



Bord Iascaigh Mhara
Irish Sea Fisheries Board

Deep Sea Fish Farm, Galway Bay

Telling our story

MARCH 2013



Bord Iascaigh Mhara (BIM), the Irish seafood development agency, has applied for an aquaculture licence to develop an organic salmon farm on the leese of Inis Oírr in Galway Bay. The proposed farm will produce up to 15,000 tonnes of organic salmon every year, worth €102 million annually.

This level of production will create an estimated 350 jobs directly with a further 150 supported indirectly after four years of operation, generating a wage flow of about €14.5 million, directly into the local economy.

The proposal is grounded in Ireland's ideal position to take advantage of a major opportunity presented by the massive projected growth in global fish consumption. According to the World Bank and the UN Food & Agricultural Organisation, an additional 42 million tonnes of seafood will be required globally by the year 2030 as a result of population growth.

With quotas and natural constraints limiting the amount of wild fish catches available to meet this need, the vast majority of the additional supply will have to come from sustainable fish farming.

Informed market analysts predict a 50% increase by 2020 in the two million tonnes of farmed salmon which are currently produced annually. Sustainable fish farming when regulated and managed correctly, provides valuable employment, investment and revenue.

Of course, Ireland has already a strong reputation for its organic farmed salmon, partly because of the rigorous standards imposed on Irish salmon farms. The demand for Irish salmon is growing and Irish Organic Salmon continues to command a high price on key markets with the sector valued at €64 million last year, an increase of 16% on 2011 value of €55 million.

This presents a major market opportunity for Ireland. Remarkably, despite our exceptionally good conditions for sustainable salmon farming, Ireland produces just 15,000 tonnes each year,

the majority of which is organic farmed salmon as opposed to the 160,000 produced by Scotland and the 1.2 million tonnes by Norway.

Government policy supports responsible and effective fish-farming. The *Harnessing our Ocean Wealth* report published in July 2012 states: "There is significant scope to expand Ireland's aquaculture industry, with increases expected from both conventional aquaculture and a new deep sea salmon farming initiative, amounting to a 78% increase in volume of production by 2020."

Development will create 350 direct jobs in the local area and generate a wage flow of €14.5 million per annum.

The Deep Sea Project has the potential to be a source of major investment to Galway and its hinterland, create hundreds of jobs and satisfy a demand for a premium product in an environmentally sustainable and responsible manner.

Subject to Government approval, BIM intends to act as the licence holder and not operator for the new site. If we are successful in achieving the licence, it is our intention to hold it in trust for the State and bring in commercial developers to operate the fish farm. This approach will allow BIM to apply additional standards to the running of the Inis Oírr organic salmon farm, to exceed environmental and safety regulations and maximise returns to the local coastal community.

BIM welcomes widespread acceptance of recent sea lice research

BIM welcomes the widespread acceptance by all commentators of the findings of the Marine Institute and NUI Galway study on the impact of sea lice on migrating Atlantic salmon. Recent comment in the media by industry groups demonstrate the widespread acceptance of the figures presented in the research.

The study found that sea lice can only be held responsible for 1% of the overall 95% losses of salmon at sea and is thus only a minor component of wild salmon mortality. The study concludes that sea lice are "unlikely to be a significant factor influencing conservation status of salmon stocks".

The findings of this study, which reviewed more than 350,000 migrating salmon from 28 releases, at eight locations along Ireland's South and West coasts covering a nine year period, are hugely important for both the Irish salmon farming industry as well as angling interests.

These results have been replicated in a similar but independent study in Norway, which has a salmon farming industry 80 times bigger than Ireland. **Having now eliminated one possible factor, which had been previously suspected as being important, all stakeholders must now pool their resources to identify the true causes of the high marine mortality of wild salmon stocks.**

In particular BIM welcomes Inland Fisheries Ireland's acceptance of the MI findings in their statement contained in the February edition of *Inshore Ireland* magazine.

Industry groups must work together to address wild salmon mortality

An additional and important finding of the MI and NUIG study was the serious decline in the numbers of salmon returning from the feeding grounds at sea to spawn in the rivers. The decline has been noted since the early 1970s. Back then, some 20% of the stock returned. The situation has now reached the point where almost 95% of the young salmon going to sea do not make it back to the rivers of their birth.

This progressive decline in marine survival is a cause for concern for all concerned with salmon fisheries.

In an attempt to address this issue Mr Jason Whooley CEO of BIM extended an invitation to all parties, to work in partnership on investigating this serious issue.

"We would welcome the opportunity to work with other stakeholders in getting to the root cause of this problem. We have considerable expertise which we can bring to bear on it. If at all possible, this rate of decline must be stabilised and now that it has been scientifically established that sea lice are not responsible for the decline we have to move on to examine other possible causes and seek to identify means of ameliorating these."

He also called for the same stakeholders to throw their support behind the salmon farming sector. *"We now know that appropriately sited and responsibly managed salmon farms do not have a detrimental effect on wild stocks and it is time for all stakeholders with a genuine interest in supporting Ireland's coastal communities and the marine sector to throw their weight behind BIM's proposal for a new sustainable organic certified salmon farm in Galway Bay. Ireland produces just 1% of Norway's output of farmed salmon and there is ready demand for any increased output we can deliver. This will bring much needed jobs and investment to our disadvantaged coastal communities – no individual or organisation should stand in the way of this."*

Marine Institute and NUI Galway research paper

In this long-term study, one group of salmon smolts were treated with a commercial agent which protects against sea lice for eight weeks after going to sea. The return rates of unprotected fish were compared with the 'protected' fish to see if they suffered any additional sea lice induced mortality.

Because the study involved the repeated release of over 350,000 fish over the course of a decade (2001 – 2009) across eight different Irish rivers, its results are highly accurate and very reliable.

"At these levels, it is unlikely to influence the conservation status of stocks and is not a significant driver of marine mortality", the study states. The paper also offers an explanation as to why some researchers in this area have reached different conclusions and demonstrates serious flaws in the experimental design employed by these research groups.

The article concludes by noting the strong and significant trend in increasing marine mortality up to 2008 and finds that **"there is no evidence to suggest that this trend is influenced by sea lice infestation levels of outwardly migrating smolts as treated and control fish are equally affected."**

Quoted in the February edition of the inshore Ireland magazine the study's lead author Dr David Jackson of the MI said that his group's findings were "very much in line" with those of a similar Norwegian study which came to the same conclusion. He went on to say, "Putting this in context, these Norwegian studies – along with our own – have produced data which is based on more than half a million fish...the results all point to the same answer."

Ireland produces just 1% of Norway's output of farmed salmon and there is ready demand for any increased output we can deliver. This will bring much needed jobs and investment to our disadvantaged coastal communities – no individual or organisation should stand in its way.

Job Creation

BIM fully stands over the figure of 500 jobs projected to arise with the development of a 15,000 tonne organic salmon farm off Galway Bay. Based on existing job creation in the salmon farming industry and specifically modelling from job creation in Ireland, the proposed development, when running at full capacity (most likely by year four) will create 350 jobs directly, with a further 150 jobs created indirectly.

The direct jobs will come from rearing the juvenile fish, work on the farm including operators, biologists and divers and in the packing and processing of the salmon as they come ashore and are transported to market.

It is not just the jobs on the farm that will benefit the local area but the diverse range of ancillary jobs that are required to service the farm itself.

EMPLOYMENT GENERATION	
DIRECT	
Juvenile production phase	35
Sea farms	65
Harvesting/packing/processing	180
Transportation/sales & marketing	70
Sub-total	350
INDIRECT	
Engineering/net-making/logistics	150
Total	500

Indirect jobs in the service sector including smoking, value-added processing (see example below), will also be created including the supply of fish feed, netting, transportation and a range of other services to the proposed unit.

To verify the accuracy of these projections, we would point out that a salmon farming company in Ireland, which currently produces 11,000 tonnes per annum employs circa 280 people. If this ratio of direct employment to output is extended to cover a 15,000 tonne per annum production then the 350 jobs is a conservative figure.

In some of the submissions, comparisons are drawn between the proposed farm and a recently issued licence for 2000 tonnes per annum in Scotland, which projected an employment of just 4. This is not a valid comparison as this licence is only concerned with a single additional site to be operated as an integral part of a larger group of sites in a production area already fully staffed by a well-established company.

EMPLOYMENT ON THE SEA FARMS					
	Year 1	Year 2	Year 3	Year 4	Year 5
General Manager	1	1	1	1	1
Assistant Manager	1	1	1	1	1
Biologist	1	2	3	3	3
Growout site Supervisor	1	2	2	2	2
Growout site Operative	10	20	28	28	28
Harvest site supervisor	0	1	1	1	1
Harvest Site Operative	0	3	5	5	5
Administrator	1	2	2	2	2
Maintenance	2	3	3	3	3
Divers	3	5	5	5	5
Boat Crew	5	10	14	14	14
Total staff numbers	25	50	65	65	65



"If this Deep Sea project gets the go-ahead, it will allow us create 50 new jobs in Lettermore. We presently employ 30 people in Tír An Fhía, Connemara, exporting 100% of our production worldwide. We have orders we cannot fill and have postponed any new contracts until 2014 due to the shortage of Organic Irish Salmon. Wouldn't it make sense to have this ambitious, exciting project proceed and see Galway Bay Organic Smoked Irish Salmon on the markets worldwide providing the maximum economic benefit to the West of Ireland and not some other producing country?"
Sean Gavin, CEO Irish SeaSpray Limited, Lettermore, Connemara



The facts about salmon farming

Pollution

Some observers have claimed that the waste from the site will be similar to that of a small town, this is incorrect. Fish feeding and excreting in the marine environment is a totally natural process. There is no meaningful comparison to be made between the metabolic wastes arising from a salmon farm and that of a town or city, of any size. Atlantic farmed salmon are cold blooded creatures and output from their metabolism does not contain any of the harmful micro-organisms that are associated with sewage from humans, livestock or industrial processes.

Thus, the waste does not have to be "treated" or "disposed" of. It is quickly and naturally broken down into its component parts and absorbed by marine metabolic processes to become part of the flora and fauna of the eco-system of Galway Bay.

The potential depositional impacts arising from the proposed farm were studied in detail as part of the environmental assessment and they demonstrated that the predicted levels of sedimentation will be very low, especially when wind and wave action are factored in, as would be expected given the energetic nature of the location of the farms.

A suitable location

The location of the proposed development was selected following an extensive analysis of alternatives and was chosen as it represents a very suitable site for salmon culture. It is located in a highly flushed area with the ability to absorb the farm input. It is an appropriate distance from river mouths and Natura 2000 protected sites.

Concerns were also raised that the site would be too rough to operate safely or profitably and that the wave climate estimates were not adequate. We would respond that the wave climate models generated were backed up both by real measured historic data from nearby locations, appropriate meteorological data sets and top class near zone and far zone wave models. Taken together, these data have generated predictions of an high order of reliability.

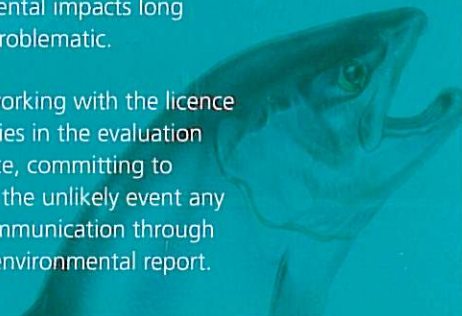
Visual impact

An extensive landscape and visual impact assessment was carried out and apart from short viewing opportunities by ferry users and commercial shipping traffic, visual and landscape assessments should be confined to those for the southern site from Inis Oírr. The Northern Site will not be visible from Inis Oírr or indeed any other point on the land. The proposed Deep Sea Fish Farm will be subject to detailed conditions and mitigation measures on the layout, design and environmental management standards of the production units.

Scale

BIM has repeatedly stated that the 15,000 tonne production target of the proposed farm will be build up gradually and that both statutory and voluntary monitoring regimes will work to detect any adverse environmental impacts long before they would become problematic.

BIM has also committed to working with the licence holder and statutory authorities in the evaluation of environmental performance, committing to taking appropriate actions in the unlikely event any impacts are detected and communication through the publishing of an annual environmental report.



We now know that appropriately sited and responsibly managed salmon farms do not have a detrimental effect on wild stocks and it is time for all stakeholders with a genuine interest in supporting Ireland's coastal communities and the marine sector to throw their weight behind BIM's proposal for a new sustainable organic certified salmon farm in Galway Bay.



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