

License Application for Sustainable hand-harvesting of *Ascophyllum nodosum* at Clew Bay (SAC Site Code 1482). In accordance with National Parks & Wildlife Service conservation objectives for marine and coastal habitats and species, and the EU Habitats Directive 92/43/EEC.

Appendix 1: Replies to individual Submissions, R36-R55 (ref: FS 6269)

Prepared by: BioAtlantis Ltd. Date of issue: 02/03/2015

BioAtlantis Ltd, Clash Industrial Estate, Tralee, Co. Kerry.



Introduction:

Each submission received by the Department during public consultation has been assigned codes in accordance with the order in which they were received (i.e. submission no.1, no.2, etc). The number associated with each submission is marked on the top right hand corner of each submission document. BioAtlantis has issued a reply to each of the individual submissions received, each of which are provided in this document. For clarity, the reply to each submission is indicated using codes (see index below). For example, reply number 'R1' is written in response to submission no. 1, etc. These reply letters directly address each person who took time out to write their submission. We encourage all those who wrote their submissions to read the reply letters written especially for them.

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Dear Sir/Madam,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest Ascophyllum nodosum seaweed in Clew Bay SAC. Firstly, we want to emphasise that BioAtlantis, as an indigenous Irish company, will work in partnership with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We envisage that traditional hand harvesters in Clew Bay will continue to harvest in the same locations as they have done for generations, in a traditional manner. We stated this in our application, in the Oireachtas meeting on seaweed harvesting and in the Mayo News:

- Application: On line 38 of page 3 of our application, we state that harvesting will continue "in a traditional way".
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As regard your other points, we wish to address them as follow.

1. Activities of Coastal Zone Services (CZS)

BioAtlantis consulted with Inland Fisheries Ireland (IFI) in December 2013 and provided them with a list of charter skippers, their bases, operational areas and fish species and activities of interest in Clew Bay and neighbouring areas, along with the presence or absence of *A. nodosum* hand harvest activities. We determined that there are no significant impacts on sites of interest. Descriptions of charter skippers and their activities were obtained from documents published by the Irish Charter Skippers Association and Inland Fisheries Ireland. On the basis of advice from IFI, we included an important mitigation measure which requires that "Harvesters must work to ensure that angler's space is respected at all times" (Seen Appendix 4 of our application). Letters associated with this consultation were enclosed with our application.

In the list provided to IFI, we identified the angling-related activities of the owner of Chase Boat Services (CSZ). We determined that harvesting would not impact on these activities which include the operational activities from Inishbofin - Achill Head - Clew Bay. Important angling locations for the owner of CSZ include Clare Island, Inishturk, Inishbofin and Bills Rocks areas, none of which will not be subject to harvest activities. While harvest will take place in Clew Bay where the owner of CZS operates, we do not envisage any negative impacts. In addition, physical access to the base at Newport where CZS operates from will be unaffected.



In terms of the range of other activities undertaken and services run by CZS, it is unlikely that harvesting will impact on Wind Farm Services, Filming and Chase Boat Services, Safety Boat Services, Crew Transfer Services, Diving Charters, etc. CZS are also involved in Angling Sightseeing, fun days out and Corporate Groups, Thrill Rides and Sightseeing. Tourism and recreation related activities have been assessed in detail in Appendix 7 to our application. In most cases there is no interaction. In cases where there may be potential for in combination effects in terms of marine and coastal habitats and species protected in the SAC, BioAtlantis have mitigated accordingly (see Appendix 7 to our application for details).

2. Sustainability and management of the resource

BioAtlantis is registered by the Department of Agriculture in Ireland for the manufacture and sale of feed material. BioAtlantis are accredited as having 'Good Manufacturing Practices', by GMP+ International B.V., one of the highest feed safety standards in the world, requiring high standards in traceability, quality and safety. A highly qualified professional team is in place in BioAtlantis covering science and engineering fields. BioAtlantis have three patents filed on benefits arising from seaweed extracts and have over 20 peer reviewed publications on the same subject.

Seaweed is our main raw material and we are confident that through working with local traditional harvesters, we can manage the resource in an effective and sustainable manner. We have applied to harvest a maximum of 12,900 sustainable tonnes, a figure slightly less than that previously reported by Hession et al., (1998). However, levels of *A. nodosum* may be lower in certain areas of the complex. Each site will be assessed prior to harvesting taking place. Harvesting levels will be recorded and mitigation measures have been designed to ensure that overharvesting does not occur. Moreover, harvesting will be undertaken by local harvesters with experience in how cut sustainably. We anticipate that this system can fit in seamlessly into current practices in Clew Bay.

3. Arramara/Acadian

As you may be aware, Údarás na Gaeltachta sold Arramara to a Canadian company, called Acadian. Acadian under the guise of Arramara have now applied for a licence to harvest seaweed from Loop head, Co. Clare to Belmullet, Co. Mayo. BioAtlantis believe that this will weaken competition in the sector. If Acadian is in control of the entire area from Clare to North Mayo, then they can pick and choose harvesters and determine the conditions of supply. It would also place BioAtlantis and other Irish processors in an unacceptable situation where they would be potentially dependent on their major competitor, Acadian, for their supply.

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4. Benefit to the community, small business and the environment

If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue harvesting as they have done for decades. It also ensures that we, as a company, take responsibility for environmental obligations required to work in this Special Area of Conservation.

BioAtlantis will make a commitment to pay a market leading price for seaweed. We are confident that our high value product range and premium customers will allow us to do so. We hope that this letter addresses all of your concerns. We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

Date: 2 A flow 2005

Best regards

Yohn T. OʻSullivan, C.E.O. BioAtlantis Ltd.

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We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your lands.

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1. Traditional harvesting:

We are committed to working only with local traditional harvesters. We stated this in our application, in the Oireachtas meeting on seaweed harvesting and in the Mayo News:

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We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land.

2. Small-scale harvesting for personal use

As stated in our application and in our press release in the Mayo news, small-scale harvesting for personal used (<0.5 tonnes), will be unaffected by our licence application.

3. Periwinkles and shellfish

This licence will not stop people picking periwinkles and other shellfish. The habitats of periwinkles and shellfish will be maintained as harvesting will take place at sustainable levels. BioAtlantis are aware of the importance of periwinkle species within the intertidal zone of Clew Bay. On page 124 and 125 of our application, we provide a list of mitigation measures to reduce potential impacts on periwinkles numbers. This requires that (a) hand harvesters cut high up on the canopy (many of them already do so), (b) harvesting takes place at low tide when periwinkles are generally less active and resting at the base of the *A. nodosum* canopy and (c) inadvertent co-removal of periwinkles i.e. 'by-catch' will be identified and returned to the water. The mitigation measures provided also ensure the ecological niche of periwinkles is maintained and that overharvesting does not occur.



4. Sustainable practices by local harvesters

As outlined page 37 & 38 of our application, we explain that we favour the traditional method with a sickle/knife "at low tide which provides harvesters with full view of the cutting process, taking care not to disturb the substrate, not harvest too low or damage holdfast". The traditional method forms the basis of our application as it is least invasive. Other companies want to move towards so called modern methods, which may not be environmentally friendly or sustainable and may cause damage by removing the *A. nodosum* holdfast. BioAtlantis in contrast, want to ensure that the traditional method continues, and is performed by locals such as you. This is stated on page 122 of our application under section: "traditional and casual harvesting":

"This will ensure that traditional hand harvest activities are incorporated seamlessly into a fully licensed system, thus protecting traditional methods, the harvesters themselves and the environment, in tandem"

5. Source of seaweed for BioAtlantis.

As you may be aware, Údarás na Gaeltachta sold Arramara to a Canadian company, called Acadian Seaplants. Acadian under the guise of Arramara have now applied for a licence to harvest seaweed from Loop head, Co. Clare to Belmullet, Co. Mayo. <u>BioAtlantis believe that this will weaken competition in the sector.</u> If Acadian is in control of the entire area from Clare to North Mayo, then they can pick and choose harvesters and determine the conditions of supply. It would also place BioAtlantis and other Irish processors in an unacceptable situation where they would be potentially dependent on their major competitor, Acadian, for their supply.

If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue harvesting as they have done for decades. It also ensures that we, as a company, take responsibility for environmental obligations required to work in this Special Area of Conservation. BioAtlantis will make a commitment to pay a market leading price for seaweed. We are confident that our high value product range and premium customers will allow us to do so.

6. Financial and employment aspects:

We recognise that harvesting is a key supplementary income and we want to ensure that this is sustained. As stated on line 40 on page 3 of our application, our plan will ensure that "harvesters can grow their business as employees or subcontractors of BioAtlantis". As stated above, BioAtlantis will pay a market leading price. We will work with harvesters either part-time or full time, according to their wishes.

BioAtlantis will operate a collection vessel in the Clew Bay area. This will be under the control of the Resource Manager (a Clew Bay local). The advantage of this is that it will save the harvesters time and money, as they otherwise have to tow seaweed ashore. It will also allow harvesters to

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cut smaller amounts as the seaweed will be collected daily, thus avoiding the danger of losing their harvest due to a change in weather conditions. It will also allow for instant weighing and fast payment.

7. BioAtlantis into the future

Our aim is to be the global brand leader in biostimulant and nutraceutical technology. The company has a long term vision and have no intention in selling the business.

We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land.

Date: 2rd Horch 2015

Best regards

ohn T. O'Sullivan, CE.O. BioAtlantis Ltd.

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1. Traditional harvesting of seaweed bordering your land

We are committed to working only with local traditional harvesters. We stated this in our application, in the Oireachtas meeting on seaweed harvesting and in the Mayo News:

- Application: On line 38 of page 3 of our application, we state that harvesting will continue "in a traditional way".
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We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from shore bordering your land.

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"This will ensure that traditional hand harvest activities are incorporated seamlessly into a fully licensed system, thus protecting traditional methods, the harvesters themselves and the environment, in tandem"

We commend harvesters such as you for liaising with NPWS, Dept. of Environment and others. BioAtlantis aim to take care of the regulation and administration aspects of harvesting to allow traditional harvesters to focus on harvesting.



3. Jobs and income in Clew Bay.

As we state above, BioAtlantis will only work with local, traditional hand harvesters, landowners and those with fishing interests in Clew Bay. Our presence will benefit the local economy both in the short and long term by ensuring that regulations and administrative issues associated with harvesting are dealt with effectively. This is crucial to ensure that seaweed harvesting continues to be viable, sustainable and profitable for years to come. We recognise that harvesting is an important supplementary income and we want to ensure that this is sustained and that families who make an income continue to do. Harvesters may work on a full time or part-time basis. As stated in point 1 above, we hope that you and other local harvesters will provide us with harvested seaweed from shore bordering your lands. Benefits from BioAtlantis making value-added products from Clew Bay seaweed will be realised in the form of prices that are attractive to hand harvesters. BioAtlantis will make a commitment to pay a market leading price for seaweed. We are confident that our high value product range and premium customers will allow us to do so.

4. Sustainability and management of the resource

Harvesting will only occur at levels that are sustainable. We detailed this in our application and anticipate that this system can fit in seamlessly into current practices in Clew Bay. We will also ensure that quantities of biomass are recorded and monitored and that the system will have full traceability.

5. Track record of BioAtlantis.

Seaweed is our main raw material and we are confident that through working with local traditional harvesters, we can manage the resource in an effective and sustainable manner. We have a long term vision to be the global brand leaders in crop biostimulant and nutraceutical technology. Protecting the environment will be central to this. BioAtlantis wish to take care of regulatory, monetary and administrative aspects to obtain a seaweed harvesting licence in Clew Bay SAC. Approval for this licence depends on the sustainability of the harvesting system. Therefore, we have modelled the system on the sustainable traditional methods used in Clew Bay for generations.

6. Why BioAtlantis seeks a licence.

As you may be aware, Údarás na Gaeltachta sold Arramara Teoranta to a Canadian company, called Acadian Seaplants. Acadian under the guise of Arramara have now applied for a licence to harvest seaweed from Loop head, Co. Clare to Belmullet, Co. Mayo. <u>BioAtlantis believe that this will weaken competition in the sector.</u> If Acadian is in control of the entire area from Clare to North Mayo, then they can pick and choose harvesters and determine the conditions of supply. It would also place BioAtlantis and other Irish processors in an unacceptable situation where they would be potentially dependent on their major competitor, Acadian, for their supply.

BioAtlantis cannot rely on our largest competitor, Acadian, to supply us with our raw material.

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We hope that this letter addresses your concerns. We appreciate your comments and we would like to meet with you to explain our plan further. We hope that you will work with us and provide us with harvested seaweed from the shore bordering your land.

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We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land adjoining the inner parts of Clew Bay along the townland of Kilmeena.

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We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest Ascophyllum nodosum seaweed in Clew Bay SAC. Firstly, we want to emphasise that BioAtlantis, as an indigenous Irish company, will work in partnership with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We have already met with approximately 10 local harvesters and would be very happy to meet with you also. We envisage that you and others will continue to harvest in the same locations as you have done for generations, in a traditional manner. We stated this in our application, in the Oireachtas meeting on seaweed harvesting and in the Mayo News:

- Application: On line 38 of page 3 of our application, we state that harvesting will continue "in a traditional way".
- Oireachtas, 8th July 2014: We stated that the best way forward to ensuring sustainability of hand harvesting is "to use the best of industry in conjunction with the best of local harvesters".
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As you may be aware, Údarás na Gaeltachta sold Arramara Teoranta to a Canadian company, called Acadian Seaplants. Acadian under the guise of Arramara have now applied for a licence to harvest seaweed from Loop head, Co. Clare to Belmullet, Co. Mayo. <u>BioAtlantis believe that this will weaken competition in the sector.</u> If Acadian is in control of the entire area from Clare to North Mayo, then they can pick and choose harvesters and determine the conditions of supply. It would also place BioAtlantis and other Irish processors in an unacceptable situation where they would be potentially dependent on their major competitor, Acadian, for their supply.

If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue harvesting as they have done for decades. It also ensures that we, as a company, take responsibility for environmental obligations required to work in this Special Area of Conservation.

Collection Vessel:

BioAtlantis will make a commitment to pay a market leading price for seaweed. We are confident that our high value product range and premium customers will allow us to do so. BioAtlantis will operate a collection vessel in the Clew Bay area. This will be under the control of the Resource Manager (a Clew Bay local). The advantage of this is that it will save the harvesters time and money, as they otherwise have to tow seaweed ashore. It will also allow harvesters to cut smaller amounts as the seaweed will be collected daily, thus avoiding the danger of losing their harvest due to a change in weather conditions. It will also allow for instant weighing and fast payment.



We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land adjoining the inner parts of Clew Bay and Newport.

Best segards,

John T. O'Sullivan, C.E.O. BioAtlantis Ltd.



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1. Aquaculture

In order to assess the potential for overlap between harvesting and aquaculture activities, BioAtlantis deemed it necessary to assess the distribution of these sites within the complex. Literature and data from the Marine Institute, Sea Fisheries Protection Authority and others was used. Page 28 of Appendix 7 to our application also lists a number of oyster culture sites. Map BioA_10_14_001.8 in Appendix 2 to our application provides a more detailed map of existing aquaculture sites in the complex, which is based on licence application data obtained by the Marine Institute (2014). Overall, the potential for overlap between *A. nodosum* hand harvesting and intertidal culture was deemed unlikely. According to the Marine Institute (2014):

"The likely overlap between these activities [harvest of seaweed on intertidal reef communities] and intertidal shellfish culture is considered small as the (reef) habitat is not considered suitable for shellfish culture".

It is unlikely that harvesting will impact on aquaculture in Clew Bay. From an environmental and conservation perspective however, the potential for in-combination effects was assessed and it was determined that harvest activities could potentially interact with and exacerbate existing risks potentially associated with aquaculture sites and their proximity in relation to (a) harbour seal sites and (b) mudflats and sandflats (pg. 27, 28 of Appendix 7 to application). The risk of such interactions is considered low (Marine Institute, 2014). Nevertheless, two mitigation measures were developed to prevent in-combination impacts between harvesting and aquaculture sites:

- (a) Code of practice for seasonal avoidance of sensitive harbour seal sites must be adhered to for all haul out sites.
- (b) Code of practice for environmentally safe navigation must be followed to ensure no in combination effects which would damage mudflats and sandflats.

Interactions with planned operations was also incorporated to these mitigations measures, to ensure that hand harvesting continues in light of proposed aquaculture sites being approved (e.g. InishCorky, ref: Marine Institute, 2014).

BioAtlantis have developed a Code of Practice for sustainable hand harvesting in Clew Bay, which includes a section on "working in the vicinity of aquaculture sites". BioAtlantis are aware of the



importance role played by the Clew Bay Oyster Co-operative Society Ltd. and The Clew Bay CLAMS Group (CLAMS), in the Clew Bay SAC. We are also aware of the efforts by these groups to adhere to a Code of Practice to ensure their activities are sustainable. We look forward to liaising with these groups in the future to ensure that we work in tandem to protect the SAC, in particular with respect to harbour seals and protected bird species.

2. Maps:

Map number BioA_10_14_001.8 in Appendix 2 was revised and constructed based on recent data from the Marine Institute report (2014). The updated version was provided as part of our revised application, and in advance of entry into public consultation. While a number of applications were not included in the map in the north of the complex, Bioatlantis is aware of these applications and mitigation measures in our application ensure that there is no impact on protected species and habitats in the SAC. In the south of the Complex, 7 aquaculture sites are indicated. There are at least 4 sites present to the east off the coast from Murrisk pier. These sites are in close proximity and denoted by a single 'X' on our map. As stated in our application, BioAtlantis will implement an Adaptive Management Approach to ensure continual improvements to the harvesting plan during its implementation and ensuring its effectiveness into the future. This includes continual updating of maps and mitigation measures in the event of additional aquaculture sites emerging in Clew Bay.

We hope that this letter addresses all of your concerns. We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

U// /IB/A

John T. O'Sullivan, C.E.O. BioAtlantis Ltd.

Cited Reference:

• Marine Institute (2014). Report supporting Appropriate Assessment of Aquaculture and Risk Assessment of Fisheries in Clew Bay Complex SAC (Site Code: 1482).



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- Application: On line 38 of page 3 of our application, we state that harvesting will continue "in a traditional way".
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In terms of your specific concerns, we wish to reply as follows:

2. Aquaculture

In order to assess the potential for overlap between harvesting and aquaculture activities, BioAtlantis deemed it necessary to assess the distribution of these sites within the complex. Literature and data from the Marine Institute, Sea Fisheries Protection Authority and others was used. Page 28 of Appendix 7 to our application also lists a number of oyster culture sites. Map BioA_10_14_001.8 in Appendix 2 to our application provides a more detailed map of existing aquaculture sites in the complex, which is based on licence application data obtained by the Marine Institute (2014). Overall, the potential for overlap between *A. nodosum* hand harvesting and intertidal culture was deemed unlikely. According to the Marine Institute (2014):

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BioAtlantis have developed a Code of Practice for sustainable hand harvesting in Clew Bay, which includes a section on "working in the vicinity of aquaculture sites". BioAtlantis are aware of the importance role played by the Clew Bay Oyster Co-operative Society Ltd. and The Clew Bay CLAMS Group (CLAMS), in the Clew Bay SAC. We are also aware of the efforts by these groups to adhere to a Code of Practice to ensure their activities are sustainable. We look forward to liaising with these groups in the future to ensure that we work in tandem to protect the SAC, in particular with respect to harbour seals and protected bird species.

2. Appendix 4 and 7

Taking your comments on board, we have double checked appendix 7. However, we cannot find the inconsistency that you have cited in Appendix 7. Appendix 4 only mentioned 200-300mm as the cutting height.

3. Maps:

The map you cite, namely BioA-04-13-0014-16 was updated in November 2014 to include additional aquaculture sites. The revised version was included as Map number BioA_10_14_001.8 in our application prior to entry into public consultation. This was constructed using up-to-date data from the Marine Institute report (2014). While a number of applications were not included in the map in the north of the complex, BioAtlantis is aware of these applications and mitigation measures are in place to ensure that there are no impacts of protected species and habitats in the SAC. In the south of the Complex, 7 aquaculture sites are indicated. There are at least 4 sites present to the east off the coast from Murrisk pier. These sites are in close proximity and denoted by a single 'X' on our map. As stated in our application, BioAtlantis will implement an Adaptive Management Approach to ensure continual improvements to the harvesting plan during its implementation and ensuring its effectiveness into the future. This includes continual updating of maps and mitigations in the event of additional aquaculture sites emerging in Clew Bay.



We hope that this letter addresses all of your concerns. We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

best egalas

John T. OʻSullivan, C.E.O. BioAtlantis Ltd. Date: Date: Det How 15015

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1. Floating structures:

Local harvesters from Clew Bay have an in-depth knowledge of the distribution of floating structures in Clew Bay and they will not come into contact with your structures. BioAtlantis will be providing one collection vessel in Clew Bay. This will not interfere with floating structures in Newport Bay or other areas.

2. Reference to aquaculture industry in Clew Bay

BioAtlantis recognise the importance of the local aquaculture industry in Clew Bay. In order to assess the potential for overlap between harvesting and aquaculture activities, BioAtlantis deemed it necessary to assess the distribution of these sites within the complex. Literature and data from the Marine Institute, Sea Fisheries Protection Authority and others was used. Map BioA_10_14_001.8 in Appendix 2 to our application provides a more detailed map of existing aquaculture sites in the complex, which is based on licence application data obtained by the Marine Institute (2014). Overall, the potential for overlap between *A. nodosum* hand harvesting and intertidal culture was deemed unlikely. According to the Marine Institute (2014):

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3. Transport of harvested seaweed.

As outlined in our application and in our press release in the Mayo News in December 2014, BioAtlantis will provide a collection vessel for the purposes of picking up harvested seaweed from the harvesters. This will allow harvesters to focus on harvesting and avoid having to tow seaweed ashore, a practice which is difficult and time-consuming. The collection vessel will be operated by the Resource Manager to the sites. Further details are provided in our main application document. The Resource Manager will collect and transport cut weed to BioAtlantis via established piers.

We hope that this letter addresses all of your concerns. We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

Best regards,

ohn T. O'Sullivan,

C.E.O. BioAtlantis Ltd.

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Page 2 of 2

Date 2 ud Harch 2015



Dear Mr. Donall Mac Giolla Bhride.

We thank you for your letter and wish to reply to your comments as follows:

1. Potential impacts

(a) Potential impacts on traditional and future harvesters.

BioAtlantis, as an indigenous Irish company, will work in partnership with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. As BioAtlantis has a requirement for seaweed, we will be able to offer contracts to local harvesters to fulfil that supply. This represents a more permanent relationship that ad hoc purchasing of seaweed.

- (b) Potential impacts on hauliers and other service providers

 BioAtlantis will also use hauliers and service providers to transport the seaweed and provide other services.
- (c) Potential impacts on existing processors:

 BioAtlantis are open to supplying existing processors in Clew Bay with seaweed, if asked.

2. Management, use, requirement and ability to process the resource

(a) Ability to manage the resource and potential impacts

BioAtlantis have a highly technical team in place, with 7 PhDs in the natural sciences and 2 engineers. The project will be resourced properly and specialized personnel will be hired as required.

(b) Ability to use the resource and requirement thereof:

In January 2015, BioAtlantis expanded into a larger facility in order to utilize increased volumes of *A. nodosum* raw material. We also plan to expand into different markets based on proven, patented results. Thus, we do have a requirement for larger quantities of seaweed.

(c) Increased need for the resource:

BioAtlantis have grown at an average rate of 45% per annum since 2007 and sell value added products in over 30 countries worldwide. BioAtlantis will double in size and double employment over the next 2-5 years. The new facility will allow BioAtlantis to expand our product range and move into different markets with new products.

(d) Ability to process the resource:

BioAtlantis have fully automated facilities for extracting and isolating molecules from seaweed.



3. Duration of licences

We agree that conditions should be defined and adhered to. BioAtlantis is open to being audited on an annual basis as a requirement of the licence. BioAtlantis propose a licensing system over a ten year period. As the system will have full traceability, performance can be assessed by regulatory authorities throughout the licence. This will allow for investment in capital expenditure and research. A three year licence would only allow for a continuance of drying seaweed and export of a commodity product, which is not in the best interest of the harvesters or the seaweed industry in Ireland.

4. Obligation and limitations

BioAtlantis will agree with obligations and limitations as set down by the Government. BioAtlantis also believe it is incumbent on Irish companies to ensure that they adhere to EU regulation with regard to protecting Special Areas of Conservation and regulations as determined under Irish law.

5. Economic benefits

- (a) Traditional and future harvesters. See point 1(a) above.
- (b) Hauliers and other service providers See point 1(b) above.

(c) Added Value:

BioAtlantis is one of the few companies in Ireland who add value to seaweed. The company have three patents filed on benefits arising from seaweed extracts and have over 20 peer reviewed publications on the same subject. BioAtlantis are currently collaborating with >26 universities and research institutes worldwide. BioAtlantis will launch a new product range for pig and poultry in 2015.

6. Ability to use quantities cited in the application

BioAtlantis have the capacity to use the quantities described in our application (see point 2 above). We agree with the 'use it or lose it' clause and BioAtlantis commit to ensuring that sustainable quantities will be processed.

7. Record of resource management, resource science and environmental responsibility

BioAtlantis have a very strong record in the area of feed traceability, quality and safety. BioAtlantis is one of the few seaweed companies in Ireland who are accredited by GMP+International B.V., one of the highest feed safety standards in the World. Bioatlantis have developed a sustainable system which is based on best scientific knowledge and provides a range of mitigation measures which will prevents impacts on the resource and protected marine and coastal habitats and species. This sustainable system includes monitoring the resource and biotope over a long period of time and robust systems to ensure full traceability of all harvest activities and their sustainability. However, I consider it somewhat disingenuous to suggest that BioAtlantis cannot manage harvesting in Clew Bay when Arramara have applied for a licence to cover an area from Co. Clare to North Mayo.

Page 2 of 3



8. The resource management plan.

The sustainable harvesting system development by Bioatlantis has been presented to the Department of the Environment and NPWS for evaluation. It was made available to the public during public consultation. Central to the system is full traceability and monitoring on a site-by-site basis within the licensing area.

9. In-house research

BioAtlantis have an established R&D department with a collective expertise across the natural sciences, including molecular genetics, chemistry, innate immunity, microbiology, monogastric health and engineering. Important aspects to research at BioAtlantis include:

- ➤ Laboratory facilities: BioAtlantis have established laboratories and plant growth facilities at our headquarters in Tralee, which caters for our multidisciplinary team of scientists.
- > Scientific Leadership: BioAtlantis are scientific leaders in their field and coordinators of an EU Framework 7 project (see www.thriverite.eu) and participants in two other research consortia (www.co-free.eu and www.biofector.info).
- Monogastric and human health: BioAtlantis have funded 5 PhDs and 4 MSc. students in partnership with Professor John O'Doherty (UCD). This has resulted in two patents and over 20 peer reviewed science papers.
- ➤ Crop science: BioAtlantis have funded MSc. students in collaboration with Enterprise Ireland and UCC and have collaborated for over 8 years with the Agri-Food and Biosciences Institute (AFBI, UK) in the area of crop production and plant health. A patent from this work has also been filed.
- > Collaborations: BioAtlantis are currently working in collaboration with over 26 universities worldwide.

10.Proof on concept

BioAtlantis have also created a Code of Practice for sustainable hand harvesting in Clew Bay (Appendix 4 of our application). These standards require full traceability and monitoring of activities, along with assessments of compliance with the Code of Practice and mitigation measures. This will be critical in ensuring the protection of marine and coastal habitats and species, in accordance with EU Law and NPWS conservation objectives for the SAC.

John T. O'Sullivan

C.E.O. BioAtlantis Ltd.

Page 3 of 3

Date: Doch World 2015



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As you may be aware, Údarás na Gaeltachta sold Arramara Teoranta to a Canadian company, called Acadian Seaplants. Acadian under the guise of Arramara have now applied for a licence to harvest seaweed from Loop head, Co. Clare to Belmullet, Co. Mayo. <u>BioAtlantis believe that this will weaken competition in the sector.</u> If Acadian is in control of the entire area from Clare to North Mayo, then they can pick and choose harvesters and determine the conditions of supply. It would also place BioAtlantis and other Irish processors in an unacceptable situation where they would be potentially dependent on their major competitor, Acadian, for their supply.

If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue harvesting as they have done for decades. It also ensures that we, as a company, take responsibility for environmental obligations required to work in this Special Area of Conservation.

Collection Vessel:

BioAtlantis will make a commitment to pay a market leading price for seaweed. We are confident that our high value product range and premium customers will allow us to do so. BioAtlantis will operate a collection vessel in the Clew Bay area which will be under the control of the Resource Manager (a Clew Bay local). The advantage of this is that it will save the harvesters time and money, as they otherwise have to tow seaweed ashore. It will also allow harvesters to cut smaller amounts as the seaweed will be collected daily, thus avoiding the danger of losing their harvest due to a change in weather conditions. It will also allow for instant weighing and fast payment.

We hope that this letter addresses all of your concerns. Your comments are very much appreciated and we welcome any suggestions as to potential improvements to the plan.

Best regards

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Page 1 of 1

Date: 2 M Karch 2015



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Date: 2 M Howh 2015



We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land adjoining the inner parts of Clew Bay along the townland area of Roskeen. You also indicate that you already hold a licence for your land in Roskeen. If so, our application will not affect this.

Best regards,

John T. O'Sullivan, C.E.O. BioAtlantis Ltd.



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We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest Ascophyllum nodosum seaweed in Clew Bay SAC. Firstly, we want to emphasise that BioAtlantis, as an indigenous Irish company, will work in partnership with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We have already met with approximately 10 local harvesters and would be very happy to meet with you also. We envisage that you and others will continue to harvest in the same locations as you have done for generations, in a traditional manner. In terms of your specific concerns, we wish to reply as follows:

1. Monopolization of the seaweed resource

We share your concerns about monopolization. Acadian/Arramara have applied for a licence to control most of the *A. nodosum* in Ireland, from Clare to north Mayo, including Clew Bay. This is certainly not in the best interest of traditional Clew Bay harvesters nor indigenous Irish companies such as BioAtlantis. A licence for BioAtlantis in Clew Bay will prevent this Acadian/Arramara monopoly from occurring.

2. Income and employment conditions

Local farmers and harvesters should be at the heart of economic development in Clew Bay. A licence for BioAtlantis will allow harvesters and authorities to compare the price of raw material terms and conditions versus harvesters in other parts of the country. This is preferable to a scenario whereby Acadian/Arramara alone control the *A. nodosum* resource from Clare to north Mayo. As stated on line 40 on page 3 of our application, BioAtlantis wish to ensure that "harvesters can grow their business as employees or subcontractors of BioAtlantis". BioAtlantis will make a commitment to pay a market leading price for seaweed. We are confident that our high value product range and premium customers will allow us to do so. We will ensure that the local economy benefits from our presence in Clew Bay.

Collection Vessel: BioAtlantis will operate a collection vessel in the area which will be under the control of the Resource Manager (a Clew Bay local). The advantage of this is that it will save the harvesters time and money, as they otherwise have to tow seaweed ashore. It will also allow harvesters to cut smaller amounts as the seaweed will be collected daily, thus avoiding the danger of losing their harvest due to a change in weather conditions. It will also allow for instant weighing and fast payment.

3. Track record of BioAtlantis.

BioAtlantis is registered by the Department of Agriculture in Ireland for the manufacture and sale of feed material. BioAtlantis are accredited as having 'Good Manufacturing Practices', by GMP+ International B.V., one of the highest feed safety standards in the world, requiring high standards in traceability, quality and safety. A highly qualified professional team is in place in BioAtlantis covering science and engineering fields. BioAtlantis have three patents filed on benefits arising from seaweed extracts and have over 20 peer reviewed publications on the same subject.



4. Local knowledge

BioAtlantis are cognisant of the fact the hand harvesters have an in depth knowledge of local issues and sustainable methods of hand harvesting. In our application we state that we will take an adaptive approach and work to include local knowledge as to best practice when approaching sites and other issues as they emerge. This will require time spent with harvesters to establish which sites are of relevance to each individual. We believe the best way to ensuring sustainability is to use the best of industry in conjunction with the best of local harvesters.

5. BioAtlantis into the future

Our vision is to be the global brand leader in biostimulant and nutraceutical technology. The company have a long term vision and absolutely will not be sold to the highest bidder.

We hope that this letter addresses your concerns. We appreciate your comments and we would like to meet with you to explain our plan further. We hope that you will work with us and provide us with harvested seaweed from the shore bordering your land.

Date: 2 Herli 2015

Best regards,

ohn T. O'Sullivan, C.E.O. BioAtlantis Ltd.



Dear Sir/Madam,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest Ascophyllum nodosum seaweed in Clew Bay SAC. Firstly, we want to emphasise that BioAtlantis, as an indigenous Irish company, will work in partnership with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We have already met with approximately 10 local harvesters and would be very happy to meet with you also. We envisage that you and others will continue to harvest in the same locations as you have done for generations, in a traditional manner. We stated this in our application, in the Oireachtas meeting on seaweed harvesting and in the Mayo News:

- Application: On line 38 of page 3 of our application, we state that harvesting will continue "in a traditional way".
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As you may be aware, Údarás na Gaeltachta sold Arramara Teoranta to a Canadian company, called Acadian Seaplants. Acadian under the guise of Arramara have now applied for a licence to harvest seaweed from Loop head, Co. Clare to Belmullet, Co. Mayo. <u>BioAtlantis believe that this will weaken competition in the sector</u>. If Acadian is in control of the entire area from Clare to North Mayo, then they can pick and choose harvesters and determine the conditions of supply. It would also place BioAtlantis and other Irish processors in an unacceptable situation where they would be potentially dependent on their major competitor, Acadian, for their supply.

If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue harvesting as they have done for decades. It also ensures that we, as a company, take responsibility for environmental obligations required to work in this Special Area of Conservation.

Collection Vessel:

BioAtlantis will make a commitment to pay a market leading price for seaweed. We are confident that our high value product range and premium customers will allow us to do so. BioAtlantis will operate a collection vessel in the Clew Bay area. This will be under the control of the Resource Manager (a Clew Bay local). The advantage of this is that it will save the harvesters time and money, as they otherwise have to tow seaweed ashore. It will also allow harvesters to cut smaller amounts as the seaweed will be collected daily, thus avoiding the danger of losing their harvest due to a change in weather conditions. It will also allow for instant weighing and fast payment.

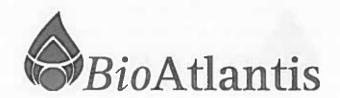
Date: 2 & Harch 2015



We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land adjoining the inner parts of Clew Bay along the townland area of Roskeen. You also indicate that you already hold a licence for your land in Roskeen. If so, our application should not affect this.

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C.E.O. BioAtlantis Ltd.



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Date: 2 cd Plans 2015



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Best regards

John T. O'Sullivan, C.E.O. BioAtlantis Ltd.



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We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest Ascophyllum nodosum seaweed in Clew Bay SAC. Firstly, we want to emphasise that BioAtlantis, as an indigenous Irish company, will work in partnership with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We have already met with approximately 10 local harvesters and would be very happy to meet with you also. We envisage that you and others will continue to harvest in the same locations as you have done for generations, in a traditional manner. We stated this in our application, in the Oireachtas meeting on seaweed harvesting and in the Mayo News:

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We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land.

Best regards,

John T. O'Sullivan,

C.E.O. BioAtlantis Ltd.



Reply to: Letter number 54

Dear Sir/Madam,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest Ascophyllum nodosum seaweed in Clew Bay SAC. Firstly, we want to emphasise that BioAtlantis, as an indigenous Irish company, will work in partnership with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We have already met with approximately 10 local harvesters and would be very happy to meet with you also. We envisage that you and others will continue to harvest in the same locations as you have done for generations, in a traditional manner. We stated this in our application, in the Oireachtas meeting on seaweed harvesting and in the Mayo News:

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We appreciate your comments and welcome any further suggestions as to potential improvements to the plan. We would like to meet with you to explain our plan further and hope that you will work with us and provide us with harvested seaweed from the shore bordering your land.

Best regards

John T. O'Sullivan, C.E.O. BioAtlantis Ltd. Date: 2 1015



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