



*BioAtlantis*

Nature Working Naturally™

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, R56-R70**  
**(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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Reply to: Submission number 56

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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

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. 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.

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.

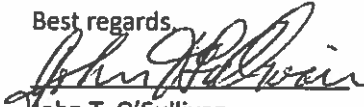
**Collection Vessel:**

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.

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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<sup>nd</sup> March 2015

Reply to: Submission number 57

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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

Regarding your aquaculture site, we have assessed the potential for overlap between harvesting and aquaculture activities. 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".*

Local hand harvesters have an in depth knowledge of the distribution of aquaculture sites and know the best practice for working in their vicinity. In Appendix 4 to our application we have provided a Code of Practice for "working in the vicinity of aquaculture sites", in order to prevent in-combination effects on sensitive harbour seal sites.

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. 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.

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 at Rosslaher and nearby areas.

Best regards,

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

Date: 2nd March 2015

**Reply to: Submission number 58**

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 agree that the decision to grant licences should be based on sustainability of the application harvesting plan, with respect to the SAC requirements. We have developed a sustainable system, with a range of mitigation measures to prevent impacts on marine and coastal habitats and species protected in Clew Bay SAC. The system also incorporates monitoring and traceability of activities related to hand harvesting to ensure that protective measures are functional and are adhered to.

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. 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.

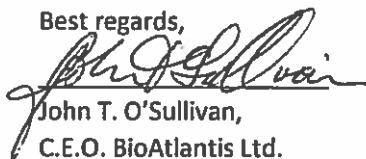
If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue 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.

Best regards,

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

Date: 2<sup>nd</sup> March 2015



Reply to: Submission number 59

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. With regard to your specific points we wish to address them as follows:

**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:

- **Application:** On line 38 of page 3 of our application, we state that harvesting will continue "in a traditional way".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

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.

**2. 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". 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 work with harvesters either part-time or full time, according to their wishes.


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.

**Collection Vessel:**

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 shore bordering your land in Carrowholly.

Best regards,

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

Date: 2nd March 2015

Reply to: Submission number 60

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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

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. 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.

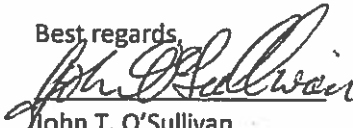
If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue 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. In addition, 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.



R60

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: 2nd March 2015

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Reply to: Submission number 61

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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

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. 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.

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 at Moynish Mor Island. However, our application does not go beyond Rossmurvagh, thus avoiding much of the Mulranny area. Therefore, the shore near Bunnahowna may be outside the scope of our application. Nevertheless, we would like to discuss this with you.

Best regards,

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

Date: 2<sup>nd</sup> March 2015

Reply to: Submission number 62

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 local harvesters will continue to harvest in the same locations as they have done for generations, in a traditional manner.

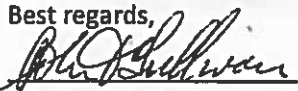
As you may be aware, Údarás na Gaeltachta sold Arramara Teoranta to a Canadian company, called Acadian Seaplants. Acadian under the guise of Arramara have now applied for a licence to harvest seaweed from Loop head, Co. Clare to Belmullet, Co. Mayo. BioAtlantis believe that this will weaken competition 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.

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.

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". 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 work with harvesters either part-time or full-time, according to their wishes.

We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

Best regards,

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

Date: 2<sup>nd</sup> March 2015

Reply to: Submission number 63

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. BioAtlantis Ltd., as an indigenous Irish company, are also extremely concerned about monopolisation of the Irish seaweed industry. It should not happen. As you are probably aware, Údarás na Gaeltachta have sold Ireland's only state-owned seaweed drying factory, Arramara Teo, to a Canadian company, Acadian SeaPlants Ltd. Acadian/Arramara have now applied for a licence to control the entire seaweed resource from Clare to North Mayo, including Clew Bay. If this is allowed to happen, then Acadian/Arramara will be able to pick and choose which harvesters to work with along the entire west coast. They will also be able to control the growth of Irish companies like BioAtlantis, as they will have total control over the supply of raw material. BioAtlantis cannot allow this to happen. It is simply not in the best strategic interest of Ireland, local harvesters or the Irish seaweed Industry for this to happen.


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.

In terms of your personal concerns regarding Inishlyre, we wish to point out the following:

1. **Presence of BioAtlantis on the island:** We arrived at the pier on the east side of Inishlyre at 13.56 on 26/09/2013. We were welcomed by and had discussions with two locals concerning the shore and seaweed and were pointed in the direction as to where we might find it. We proceeded on foot along the shoreline to make our assessments with their permission.
2. **Quantities of *A. nodosum* on the island:** We agree with your comments that *A. nodosum* does not grow in Inishlyre in great quantities. We state clearly in our application that Inishlyre has "low" *A. nodosum* density.
3. **Harvest methods:** evidence of different harvesting techniques were found at Inishlyre.

BioAtlantis are focused on supporting sustainable employment of existing local harvesters, both in the short and long term. We appreciate your comments and welcome any suggestions as to potential improvements and ways in which we can work together for the mutual benefit of local harvesters and BioAtlantis, while respecting the environment.

Best regards,

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

Date: 2<sup>nd</sup> March 2015



Reply to: Submission number 64

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. BioAtlantis Ltd., as an indigenous Irish company, are also extremely concerned about monopolisation of the Irish seaweed industry. It should not happen. As you are probably aware, Údarás na Gaeltachta have sold Ireland's only state-owned seaweed drying factory, Arramara Teo, to a Canadian company, Acadian SeaPlants Ltd. Acadian/Arramara have now applied for a licence to control the entire seaweed resource from Clare to North Mayo, including Clew Bay. If this is allowed to happen, then Acadian/Arramara will be able to pick and choose which harvesters to work with along the entire west coast. They will also be able to control the growth of Irish companies like BioAtlantis, as they will have total control over the supply of raw material. BioAtlantis cannot allow this to happen. It is simply not in the best strategic interest of Ireland, local harvesters or the Irish seaweed Industry for this to happen.

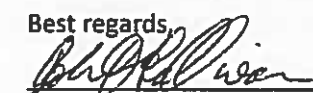
If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue 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.

In terms of your personal concerns regarding Inishlyre, we wish to point out the following:

1. **Presence of BioAtlantis on the island:** We arrived at the pier on the east side of Inishlyre at 13.56 on 26/09/2013. We were welcomed by and had discussions with two locals concerning the shore and seaweed and were pointed in the direction as to where we might find it. We proceeded on foot along the shoreline to make our assessments with their permission.
2. **Quantities of *A. nodosum* on the island:** We agree with your comments that *A. nodosum* does not grow in Inishlyre in great quantities. We state clearly in our application that Inishlyre has "low" *A. nodosum* density.
3. **Harvest methods:** evidence of different harvesting techniques were found at Inishlyre.

BioAtlantis are focused on supporting sustainable employment of existing local harvesters, both in the short and long term. We appreciate your comments and welcome any suggestions as to potential improvements and ways in which we can work together for the mutual benefit of local harvesters and BioAtlantis, while respecting the environment.

Best regards,

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

Date: 2nd March 2015

Reply to: Submission number 65

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, and in particular, your comments regarding our assessment of the resource. As stated on page 43 of our main application document, the study described in Appendix 1 was a "pilot study". This was a preliminary test of the methods and procedures employed in order to evaluate important aspects such as feasibility, time, costs, and the underlying statistical variability involved. The pilot study was also deemed necessary to establish appropriate sample sizes and to determine ways in which to improve the experimental design, prior to up-scaling analysis during the operational phase. The study in Appendix 1 was primarily qualitative rather than quantitative. On page 6 of Appendix 1, we state:

*"this study was "primarily qualitative in design, replicate numbers were insufficient to allow for direct statistical comparisons of measures between sites"*

As shown in Fig. 4, we did not perform statistical comparisons between biomass at different sites. This would require a larger number of replicates which would reflect the variability of *A. nodosum* levels in Clew Bay. While comparison between sites was not determined, we performed a preliminary assessment of the potential relationship between *A. nodosum* biomass and periwinkle and limpet numbers. Measurements were based on biomass levels and species counts per individual 1m<sup>2</sup> replicate. We chose a larger sized quadrant as this provides a more accurate measurement compared to other studies, which otherwise rely on smaller quadrants, with larger margins for error.

We agree that harvesting must be sustainable and based on robust and sound measures of *A. nodosum* biomass. With this pilot study complete, BioAtlantis will perform a more in depth assessment as part of the operational phase. In Appendix 4 to our application we explain that on-site assessments will take place prior to harvest taking place. This will ensure that only suitable sites will be subject to harvest. The flow chart in Fig.2 of our main application document also states that figures will be validated on a site by site basis, which will involve "inspection of islands prior to scheduled harvest". In addition, the experimental design for long term assessments is described in Section 1.3.3 (d) of our main application document under "Operation/Activity 4: Long term assessment biomass and community structure" (pg. 43 & 44). In terms of sustainable management of Clew Bay harvesting, we have created a Code of Practice (Appendix 4 of our application), with an auditing system designed to ensure full traceability of activities and monitoring of compliance with 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.

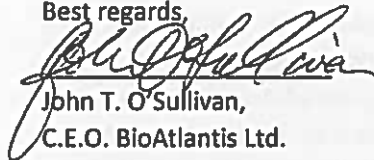


# BioAtlantis

R65

We appreciate your constructive comments and will take them on board as we begin to secure the licence and implement the Code of Practice and monitoring systems. We welcome any further suggestions you might have as to potential improvements to the plan.

Best regards,

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

Date: 2nd March 2015

Page 2 of 2

**Reply to: Letter number 66**

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. I would like to address each of your points as follows:

**1. Monopolization of the resource**

First and foremost, BioAtlantis are open to supplying existing processors in Clew Bay with seaweed. However, as you are 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. 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.

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.

**2. Added value products**

BioAtlantis are one of the few companies in Ireland who add value to the product. We have three patents filed on benefits arising from seaweed extracts and have over 20 peer reviewed publications on the same subject. Our value-added products are sold in over 30 countries worldwide. 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.

**3. Energy consumption**

BioAtlantis will transport harvested seaweed to our facilities in Tralee where we manufacture value-added products. The cost of transporting seaweed equates to the cost of drying. Also, since drying can potentially lead to losses in efficacy of seaweed extracts, transporting fresh seaweed is preferable.

**4. Sea trout**

On page 90 of our application and the associated Appendices, we assessed the potential hazards posed by hand harvesting on fish species such as trout and salmon. We identified that in the absence of appropriate systems of management, monitoring and verification, there is increased likelihood of excess removal of *A. nodosum* which in turn, may impact upon species of fish which

use these zones. To mitigate against this, we have developed a sustainable system whereby harvesting takes place (a) at levels which does not lead to *A. nodosum* mortality, (b) cutting takes place at levels sufficiently high above the holdfast in order to maintain canopy coverage and (c) overharvesting of an area does not occur. Specific details of this system are described in our application document. Also, the important catchment area of Burrishoole is excluded from all harvest-related activities. There will be no activities which cause deterioration to quality of the environment of trout or salmon.

#### 5. Coastal erosion

In our application, we examined the potential for harvest activities to give rise to disruption and damage to coastal habitats. We determined that unauthorized transport in coastal areas has the potential to cause physical disruption and damage to these areas (e.g. see page 23-25 of Appendix 5 to the application). The following mitigation measures are described in our application, and have been developed to ensure that any potential impacts on coastal habitats are prevented:

- (a) Training: Harvesters will be trained to ensure that all transport activities take place using existing piers, routes and roadways,
- (b) Location of harvest and pick-up points will be recorded on GRNS (See Appendix 3),
- (c) Inspection of GRNs at BioAtlantis.

#### 6. Return for harvesters

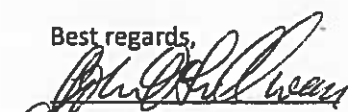
As described above, BioAtlantis manufacture value-added products for crop biostimulant and monogastric animal health markets. We export to premium customers in over 30 countries worldwide. This ensures that local hand harvesters will benefit financially from working with BioAtlantis.

#### 7. Duration of licences

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 which is not in the best interest of the harvesters or the seaweed industry in Ireland.

BioAtlantis are open to working with you. Please feel free to contact us.

Best regards,

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

Date: 2nd March 2015

Reply to: Letter number 67

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.

Regarding your specific comments, it is important to note that there are many factors which determine the distribution and density of *A. nodosum*. For instance, in highly sheltered areas, *A. nodosum* tends to grow in high density. At such sites, *A. nodosum* is the dominant species, while species such as *Fucus* sp. are present at very low levels. Clew Bay is highly sheltered and many sites support such high levels of *A. nodosum* growth, with correspondingly low levels of *Fucus* sp. These areas will be targeted for sustainable harvesting. It is not feasible to harvest in areas with low *A. nodosum* density and high *Fucus* density.

The sustainable harvesting system proposed by BioAtlantis is designed to ensure that overharvesting of *A. nodosum* does not occur. According to Kelly et al., 2001, and many other studies, overharvesting of *A. nodosum* is associated with increased density of *Fucus* Sp. This species of seaweed is particularly opportunistic in cases where harvest methods are severe. Increased *Fucus* growth can also delay *A. nodosum* growth rates and recovery of sites post-harvest. As a responsible company, we will not allow over-harvesting to occur and we have developed our system to prevent this. Our sustainable harvesting plan also requires that each site be visited to determine densities of *A. nodosum* and assign appropriate fallowing periods in the case of recent harvest activities.

Your comments are very much appreciated. If you have any further comments to make, we would be happy to hear from you.

Best regards,

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

Date: 24 March 2015

Reply to: Submission number 68

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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

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. 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.


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 a Rosmoney, Westport.

Best regards,

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

Date: 2<sup>nd</sup> March 2015



Reply to: Submission number 69

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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

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. 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.

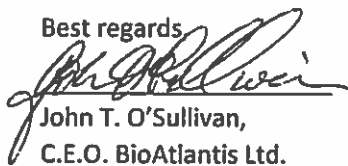
If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay. This will be good for competition and will ensure that local harvester's rights are protected. BioAtlantis will employ existing traditional harvesters from Clew Bay who will continue 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 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 a Rosmoney, Westport.

Best regards

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

Date: 2<sup>nd</sup> March 2015

Reply to: Submission number 70

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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December, 2014 (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

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. 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.


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 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 adjoining the townland of Raigh. We wish to reassure you that those with folio rights will not be affected by our application.

Best regards,

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

Date: 20th March 2015



***BioAtlantis***

**Nature Working Naturally™**

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, R71-R75**  
**(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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Reply to: Submission number 71

Dear Mr. Moran,

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. I would like to address each of your points as follows:

**1. Traditional harvesting**

I would like to state that BioAtlantis, as an indigenous Irish company, will only work with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We envisage local harvesters 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, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

**2. (a) Monopolization of the resource**

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. 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. If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay.

**3. (a) Management of the resource**

BioAtlantis have a long term vision to be the global brand leader 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 obtaining and maintaining a seaweed harvesting licence in Clew Bay SAC.


**3. (b) Other seaweed companies in Clew Bay**

BioAtlantis are open to the possibility of supplying local companies with seaweed. Please feel free to contact us at any stage.



R71

Best regards,

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

Date: 20 April 2015

Page 2 of 2



Reply to: Submission number 72

Dear Sir,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. We are aware of your work as a marine biologist in Co. Mayo. We are also aware that you work with Aquafact Environmental Consultants Ltd., the company who are working for Acadian Seaplants and Arramara in their licence application to harvest seaweed from Clare to north Mayo. We would like to address your points as follows:

**1. Point 1. Survey data, risk assessment and mitigation measures**

Data published by NPWS (2011) which describes the range and usage requirements of Otter *Lutra Lutra* in their natural habitats in Clew Bay, was used in our assessment. This data provided a strong framework in which to address risks to otters and mitigate where necessary. As otters occupy both freshwater aquatic, marine aquatic and associated terrestrial habitats, they require unrestricted access to sites and islands throughout Clew Bay. They also require unrestricted access to adequate food supply. According to NPWS (2011), the conservation objectives for otters are to restore the favourable conservation conditions defined by the following attributes.

- Distribution of positive survey sites
- Extent of terrestrial habitat
- Extent of marine habitat
- Extent of freshwater (river) habitat.
- Extent of freshwater (lake/lagoon) habitats.
- Number of couching sites and holts
- Fish biomass available
- Barriers to connectivity

In our application (page 26 of Appendix 5), we identified the following potential sources of hazards which may potentially impact on these conservation objectives. For each of these potential hazards, we have mitigated accordingly.

- Damage to freshwater habitats
  - Damage to marine habitats.
  - Damage to fish resources.
  - Blocking access to sites
- (Other hazards include potential for disturbance by harvesters at sites)

**Mitigation measures**

Mitigation measures were put in place on the basis of identifying potential hazards which may potentially impact on Otter *Lutra Lutra* and other protected marine and coastal habitats and species in the SAC. On this basis, a Code of Practice for *A. nodosum* harvest activities in Clew Bay

SAC was developed. This was published as Appendix 4 to our application and included in the Natura Impact Statement (NIS). Mitigation measures, as described in Appendix 4 are as follows:

- Harvesters will always follow pre-planned harvest schedules provided by BioAtlantis. This ensures that harvesters arrive to the foreshore by boat or by via existing routes. Moreover, routes used will not increase significantly beyond current levels already used by harvesters in Clew Bay. As there will be a collection vessel provided by BioAtlantis, this will minimise the length of time that harvesters boats are in the water. This reduces the risk of harvesters interacting with otters.
- Harvest areas are defined by BioAtlantis. This ensures that harvesters do not enter into areas which are deemed highly sensitive in terms of food supply (e.g. Burrishoole).
- All freshwater areas are prohibited from any harvest-related activities. This prevents any interactions in freshwater habitats.
- To minimise disturbance or interaction with otters, harvesters will ensure:
  - All activities are maintained within the intertidal *Ascophyllum nodosum* zone. This ensures that harvest activity takes place in the intertidal zone and will not affect Otter *Lutra Lutra* holts beyond the intertidal zone.
  - Harvesters must not interfere with Otter *Lutra Lutra* couching sites, holts or access paths/routes. Harvesters will be made aware that these areas must not be interfered with or blocked in any way. This will be part of their training.

**Site specific measures (as outlined in the Code of Practice):**

- The freshwater lagoon on east side of InishGowla south must be avoided by harvesters. This prevents any interactions in this freshwater habitat.
- Harvest-related activities are prohibited within the Burrishoole Catchment to ensure no impact on catchment, connected lakes, fish and otters.
- Harvest-related activities are prohibited at Lough Furnace. This will ensure that there are no negative impacts on fish resources.

**Food supply of Otter *Lutra Lutra***

According to the conservation objectives described by NPWS (2011) and references therein, Otter *Lutra Lutra* has a broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater and wrasse and rockling in coastal waters. On page 65 of our application we identify the Burrishoole Catchment area of Clew Bay as representing an important habitat for migratory fish species such as trout and salmon, and is regarded as a major European and World Index site. In particular, sea trout and salmon smolts enter the sea at Clew Bay, while post-smolt and adult sea trout also feed within the bay. On this basis we have omitted the Burrishoole Channel from our application. This is marked in Appendix 2 in Map BioA\_10-14-001.1. We also identify Lough Furnace in our application, a rare deep, permanently stratified, saline lake lagoon located at the north-eastern corner of Clew Bay, which hosts important population of eel. Exclusion of these sites from the harvesting plan ensures that potential impacts on Otter *Lutra Lutra* food supply are reduced. It also prevents impacts on important life-cycle stages of trout or salmon.

Hand harvesting will take place at low tide and this will ensure that there are no direct impacts on fish species such as wrasse and rockling, which are important prey species to Otter *Lutra Lutra*.

BioAtlantis will manage activities in a sustainable manner to prevent *A. nodosum* overharvesting, prevent *A. nodosum* mortality and in turn, prevent potential negative effects on species further along the food chain, e.g. fish & otters. As regard the broader diet of Otter *Lutra Lutra*, mitigation measures are in place to ensure that understory species within the *A. nodosum* canopy are protected and that bycatch including crustaceans and other species identified on the collection vessel will be returned to the water. These mitigation measures are outlined in the NIS and Code of Practice.

**Other aspects which reduce risk to Otter *Lutra Lutra*:**

- Harvest activities will not require construction of barriers which would affect access to sites of habitats.
- Since harvested seaweed will be collected by a pick vessel provided by BioAtlantis, seaweed not be transferred by land, thus reducing potential impacts on otters in these location and species and habitats of relevance to otters within the broader coastal ecosystem.
- As stated on page 22 of the NIS, approximately 2-4 harvesters are permitted on small-medium sized sites. Medium to large islands may require between 4-6, while larger islands will likely require approximately 6-10 harvesters. Thus, the low number of people over a wide area reduces the potential for anthropogenic impacts, and in turn will reduce the potential for interactions with otters on the foreshore.
- Map 8 of NPWS (2011) identifies a number of linear habitats. These will not be damaged or blocked in anyway, therefore ensuring that otters have undisrupted access to the marine zone.

**Training of harvesters and securing the Code of Practice:**

As described in the Code of Practice (Appendix 4 to our application), harvesters will receive appropriate training on the biological requirements and behaviour of sensitive harbour seal, otters and birds by biologists in BioAtlantis. Support will also be provided by engineers who will ensure that marine and navigation aspects when approaching or avoiding sensitive sites are explained. Training is scheduled to take place during month 1 of the operational phase. Verification of understanding of the training and regular auditing of the system by BioAtlantis will ensure standards are maintained. Harvesters will be trained in all aspects of the Code of Practice as it pertains to otters. Data provided by "Island Otterwatch" in Fig. 1 of your letter will also form an excellent basis for training harvesters and in making them aware of the distribution and sighting of otters sites in Clew Bay. This will be of interest to harvesters who own land adjoining the foreshore where otters have been spotted. As part of their training, harvesters in coastal areas will also be made aware of Map 8 of NPWS (2011), which identifies freshwater aquatic linear habitats, which harvesters must not block or damage in anyway. This will be part of the training required of harvesters as the operational phase begins in the first month of receiving the application licence. The requirement to train harvesters is stated in Appendix 4.

**'Adaptive Management Approach'**

As stated on page 76 of the NIS, an adaptive management approach will be taken which will ensure:

*"continual improvements to the harvesting plan during its implementation and its effectiveness into the future. This will include ongoing liaison with the NPWS regarding shoreline and island locations of importance to Common seal and Otter Lutra Lutra and will provide for the amendment and alteration of Code of Practice in order to limit environmental impacts and ensure the sustainable strategy adopted by the company"*

**Seaweed harvesting as a notifiable action in Clew Bay SAC.**

Many traditional hand harvesters are highly conscious of the importance of protecting the SAC environment of Clew Bay. Some already liaise with NPWS and ensure that their harvesting activities are in line with SAC requirements. For the large part, hand harvesting has been sustainable in Clew Bay for generations. BioAtlantis have put forward a sustainable management system for harvesting which is designed to fit in seamlessly into the existing local harvesting traditions, whilst also ensuring greater traceability, monitoring and compliance with conservation objectives of the SAC going forward. This system can be regularly assessed by the regulatory authorities to assess its performance.

**2. NPWS**

We believe that it is incumbent on private companies who want to operate in SACs that they ensure that they manage their activities and comply with stated conservation objectives, in a clear, open and transparent manner. NPWS have provided documents on their website which describe the conservation objective for Clew Bay in a clear and concise manner. This is freely available on their website. This allows for companies such as BioAtlantis to assess the needs of the SAC and mitigate in situations where there are significant risks identified. NPWS rangers also provide support to individuals in Clew Bay, particularly in the case where notifiable actions may be relevant.

**3. Policy on seaweed harvesting**

BioAtlantis attended an Oireachtas meeting on July 8<sup>th</sup> 2014 on the subject of seaweed harvesting in Ireland, whereby we explained that we believe that harvesting should take place in a sustainable manner. Most Irish companies agree with this. The Minister will make his decision on licensing based on environmental considerations and the public interest.

**4. Permit for harvesting in Clew Bay**

You suggested that regulation of harvesting is premature at this point. However, we consider it dangerous not to regulate harvesting, as interest in seaweed harvesting has grown considerably in the last ten years. Continued growth in unregulated harvesting may have significant effects on the Clew Bay conservation requirements. BioAtlantis have put forward a management plan for harvesting in Clew Bay, one that is centred on mitigation, traceability, monitoring, verification and training. This also includes an adaptive management approach, which will allow for continued improvements into the future, as may be required by the regulatory authorities.

#### 5.1 Freshwater habitats and number of harvesters

Newport River and other freshwater habitats are omitted from our application. As stated in point 1 above, the low number of people over a wide area reduces the potential for anthropogenic impacts, and in turn will reduce the potential for interactions with otters on the foreshore. Moreover a range of mitigation measures are in place to ensure that conservation objectives for the Otter *Lutra Lutra* as met. 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. This ensures that numbers of personnel are generally in line with those levels working there currently.

#### 5.2 Cumulative and in combination effects

Section 3.6 of our application details our assessment of potential in combination and cumulative effects, and is supported by data presented in See Appendix 5 and 7. Appendix 7 to our application provides an in depth assessment of cumulative and in-combination effects, including activities which could impact on the otters, harbour seals and wintering and breeding bird species. In these cases, we provide additional mitigation measures. In-combination effects of harvesting and aquaculture were also assessed, particularly in the context of a report by the Marine Institute (2014). Mitigation measures have been set out in a detailed 'Code of Practice', developed by BioAtlantis and included in the Licence Application (BioAtlantis, 2014), in order to avoid significant direct, indirect and cumulative effects on these qualifying interests. With regard to the otter, we identified no in combination effects with either planned or existing operations in Clew Bay, with respect to recreation & tourism, existing harvest activities, existing aquaculture, or invertebrate harvesting. However, in-combination effects between harvesters and aquaculture sites, with respect to harbour seals and birds, were identified and were mitigated against accordingly (see NIS and main application document).

#### 6. Data, cumulative and in combination effects and notifiable actions

As described in point 5.2 above, cumulative and in combination effects have been addressed in the application, and additional mitigation measures developed accordingly. As described in point 1 above, the sustainable system proposed by BioAtlantis provides a range of mitigation measures to protect the Otter *Lutra Lutra* and ensure conservation objective are met for this species. These measures are incorporated in the Code of Practice in Appendix 4 to our application. The 'Adaptive Management' approach to the Code of Practice allows for inclusion of additional data related to protection of marine and coastal habitats an species, including the otters, as the datasets emerge from NPWS and others in the future.

#### 7. Disturbance due to anthropogenic effects

In our application, a wide range of anthropogenic effects have been assessed in detail in Appendix 7, including those related to tourism, recreation activities, invertebrate harvesting and traffic in the vicinity of aquaculture sites in Clew Bay. Mitigation measures have been put in place for Collanmore and the surrounding area during peak tourist season. Likewise, mitigation measures are also in place to ensure that Westport Harbour and Roman Island are

avoided during peak tourist season. This ensures the disturbance effects on otters are not exacerbated by the presence of hand harvesters at these sites.

#### **8. Sustainability in terms of fish communities**

BioAtlantis consulted with Inlands Fisheries Ireland in December 2013. One of their recommendations was that the plan should ensure that adequate habitat is maintained for fish species utilizing seaweed for cover. They also recommend that stands of seaweed should be allowed adequate time for regrowth between harvests. Our application has been developed on this basis and requires that harvesting is carried out in a manner which does not lead to overharvesting and harvested areas are allocated appropriate fallowing periods. The sustainable harvested plan is also described on page 73 of the NIS.

#### **9. Kelly et al., 2001**

As stated in the Code of Practice in Appendix 4 to our application, harvested seaweed must be placed in nets with mesh space large enough to allow for Amphipods, isopods or other by-catch to escape. Typically, 2 hours will be available for animals to migrate out of the nets before transfer to the collection vessel. Any inadvertent co-removal of periwinkles, amphipods, isopods or other *Animalia* identified on the collection vessel must be collected and returned to the water. This reduces the risk of affects on these species and will help ensure that there are no impacts on these species. Moreover, as outlined in page 115 and 116 of our application, BioAtlantis will be assessing the potential impact of *A. nodosum* harvesting on biotope species throughout the long term period proposed in our licence. This will build on the finding by Kelly et al., 2001.

#### **10. Effects on foraging or sleeping otters**

Harvesting requires a small number of harvesters on the foreshore, as described in point 1 above. Thus, potential for disturbing sleeping otters is also minimized. Moreover, mitigation measures are in place to ensure that Otter *Lutra Lutra* disturbance is not exacerbated due to in combination or cumulative effects between harvesting and busy summer tourist and recreation activities at Collanmore, Westport Quay and Roman Ireland.

#### **11. Reference to Otters diet**

In section 4.2.2.2 of the NIS, pg. 76, reference is made to fish as a key component of the otter diet. Moreover, Section 4.2.2.2 makes specific reference to Lough Furnace and the Burrishoole catchment as being excluded from the application, and this ensures that potential impacts on Atlantic Salmon, Sea Trout and European Eel are reduced.

#### **12. Effects of harvesting on holts.**

*A. nodosum* does not grow in close proximity to Otter *Lutra Lutra* holts and therefore will not be directly impacted by harvest activities which will take place on the foreshore. In our code of practice we also require that harvesters not interact with holts which may be located beyond the foreshore (see page 14 of Code of Practice). As stated in point 1 above, harvesters will undergo training to identify these issues and requirements at the beginning of the operational stage. Moreover, the risks associated with transport of seaweed on Otter *Lutra Lutra* holts are very low,



as seaweed will be picked up in the collection vessel and transport will take place from established piers.

#### **13 & 14. Distribution, diet and abundance**

- **Distribution**

As described in point 1 above, data published by NPWS (2011) describes the range and usage requirements of Otter *Lutra Lutra* in their natural habitats in Clew Bay, and this was used in our assessment. Map 8 published by NPWS (2011) described the requirements as encompassing marine, fresh water and terrestrial areas. This data provided a strong framework in which to address risks to otters and mitigate as performed in our application document and NIS. As part of their training, harvesters will be made aware of conservation requirements and mitigations measures outlined above. The need to train harvesters is mentioned in the Code of Practice to our application and included in the NIS. Moreover, an Adaptive Management Approach had been incorporated into the plan to ensure that improvements are made as new information arises.

- **Diet**

As outlined in point 1 above, the conservation objectives described by NPWS (2011) and references therein state that Otter *Lutra Lutra* has a broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater and wrasse and rockling in coastal waters. We based our assessment on this information and mitigated accordingly by removing the Burrishoole Catchment from the plan. Mitigation measures are also in place to ensure that bycatch including crustaceans and other species will be identified on the collection vessel and returned to the water. As stated in the Code of Practice in Appendix 4 to our application, harvested seaweed must be placed in nets with mesh space large enough to allow for Amphipods, Isopods or other by-catch to escape, with up to 2 hours available for animals to migrate out of the nets before transfer to the collection vessel.

- **Abundance**

There are many significant threats to the abundance of the otter. BioAtlantis have mitigated against these potential hazards to ensure that abundance of Otter *Lutra Lutra* populations are unaffected by hand harvesting. Again, this is explained in point 1 above and throughout the application and NIS.

#### **15. Limitations of Kelly et al., 2001**

As stated in point 9 above, and in page 115 and 116 of our application, BioAtlantis will be assessing the potential impact of *A. nodosum* harvesting on biotope species throughout the long term period proposed in our licence. This will build on the finding by Kelly et al., 2001. Mitigation measures will apply throughout the lifetime of the licence in order to prevent potential impacts on conservation objectives for marine and coastal habitats and species, including the otter, from occurring. Notably, harvest-related activities are prohibited within the Burrishoole Catchment to ensure no impacts on the catchment, connected lakes, fish and otters.

**16. Black and Miller**

The study by Black & Miller (1991) assessed the impact of total clearing of seaweed in Nova Scotia, Canada. BioAtlantis will not allow total clearance of seaweed and require harvesters to employ sustainable techniques, as outlined in the Code of Practice and NIS.

**17. Limitations of Kelly et al.,**

See point 15 above.

**19. Rangeley et al., 1994**

See point 16 above. The techniques employed in Nova Scotia, Canada and assessed by Black & Miller (1991) are severe and will not be employed in Clew Bay. As regards potential impacts on the Otter *Lutra Lutra* diet, mitigation measures have been developed for the Burrishoole Catchment area. The sustainable nature of the harvesting system at low tide also prevents direct impacts on fish species as they will not be present when harvesting takes place. The techniques employed also minimize any potential impacts on the biotope understory species. Mitigation measures are also in place to ensure that bycatch including crustaceans and other species will be identified on the collection vessel and returned to the water. See point 1 for more details.

**20. Lobster**

Lobster was mentioned on page 60 of the NIS. No risks of in-combination effects with harvesting were identified. Lobster potting mainly take place outside of the SAC area to the west of the complex. While lobster pots may pose a risk for otters (Marine Institute, 2014), this will not be exacerbated by harvesting. As regards aquaculture, the potential for overlap between *A. nodosum* hand harvesting and intertidal culture was deemed unlikely in our application. 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. Mitigation measures were put in place for potential interactions between aquaculture and seaweed harvesting (see Appendix 7 and Code of Practice in Appendix 4).

**21. Effects on fish**

It is unlikely that sustainable hand harvesting will lead to a decline in fish biomass. As explained above, mitigation measures are in place to ensure the Burrishoole catchment is not subject to harvesting. While wrasse and rockling are preyed upon by otter, harvesting will take place at low tide to prevent any direct interactions with these species. Wrasse and rockling are not limited to the intertidal zone in their distribution.



**22. Impact of harvesting**

Harvesting will only occur at levels that are sustainable. 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. This will ensure that conservation objectives for the Otter *Lutra Lutra* and other species are met.

**23. Diet of otters in Clew Bay**

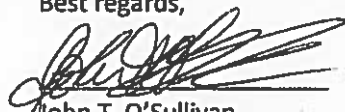
A study of otters at Westport by Murphy & Fairley, 1985, showed that otters feed mainly on fish, including eel, rockling, gobies, wrasses, butterfish, and some crustaceans. We would not expect the food supply of Otter *Lutra Lutra* to be adversely affected by sustainable harvesting, unless there were significant pollution. It is extremely unlikely that a chemical hazard will occur given that no chemicals will be carried on board the boat, except for small quantities of standard cleaning material and fuel oil. Fuel oil is unlikely to leak as boat engines will be regularly maintained. This is stated on page 77 of our main application document and in the associated appendices.

**24. Management plan.**

Most scientists, decision makers and indeed Irish seaweed companies, recognise the need to monitor harvesting to ensure the resource is managed sustainably. For the large part, traditional harvesters have ensured that this has been sustainable to date. However, as interest in seaweed now increases, it is vital that sustainable harvesting must be monitored with robust systems. BioAtlantis have put forward a sustainable management system for harvesting which is designed to fit in seamlessly into the existing local harvesting traditions, whilst also ensuring greater traceability, monitoring and compliance with conservation objectives of the SAC. BioAtlantis have a long term vision to be the global brand leader in crop biostimulant and nutraceutical technology. Protecting the environment will be central to this.

We appreciate your comments and welcome any suggestions as to potential improvements.

Best regards,

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

Date: 2<sup>nd</sup> March 2015

**Cited references:**

**Black, R. & Miller, R.J., (1991).** Use of the intertidal zone by fish in Nova Scotia. *Environmental Biology of Fishes*, 31: 109-121.

**Hession, C., Guiry, M.D., McGarvey, S. & Joyce, D., (1998).** Mapping and assessment of the seaweed resources (*Ascophyllum nodosum*, *Laminaria* spp.) off the west coast of Ireland. Marine Resource Series No. 5. Marine Institute, Dublin, 74 pp.

**Kelly L, Louise Collier, Mark J. Costello, Michael Diver, Seamus McGarvey Stefan Kraan, Jim Morrissey and Michael D. Guiry (2001).** Impact Assessment of Hand and Mechanical Harvesting of *Ascophyllum nodosum* on Regeneration and Biodiversity

**Marine Institute (2014).** Report supporting Appropriate Assessment of Aquaculture and Risk Assessment of Fisheries in Clew Bay Complex SAC (Site Code: 1482). Web: <https://www.agriculture.gov.ie/media/ClewBaySACAA290714.pdf>, accessed: 15/09/2014

**Murphy, K.P. & Fairley, J.S. (1985).** Food and sprainting places of otters on the west coast of Ireland. *Irish Naturalists' Journal* 21: 477-479.

**NPWS, 2011.** Clew Bay SAC (site code: 1482). Conservation objectives. Version 1.0, 19th July, 2011

**Reply to: Submission number 73**

Dear Cllr. Conway-Walsh,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. You raise very genuine and understandable concerns on behalf of your constituents and I am writing to you in an effort to allay these concerns and explain the BioAtlantis position in all of this.

Firstly, I 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. BioAtlantis believes that seaweed harvesting is best left to the experts in Clew Bay who have managed this natural resource sustainably for generations. We have no desire to interfere in any way with anyone's livelihood or way of doing business. In fact, our wish is to work in partnership with the harvesters in Clew Bay to ensure a sustainable supply of raw material into the future in a way which maximises benefits for all involved. It is our belief that everyone's aspirations, both in the short and longer terms can be met, if all of the parties involved approach the issues from a partnership position. We wish to address your specific points as follows:

**1. Monopoly**

Our sole motivation in seeking the Clew Bay licence is to try and achieve some security of supply for our business. This security of supply has been placed under threat by the government supported decision by Údarás na Gaeltachta to sell Arramara Teo to the Canadian company, Acadian Seaplants. This has been compounded by the decision by Acadian/Arramara to apply for a licence seeking an exclusive harvesting licence for a vast tract of the Irish coastline stretching from Loop Head in County Clare to Belmullet in North 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.

**2. Indigenous seaweed cutters and coastal landowners**

We would like to state that BioAtlantis, as an indigenous Irish company, will only work 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 are looking forward to meeting others also. We envisage that harvesters 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”.
- **Oireachtas, 8<sup>th</sup> 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”.
- **Mayo News, 16<sup>th</sup> December (pg. 24):** We state that “local hand harvesters can continue harvesting in a traditional way”.

### **3. Folio rights:**

As we stated in our press release in the Mayo News on 16<sup>th</sup> December: “The BioAtlantis licence will not affect existing private foreshore rights”.

### **Partnership approach as envisaged by BioAtlantis**

Our vision is for a partnership arrangement with local harvesters which would see BioAtlantis working with them to maximise their returns from their harvesting activity. We believe we can work together to our mutual benefit.

- Harvesters will have the option of continuing to harvest as much seaweed as they did in the past from the same areas. However, areas that have been recently over-harvested may have to be assigned a period of fallowing to ensure regrowth.
- Harvesters will have the added certainty of a guaranteed buyer for their crops.
- This two way commitment between harvester and buyer will provide a greater level of commercial certainty on both sides.
- 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.
- **Collection Vessel:** All harvesters, regardless of their working arrangements with BioAtlantis, will benefit from the introduction of a pick-up vessel in Clew Bay. This will pick up the seaweed from hand harvesters, thus relieving them of the difficult and time consuming task of transporting the seaweed ashore. This also has much less impact on the environment especially coastal habitats as it lessens the requirement for heavy machinery. It will also allow harvesters to cut smaller quantities to fit a weather window as they will not be required to cut a full load. It will also facilitate immediate weighing, checking and payment systems.
- BioAtlantis can bring certain improvements to the harvesting process without in any way interfering with traditional hand harvesting methods. For example, the modern food industry requires increasingly exacting traceability standards and BioAtlantis will be able to assist in putting these in place. BioAtlantis is GMP+ accredited. This quality system puts traceability at its core therefore, BioAtlantis believes it is more than competent to help harvesters to put a system in place that meets the environmental requirements of the SAC.

- BioAtlantis will also help introduce operating practices which will document the care taken by harvesters to preserve the SAC to required environmental standards. This will involve our Resource Manager (who will operate the collection vessel) recording the amounts harvested each day and the areas set aside. The Resource Manager who will be from Clew Bay, will monitor the SAC area and plan in advance for sites which have sensitive harbour seal and bird life at certain seasons of the year.
- BioAtlantis are open to supplying other existing processors in Clew Bay with seaweed.
- Investment in Clew Bay: BioAtlantis will incur costs of €500K+ as follows:
  - Licence application cost to date: €100k
  - Site-by-site resource measurement: €50k
  - A collection boat will be provided by BioAtlantis which will allow harvesters to focus on harvesting and avoid having to tow seaweed ashore. This will include a crane and a weighing system on the boat together with a traceability system so people can cut daily quantities, which will be collected daily, weighed and traced to the harvest site. Text message or email will be sent via smart phone to confirm payment and allow for quick processing of payment  
Cost: €350k +
  - We will employ a local skipper as Resource Manager to operate the vessel. Cost: €50k per annum.

**Summary:**

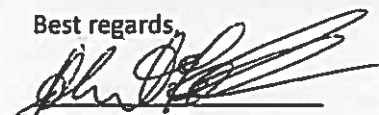
BioAtlantis is an indigenous innovative Irish company engaged in the R&D and production of value added seaweed based products for export around the world. BioAtlantis employ 25 people, 7 of which have PhDs. We believe Irish companies such as ours deserve whatever support can be given by the State but only insofar as it does not impact negatively on the interests of others such as the local hand harvesters in Clew Bay.

However, we believe in this case that the interests of all concerned can be served by the granting of the licence to BioAtlantis and the establishment of a true and lasting partnership between the company and the local seaweed harvesting community. We fully understand that the process of developing this partnership will not be a simple or quick one and it will require a lot of hard work.

We would be happy to meet with you to explain our plan, answer any other questions that you may have and take any comments you may have on board.

We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

Best regards,

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

Date: 2<sup>nd</sup> March 2015

Reply to: Submission number 74

Dear Minister Ring,

Thank you for your interest in BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. Your submission to the Marine Planning & Foreshore Unit of the Department of the Environment, Community and Local Government raises very understandable concerns on behalf of your constituents and in relation to natural resources and the environment.

We are writing to you in an effort to allay these concerns and explain the BioAtlantis position in all of this. Firstly, our sole motivation in seeking the Clew Bay licence is to achieve security of supply for our business. This security of supply has been placed under threat by the government supported decision by Údarás na Gaeltachta to sell Arramara Teo to a Canadian concern and the subsequent decision of that overseas company to seek an exclusive harvesting licence for a vast tract of the Irish coastline stretching from County Clare to North Mayo.

BioAtlantis believes that seaweed harvesting is best left to the experts in Clew Bay who have managed this natural resource sustainably for generations. We have no desire to interfere in any way with anyone's livelihood or way of doing business. In fact, our wish is to work in partnership with the harvesters in Clew Bay to ensure a sustainable supply of raw material into the future in a way which maximises benefits for all involved.

It is our belief that everyone's aspirations, both in the short and longer terms can be met, if all of the parties involved approach the issues from a partnership position.

It might be helpful at this stage to address each of the concerns you raised in your submission.

1. You express a fear that local harvesting businesses could be done away with and that BioAtlantis may at some point sell the licence to an unknown third party at some point in the future.
  - (a) BioAtlantis will only work with local, traditional hand harvesters and other traditional stakeholders in the Clew Bay area. If our licence application is successful our objective will be to see as little change as possible in terms of current activities in Clew Bay, save that we hope to see local harvesters increase their incomes if that is their wish.
  - (b) Sale of harvesting rights: We can state clearly that we have no interest in selling BioAtlantis and/or its associated harvesting rights. We want to build a substantial company and would not have gone to the time and expense of filing patents and buying a new factory if selling out was a strategy.
2. Another concern is the existence of a potential monopoly on seaweed purchasing from the local harvesters if BioAtlantis is granted this licence.

BioAtlantis will enter into discussions with the local harvesting community and other relevant stakeholders to establish a mechanism which will guarantee a market leading price to harvesters as well as ensure that other seaweed consuming businesses are not imperilled by the granting of

the licence. Any assistance you could provide with the development of such a mechanism would be very welcome.

**3. Worry that BioAtlantis may not offer employment to all existing local harvesters.**

BioAtlantis has consistently and continues to guarantee that it will offer employment to local harvesters currently working at Clew Bay. It will be entirely a matter for the harvesters to decide if they wish to work for BioAtlantis as direct employees, self-employed contractors, or on some other arrangement which suits them better.

**4. Sustainable harvesting is a further issue raised.**

BioAtlantis wants local hand harvesters to continue working in the traditional way. We believe that the best way to ensure the sustainability of hand harvesting is to combine the expertise of local hand harvesters built up over generations with the best that industry has to offer in terms of adding value to the crop. BioAtlantis favours the traditional method with a sickle or knife at low tide and leaving between 8-12 inches of material behind post-harvest. This provides harvesters with a full view of the cutting process and allows them to take care not to disturb the substrate and not harvest too low or damage the holdfast. Indeed, this traditional method forms the basis of our application.

**5. Tourism**

Our application also placed close attention to potential interactions with tourism and recreation related activities, particularly with respect to Collanmore Island and Mayo County Council's plans for development of Westport Harbour and Roman Island. We would be happy to discuss these aspects with you also in your role as Minister.

**Partnership approach as envisaged by BioAtlantis**

Our vision is for a partnership arrangement with local harvesters which would see BioAtlantis working with them to maximise their returns from their harvesting activity. We believe we can work together to our mutual benefit. BioAtlantis is an acknowledged leader in adding value to the seaweed crop while the local harvesters in Clew Bay are acknowledged experts in the sustainable harvesting of the resource.

- Harvesters will have the option of continuing to harvest as much seaweed as they did in the past from the same areas. However, areas that have been recently over-harvested may have to be allocated a period of fallowing to ensure regrowth.
- Harvesters will have the added certainty of a guaranteed buyer for their crops.
- This two way commitment between harvester and buyer will provide a greater level of commercial certainty on both sides.
- 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.



- **Collection Vessel:** All harvesters, regardless of their working arrangements with BioAtlantis, will benefit from the introduction of a pick-up vessel in Clew Bay. This will pick up the seaweed from hand harvesters, thus relieving them of the difficult and time consuming task of transporting the seaweed ashore. This also has much less impact on the environment especially coastal habitats as it lessens the requirement for heavy machinery. It will also allow harvesters to cut smaller quantities to fit a weather window as they will not be required to cut a full load. It will also facilitate immediate weighing, checking and payment systems.
- BioAtlantis can bring certain improvements to the harvesting process without in any way interfering with traditional hand harvesting methods. For example, the modern food industry requires increasingly exacting traceability standards and BioAtlantis will be able to assist in putting these in place. BioAtlantis is GMP+ accredited. This quality system puts traceability at its core therefore, BioAtlantis believes it is more than competent to help harvesters to put a system in place that meets the environmental requirements of the SAC.
- BioAtlantis will also help introduce operating practices which will document the care taken by harvesters to preserve the SAC to required environmental standards. This will involve our Resource Manager (who will operate the collection vessel) recording the amounts harvested each day and the areas set aside. The Resource Manager who will be from Clew Bay, will monitor the SAC area and plan in advance for sites which have sensitive harbour seal and bird life at certain seasons of the year.
- BioAtlantis are open to supplying other existing processors in Clew Bay with seaweed.
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Cost: €350k +
  - We will employ a local skipper as Resource Manager to operate the vessel. Cost: €50k per annum.

#### Summary:

We believe the foregoing addresses all of your concerns regarding supply/demand and public interest issues. However, we fully respect and understand how people will have natural fears in relation to a proposal such as this. In this context, BioAtlantis has already met with approximately 10 local harvesters and we plan to meet others as well in an effort to allay these fears and concerns.

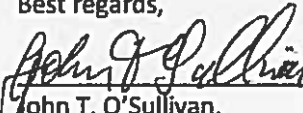
BioAtlantis is an indigenous innovative Irish company engaged in the R&D and production of value added seaweed based products for export around the world. There are currently 25 people employed by BioAtlantis, 7 of which have PhDs. BioAtlantis will double in size and increase employment from 25 to 50 over the next 2-5 years. We believe companies such as ours deserve



whatever support can be given by the State but only insofar as it does not impact negatively on the interests of others such as the local hand harvesters in Clew Bay. However, we believe in this case that the interests of all concerned can be served by the granting of the licence to BioAtlantis and the establishment of a true and lasting partnership between the company and the local seaweed harvesting community.

I would like to take this opportunity to ask you, in your role as a respected public representative, to assist in this process. Not as an advocate on behalf of BioAtlantis but as an honest broker working on behalf of the Clew Bay community to ensure that any agreement which may be reached is in their best interest. We would also like to meet with you to explain our plan, clarify any doubts that you may have and take any comments you may have on board.

Best regards,

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

Date: 2nd March 2015

Reply to: Submission number 75

Dear Mr. Hayden,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. Firstly, I 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 would like to address your specific points as follows:

**1. Seaweed quantities on Inishraher**

Our biomass estimates were calculated based on data from Hession et al., (1998), our own on-site pilot study and information obtained through use of satellite images, tidal information and aerial photographs. We state in our application that site-by site validation of biomass levels will be established during the implementation phase of our work, once the licence is secured. See Appendix 4, page, "Step 1: On-site survey & schedule (Start date: Month 1. Duration: 1-2 weeks)".

**2. Pontoon**

Our application will have no impact on your plans to establish a pontoon on the island foreshore.

**3. Harvest of edible seaweed**

Our licence is unlikely to affect your plans for low scale harvest of seaweed on Inishraher. In our application and in our press release in the Mayo News on the 16<sup>th</sup> we state that small scale harvest (<0.5tonne) will be unaffected by our application. On page 121 of our application we state: "Any commercial user having small requirements of >0.5 tonnes per annum (e.g. hotels, health Spas), will be approached by BioAtlantis to discuss their requirements"

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. 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.


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.



R75

We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

Best regards,

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

Date:

2<sup>nd</sup> March 2015

Page 2 of 2





**BioAtlantis**

Nature Working Naturally™

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, R71-R75**  
**(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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Reply to: Submission number 71

Dear Mr. Moran,

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. I would like to address each of your points as follows:

**1. Traditional harvesting**

I would like to state that BioAtlantis, as an indigenous Irish company, will only work with local, traditional hand harvesters, landowners and those with fishing interests in the Clew Bay area. We envisage local harvesters 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, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

**2. (a) Monopolization of the resource**

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. 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. If successful, our application will provide an alternative, viable and sustainable outlet for seaweed harvested in Clew Bay.

**3. (a) Management of the resource**

BioAtlantis have a long term vision to be the global brand leader 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 obtaining and maintaining a seaweed harvesting licence in Clew Bay SAC.


**3. (b) Other seaweed companies in Clew Bay**

BioAtlantis are open to the possibility of supplying local companies with seaweed. Please feel free to contact us at any stage.



R71

Best regards,

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

Date: 24 March 2015



Reply to: Submission number 72

Dear Sir,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. We are aware of your work as a marine biologist in Co. Mayo. We are also aware that you work with Aquafact Environmental Consultants Ltd., the company who are working for Acadian Seaplants and Arramara in their licence application to harvest seaweed from Clare to north Mayo. We would like to address your points as follows:

**1. Point 1. Survey data, risk assessment and mitigation measures**

Data published by NPWS (2011) which describes the range and usage requirements of Otter *Lutra* in their natural habitats in Clew Bay, was used in our assessment. This data provided a strong framework in which to address risks to otters and mitigate where necessary. As otters occupy both freshwater aquatic, marine aquatic and associated terrestrial habitats, they require unrestricted access to sites and islands throughout Clew Bay. They also require unrestricted access to adequate food supply. According to NPWS (2011), the conservation objectives for otters are to restore the favourable conservation conditions defined by the following attributes.

- Distribution of positive survey sites
- Extent of terrestrial habitat
- Extent of marine habitat
- Extent of freshwater (river) habitat.
- Extent of freshwater (lake/lagoon) habitats.
- Number of couching sites and holts
- Fish biomass available
- Barriers to connectivity

In our application (page 26 of Appendix 5), we identified the following potential sources of hazards which may potentially impact on these conservation objectives. For each of these potential hazards, we have mitigated accordingly.

- Damage to freshwater habitats
  - Damage to marine habitats.
  - Damage to fish resources.
  - Blocking access to sites
- (Other hazards include potential for disturbance by harvesters at sites)

**Mitigation measures**

Mitigation measures were put in place on the basis of identifying potential hazards which may potentially impact on Otter *Lutra* and other protected marine and coastal habitats and species in the SAC. On this basis, a Code of Practice for *A. nodosum* harvest activities in Clew Bay

SAC was developed. This was published as Appendix 4 to our application and included in the Natura Impact Statement (NIS). Mitigation measures, as described in Appendix 4 are as follows:

- Harvesters will always follow pre-planned harvest schedules provided by BioAtlantis. This ensures that harvesters arrive to the foreshore by boat or by via existing routes. Moreover, routes used will not increase significantly beyond current levels already used by harvesters in Clew Bay. As there will be a collection vessel provided by BioAtlantis, this will minimise the length of time that harvesters boats are in the water. This reduces the risk of harvesters interacting with otters.
- Harvest areas are defined by BioAtlantis. This ensures that harvesters do not enter into areas which are deemed highly sensitive in terms of food supply (e.g. Burrishoole).
- All freshwater areas are prohibited from any harvest-related activities. This prevents any interactions in freshwater habitats.
- To minimise disturbance or interaction with otters, harvesters will ensure:
  - All activities are maintained within the intertidal *Ascophyllum nodosum* zone. This ensures that harvest activity takes place in the intertidal zone and will not affect Otter *Lutra Lutra* holts beyond the intertidal zone.
  - Harvesters must not interfere with Otter *Lutra Lutra* couching sites, holts or access paths/routes. Harvesters will be made aware that these areas must not be interfered with or blocked in any way. This will be part of their training.

**Site specific measures (as outlined in the Code of Practice):**

- The freshwater lagoon on east side of InishGowla south must be avoided by harvesters. This prevents any interactions in this freshwater habitat.
- Harvest-related activities are prohibited within the Burrishoole Catchment to ensure no impact on catchment, connected lakes, fish and otters.
- Harvest-related activities are prohibited at Lough Furnace. This will ensure that there are no negative impacts on fish resources.

**Food supply of Otter *Lutra Lutra***

According to the conservation objectives described by NPWS (2011) and references therein, Otter *Lutra Lutra* has a broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater and wrasse and rockling in coastal waters. On page 65 of our application we identify the Burrishoole Catchment area of Clew Bay as representing an important habitat for migratory fish species such as trout and salmon, and is regarded as a major European and World Index site. In particular, sea trout and salmon smolts enter the sea at Clew Bay, while post-smolt and adult sea trout also feed within the bay. On this basis we have omitted the Burrishoole Channel from our application. This is marked in Appendix 2 in Map BioA\_10-14-001.1. We also identify Lough Furnace in our application, a rare deep, permanently stratified, saline lake lagoon located at the north-eastern corner of Clew Bay, which hosts important population of eel. Exclusion of these sites from the harvesting plan ensures that potential impacts on Otter *Lutra Lutra* food supply are reduced. It also prevents impacts on important life-cycle stages of trout or salmon.

Hand harvesting will take place at low tide and this will ensure that there are no direct impacts on fish species such as wrasse and rockling, which are important prey species to Otter *Lutra Lutra*.

BioAtlantis will manage activities in a sustainable manner to prevent *A. nodosum* overharvesting, prevent *A. nodosum* mortality and in turn, prevent potential negative effects on species further along the food chain, e.g. fish & otters. As regard the broader diet of Otter *Lutra Lutra*, mitigation measures are in place to ensure that understory species within the *A. nodosum* canopy are protected and that bycatch including crustaceans and other species identified on the collection vessel will be returned to the water. These mitigation measures are outlined in the NIS and Code of Practice.

**Other aspects which reduce risk to Otter *Lutra Lutra*:**

- Harvest activities will not require construction of barriers which would affect access to sites of habitats.
- Since harvested seaweed will be collected by a pick vessel provided by BioAtlantis, seaweed not be transferred by land, thus reducing potential impacts on otters in these location and species and habitats of relevance to otters within the broader coastal ecosystem.
- As stated on page 22 of the NIS, approximately 2-4 harvesters are permitted on small-medium sized sites. Medium to large islands may require between 4-6, while larger islands will likely require approximately 6-10 harvesters. Thus, the low number of people over a wide area reduces the potential for anthropogenic impacts, and in turn will reduce the potential for interactions with otters on the foreshore.
- Map 8 of NPWS (2011) identifies a number of linear habitats. These will not be damaged or blocked in anyway, therefore ensuring that otters have undisrupted access to the marine zone.

**Training of harvesters and securing the Code of Practice:**

As described in the Code of Practice (Appendix 4 to our application), harvesters will receive appropriate training on the biological requirements and behaviour of sensitive harbour seal, otters and birds by biologists in BioAtlantis. Support will also be provided by engineers who will ensure that marine and navigation aspects when approaching or avoiding sensitive sites are explained. Training is scheduled to take place during month 1 of the operational phase. Verification of understanding of the training and regular auditing of the system by BioAtlantis will ensure standards are maintained. Harvesters will be trained in all aspects of the Code of Practice as it pertains to otters. Data provided by "Island Otterwatch" in Fig. 1 of your letter will also form an excellent basis for training harvesters and in making them aware of the distribution and sighting of otters sites in Clew Bay. This will be of interest to harvesters who own land adjoining the foreshore where otters have been spotted. As part of their training, harvesters in coastal areas will also be made aware of Map 8 of NPWS (2011), which identifies freshwater aquatic linear habitats, which harvesters must not block or damage in anyway. This will be part of the training required of harvesters as the operational phase begins in the first month of receiving the application licence. The requirement to train harvesters is stated in Appendix 4.

**'Adaptive Management Approach'**

As stated on page 76 of the NIS, an adaptive management approach will be taken which will ensure:

*"continual improvements to the harvesting plan during its implementation and its effectiveness into the future. This will include ongoing liaison with the NPWS regarding shoreline and island locations of importance to Common seal and Otter Lutra Lutra and will provide for the amendment and alteration of Code of Practice in order to limit environmental impacts and ensure the sustainable strategy adopted by the company"*

**Seaweed harvesting as a notifiable action in Clew Bay SAC.**

Many traditional hand harvesters are highly conscious of the importance of protecting the SAC environment of Clew Bay. Some already liaise with NPWS and ensure that their harvesting activities are in line with SAC requirements. For the large part, hand harvesting has been sustainable in Clew Bay for generations. BioAtlantis have put forward a sustainable management system for harvesting which is designed to fit in seamlessly into the existing local harvesting traditions, whilst also ensuring greater traceability, monitoring and compliance with conservation objectives of the SAC going forward. This system can be regularly assessed by the regulatory authorities to assess its performance.

**2. NPWS**

We believe that it is incumbent on private companies who want to operate in SACs that they ensure that they manage their activities and comply with stated conservation objectives, in a clear, open and transparent manner. NPWS have provided documents on their website which describe the conservation objective for Clew Bay in a clear and concise manner. This is freely available on their website. This allows for companies such as BioAtlantis to assess the needs of the SAC and mitigate in situations where there are significant risks identified. NPWS rangers also provide support to individuals in Clew Bay, particularly in the case where notifiable actions may be relevant.

**3. Policy on seaweed harvesting**

BioAtlantis attended an Oireachtas meeting on July 8<sup>th</sup> 2014 on the subject of seaweed harvesting in Ireland, whereby we explained that we believe that harvesting should take place in a sustainable manner. Most Irish companies agree with this. The Minister will make his decision on licensing based on environmental considerations and the public interest.

**4. Permit for harvesting in Clew Bay**

You suggested that regulation of harvesting is premature at this point. However, we consider it dangerous not to regulate harvesting, as interest in seaweed harvesting has grown considerably in the last ten years. Continued growth in unregulated harvesting may have significant effects on the Clew Bay conservation requirements. BioAtlantis have put forward a management plan for harvesting in Clew Bay, one that is centred on mitigation, traceability, monitoring, verification and training. This also includes an adaptive management approach, which will allow for continued improvements into the future, as may be required by the regulatory authorities.

### 5.1 Freshwater habitats and number of harvesters

Newport River and other freshwater habitats are omitted from our application. As stated in point 1 above, the low number of people over a wide area reduces the potential for anthropogenic impacts, and in turn will reduce the potential for interactions with otters on the foreshore. Moreover a range of mitigation measures are in place to ensure that conservation objectives for the Otter *Lutra Lutra* as met. 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. This ensures that numbers of personnel are generally in line with those levels working there currently.

### 5.2 Cumulative and in combination effects

Section 3.6 of our application details our assessment of potential in combination and cumulative effects, and is supported by data presented in See Appendix 5 and 7. Appendix 7 to our application provides an in depth assessment of cumulative and in-combination effects, including activities which could impact on the otters, harbour seals and wintering and breeding bird species. In these cases, we provide additional mitigation measures. In-combination effects of harvesting and aquaculture were also assessed, particularly in the context of a report by the Marine Institute (2014). Mitigation measures have been set out in a detailed 'Code of Practice', developed by BioAtlantis and included in the Licence Application (BioAtlantis, 2014), in order to avoid significant direct, indirect and cumulative effects on these qualifying interests. With regard to the otter, we identified no in combination effects with either planned or existing operations in Clew Bay, with respect to recreation & tourism, existing harvest activities, existing aquaculture, or invertebrate harvesting. However, in-combination effects between harvesters and aquaculture sites, with respect to harbour seals and birds, were identified and were mitigated against accordingly (see NIS and main application document).

### 6. Data, cumulative and in combination effects and notifiable actions

As described in point 5.2 above, cumulative and in combination effects have been addressed in the application, and additional mitigation measures developed accordingly. As described in point 1 above, the sustainable system proposed by BioAtlantis provides a range of mitigation measures to protect the Otter *Lutra Lutra* and ensure conservation objective are met for this species. These measures are incorporated in the Code of Practice in Appendix 4 to our application. The 'Adaptive Management' approach to the Code of Practice allows for inclusion of additional data related to protection of marine and coastal habitats an species, including the otters, as the datasets emerge from NPWS and others in the future.

### 7. Disturbance due to anthropogenic effects

In our application, a wide range of anthropogenic effects have been assessed in detail in Appendix 7, including those related to tourism, recreation activities, invertebrate harvesting and traffic in the vicinity of aquaculture sites in Clew Bay. Mitigation measures have been put in place for Collanmore and the surrounding area during peak tourist season. Likewise, mitigation measures are also in place to ensure that Westport Harbour and Roman Island are

avoided during peak tourist season. This ensures the disturbance effects on otters are not exacerbated by the presence of hand harvesters at these sites.

#### **8. Sustainability in terms of fish communities**

BioAtlantis consulted with Inlands Fisheries Ireland in December 2013. One of their recommendations was that the plan should ensure that adequate habitat is maintained for fish species utilizing seaweed for cover. They also recommend that stands of seaweed should be allowed adequate time for regrowth between harvests. Our application has been developed on this basis and requires that harvesting is carried out in a manner which does not lead to overharvesting and harvested areas are allocated appropriate fallowing periods. The sustainable harvested plan is also described on page 73 of the NIS.

#### **9. Kelly et al., 2001**

As stated in the Code of Practice in Appendix 4 to our application, harvested seaweed must be placed in nets with mesh space large enough to allow for Amphipods, isopods or other by-catch to escape. Typically, 2 hours will be available for animals to migrate out of the nets before transfer to the collection vessel. Any inadvertent co-removal of periwinkles, amphipods, isopods or other *Animalia* identified on the collection vessel must be collected and returned to the water. This reduces the risk of effects on these species and will help ensure that there are no impacts on these species. Moreover, as outlined in page 115 and 116 of our application, BioAtlantis will be assessing the potential impact of *A. nodosum* harvesting on biotope species throughout the long term period proposed in our licence. This will build on the finding by Kelly et al., 2001.

#### **10. Effects on foraging or sleeping otters**

Harvesting requires a small number of harvesters on the foreshore, as described in point 1 above. Thus, potential for disturbing sleeping otters is also minimized. Moreover, mitigation measures are in place to ensure that Otter *Lutra Lutra* disturbance is not exacerbated due to in combination or cumulative effects between harvesting and busy summer tourist and recreation activities at Collanmore, Westport Quay and Roman Ireland.

#### **11. Reference to Otters diet**

In section 4.2.2.2 of the NIS, pg. 76, reference is made to fish as a key component of the otter diet. Moreover, Section 4.2.2.2 makes specific reference to Lough Furnace and the Burrishoole catchment as being excluded from the application, and this ensures that potential impacts on Atlantic Salmon, Sea Trout and European Eel are reduced.

#### **12. Effects of harvesting on holts.**

*A. nodosum* does not grow in close proximity to Otter *Lutra Lutra* holts and therefore will not be directly impacted by harvest activities which will take place on the foreshore. In our code of practice we also require that harvesters not interact with holts which may be located beyond the foreshore (see page 14 of Code of Practice). As stated in point 1 above, harvesters will undergo training to identify these issues and requirements at the beginning of the operational stage. Moreover, the risks associated with transport of seaweed on Otter *Lutra Lutra* holts are very low,



as seaweed will be picked up in the collection vessel and transport will take place from established piers.

### **13 & 14. Distribution, diet and abundance**

- **Distribution**

As described in point 1 above, data published by NPWS (2011) describes the range and usage requirements of Otter *Lutra Lutra* in their natural habitats in Clew Bay, and this was used in our assessment. Map 8 published by NPWS (2011) described the requirements as encompassing marine, fresh water and terrestrial areas. This data provided a strong framework in which to address risks to otters and mitigate as performed in our application document and NIS. As part of their training, harvesters will be made aware of conservation requirements and mitigations measures outlined above. The need to train harvesters is mentioned in the Code of Practice to our application and included in the NIS. Moreover, an Adaptive Management Approach had been incorporated into the plan to ensure that improvements are made as new information arises.

- **Diet**

As outlined in point 1 above, the conservation objectives described by NPWS (2011) and references therein state that Otter *Lutra Lutra* has a broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater and wrasse and rockling in coastal waters. We based our assessment on this information and mitigated accordingly by removing the Burrishoole Catchment from the plan. Mitigation measures are also in place to ensure that bycatch including crustaceans and other species will be identified on the collection vessel and returned to the water. As stated in the Code of Practice in Appendix 4 to our application, harvested seaweed must be placed in nets with mesh space large enough to allow for Amphipods, isopods or other by-catch to escape, with up to 2 hours available for animals to migrate out of the nets before transfer to the collection vessel.

- **Abundance**

There are many significant threats to the abundance of the otter. BioAtlantis have mitigated against these potential hazards to ensure that abundance of Otter *Lutra Lutra* populations are unaffected by hand harvesting. Again, this is explained in point 1 above and throughout the application and NIS.

### **15. Limitations of Kelly et al., 2001**

As stated in point 9 above, and in page 115 and 116 of our application, BioAtlantis will be assessing the potential impact of *A. nodosum* harvesting on biotope species throughout the long term period proposed in our licence. This will build on the finding by Kelly et al., 2001. Mitigation measures will apply throughout the lifetime of the licence in order to prevent potential impacts on conservation objectives for marine and coastal habitats and species, including the otter, from occurring. Notably, harvest-related activities are prohibited within the Burrishoole Catchment to ensure no impacts on the catchment, connected lakes, fish and otters.

**16. Black and Miller**

The study by Black & Miller (1991) assessed the impact of total clearing of seaweed in Nova Scotia, Canada. BioAtlantis will not allow total clearance of seaweed and require harvesters to employ sustainable techniques, as outlined in the Code of Practice and NIS.

**17. Limitations of Kelly et al.,**

See point 15 above.

**19. Rangeley et al., 1994**

See point 16 above. The techniques employed in Nova Scotia, Canada and assessed by Black & Miller (1991) are severe and will not be employed in Clew Bay. As regards potential impacts on the Otter *Lutra Lutra* diet, mitigation measures have been developed for the Burrishoole Catchment area. The sustainable nature of the harvesting system at low tide also prevents direct impacts on fish species as they will not be present when harvesting takes place. The techniques employed also minimize any potential impacts on the biotope understory species. Mitigation measures are also in place to ensure that bycatch including crustaceans and other species will be identified on the collection vessel and returned to the water. See point 1 for more details.

**20. Lobster**

Lobster was mentioned on page 60 of the NIS. No risks of in-combination effects with harvesting were identified. Lobster potting mainly take place outside of the SAC area to the west of the complex. While lobster pots may pose a risk for otters (Marine Institute, 2014), this will not be exacerbated by harvesting. As regards aquaculture, the potential for overlap between *A. nodosum* hand harvesting and intertidal culture was deemed unlikely in our application. 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. Mitigation measures were put in place for potential interactions between aquaculture and seaweed harvesting (see Appendix 7 and Code of Practice in Appendix 4).

**21. Effects on fish**

It is unlikely that sustainable hand harvesting will lead to a decline in fish biomass. As explained above, mitigation measures are in place to ensure the Burrishoole catchment is not subject to harvesting. While wrasse and rockling are preyed upon by otter, harvesting will take place at low tide to prevent any direct interactions with these species. Wrasse and rockling are not limited to the intertidal zone in their distribution.



**22. Impact of harvesting**

Harvesting will only occur at levels that are sustainable. 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. This will ensure that conservation objectives for the Otter *Lutra Lutra* and other species are met.

**23. Diet of otters in Clew Bay**

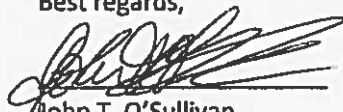
A study of otters at Westport by Murphy & Fairley, 1985, showed that otters feed mainly on fish, including eel, rockling, gobies, wrasses, butterfish, and some crustaceans. We would not expect the food supply of Otter *Lutra Lutra* to be adversely affected by sustainable harvesting, unless there were was significant pollution. It is extremely unlikely that a chemical hazard will occur given that no chemicals will be carried on board the boat, except for small quantities of standard cleaning material and fuel oil. Fuel oil is unlikely to leak as boat engines will be regularly maintained. This is stated on page 77 of our main application document and in the associated appendices.

**24. Management plan.**

Most scientists, decision makers and indeed Irish seaweed companies, recognise the need to monitor harvesting to ensure the resource is managed sustainably. For the large part, traditional harvesters have ensured that this has been sustainable to date. However, as interest in seaweed now increases, it is vital that sustainable harvesting must be monitored with robust systems. BioAtlantis have put forward a sustainable management system for harvesting which is designed to fit in seamlessly into the existing local harvesting traditions, whilst also ensuring greater traceability, monitoring and compliance with conservation objectives of the SAC. BioAtlantis have a long term vision to be the global brand leader in crop biostimulant and nutraceutical technology. Protecting the environment will be central to this.

We appreciate your comments and welcome any suggestions as to potential improvements.

Best regards,

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

Date: 2<sup>nd</sup> March 2015

**Cited references:**

**Black, R. & Miller, R.J., (1991).** Use of the intertidal zone by fish in Nova Scotia. *Environmental Biology of Fishes*, 31: 109-121.

**Hession, C., Guiry, M.D., McGarvey, S. & Joyce, D., (1998).** Mapping and assessment of the seaweed resources (*Ascophyllum nodosum*, *Laminaria* spp.) off the west coast of Ireland. Marine Resource Series No. 5. Marine Institute, Dublin, 74 pp.

**Kelly L, Louise Collier, Mark J. Costello, Michael Diver, Seamus McGarvey Stefan Kraan, Jim Morrissey and Michael D. Guiry (2001).** Impact Assessment of Hand and Mechanical Harvesting of *Ascophyllum nodosum* on Regeneration and Biodiversity

**Marine Institute (2014).** Report supporting Appropriate Assessment of Aquaculture and Risk Assessment of Fisheries in Clew Bay Complex SAC (Site Code: 1482). Web: <https://www.agriculture.gov.ie/media/ClewBaySACAA290714.pdf>, accessed: 15/09/2014

**Murphy, K.P. & Fairley, J.S. (1985).** Food and sprainting places of otters on the west coast of Ireland. *Irish Naturalists' Journal* 21: 477-479.

**NPWS, 2011.** Clew Bay SAC (site code: 1482). Conservation objectives. Version 1.0, 19th July, 2011

**Reply to: Submission number 73**

Dear Cllr. Conway-Walsh,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. You raise very genuine and understandable concerns on behalf of your constituents and I am writing to you in an effort to allay these concerns and explain the BioAtlantis position in all of this.

Firstly, I 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. BioAtlantis believes that seaweed harvesting is best left to the experts in Clew Bay who have managed this natural resource sustainably for generations. We have no desire to interfere in any way with anyone's livelihood or way of doing business. In fact, our wish is to work in partnership with the harvesters in Clew Bay to ensure a sustainable supply of raw material into the future in a way which maximises benefits for all involved. It is our belief that everyone's aspirations, both in the short and longer terms can be met, if all of the parties involved approach the issues from a partnership position. We wish to address your specific points as follows:

**1. Monopoly**

Our sole motivation in seeking the Clew Bay licence is to try and achieve some security of supply for our business. This security of supply has been placed under threat by the government supported decision by Údarás na Gaeltachta to sell Arramara Teo to the Canadian company, Acadian Seaplants. This has been compounded by the decision by Acadian/Arramara to apply for a licence seeking an exclusive harvesting licence for a vast tract of the Irish coastline stretching from Loop Head in County Clare to Belmullet in North 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.

**2. Indigenous seaweed cutters and coastal landowners**

We would like to state that BioAtlantis, as an indigenous Irish company, will only work 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 are looking forward to meeting others also. We envisage that harvesters 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".
- **Oireachtas, 8<sup>th</sup> 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".
- **Mayo News, 16<sup>th</sup> December (pg. 24):** We state that "local hand harvesters can continue harvesting in a traditional way".

### 3. Folio rights:

As we stated in our press release in the Mayo News on 16<sup>th</sup> December: "The BioAtlantis licence will not affect existing private foreshore rights".

### Partnership approach as envisaged by BioAtlantis

Our vision is for a partnership arrangement with local harvesters which would see BioAtlantis working with them to maximise their returns from their harvesting activity. We believe we can work together to our mutual benefit.

- Harvesters will have the option of continuing to harvest as much seaweed as they did in the past from the same areas. However, areas that have been recently over-harvested may have to be assigned a period of fallowing to ensure regrowth.
- Harvesters will have the added certainty of a guaranteed buyer for their crops.
- This two way commitment between harvester and buyer will provide a greater level of commercial certainty on both sides.
- 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.
- **Collection Vessel:** All harvesters, regardless of their working arrangements with BioAtlantis, will benefit from the introduction of a pick-up vessel in Clew Bay. This will pick up the seaweed from hand harvesters, thus relieving them of the difficult and time consuming task of transporting the seaweed ashore. This also has much less impact on the environment especially coastal habitats as it lessens the requirement for heavy machinery. It will also allow harvesters to cut smaller quantities to fit a weather window as they will not be required to cut a full load. It will also facilitate immediate weighing, checking and payment systems.
- BioAtlantis can bring certain improvements to the harvesting process without in any way interfering with traditional hand harvesting methods. For example, the modern food industry requires increasingly exacting traceability standards and BioAtlantis will be able to assist in putting these in place. BioAtlantis is GMP+ accredited. This quality system puts traceability at its core therefore, BioAtlantis believes it is more than competent to help harvesters to put a system in place that meets the environmental requirements of the SAC.

- BioAtlantis will also help introduce operating practices which will document the care taken by harvesters to preserve the SAC to required environmental standards. This will involve our Resource Manager (who will operate the collection vessel) recording the amounts harvested each day and the areas set aside. The Resource Manager who will be from Clew Bay, will monitor the SAC area and plan in advance for sites which have sensitive harbour seal and bird life at certain seasons of the year.
- BioAtlantis are open to supplying other existing processors in Clew Bay with seaweed.
- Investment in Clew Bay: BioAtlantis will incur costs of €500K+ as follows:
  - Licence application cost to date: €100k
  - Site-by-site resource measurement: €50k
  - A collection boat will be provided by BioAtlantis which will allow harvesters to focus on harvesting and avoid having to tow seaweed ashore. This will include a crane and a weighing system on the boat together with a traceability system so people can cut daily quantities, which will be collected daily, weighed and traced to the harvest site. Text message or email will be sent via smart phone to confirm payment and allow for quick processing of payment  
Cost: €350k +
  - We will employ a local skipper as Resource Manager to operate the vessel. Cost: €50k per annum.

**Summary:**

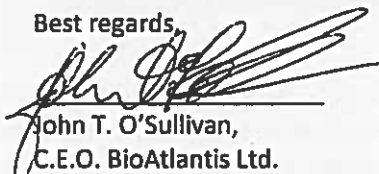
BioAtlantis is an indigenous innovative Irish company engaged in the R&D and production of value added seaweed based products for export around the world. BioAtlantis employ 25 people, 7 of which have PhDs. We believe Irish companies such as ours deserve whatever support can be given by the State but only insofar as it does not impact negatively on the interests of others such as the local hand harvesters in Clew Bay.

However, we believe in this case that the interests of all concerned can be served by the granting of the licence to BioAtlantis and the establishment of a true and lasting partnership between the company and the local seaweed harvesting community. We fully understand that the process of developing this partnership will not be a simple or quick one and it will require a lot of hard work.

We would be happy to meet with you to explain our plan, answer any other questions that you may have and take any comments you may have on board.

We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

Best regards,



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

Date: 2<sup>nd</sup> March 2015

Reply to: Submission number 74

Dear Minister Ring,

Thank you for your interest in BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. Your submission to the Marine Planning & Foreshore Unit of the Department of the Environment, Community and Local Government raises very understandable concerns on behalf of your constituents and in relation to natural resources and the environment.

We are writing to you in an effort to allay these concerns and explain the BioAtlantis position in all of this. Firstly, our sole motivation in seeking the Clew Bay licence is to achieve security of supply for our business. This security of supply has been placed under threat by the government supported decision by Údarás na Gaeltachta to sell Arramara Teo to a Canadian concern and the subsequent decision of that overseas company to seek an exclusive harvesting licence for a vast tract of the Irish coastline stretching from County Clare to North Mayo.

BioAtlantis believes that seaweed harvesting is best left to the experts in Clew Bay who have managed this natural resource sustainably for generations. We have no desire to interfere in any way with anyone's livelihood or way of doing business. In fact, our wish is to work in partnership with the harvesters in Clew Bay to ensure a sustainable supply of raw material into the future in a way which maximises benefits for all involved.

It is our belief that everyone's aspirations, both in the short and longer terms can be met, if all of the parties involved approach the issues from a partnership position.

It might be helpful at this stage to address each of the concerns you raised in your submission.

1. You express a fear that local harvesting businesses could be done away with and that BioAtlantis may at some point sell the licence to an unknown third party at some point in the future.
  - (a) BioAtlantis will only work with local, traditional hand harvesters and other traditional stakeholders in the Clew Bay area. If our licence application is successful our objective will be to see as little change as possible in terms of current activities in Clew Bay, save that we hope to see local harvesters increase their incomes if that is their wish.
  - (b) Sale of harvesting rights: We can state clearly that we have no interest in selling BioAtlantis and/or its associated harvesting rights. We want to build a substantial company and would not have gone to the time and expense of filing patents and buying a new factory if selling out was a strategy.
2. Another concern is the existence of a potential monopoly on seaweed purchasing from the local harvesters if BioAtlantis is granted this licence.

BioAtlantis will enter into discussions with the local harvesting community and other relevant stakeholders to establish a mechanism which will guarantee a market leading price to harvesters as well as ensure that other seaweed consuming businesses are not imperilled by the granting of

the licence. Any assistance you could provide with the development of such a mechanism would be very welcome.

3. Worry that BioAtlantis may not offer employment to all existing local harvesters.

BioAtlantis has consistently and continues to guarantee that it will offer employment to local harvesters currently working at Clew Bay. It will be entirely a matter for the harvesters to decide if they wish to work for BioAtlantis as direct employees, self-employed contractors, or on some other arrangement which suits them better.

4. Sustainable harvesting is a further issue raised.

BioAtlantis wants local hand harvesters to continue working in the traditional way. We believe that the best way to ensure the sustainability of hand harvesting is to combine the expertise of local hand harvesters built up over generations with the best that industry has to offer in terms of adding value to the crop. BioAtlantis favours the traditional method with a sickle or knife at low tide and leaving between 8-12 inches of material behind post-harvest. This provides harvesters with a full view of the cutting process and allows them to take care not to disturb the substrate and not harvest too low or damage the holdfast. Indeed, this traditional method forms the basis of our application.

5. Tourism

Our application also placed close attention to potential interactions with tourism and recreation related activities, particularly with respect to Collanmore Island and Mayo County Council's plans for development of Westport Harbour and Roman Island. We would be happy to discuss these aspects with you also in your role as Minister.

**Partnership approach as envisaged by BioAtlantis**

Our vision is for a partnership arrangement with local harvesters which would see BioAtlantis working with them to maximise their returns from their harvesting activity. We believe we can work together to our mutual benefit. BioAtlantis is an acknowledged leader in adding value to the seaweed crop while the local harvesters in Clew Bay are acknowledged experts in the sustainable harvesting of the resource.

- Harvesters will have the option of continuing to harvest as much seaweed as they did in the past from the same areas. However, areas that have been recently over-harvested may have to be allocated a period of fallowing to ensure regrowth.
- Harvesters will have the added certainty of a guaranteed buyer for their crops.
- This two way commitment between harvester and buyer will provide a greater level of commercial certainty on both sides.
- 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.



- **Collection Vessel:** All harvesters, regardless of their working arrangements with BioAtlantis, will benefit from the introduction of a pick-up vessel in Clew Bay. This will pick up the seaweed from hand harvesters, thus relieving them of the difficult and time consuming task of transporting the seaweed ashore. This also has much less impact on the environment especially coastal habitats as it lessens the requirement for heavy machinery. It will also allow harvesters to cut smaller quantities to fit a weather window as they will not be required to cut a full load. It will also facilitate immediate weighing, checking and payment systems.
- BioAtlantis can bring certain improvements to the harvesting process without in any way interfering with traditional hand harvesting methods. For example, the modern food industry requires increasingly exacting traceability standards and BioAtlantis will be able to assist in putting these in place. BioAtlantis is GMP+ accredited. This quality system puts traceability at its core therefore, BioAtlantis believes it is more than competent to help harvesters to put a system in place that meets the environmental requirements of the SAC.
- BioAtlantis will also help introduce operating practices which will document the care taken by harvesters to preserve the SAC to required environmental standards. This will involve our Resource Manager (who will operate the collection vessel) recording the amounts harvested each day and the areas set aside. The Resource Manager who will be from Clew Bay, will monitor the SAC area and plan in advance for sites which have sensitive harbour seal and bird life at certain seasons of the year.
- BioAtlantis are open to supplying other existing processors in Clew Bay with seaweed.
- **Investment in Clew Bay:** BioAtlantis will incur costs of €500K+ as follows:
  - Licence application cost to date: €100k
  - Site-by-site resource measurement: €50k
  - A collection boat will be provided by BioAtlantis which will allow harvesters to focus on harvesting and avoid having to tow seaweed ashore. This will include a crane and a weighing system on the boat together with a traceability system so people can cut daily quantities, which will be collected daily, weighed and traced to the harvest site. Text message or email will be sent via smart phone to confirm payment and allow for quick processing of payment  
**Cost: €350k +**
  - We will employ a local skipper as Resource Manager to operate the vessel. **Cost: €50k per annum.**

#### **Summary:**

We believe the foregoing addresses all of your concerns regarding supply/demand and public interest issues. However, we fully respect and understand how people will have natural fears in relation to a proposal such as this. In this context, BioAtlantis has already met with approximately 10 local harvesters and we plan to meet others as well in an effort to allay these fears and concerns.

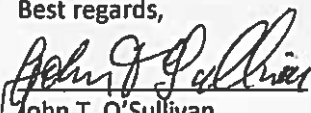
BioAtlantis is an indigenous innovative Irish company engaged in the R&D and production of value added seaweed based products for export around the world. There are currently 25 people employed by BioAtlantis, 7 of which have PhDs. BioAtlantis will double in size and increase employment from 25 to 50 over the next 2-5 years. We believe companies such as ours deserve



whatever support can be given by the State but only insofar as it does not impact negatively on the interests of others such as the local hand harvesters in Clew Bay. However, we believe in this case that the interests of all concerned can be served by the granting of the licence to BioAtlantis and the establishment of a true and lasting partnership between the company and the local seaweed harvesting community.

I would like to take this opportunity to ask you, in your role as a respected public representative, to assist in this process. Not as an advocate on behalf of BioAtlantis but as an honest broker working on behalf of the Clew Bay community to ensure that any agreement which may be reached is in their best interest. We would also like to meet with you to explain our plan, clarify any doubts that you may have and take any comments you may have on board.

Best regards,

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

Date: 2nd March 2015

Reply to: Submission number 75

Dear Mr. Hayden,

We thank you for your letter regarding BioAtlantis Ltd.'s application (Ref: FS6269) to hand harvest *Ascophyllum nodosum* seaweed in Clew Bay SAC. Firstly, I 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 would like to address your specific points as follows:

**1. Seaweed quantities on Inishraher**

Our biomass estimates were calculated based on data from Hession et al., (1998), our own on-site pilot study and information obtained through use of satellite images, tidal information and aerial photographs. We state in our application that site-by site validation of biomass levels will be established during the implementation phase of our work, once the licence is secured. See Appendix 4, page, "Step 1: On-site survey & schedule (Start date: Month 1. Duration: 1-2 weeks)".

**2. Pontoon**

Our application will have no impact on your plans to establish a pontoon on the island foreshore.

**3. Harvest of edible seaweed**

Our licence is unlikely to affect your plans for low scale harvest of seaweed on Inishraher. In our application and in our press release in the Mayo News on the 16<sup>th</sup> we state that small scale harvest (<0.5tonne) will be unaffected by our application. On page 121 of our application we state: "Any commercial user having small requirements of >0.5 tonnes per annum (e.g. hotels, health Spas), will be approached by BioAtlantis to discuss their requirements"

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. 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.

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.

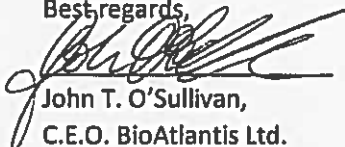
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R75

We appreciate your comments and welcome any further suggestions as to potential improvements to the plan.

Best regards,



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

Date:

20th March 2015

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