Doug McLeod of the Scottish Association of Shellfish Growers and Clive Askew of the Shellfish Association of Great Britain.
CO-ORDINATED LOCAL AQUACULTURE MANAGEMENT SYSTEMS

The unique Co-ordinated Local Aquaculture Management Systems (CLAMS) process is an all-island initiative to manage the development of aquaculture in bays and inshore waters at a local level. In each case, the plan fully integrates aquaculture interests with relevant legislation, as well as:

- Single Bay Management (SBM) practices, which were initially introduced by salmon farmers to co-operatively tackle a range of issues, and have now been extended to all aquaculture species.
- The interests of other groups using the bays and inshore waters.
- Integrated Coastal Zone Management (ICZM) plans.
- County and District Development plans.

The process has been widely adopted in bays and inshore waters where aquaculture is practiced around the Island of Ireland, as a further proactive step by fish and shellfish farmers, to encourage public consultation on their current operations and their future plans. The CLAMS groups are formed by representatives from the various companies and farms with assistance from the CLAMS facilitators. The Aquaculture Initiative have facilitated the establishment of seven CLAMS groups within our remit area, these are located in:

- Carlingford Lough.
- Belfast Lough.
- Larne Lough.
- Trawbreaga Bay.
- Mulroy Bay.
- Lough Swilly.
- Donegal Bay.

CLAMS allows for the successful integration of aquaculture into the coastal zone, taking cognisance of the need to improve environmental compliance, product quality and consumer confidence. As part of its commitment to the sustainable development of the aquaculture industry, the CLAMS process facilitates the gathering and analysis of data in relation to fish farming.

The success of all the CLAMS groups and the projects that they undertake are dependent on the dedication and enthusiasm of the producer members and the regional officers that support them in their efforts. The following summary is only a glimpse of the work that has been undertaken throughout the lifespan of these groups.

Larne Lough

Aquaculture in Larne Lough is exclusively based on shellfish with a total of five different sites licensed by DAFF under the provisions of the Fisheries Act (NI) 1966 as amended. The shellfish species cultivated in the Lough are mussels, clams, pacific oysters and native oysters. The Larne CLAMS Group was established in November 2005 with a membership of all the aquaculture operators in the Lough and the Larne CLAMS plan was completed in July 2007.

Belfast Lough

The first aquaculture sites in Belfast Lough were licensed in the late 1990’s and since then Belfast Lough has become the dominant area in Northern Ireland in terms of value and volume of aquaculture production. Aquaculture in Belfast is exclusively that of bottom culture of mussels (Mytilus edulis) with production exceeding 6,500t in 2006. The Belfast CLAMS Group was founded in 2007 with the support of the operators in the Lough. The group has been particularly focused on liaising with the regulatory authorities on issues of concern to the industry.

Lough Swilly

Aquaculture activity in Lough Swilly is based on the culture of Salmon, Mussels and Oysters. The CLAMS Group in Lough Swilly was established in 2000 and the CLAMS plan was completed and launched in September 2001. The CLAMS Group has been involved in lobbying for adequate pier facilities for both license aquaculture holders and fishermen within the Lough, this work is ongoing. New mussel culture technologies have been tested in the Lough including the Smart Farm system for rope mussel producers, which was proven to be successful in the strong currents which characterise the Lough. Coco rope has also been used in ongoing trials to collect mussel seed, with some success. Proposed future projects include working available ground to facilitate the deposition of naturally falling mussel seed for the bottom mussel industry in the Lough. Since January 2004 the Initiative also has a boat based at Fahan marina to facilitate surveys.

The local oyster association is endeavouring to license native oyster ground to formalise their fishery in the Lough. Through lengthy discussions with all parties on the ground, the Initiative has assisted in resolving a dispute between the oyster fishermen and licensed mussel producers. There are still issues which are being dealt with on an ongoing basis. The Initiative with the assistance of the Inshore Fishery Officer from BIM have also assisted these fishermen in developing their fishery by facilitating their relationship with ICOS, the co-ordinating organisation for co-operatives in Ireland, and helping with the formulation of basic management and development plans. These are then submitted by the fishermen along with an application for an aquaculture license to DAF.
Mulroy Bay

The CLAMS Group in Mulroy was established in the Autumn of 2005 with team members of the initiative acting as liaison officers and a document currently awaits publication. Scallop, Salmon, Oysters and Mussels are currently reared in the Bay by licensed producers. In 2006, negotiations began with Donegal County Council regarding the construction of the new bridge across the Bay. Following these discussions an extensive real time monitoring system has been put in place at a cost of €325,000 to alert producers and others if there are any water quality issues arising as a result of the construction. Insurance was also provided by the council to the value of standing stock in the bay. The Liaison Officer has organised for the BIM training unit to provide training in VHF radio, first aid and sea survival for employee’s of producers in the bay. Navigational plans have been drawn up for the bay in conjunction with the Commissioner of Irish Lights and it is hoped to obtain funding in the short term to place markers where required. The group has facilitated sampling of the aquaculture areas in the bay as required under the shellfish waters designation programme.

Trawbreaga Bay

The Trawbreaga CLAMS Group was initially set up at the end of 2005. The aquaculture activities in this bay are based entirely on the culture of gigas oysters. A number of projects have been undertaken in the bay since the group was formalised. Navigational plans have been drawn up in conjunction with the Commissioner of Irish Lights and the installation of required markers on aquaculture sites awaits appropriate funding. Access to the shore has been facilitated through the improvement of road access funded partly by the CLAMS Executive and further work funded by the executive was undertaken to clear a common working area for producers above the high water mark. The producers have not been shy in undertaking and funding work themselves and this was demonstrated in July 2006 when they undertook a clean up of disused trestles from the shore.

Donegal Bay

Following an initial meeting in the autumn of 2007 the group was set up formally early in 2008 by the producers facilitated again by the Aquaculture Initiative. Work will now begin on the development of a plan and other issues of interest to producers.

CARLINGFORD LOUGH CLAMS

Carlingford Lough is one of Ireland’s most important areas for aquaculture. The natural suitability of the Lough to the growing of shellfish has been utilised for centuries. Today the Lough is the base of a vibrant and expanding aquaculture industry with pacific oysters and bottom mussels grown without the addition of artificial food and chemicals, within the highly productive waters. The Pacific Oyster (Crassostrea gigas) was first introduced into Carlingford in the 1970’s as part of a trial carried out by BIM. The pacific oyster was ideally suited and following successful trials, a number of commercial farms were established. These farms which were among the first in Ireland are still in operation today. The farms in Carlingford are located on the inter-tidal areas of foreshore, notably at Ballagan, Oysterman, Carlingford, Mill Bay and Cranfield.

Bottom Mussel (Mytilus edulis) farming within Carlingford Lough is a form of extensive culture. Seed is transferred from the naturally occurring wild seed mussel beds to be cultured on licensed plots where conditions are more favourable, growth and survival rates are improved and the stock can be managed more effectively. No structures are used for the culture of bottom mussels, and with all the licensed areas for mussels in the Lough being sub-tidal, there is no visual impact associated with this type of farming.

In 2002, following the success of the CLAMS process elsewhere, the Loughs Agency requested that the Aquaculture Initiative set up a CLAMS grouping in Carlingford Lough. The CLAMS Group was founded in 2003 with initiative personnel acting as liaison officers and a CLAMS plan was prepared that year, the plan was subsequently updated in 2005.

Since then the CLAMS Group has been active in addressing a number of issues of concern to the industry and other stakeholders as well as accessing funding from BIM and the Loughs Agency for a number of collective projects.

Projects have included:

- A navigational plan for the oyster production areas in the Lough – the plan has been agreed by the regulatory authorities with responsibility for navigation in Northern Ireland and the Republic of Ireland.

- Ensuring that aquaculture is considered when planning developments in the Lough - examples of such developments are the dredging works associated with Warrenpoint port and the proposed development at Greencore Port.

The Carlingford CLAMS process is unique in that it is the first such cross-border CLAMS. All licensed aquaculture operators in the Lough are members of the group and work in cooperation with each other, the liaison officers, regulators and other stakeholders to ensure the sustainable development of the industry on both sides of the border.
APPENDICES

A number of information leaflets and reports are available from the Aquaculture Initiative. For further details contact staff at any of our offices.

Reports & Documents

- A Comparison between species cultured North & South.
- An Initial Assessment of the potential for Aquaculture Development in Dundalk Bay.
- Aquaculture Licensing Procedures in Northern Ireland and the Republic of Ireland.
- NI Aquaculture Legislation Register.
- CLAMS – Northern Ireland Explanatory Leaflet.
- ECOPACT – Northern Ireland Explanatory Leaflet.
- Lough Swilly – Aquaculture Activity.
- Carlingford CLAMS Document.
- A review of Pollan broodstock and Hatchery techniques.
- Oyster Quality Logbook.
- Larne CLAMS Document.
- North West Newsletters – Prepared every two months.
- Donegal and Sligo – Aquaculture Wall Planner.
- Northern Ireland – Aquaculture Newsletter.
- The North West Aquaculture Strategy.
- Mulroy CLAMS Document.
- Farming Eurasian Perch.

Interpretative Signs

- Lough Swilly – Aquaculture & the Environment.
- Mulroy Bay – Aquaculture & the Environment.
- Carlingford Lough – Aquaculture & the Environment.

Presentations

- Environmental Protection & Conservation in the International Context.
- Organic Aquaculture.
- Environmental Management Systems.
- Environmental Protection & Conservation in the EU and national context.
- The Potential for Aquaculture in Leitrim.
- Environmental Issues affecting Aquaculture in Northern Ireland.
- Sea horses to Sea Urchins – The next big splash in Irish Aquaculture.
- Aquaculture, Fisheries and the Marine Environment.
- ECOPACT – A guide for aquaculture operators.
- The Concept of Environmental Management Systems and ECOPACT.
- Perch aquaculture in Ireland – Grasping the potential new Species in Irish Aquaculture.
- Carlingford CLAMS.
- Aquaculture in Carlingford Lough.
Water usage by freshwater finfish producers and compliance with discharge consents.

- New Species production.
- The Irish Aquaculture Industry – species techniques innovations.
- Aquaculture Licensing system in the Republic of Ireland.
- Aquaculture in Ireland.
- Cross Border Freshwater Crayfish Project.
- Aquaculture in Northern Ireland.
- Perch Culture in Ireland.

**Advisory Documents**

- Chemical and Therapeutant use in Irish Aquaculture.
- Profile of Aquaculture & Fish Handling Activities in Co. Donegal.
- Potential for Aquaculture Activities in the Inishowen Area.

**Articles**

- Northern Ireland Shellfish Seminar.
- The Finnish Aquaculture Sector – The Road Ahead.
- Oyster Season is upon us again!!
- Implementation of ECOFACT in Lough Swilly.
- Aquaculture Initiative announce first Irish Perch Farm.
- Ireland’s First Perch farm opens in Cavan.
- Profet workshop to be held in Dublin.
- Funding applications require forward planning
- Highly successful perch workshop held in Cavan.
- Huge response to shared aquaculture stand at Balmoral.
- ICZM Strategy planned for Northern Ireland.
- Current work of the Aquaculture Initiative.
- Shellfish-growing equipment – La Tremblade.
- Mulroy CLAMS.
- ECOFACT Progress in Northern Ireland.
- Plans to Develop a pilot scale commercial crayfish hatchery in Co. Down.
- The 8th Annual C-Mar Aquaculture Workshop.
- An overview of the activities of the Aquaculture Initiative EEIG.
- Trestle cleanup – Trawbrega Bay.
- Draft legislation for Water Abstraction Regulation in Northern Ireland.
- EHS hold conference on Seaweed Harvesting in Co. Down.
- Quality Section fact finding trip to Marennes.
- Grading is of paramount importance for Irish oysters in France.
- Donegal CLAMS Group.

- Minimising Feed cost in finfish production.
- New Water Licence anger Irish Fish Farmers.
- Role and functions of the Aquaculture Initiative.
- BA Fish and Shellfish Conference – Enfield.
- Aquaculture Initiative open NI office.
- Trawbrega Bay CLAMS Group elects new chairperson.
- Navigation plans for Lough Swilly and Mulroy Bay.
- Water Quality Monitoring in Mulroy Bay.
- Oysters From Ireland in demand on French Market.
- Lough Swilly CLAMS Group.
- Cross-border Crayfish Project.
- Aquaculture Initiative EEIG going from strength to strength.

**Surveys**

- Carlingford Co-op Mussel Survey.
- Trout Farm – Water Quality.
- Lough Foyle Bottom Mussel Audit.
- Belfast Lough Bottom Mussel Survey.
- Carlingford Lough Seed Mussel Survey.
- Lough Foyle Native Oyster Survey.
- Shellfish Designation – Summary File Carlingford.
- Shellfish Designation – Summary File Mulroy Bay.
- Shellfish Designation – Summary File Dundalk.
- All island trout production Survey.
- Shellfish Designation – Summary File Aran.
- Shellfish Designation – Summary File Ballinasloe Bay.
- Shellfish Designation – Summary File Donegal Bay.
- Shellfish Designation – Summary File Dungloe.
- Shellfish Designation – Summary File Gweedore.
- Shellfish Designation – Summary File Gweedore.
- Shellfish Designation – Summary File Loughros Beg.
- Shellfish Designation – Summary File Loughros Mor.
- Shellfish Designation – Summary File McSwynes Bay.
- Shellfish Designation – Summary File Newtown Cove.
- Shellfish Designation – Summary File Trawbrega Bay.
- Shellfish Designation – Summary File Trawenagh Bay.
- Inch Flat – Seed Mussel Survey.
- Ray Bridge – Native Oyster Survey.
- Dunany Point – Seed Mussel Survey.
Consultations

- Proposals for amending Regulation 2792/1999 laying down the detailed rules and arrangements regarding Community structural assistance in the fisheries sector.
- Proposal for the Closure of Strangford Lough to Mobile Gear.
- Amendments to the Northern Ireland Habitats Regulations.
- Towards An Integrated Coastal Zone Management Strategy For Northern Ireland.
- Environment NI: A vision for the future.
- Consultation on Proposals for a Marine Bill.
- European Commission’s proposal for the regulation concerning the use of alien species and locally absent species in aquaculture.
- The Draft Water Abstraction & Impoundment (Licensing) Regulations (NI) 2006.
- EHS Draft Strategy.
- Proposed Environmental Impact Assessment (Fish Farming In Marine Waters) Regulations (NI) 2005.
- Towards an Integrated Coastal Zone Management Strategy for Northern Ireland.
- Consultation on Proposals for a Marine Bill.
- Belfast Lough SPA.
- The European Fisheries Fund.
- The Draft water Abstraction and impoundment (licensing) (NI 2006).
- The regulation of the wild oyster fishery in Lough Foyle.
- Proposal for a Mourne National Park.
- Draft Baseline Survey of the Shellfish Resources in Lough Foyle.
- FEPA: Upgrading of existing shore pumping station at Rostrevor.
- FEPA: Sea Disposal in respect of proposed dredging works at Warrenpoint port.
- Proposal for the Regulation of the Wild Oyster Fishery in Lough Foyle.
- Council Regulation concerning the use of alien Species in Aquaculture.
- Proposed Mussels (prohibition of Fishing) Amendment) Regulations (NI).
- Consultation on a proposal to prohibit sea fishing within two non-disturbance zones to Protect Modiolus modiolus in Strangford Lough SAC.
- Envirocite – EIS Scoping document Warrenpoint breakwater.
- Consultation on the European Fisheries Fund (EFF) UK Operational Programme.
- Proposals to introduce a fees and charges scheme under the water abstraction and impoundment (licensing regulations NI) 2006.
- Consultation on the European Fisheries Fund UK operational Programme.
- Alien Species Aquaculture Code of Practice.