

# Draft Seaweed Policy Statement

## Consultation Analysis Report

November 2014

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# 1 Draft Seaweed Policy Statement (SPS) consultation document: analysis

This section introduces the Draft Seaweed Policy Statement consultation document and the report of the consultation analysis.

## 1.1 Consultation document

- 1.1.1 The Draft Seaweed Policy Statement consultation document<sup>1</sup> (draft SPS) set out the Scottish Government's draft policies regarding both the cultivation of seaweed at different scales of development and its inclusion in Integrated Multi-Trophic Aquaculture (IMTA). The consultation proposed nine seaweed cultivation policies, explored the most suitable regime for consenting seaweed cultivation, discussed options for managing the sustainable growth of the seaweed wild harvesting industry, and sought views on the potential diversification of marine species to be farmed.
- 1.1.2 The objective of the consultation was to seek comments on these topics from the seaweed cultivation and harvesting industry, other related marine industries (including aquaculture), interested stakeholders and members of the public.
- 1.1.3 The draft consultation document was published on the Scottish Government website on 26 August 2013. The document included a partial Business and Regulatory Impact Assessment (BRIA) of the proposals, and was accompanied by a Strategic Environmental Assessment (SEA) Environmental Report<sup>2</sup>. The consultation period ran from 26 August to 13 November 2013, and was advertised in both national and local newspapers<sup>3</sup>.

## 1.2 Consultation analysis

- 1.2.1 This analysis of consultation responses has been undertaken on behalf of Marine Scotland by the Scottish Government's Environmental Assessment Team. The analysis was undertaken in accordance with the Scottish Government's good practice guidance<sup>4</sup> (May 2010), and the findings are presented in this report.
- 1.2.2 This report is structured as follows:

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<sup>1</sup> Scottish Government (2013) Draft Seaweed Policy Statement Consultation available at: <http://www.scotland.gov.uk/Publications/2013/08/6786>

<sup>2</sup> Scottish Government (2013) Draft Seaweed Policy Statement Environmental Report available at: <http://www.scotland.gov.uk/Publications/2013/08/6786>

<sup>3</sup> Including the Edinburgh Gazette, the Herald, the Stornoway Gazette, the Press and Journal, the Shetland Times, the Orcadian, the Oban Times and the West Highland Free Press.

<sup>4</sup> The Scottish Government (2010) Consultation: Good Practice Guidance, Revised May 2010.

- Section 1 (this section) provides an introduction to the consultation document.
- Section 2 provides an overview of the consultation questions and the method of analysis.
- Section 3 sets out details of the number of responses received and the sectors and stakeholder groups who responded to the consultation.
- Section 4 provides an overall summary of the key issues raised.
- Sections 5 – 8 outline the issues raised by respondents for each of the consultation questions.
- Section 9 provides a summary of additional comments made by the respondents in their submissions.

## **2 Consultation questions overview**

### **2.1 Consultation document layout**

2.1.1 The consultation document was set out in four sections and contained nine questions :

- Section 1 – Draft Seaweed Policy Statement (questions 1 – 5).
- Section 2 – Consenting (question 6).
- Section 3 – Related issues (questions 7 – 8).
- Partial Business and Regulatory Impact Assessment (BRIA) (question 9).

2.1.2 The questions included both open questions and closed questions (i.e. ‘yes’ or ‘no’ answers). The latter also asked respondents to state the reasons for their responses and in some cases asked for further information. Question 9 asked respondents for comments on the Partial BRIA. Consultees were also invited, through the consultation notices, to provide comments on the SEA Environmental Report.

### **2.2 Consultation responses introduction**

2.2.1 The responses to the consultation questions, and any additional comments made by respondents, are summarised in Sections 5 – 9. For each closed question, the summary is accompanied by a table showing the number of responses by respondent sector (including the number of respondents who did not answer a question).

2.2.2 The responses largely focused on answers to the consultation questions. Some respondents provided comments, either as part of their responses to specific questions or in addition to their answers. In consequence, the length of the responses varied from short answers to the consultation questions, to longer and more detailed responses.

2.2.3 Some respondents chose not to answer some of the questions, and these are identified in the “not answered” column of the table. Some respondents provided answers which were more relevant to another question than to the one they answered; these have been discussed in the commentary for the appropriate question.

## 3 Respondents overview

This section provides an overview of the respondents to the consultation, including the sectors on whose behalf they have commented.

There were 36 responses:

- 33% from public bodies
- 14 % from the fishing industry
- 11% from the seaweed industry
- 42% from aquaculture; voluntary and academic organisations; the recreational, farming and land use sectors; and interested members of the public and other commercial businesses.

### 3.1 Responses overview

3.1.1 The consultation generated 36 responses from the seaweed, aquaculture and fishing industries; public bodies; voluntary and academic organisations; the recreational, farming and land use sectors; and interested members of the public and other commercial businesses.

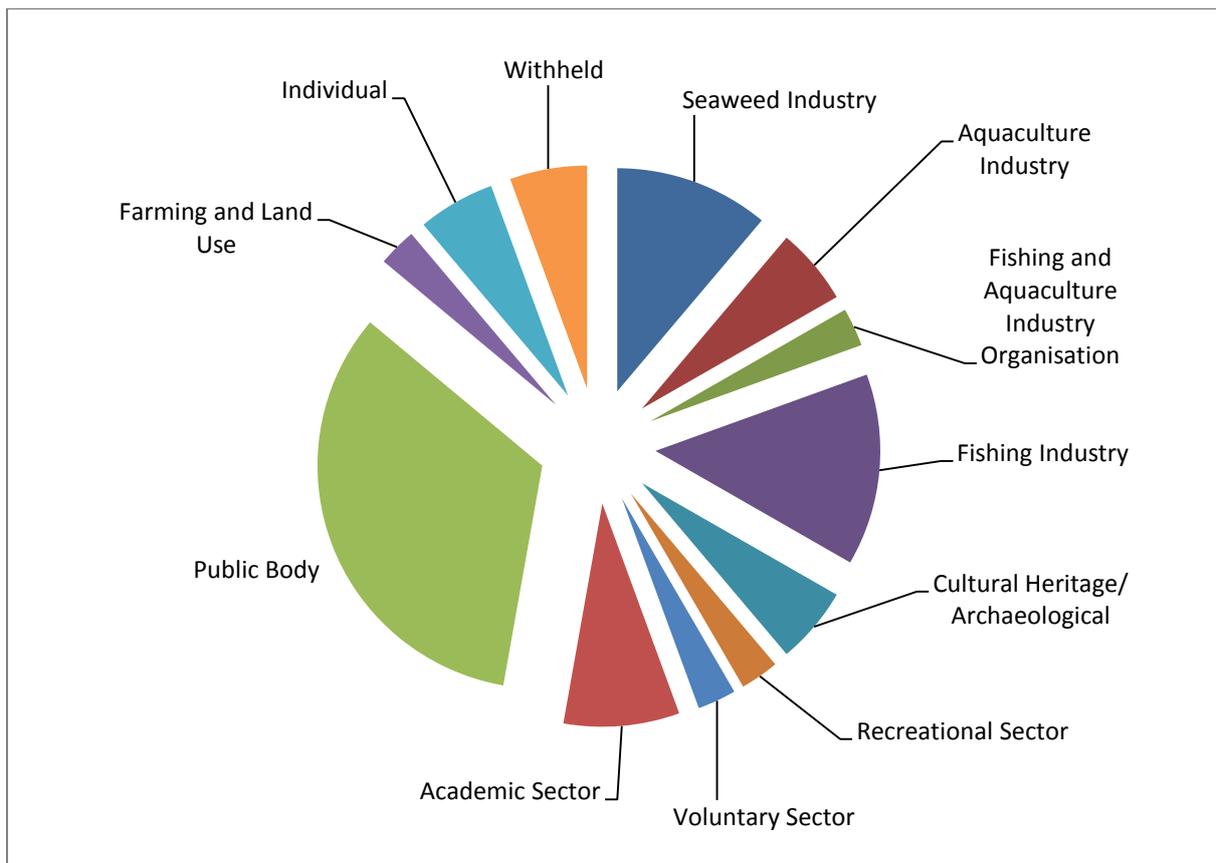
### 3.2 Stakeholder group breakdown

3.2.1 It was a key principle of the policy development process and the consultation analysis that each response be given due consideration. Each response received for the consultation was read in detail.

3.2.2 Each respondent to the consultation was assigned to one of 12 broad stakeholder groups, and also to a further sub-group (21 in total; Table 1).

3.2.3 A third of the responses were from public bodies, and the fishing and seaweed industries accounted for 14% and 11% of the responses respectively (Figure 1 and Table 1). The other nine stakeholder groups accounted for the remaining 42% of responses. Figure 1 shows the relative proportion of responses from the broad stakeholder groups.

**Figure 1: Response rates by broad stakeholder group**



**Table 1: Response rates by stakeholder group**

Broad stakeholder group	Replies (percentage share)	Detailed stakeholder group	Replies (percentage share)
1. Seaweed Industry	4 (11%)	1.1 Industry Organisation	1 (3%)
		1.2 Manufacturer	1 (3%)
		1.3 Harvester and Manufacturer	2 (6%)
2. Aquaculture Industry	2 (6%)	2.1 Finfish/Shellfish Grower	1 (3%)
		2.2 Finfish/Shellfish Growers Association	1 (3%)
3. Fishing and Aquaculture Industry Organisation	1 (3%)	3.1 Industry Organisation	1 (3%)
4. Fishing Industry	5 (14%)	4.1 Industry Organisation	4 (11%)
		4.2 Non-Statutory Industry Body	1 (3%)
5. Cultural Heritage/ Archaeological	2 (6%)	5.1 Conservation Organisation	2 (6%)
6. Recreational Sector	1 (3%)	6.1 Yachting	1 (3%)
7. Voluntary Sector	1 (3%)	7.1 Conservation Organisation	1 (3%)
8. Academic Sector	3 (8%)	8.1 Scientific Organisation	2 (6%)
		8.2 Rural College	1 (3%)
9. Public Body	12 (33%)	9.1 Government Agency	2 (6%)
		9.2 Environmental Regulator	1 (3%)
		9.3 Marine Navigation and Safety	1 (3%)
		9.4 Local Authority	5 (14%)
		9.5 Other Public Body	3 (8%)
10. Farming and Land Use	1 (3%)	10.1 Consultant	1 (3%)
11. Individual	2 (6%)	11.1 Individual	2 (6%)
12. Withheld	2 (6%)	12.1 Withheld	2 (6%)
<b>TOTAL</b>	<b>36 (100%)<sup>5</sup></b>		<b>36 (100%)<sup>5</sup></b>

<sup>5</sup> Due to rounding of individual percentages in the figures shown, the percentage share displayed in this column does not total 100%.

## 4 Key issues

This section provides an overview of the comments made by respondents to the consultation.

### 4.1 General views

- 4.1.1 The majority of respondents across the range of sectors agreed, or agreed in principle, with the proposed policies. Many asked for clarification of the wording used in most of the policies and, in particular, definitions of the terms used. Many also requested additional wording, to clarify the intention of the policy and/or provide what they considered to be the necessary level of detail.
- 4.1.2 The majority of respondents supported seaweed cultivation, but added provisos about appropriate siting and control of activities. Those opposed were primarily concerned about environmental and economic effects. Several felt that the policies should apply to all scales of seaweed cultivation or, indeed, to all forms of aquaculture.

### 4.2 Key issues

#### *Further consultation with stakeholders*

- 4.2.1 Some respondents felt that there had been little consultation outside the aquaculture sector during the development of the draft SPS. They felt that additional consultation with sectors such as the fishing sector, yachting organisations and the tourism sector should be undertaken. They also considered that consultation should be undertaken with environmental and wider community stakeholders, not just with “traditional interests”.

#### *Other marine users*

- 4.2.2 The majority of respondents agreed that other marine users and activities should be considered in the siting of seaweed farms. Respondents from a range of sectors felt that, in addition to aquaculture and shipping, the consideration of “other users” in the policies should include fishing, recreation and tourism.
- 4.2.3 Some sectors raised concerns that increased growth in the seaweed cultivation sector could impact on existing marine activities, particularly fishing, recreation and navigation. Concerns were raised about the potential effects of seaweed cultivation, in particular, on the ability of the fishing industry to continue to gain access to and navigate fishing grounds, particularly in Orkney.

### *Proposed size scales for cultivation*

- 4.2.4 Answers regarding the size scales used were evenly split: half thought that they were appropriate and half did not. Many questioned how the size scales outlined in the Consultation Document had been determined and asked what this could mean in the future when different types of cultivation technology are likely to be used. Other respondents expressed concerns over issues such as how cumulative impacts would be assessed and managed.
- 4.2.5 Many respondents raised concerns about the size scale categories and the degree of significant environmental effect that has been attributed to each (particularly shellfish scale). Many felt that the size limits quoted were inappropriate and not reflective of current shellfish practices. Some suggested alternative criteria based on their experience of aquaculture developments. Several suggested that scale be defined by area and/or biomass production rather than number and length of lines, which would facilitate future changes in equipment.
- 4.2.6 Several respondents considered that shellfish (small) scale has more potential for significant environmental effects than was identified in the Consultation Document. The majority of respondents were supportive of medium-scale development, subject to regulatory consideration, a key proviso. Concerns were raised regarding extensive or large-scale cultivation, particularly relating to possible negative effects on the environment and other marine users (e.g. the recreation and fishing sectors; navigational safety).

### *Siting*

- 4.2.7 Most respondents supported the policy of siting seaweed farms away from sources of pollution, including sewage outfalls, although clarification of terms was requested.

### *Cultivation equipment*

- 4.2.8 The majority of respondents agreed that seaweed farming equipment should be fit for purpose to prevent damage from adverse weather conditions.

### *Research*

- 4.2.9 Respondents called for additional research to underpin the policies, fill information gaps and reduce uncertainties, both for developers and decision-making bodies. This need was identified, in particular, to support the development of guidance and/or Code of Practice for wild harvesting.

- 4.2.10 Research was also considered important in the consideration of “local provenance” in seaweed cultivation and the potential effects of cultivation on the marine environment (e.g. wild seaweed stocks, etc).

### *Guidance and regulation*

- 4.2.11 The majority of respondents supported proposed guidance, such as a Code of Practice, on wild harvesting activities. Many felt that this sector will expand in the future and that control is essential to avoid overexploitation of wild seaweed stocks. Several respondents noted that there was current and existing work that can be used to underpin the development of guidance, and provided examples. Some respondents suggested that guidance would also be beneficial for seaweed cultivation, e.g. when considering the impact of cultivation on other marine users.
- 4.2.12 Several respondents felt that guidance, or the introduction of a Code of Practice, would not be sufficient, and that the Scottish Government should introduce regulation of seaweed harvesting instead of, or as well as, guidance. There was little consensus regarding the form that regulation should take: planning consent, marine licensing and use of General Binding Rules were all suggested.

### *Provenance/ cultivated species*

- 4.2.13 The majority of respondents supported the inclusion of policy on the use of native species and local provenance, and many saw this as being essential to minimising the risk of introducing invasive non-native species. However, some sought clarification on what would be considered “local” or “native”, and suggested guidance on how this could be implemented in practice.
- 4.2.14 Some felt that this policy could be commercially restrictive and suggested flexibility, particularly in light of the way climate change can affect distribution of species. The use of “native” and “nearby” stock was suggested by some, provided there were no adverse effects on local stock or the environment.
- 4.2.15 Some referred to existing legislation and Codes of Practice on non-native species, with respondents both in support of and against the policy noting a need for evidence and further research to be undertaken in this area. It was suggested that the possible ecological and environmental impacts of farming new species should be “at the heart” of the consenting process.
- 4.2.16 Amendment of the 1997 Act was supported by most of the respondents across a range of sectors, although views varied on whether species should be named. Some suggested species for inclusion, while others felt that this should remain open to provide flexibility as the industry grows and that defining species in legislation could be unnecessarily restrictive.

### *Consenting process*

- 4.2.17 More than half of the respondents considered that seaweed cultivation should be consented through town and country planning, in line with other forms of aquaculture. There was less support for marine licensing, or combinations of the two. Several felt that none of the options were appropriate.
- 4.2.18 There were suggestions that small-scale, inshore developments be consented through planning, and larger (medium and extensive), offshore and deep water development consented through marine licensing.
- 4.2.19 There was general support for consistency and improved clarity in the regulatory regime, and for the recognition of seaweed cultivation as a form of aquaculture.
- 4.2.20 Respondents identified a need for expertise in considering environmental issues in the consenting process, particularly from those with knowledge of environmental issues in coastal and marine environments (i.e. Marine Scotland, Local Authorities). There was disagreement about whether planning authorities or Marine Scotland would be best placed to provide the necessary expertise to support decision-making.
- 4.2.21 The importance of links between terrestrial and marine planning, co-ordination between Local Authorities and Marine Scotland, the role of Marine Scotland in the consenting process, and a request for a wider consultation on consenting options were also discussed. The context of the SPS was also noted by several respondents, specifically the importance of links between the SPS and the emerging National and Regional Marine Plans, as well as the National Planning Framework and the revised Scottish Planning Policy.
- 4.2.22 Several respondents suggested that seaweed cultivation, at some or all size scales, should be subject to environmental impact assessment (EIA) as part of the consenting process.
- 4.2.23 Several respondents noted that, should consenting be through planning, a marine licence would still be required. A few noted that responsibilities could be transferred to Regional Marine Planning Partnerships when they are established.

### *IMTA*

- 4.2.24 There was general support for IMTA; those who opposed the policies did not agree with the IMTA concept. Respondents did, however, raise several concerns, most of which focused on the environmental and economic implications of this type of development.

- 4.2.25 Several respondents questioned the need for policy 9. There were also queries about whether the basis of the policy was still justified, and calls for amendment of the original policy, e.g. species of finfish; geographic application.

### *Socio-economic Issues*

- 4.2.26 Several respondents considered that the BRIA's assessment of potential costs and benefits should have included equal emphasis on seaweed cultivation and harvesting in the wild. Some noted that the cost of the consenting process for wild seaweed harvesting in the future should have been reflected in the BRIA.
- 4.2.27 Several respondents felt additional consultation and cost analysis assessment was required, particularly in relation to the potential for socio-economic impacts on other marine users (e.g. fishing, tourism, etc.).

## 5 Section 1: Draft Seaweed Policy Statement (SPS)

This section sets out the quantitative analysis of responses to the draft Seaweed Policy Statement, and a summary of the comments made and issues raised by respondents (these are summarised and discussed under the relevant questions). Summaries of the findings are presented in boxes at the end of the discussion on each consultation question.

### 5.1 Overview

5.1.1 This section set out the draft SPS and sought views on nine policies on:

- Stand-alone commercial seaweed cultivation; and
- Commercial seaweed cultivation within IMTA systems.

5.1.2 Views were also sought on the proposed scales for the development of the seaweed cultivation industry: shellfish (small), medium and extensive scale.

### 5.2 Question 1: Do you agree with policies 1 – 6?

5.2.1 The majority of respondents across the range of sectors agreed, or agreed in principle, with the proposed policies. These were viewed by some as “sensible, proportionate or adequate”; another respondent felt that the approaches outlined in the six policies would provide an “adequately robust framework” to support the development of a seaweed farming industry while ensuring the protection of consumers, the environment and other marine users. A few respondents did not agree. One considered that, in the absence of policies relating to landscape/seascape, or potential impacts on sensitive benthic habitats, species or designated areas, Policies 1 – 6 did not provide an appropriate guide for shellfish-scale seaweed cultivation. One respondent, while agreeing in principle, felt that there were further considerations which should be taken into account to ensure that these policies achieve the desired aims, and provided these considerations in their response.

5.2.2 Several respondents considered that the policies in the National Marine Plan (and forthcoming Regional Marine Plans) should apply to seaweed cultivation and harvesting, and that the SPS should make reference to these plans and policies. One respondent, from the fishing industry, considered that this would ensure wider stakeholder engagement and consultation. Another public body respondent also suggested that the SPS should refer to the need for such development to accord with these plans.

- 5.2.3 One respondent also considered that, as set out, the policies align with those that require consideration when determining applications for other forms of aquaculture. Another agreed that the policies could be used for determining applications for consent or for providing good guidance to developers. Some public body respondents were critical of the wording of the policies and considered, for example, that “in principle” statements do not provide certainty either for those assessing applications or for prospective developers. Another respondent also welcomed the commitment that the establishment of seaweed production would not be used as a sole driver for improvements to water quality or to impose additional requirements on existing operators of authorised activities.
- 5.2.4 Some respondents felt that there had been little consultation out with the aquaculture sector during the development of the draft SPS, for example, with fishing interests, yachting organisations and the tourism sector. Fishing industry respondents raised concerns regarding the detrimental effect on other users, in particular inshore fishing activities, including the cumulative impact of new and additional developments in the marine environment and resultant impacts on navigation and vessel transit to and from fishing grounds. They felt that their interests had not been considered and assurances were sought that seaweed cultivation would not affect their opportunity to make a living from the sea.
- 5.2.5 Of those who did not support the draft SPS, one respondent stated their strong opposition on the basis that it presumes that seaweed will be grown on ropes. They noted that other methods such as vertical and horizontal net systems are being trialled, and had concerns that the development of farms based on such systems may be hindered or blocked, as they cannot be fitted into any size category defined in the policies.
- 5.2.6 Another respondent had concerns about seaweed cultivation generally and felt that, while small-scale seaweed cultivation under strict regulatory control may be feasible, medium and large-scale cultivation (especially IMTA) would have significant adverse environmental effects and affect other marine users dependent on environmental quality. Another respondent voiced their concern that the proposed policies may have a detrimental impact on the habitat of marine birds, through their support for the development of seaweed farms.
- 5.2.7 Concerns were also raised about the definition of size/scale. One respondent felt that, even with potentially smaller seaweed farms, Policies 1 – 9 were appropriate. Others disagreed and felt that they could not respond fully on the basis of the size/scale definitions set out in the Consultation Document. One respondent felt that Policies 2 – 6 would also be relevant to medium-scale seaweed cultivation.

## Views on specific policies

### 5.3 Question 1a – Do you agree with policy 1?

**Policy 1: In principle, the Scottish Government is supportive of shellfish scale seaweed cultivation, subject to regulatory consideration.**

Sector	Yes	No	Not answered
1. Seaweed Industry	4		
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry		1	4
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector			1
7. Voluntary Sector		1	
8. Academic Sector	3		
9. Public Body	8	2	2
10. Farming and Land Use	1		
11. Individual		1	1
12. Withheld	2		
<b>Overall</b>	<b>22</b>	<b>5</b>	<b>9</b>

- 5.3.1 Twenty-two respondents supported this policy, or supported it in principle, primarily the public bodies and the seaweed industry. The five respondents who did not support the policy came from four different sectors.
- 5.3.2 Several respondents considered that “shellfish scale” seaweed cultivation has the potential for significant environmental effects, depending on where it is located, and suggested that this should be reflected in the wording of policy 1.
- 5.3.3 Some of the respondents who agreed with the policy added provisos; for example, that care must be taken not to over-exploit resources or that consenting should be through planning permission, by bringing the culture of seaweed (marine plants) within the meaning of development in the planning acts.
- 5.3.4 Of the respondents who did not support this policy, one felt that it should be made clear whether the Scottish Government intend seaweed cultivation and harvesting to be addressed in Local Development Plans or Regional Marine Plans; if the former, then the wording of the policy should be changed to reflect that development would only be supported if it accorded with the development plan. Another public body respondent did not feel that the caveat of “subject to regulatory consideration” is appropriate because this process applies to all development proposals.
- 5.3.5 Views on the consenting process are discussed under question 6.

### Policy 1 Summary:

- The majority of respondents supported this policy, with some provisos.
- Some would support the policy only if consenting was through town and country planning.
- Several considered that “shellfish scale” seaweed cultivation has the potential for significant environmental effects, depending on where it is located, and wanted a reference to this included in policy 1.

## 5.4 Question 1b – Do you agree with policy 2?

**Policy 2: Only species native to the area where the seaweed cultivation will take place should be cultivated, to minimise risk from non-native species.**

- 5.4.1 Two questions in the consultation document sought views on policy 2, one regarding general agreement (question 1b) and one on local provenance (question 2). A combined analysis of the responses to these two questions has been undertaken and the findings are presented below.

Sector	Yes	No	Not answered
1. Seaweed Industry	4		
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry	1		4
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector			1
7. Voluntary Sector			1
8. Academic Sector	3		
9. Public Body	9	1	2
10. Farming and Land Use	1		
11. Individual	1		1
12. Withheld	1	1	
<b>Overall</b>	<b>24</b>	<b>2</b>	<b>10</b>

- 5.4.2 The majority of respondents (24) answering the question supported this policy, with respondents from a range of sectors. Most support was received from public bodies and seaweed industry respondents. The three respondents who did not support the policy all came from different sectors.

5.5

## Question 2: Should policy 2 require local provenance, i.e., stock must originate from the water body the seaweed is to be grown in?

**Policy 2: Only species native to the area where the seaweed cultivation will take place should be cultivated, to minimise risk from non-native species.**

Sector	Yes	No	Not answered
1. Seaweed Industry	2	2	
2. Aquaculture Industry	1	1	
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry	2		3
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector			1
7. Voluntary Sector	1		
8. Academic Sector	3		
9. Public Body	8	1	3
10. Farming and Land Use			1
11. Individual	1		1
12. Withheld		1	1
<b>Overall</b>	<b>20</b>	<b>5</b>	<b>11</b>

5.5.1 This policy was supported by most of the respondents (20) who answered the question. Opposition was expressed by five respondents.

### *General comments*

5.5.2 Respondents in support of the policy commented that it is essential to minimise the risk of introducing invasive non-native species, both now and in the future, and that this should be a high priority (several noted that non-native invasive marine species are already occurring, e.g. in Orkney). The key reasons cited were minimising the risk of species displacement and the risk of disease, and preserving the genetic integrity of a local population. Support was also expressed from a commercial perspective, where one respondent considered that this policy is in the interest of those using a combination of cultivation and wild harvest where the native wild population is key. Protection of Scottish species is also important where brand principles are concerned e.g. standards of excellence, Scottish premium product, etc.

5.5.3 Several respondents referred to the legislation on non-native species. One respondent considered that the development of the SPS should pay attention to the existing legislation; they also commented that the Code of Practice on Non-Native Species “does not clearly deal with the cultivation of plants in the sea”. Another noted that legislation on non-native species does allow for exemption on certain sites, e.g. on agricultural farms where

the cultivation and harvest of non-native species provides huge benefit. If applied to seaweed cultivation, this would have to be weighed against the long-term management of the farm and the possibility of introducing seaweed species that may become invasive or inadvertently introducing associated species or diseases.

- 5.5.4 One individual respondent felt that there may be considerable commercial pressure (and a business opportunity) to import stocks to meet overseas demand for seaweed, which would require the use of non-native (and thus potentially invasive) species. They felt that measures will be needed in any legislation to prevent the importation and growing of alien species.
- 5.5.5 Those who did not support this policy felt that it was overly restrictive. One respondent stated that the policy would make seaweed hatchery production and grow-out unfeasible, as it would require hatcheries to maintain cultures of seaweeds from hundreds of potential farm locations. Another was of the view that this could potentially shrink the gene pool within a population, and hence reduce the resilience of a species, putting it at risk in the face of climate change. One respondent also noted that, in the future, the seaweed cultivation industry would likely wish to use species that have been selectively bred for specific traits (e.g. faster growth, pest resistance, etc.), and that policy 2 would preclude this, as these would be genetically different from local stocks.
- 5.5.6 There was a clear view from those who opposed the policy that, unless there is clear scientific evidence that there are significant genetic differences between seaweeds of the same species in different geographic locations in Scotland, or that any genetic differences that do exist would be likely to have an adverse effect on the local seaweed stocks, this restriction is unnecessary. They felt that it is important not to constrain the industry with legislative barriers. Indeed, one of the supporters of the policy noted the practical limitations involved in collecting sufficient quantities of spore locally to permit this industry to develop commercially.

### *Clarification/definition of terms*

- 5.5.7 A key request was for clarification of the policy's wording. Respondents sought more information on the geographical extent of "the area" and what was meant by "native to the area", e.g. does the term "area" refer to the coastline of Scotland or to a smaller scale? Similarly, several requested a definition of water body for use in interpreting the policy, for example, would this mean a single sea loch, defined geographic regions around Scotland, or UK waters? Several respondents felt unable to answer without this information.
- 5.5.8 Several respondents made suggestions about the policy's wording, or what the policy should include. For example, one respondent suggested use of

the term 'nearby' provenance, as it is slightly physically broader than 'local'. Others suggested that the policy wording could be clarified to include “within the same waterbody” or that species should be grown only in locations where that species is also naturally found in the same body of water or, at the very least, only within their native range.

- 5.5.9 Also of relevance is the issue of species distribution. One respondent noted that they currently harvest/grow seaweed of the same species on both the east and west coasts of Scotland. Another noted that the species being considered for cultivation occur across the whole of Europe, and recommended that seaweeds for cultivation should be sourced from UK waters. The comment was made that use of the term 'local' depends on the specific seaweed: some seaweeds have a small spatial distribution, others have global distributions.
- 5.5.10 Along the same lines, one respondent suggested that the wording of the policy should be amended to read “only species native to the area where the seaweed cultivation will take place should be cultivated, to minimise the risk from non-native species. Stock must either originate from the water body the seaweed is to be grown in, or have a demonstrated inability to reproduce in order to avoid erosion of local genetic diversity.”
- 5.5.11 One respondent emphasised that the use of non-local stock may also increase the risk of non-native species being introduced, either as a deliberate result of developing a farm or accidentally through being introduced along with the species cultivated when the farm is stocked. For these reasons stock of as local a provenance as possible, and ideally from within the same water body, should be used in the development of seaweed farms.

### *Flexibility/exceptions*

- 5.5.12 It was suggested that flexibility is retained in the policy to allow use of “native” or “nearby” stock, not necessarily of immediately local provenance, to improve cultivation prospects with no adverse effects on local stock or the environment.
- 5.5.13 One respondent noted that there may be situations where improvements in seaweed yields are to be gained from introduced species being used and that this would need to be subject to future research and/or case by case assessment (e.g. use an approved screening process for other species, authenticated stock, known and approved sources, etc.).
- 5.5.14 One respondent considered that, in some circumstances where types of seaweed historically occurring in an area have disappeared, controlled reintroduction using stocks from another area should not be precluded if considered appropriate to improve biodiversity (but that such introductions should be accompanied by appropriate hygiene and other controls etc. as

well as scientific monitoring, prior to and during cultivation, to make certain that there are no adverse environmental or other impacts).

### *Climate change*

- 5.5.15 The comment was made that this policy may need to remain flexible in light of the way that climate change may affect the distribution of seaweeds, citing their high sensitivity to temperature change, and that it may need to be reviewed if the native range of a species changes in response to climate change, such that this species moves into previously uninhabited areas (thereby becoming invasive).

### *Research*

- 5.5.16 The need for evidence and for further work to be undertaken in this area was expressed, both by those who did and did not support this policy. It was proposed that further work is needed to: study the population genetics of local seaweed populations to confirm the level of diversity in both Scottish and UK waters (including whether there is significant genetic difference between the species that occur on both the east and west coasts of Scotland); establish the actual significance of the introduction of non-locally provenanced seaweed and any subsequent impact on genetic integrity; and to determine factors like spore dispersal in the natural environment. It was considered that, until such work has been undertaken, the resolution of uncertainties is unlikely to be possible.

### *Implementation*

- 5.5.17 Guidance was requested as to how cultivators should assess whether a species is native or non-native. One respondent asked how, in practice, this policy would be enforced. Another suggested use of an invasive species risk management plan.
- 5.5.18 Another, from the seaweed industry, noted that a non-native species may naturally colonise a seaweed farm, and requested that procedures be put in place so that it can be demonstrated that, where this has occurred, it has been a natural event and not through intentional action on the part of the cultivator.

### Policy 2 summary:

- The majority of respondents supported requirements for native and local provenance, both for commercial (preserving the Scottish “brand”) and environmental reasons (minimising the risk of species displacement and/or disease; preserving local genetic integrity). Opponents felt it was overly restrictive and would make production activities unfeasible now and in the future.
- Respondents requested clarification of the terms used in the wording of the policy. Some wanted the policy to focus on native provenance only, to introduce some flexibility into sourcing of seaweeds. Others noted that flexibility of implementation may be required in light of future climate change.
- Many called for further research into this area.
- Requests were made for guidance and for the policy to be applied to all aquaculture sectors.

### 5.6 Question 1c – Do you agree with policy 3?

**Policy 3: Where seaweed is grown for human consumption, cultivators could site farms away from sewage outfalls and other potential sources of pollution.**

Sector	Yes	No	Not answered
1. Seaweed Industry	4		
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry			5
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector			1
7. Voluntary Sector		1	
8. Academic Sector	3		
9. Public Body	9	2	1
10. Farming and Land Use	1		
11. Individual	1		1
12. Withheld	2		
<b>Overall</b>	<b>24</b>	<b>3</b>	<b>9</b>

5.6.1 The majority of respondents (24) supported this policy. Public bodies, the seaweed industry and the academic sector were the main supporters. Three organisations did not support this policy - two public bodies and one from the voluntary sector. Several respondents noted that siting seaweed farms close to outfalls could be of benefit to ambient water quality.

5.6.2 Many of the respondents, both for and against, felt that the current wording was unclear and should be strengthened. For example, respondents requested that the word “could” be replaced by “should” or “must” or that the policy be rephrased to “farms must be located away from sewage outfalls and other sources of pollution”. Others questioned how “away

from” would be defined, noting that this could be interpreted in many different ways when considering distance from source, for example, taking oceanographic currents, prevailing winds etc. into account. Another respondent felt that the answer to this policy question depends on the extent to which seaweeds accumulate, or harbour, harmful bacteria, viruses, heavy metals etc. that may be present in such discharges.

- 5.6.3 One respondent from the academic sector asked if the use of the seaweed will be covered in the consent to ensure that it is fit for human consumption. Other suggestions included that: standards for human food seaweed need to be implemented, based on existing standards for wild harvested seaweed; water quality be assessed at all sites; and consideration is given to the designation of seaweed growing waters (for human consumption), similar to what is presently in place for shellfish. Undertaking a collaborative approach to information sharing, between the Foods Standards Agency (FSA) in Scotland, SEPA and Scottish Water, was suggested as a useful means for the seaweed sector to identify sites for seaweed cultivation for human consumption, such as that proposed in the consultation “Integrated approach to shellfish waters – next steps”. Another respondent was of the view that human health considerations were not a matter for development consent, and that such issues should be dealt with through the harvesting area process, as is currently done for shellfish.
- 5.6.4 Financial implications were also discussed. A respondent from the seaweed harvesting industry reiterated that, for them, quality of the product was of utmost importance and that any potential contamination is avoided at all cost. However, they felt that further research is needed into testing criteria for seaweed for human consumption to prevent excessive testing constraints which could potentially cripple small to medium enterprises. It was also noted by another that costs may influence the siting of development, for example, there would presumably be an advantage to be a set distance away from a known discharge so as to reduce the need for expensive sampling and testing regimes.

#### Policy 3 summary:

- The majority of respondents supported the policy of siting seaweed farms away from pollution sources. Several, however, noted the potential benefits to water quality of siting farms close to outfalls.
- Many asked for clarification and strengthening of the wording, e.g. from “could” to “should”.
- Several respondents raised issues around human consumption, including establishing standards, assessing water quality, and designating seaweed growing waters. The financial implications of such measures were also raised.
- Several respondents, particularly those from the water industry, considered that seaweed for human consumption should be grown in designated shellfish waters.

## 5.7 Question 1d – Do you agree with policy 4?

**Policy 4: Equipment used in seaweed cultivation should be fit for purpose to prevent damage from adverse weather conditions.**

Sector	Yes	No	Not Answered
1. Seaweed Industry	4		
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry	1		4
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector			1
7. Voluntary Sector		1	
8. Academic Sector	3		
9. Public Body	10	1	1
10. Farming and Land Use	1		
11. Individual		1	1
12. Withheld	2		
<b>Overall</b>	<b>25</b>	<b>3</b>	<b>8</b>

- 5.7.1 This was supported across the range of sectors, with 25 respondents agreeing with the policy. Only three respondents were opposed.
- 5.7.2 Suggestions for changes to its wording were made by respondents who both agreed and disagreed with policy 4. For example, it was suggested that the wording “should be fit for purpose” be changed to “should be demonstrably fit for the proposed location and the prevailing conditions” or “should be fit for purpose in relation to the surrounding environmental conditions, in order to prevent impacts on safe navigation and other interests”.
- 5.7.3 Other respondents felt that there should be some clarification and definition of the term “damage”, for example, does this relate solely to damage to the farm equipment or also to subsequent impacts on navigation or other interests? It was also noted that built structures along the coastline, as well as other marine structures, could be damaged by equipment. A few respondents who did not support the policy felt that the wider environmental impacts of farms breaking up had not been considered. One noted, for example, that such “damage” could include damage from the spread of seaweed.
- 5.7.4 Other views were that, while equipment must conform to the policy, it should also be suitable for harvesting sustainably and safely without it becoming too much of a cost burden on industry, thereby discouraging new entrants to the market.
- 5.7.5 One respondent felt that it was unclear what criteria the equipment would be assessed against, for example against a technical standard or on a site-

by-site basis. Another considered that the policy should apply to all scales of cultivation, and that industry-specific guidelines should be developed, taking into account other countries' experience.

- 5.7.6 It was also suggested that the policy should include provisions to ensure: that equipment is placed in the specific position applied for; that maintenance is undertaken; and that consideration of decommissioning and restoration be part of the consenting process.

**Policy 4 summary:**

- The majority of respondents agreed that seaweed farming equipment should be fit for purpose to prevent damage from adverse weather conditions.
- Changes to wording were suggested for clarification, e.g. to “fit for purpose”.
- It was suggested that industry-specific guidelines be prepared and that these should be proportionate, given the cost implications.

## 5.8 Question 1e – Do you agree with policy 5?

**Policy 5: Other marine users and activities should be considered in the siting of farms.**

Sector	Yes	No	Not Answered
1. Seaweed Industry	3	1	
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry	1	1	3
5. Cultural Heritage/Archaeological	2		
6. Recreational Sector			1
7. Voluntary Sector	1		
8. Academic Sector	3		
9. Public Body	11		1
10. Farming and Land Use	2		
11. Individual	1		1
12. Withheld	2		
<b>Overall</b>	<b>29</b>	<b>2</b>	<b>6</b>

- 5.8.1 This policy was supported by 29 respondents across the range of sectors, including nearly all of the public bodies; only two were opposed. One respondent felt that this approach is already used when determining applications for planning permission, but was of the view that it is not used as readily in determining marine licence applications.

- 5.8.2 Many of the respondents who supported the policy felt that it could benefit from being strengthened and through clarification of the wording, particularly “other marine users” and how they will be “considered”. In particular, respondents felt that “other marine users and activities” should include fishing interests, other coastal users and activities, Scottish Water

infrastructure and socio-economic impacts; some also considered that the term should include environmental and wider community stakeholders as well as traditional interests. Several suggested that the wording of the policy be amended to read “other marine and coastal users and activities”.

- 5.8.3 In terms of strengthening the policy, one respondent suggested that there should be an obligation on developers to consult other marine users, rather than just consider them, which is open to interpretation. Several respondents, from a range of sectors, felt that consideration should be given to expanding this policy to ensure no development took place where there were navigational safety issues. Several also raised concerns about potential displacement of the fishing industry, with consequent socio-economic impacts; one suggested that the policy should be widened to include a presumption against development in the same area as a wild fishery or development that could displace the “legitimate activity and legally held right of fishermen to fish”.
- 5.8.4 Supporters of the policy felt that guidance would be required to assist in the assessment of potential impacts on other marine users. A few wanted the policy and/or the requested guidance to be spatial in nature.
- 5.8.5 Of those who did not support this policy, one considered that seaweed cultivation would have a very low impact on other users.

**Policy 5 summary:**

- The majority of respondents agreed that other marine users and activities should be considered in the siting of seaweed farms. Opponents felt that seaweed cultivation would have a low impact on other users.
- Many of the respondents felt that the wording should be strengthened and clarified, particularly the definition of “other marine users” and how they will be “considered”.
- Specific concerns were raised about displacement and effects on navigation.
- Guidance to assist in implementation was requested.

## 5.9 Question 1f – Do you agree with Policy 6?

**Policy 6: Shellfish scale farming is not spatially limited, and may be located anywhere in Scotland with appropriate local conditions, and with due regard to the marine environment.**

Sector	Yes	No	Not answered
1. Seaweed Industry	4		
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry		1	4
5. Cultural Heritage/Archaeological	2		
6. Recreational Sector			1
7. Voluntary Sector	1		
8. Academic Sector	3		
9. Public Body	7	3	2
10. Farming and Land Use	1		
11. Individual		1	1
12. Withheld	2		
<b>Overall</b>	<b>23</b>	<b>5</b>	<b>8</b>

- 5.9.1 The majority of respondents (23), across the broad range of sectors, supported this policy. Five were opposed, three from public bodies.
- 5.9.2 Many of those who supported the policy requested clarification of the wording and suggested some changes. The main issues arose around the meaning of “appropriate local conditions” and “with due regard to the marine environment”. Points made in response to policy 5 were reiterated, in that consideration of location should include consideration of other marine and coastal users and activities, navigational safety issues and socio-economic impacts. Several respondents felt that consideration of ambient water quality would be a key consideration in defining “appropriate local conditions”; several felt that “appropriate local conditions” should be limited to shellfish growing waters.
- 5.9.3 Concern was raised by one public body respondent that the policy did not contain sufficient detail to ensure that all the “regional” issues identified by the Strategic Environmental Assessment (SEA) would be given sufficient consideration by future consenting regimes. They, and others, suggested that the effectiveness of this policy would be improved by: including a requirement to consider environmental impacts; identifying environmental assessment objectives; highlighting the need to assess indirect impacts (e.g. on marine birds and their habitats) and cumulative effects; and providing a more detailed explanation of the specific aspects of the marine environment that should be given “due regard” in determining suitable location (as set out in the SEA Environmental Report).

- 5.9.4 Of the respondents who did not support this policy, one respondent felt that there are already spatial limits on seaweed cultivation, including the presumption against finfish aquaculture on the north and east coasts of Scotland (policy 9) and the limited number of protected shellfish waters on these same coasts. A public body felt that the policy did not make sense and that it did not add anything to the policy framework. They also questioned why no reference was made to relevant National Marine Plan policies or future Regional Marine Plan policies. Another respondent felt that the precautionary approach was being ignored, and that cultivation of seaweed would result in a change to ecosystem balance such that resulting ecosystem changes could seriously affect marine mobile species. They envisaged that seaweed would spread beyond the farm, to the detriment of others who rely on healthy functioning marine ecosystems (e.g. fishermen or tourists, amongst others) and felt that these factors should be included when considering the “economic” case for such developments.
- 5.9.5 One respondent noted that “it cannot be assumed that sites with ‘appropriate local conditions’ may be located anywhere in Scotland”, until further information is available on what types of seaweed are to be cultivated, their end use, and the methods of production (views on the example of shellfish scale set out by the draft SPS are captured under question 5).
- 5.9.6 One respondent considered that a high number of small-scale seaweed farms could have similar, or greater, impacts to those from a large-scale farm and wanted to know what controls would be put in place in this regard.

**Policy 6 summary:**

- The majority of respondents agreed that shellfish-scale farming may be located anywhere in Scotland with appropriate local conditions, and with due regard to the marine environment.
- Clarification of definitions was requested, accompanied by suggestions, particularly around “appropriate local conditions” and “due regard”.
- Some wanted to see more detail, e.g. on potential environmental effects and their assessment and on cumulative effects. e.g. of high numbers of farms.
- Some opponents considered that there are already spatial limits on seaweed cultivation, others that the precautionary approach should be employed.

## 5.10 Question 3: Do you agree with policy 7?

**Policy 7 – In principle, the Scottish Government is also supportive of medium scale development, subject to regulatory consideration. Applications for such seaweed farms should demonstrate that mitigation measures have been considered to prevent adverse environmental impacts, and how these will be delivered.**

Sector	Yes	No	Not Answered
1. Seaweed Industry	3		1
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry	1	1	3
5. Cultural Heritage/Archaeological	1	1	
6. Recreational Sector	1		
7. Voluntary Sector	1		
8. Academic Sector	3		
9. Public Body	9	2	1
10. Farming and Land Use	1		
11. Individual		1	1
12. Withheld	1	1	
<b>Overall</b>	<b>24</b>	<b>6</b>	<b>6</b>

- 5.10.1 Twenty-four respondents supported this policy, or supported it in principle. These were mainly from public bodies, the academic sector and the seaweed industry. The remaining sectors were mostly in broad agreement. Six respondents, from five different sectors, were opposed. Several respondents had comments about development size/scale and consenting, and these are discussed under Questions 5 and 6, respectively.
- 5.10.2 Many respondents added provisos to this support. A key proviso was that, as well as environmental impacts, social and economic sustainability must be considered, as well as other stakeholders, particularly in light of concerns raised about existing spatial pressures in the coastal and marine environment. Concerns were raised by the fishing and recreational sectors about the potential for displacement of recreational and fishing vessels, and the consequent environmental effects of the latter. Other provisos included that requirements for mitigation measures be proportionate and supported by guidance; developers must apply for a Marine Licence so that sites are assessed for navigational safety; and that issues of disturbance and deterrence of seabirds must be coherently addressed. One respondent also felt that the policy should provide guidance on the potential adverse environmental effects identified in the SEA.
- 5.10.3 The wording of the policy was considered by many. One respondent felt that the policy was not well worded and that it could be amended to support this scale of development, subject to it being consistent with relevant

National and Regional Marine Plan policies. Several felt that the policy wording should be changed to require that environmental information be submitted alongside the application for consent, to show how the proposed development would be managed to ensure no significant environmental impact.

- 5.10.4 The topic of mitigation was also discussed. A suggestion was made to use the term “safeguards” rather than “mitigation”, as this respondent considered mitigation to be reduction of harm rather than prevention. One respondent proposed that the wording of the policy should be amended from “that mitigation measures have been considered to prevent ...” to read “... that mitigation measures have been identified to prevent”. These measures could then be required to accompany any application for consent, making the assessment of the proposal more meaningful. One public body respondent noted that mitigation measures should only have to be considered if the development is likely to give rise to negative impacts; if they are not sufficient to overcome such negative impacts, then refusal of the application would be warranted. It was also suggested that the SPS should include the necessary mitigation measures, and that these should be backed up by evidence (peer reviewed) to ensure that they are effective.
- 5.10.5 One respondent felt, however, that lack of research on the environmental impact of seaweed cultivation meant that it would be impossible for a planning application to present an effective mitigation strategy for all impacts, as they are not yet understood. Continued research was also suggested by another, to ensure that developments are not creating adverse environmental effects, whilst another respondent noted that it will only be as the scale of farming increases that evidence of any impacts, whether positive or negative, will be identified.
- 5.10.6 This respondent recommended that a deploy and monitor approach be utilised, with initial baseline data taken for a site and samples taken at various time points during deployment to monitor any environmental impacts, noting that this is currently being undertaken, at a small scale, on several projects.
- 5.10.7 A few respondents supportive of this policy felt that it should also apply to shell-fish scale developments, given the potential for this scale to have significant environmental effects, particularly in respect of designated sites, Protected Marine Features, sensitive habitats/species, and other users and communities. It was also felt that scale alone will not necessarily be an appropriate measure of the significant impacts, as the significance of impacts will also be linked to the specific site location.
- 5.10.8 A few respondents from a range of sectors (including public bodies, the academic sector and the fishing industry, amongst others) suggested that consideration be given to requiring Environmental Impact Assessment (EIA)

of this scale of seaweed cultivation. It was felt that this would provide evidence for mitigation of potential environmental and social impacts, including those on the benthos, water column and interactions with other marine organisms as well as implications for fisheries and space, visual/other coastal impacts etc. Another respondent felt that larger “shellfish scale” developments and shellfish farms should also be included in such requirements.

Policy 7 summary:

- The majority of respondents supported medium-scale seaweed cultivation. Many added provisos, e.g. that, as well as environmental impacts, social and economic sustainability and other stakeholders must be considered.
- Suggestions for clarification of the wording were made, particularly relating to definitions of terms used. Respondents also asked for more detail to be provided, e.g. a description of the necessary mitigation measures. Approaches to mitigation were also discussed, with useful suggestions.
- Respondents also called for research into the environmental effects of seaweed cultivation, and into the potential measures for mitigation of these effects.
- Several felt that this policy should also apply to shellfish-scale developments.

## 5.11 Question 4: Do you agree with policies 8 and 9?

**Policy 8 – The Scottish Government is supportive of IMTA.**

**Policy 9 – Where seaweed is grown in IMTA alongside finfish, it is spatially limited to the West Coast of Scotland, the Western Isles, Shetland and Orkney. This is due to the continued presumption against the further marine finfish developments on the north and east coasts, as detailed in the Scottish Planning Policy document and the forthcoming National Marine Plan.**

Sector	Yes	No	Not Answered
1. Seaweed Industry	3		1
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry		1	
4. Fishing Industry	1	1	3
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector		1	
7. Voluntary Sector	1		
8. Academic Sector	2	1	
9. Public Body	9	2	1
10. Farming and Land Use	1		
11. Individual		1	1
12. Withheld	1	1	
<b>Overall</b>	<b>21</b>	<b>8</b>	<b>7</b>

- 5.11.1 Twenty-one respondents, across the range of sectors (including most of the public bodies), supported these policies. They were not supported by eight respondents, also across the range of sectors.

### *General/overarching views*

- 5.11.2 Nine of the twelve sectors broadly supported these policies. Some respondents added provisos to this support. For example, several felt that further research into IMTA was required on, for example, the tonnage of shellfish and/or seaweed required to mitigate environmental effects from a salmon farm (e.g. 1500-tonne production level); the spatial requirements of IMTA; whether IMTA from “closed” tank- and land-based systems could be successfully transferred to the marine environment; and the environmental and economic implications of IMTA. Most of the respondents who opposed the policies did so because they do not agree with the concept of IMTA. The issues discussed in the following paragraphs were raised by both supporters and opponents of the IMTA policies.
- 5.11.3 Biological carrying capacity was an issue for several respondents. One was concerned, for example, that the introduction of shellfish at a salmon farm to mitigate environmental impacts could result in the biological

carrying capacity of the water body being exceeded, which would have adverse effects on existing shellfish farms by reducing growth and production overall, with consequent economic impacts. Several were concerned that IMTA would be used to support intensified stocking of finfish or to retain current production capacity at over-stocked locations. One respondent considered that permissions granted for IMTA should only be awarded to concerns with 'serious intent and those with a genuine desire to succeed in this particular area of activity'.

- 5.11.4 Many respondents supported the principle of nutrient uptake through IMTA. One respondent felt that the inclusion of seaweed cultivation alongside finfish farming should be mandatory. However, several respondents questioned whether IMTA could achieve its stated objectives. One felt that there is no real means of containing nutrients and that the use of "integrated" is therefore inappropriate. Several questioned whether nutrient uptake would occur, particularly in the open sea. One was concerned that, for nutrient uptake to be effective, separation distances would have to be quite small, which would result in IMTA species being exposed to pesticides, residual medicines, etc. from finfish farms. Another queried how nutrient uptake would be monitored.
- 5.11.5 Several respondents were concerned that IMTA would act as a source of diffuse pollution, for example by increasing the likelihood of pathogens and diseases developing and spreading into natural populations of marine organisms. One considered that growing IMTA species in the increased nutrients from farmed fish (particularly nitrogen) would be similar to growing in sewage effluent. Others (who also had concerns about over-stocking) felt that IMTA could compromise the health and quality of wild marine products.
- 5.11.6 There were concerns about the potential economic effects on the fishing and shellfish farming sectors. These included displacement of existing fishing activities; decreased access to shellfish cultivation sites; "dumping" of (shellfish) product on the market, thereby driving down prices; and effects on brand, including those emphasising the wild nature of their products or sustainability, e.g. the Marine Stewardship Council awards. While supportive of IMTA in general, it was felt by one public body respondent that this policy would benefit from further clarification, in particular the definition of IMTA with respect to spatial versus ecological considerations. Their view was that multi-trophic integration may be capable of being achieved in biological/ecological terms within a discrete biological area without seaweed/finfish cultivation systems being immediately adjacent.

### *Comments specific to policy 8*

- 5.11.7 Several respondents suggested amendments to the wording of Policy 8. One noted that IMTA should only be supported if it conforms to the development plan (assuming that planning permission is the chosen consenting mechanism). Another suggested that IMTA should be restricted to shellfish waters, so that developers have certainty about ambient water quality.
- 5.11.8 One respondent suggested that, to ensure sustainability of the approach, the algae arising from IMTA should not be seen merely as a sink for finfish farming nutrients, but should have a purpose after harvesting. Preference could therefore be given in the authorisation process to proposals which include a beneficial and sustainable use for the seaweed. Another cautioned that, in the case of sea urchin production, care must be exercised to ensure that over-grazing of seaweed (by sea urchins) does not occur. It was also proposed that the SPS should require that IMTA-scale cultivation undergo environmental impact assessment, including the consideration of cumulative impacts.

### *Comments specific to Policy 9*

- 5.11.9 Policy 9 reiterates existing policy (included in Scottish Planning Policy<sup>6</sup> and the draft National Marine Plan) and several respondents questioned the basis for this existing policy. These comments are included in Section 9 of this report.
- 5.11.10 Several respondents questioned the need for this policy, and whether the SPS needed to reaffirm existing policy through policy 9, noting that there are existing policies in place to limit the spatial distribution of finfish aquaculture and that, if finfish aquaculture is not supported on the north and east coasts, this effectively rules out finfish as one of the species that can be considered as part of IMTA in these areas.
- 5.11.11 One respondent was of the view that policy 9 should not assume that IMTA is appropriate for all existing finfish sites. Many sites are already constrained by space due to a requirement to retain access to anchorages and an increase in size would not be possible.
- 5.11.12 There were varying views regarding the areas to which the presumption against development should apply. One respondent opposed to this policy felt that the presumption against development should be extended to apply to areas where they felt the inshore fisheries required special protection, for example, Orkney. However, one respondent felt that if the west coast is to be compelled to have seaweed farms, then so too should the east coast.

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<sup>6</sup> There is a presumption against development of marine finfish farm developments on the north and east coasts to safeguard migratory fish species. Paragraph 104 of Scottish Planning Policy.

5.11.13 Other views expressed included that IMTA should be considered in all areas as part of the expansion to an existing finfish farm.

5.11.14 It was also suggested that use of the term “Western Isles” in policy 9 should be more specifically defined as it currently confuses the Outer and Inner Hebrides. As there are issues specific to the Outer Hebrides, it was thought that defining these two distinct island groups would reduce confusion.

**Policies 8 and 9 summary:**

- The majority of respondents supported IMTA, with some provisos such as the need for research. Those who opposed the policies did not agree with the IMTA concept.
- Respondents raised a number of concerns about IMTA, including:
  - whether the increase in biological carrying capacity would result in an increase in the biomass of farmed finfish i.e. intensification
  - whether IMTA could achieve its stated objectives
  - whether IMTA is appropriate for all finfish aquaculture sites
  - potential economic disbenefits of IMTA
- Suggestions for amendment were made, including conformity with the development plan, or restriction to shellfish waters.
- Several respondents questioned the need for policy 9. There were also queries about whether the basis of the policy was still justified, and calls for amendment of the original policy, e.g. species of finfish; geographic application.

## 5.12 Question 5: Do you think that the size scales (shellfish (small), medium, and extensive), are appropriate?

Sector	Yes	No	Not answered
1. Seaweed Industry	3	1	
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry		1	3
4. Fishing Industry		2	
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector	1		
7. Voluntary Sector	1		
8. Academic Sector	2	1	
9. Public Body	3	5	4
10. Farming and Land Use	1		
11. Individual		1	1
12. Withheld		1	1
<b>Overall</b>	<b>14</b>	<b>12</b>	<b>10</b>

- 5.12.1 There were mixed views across the sectors as to whether the size scales assumed for the SPS were appropriate. Approximately one-third (14) of respondents agreed, another third (12) disagreed and the remaining third did not answer the question. Of the 12 respondents who did not agree, around half were public bodies.
- 5.12.2 Many of the respondents who answered “no” to this question supported one or two of the size scales but not all three. These comments have been separated into general comments and those specific to each proposed size scale.
- 5.12.3 In addition, the text in the following paragraphs includes views provided in responses to other policies, policy 6 and policy 7 in particular.

### *General comments*

- 5.12.4 Many of the respondents who were of the view that the proposed size scales are appropriate provided no rationale for this opinion. Several of the respondents felt that it was a logical approach, but with provisos: for example, several felt that there was little difference between “small” and “medium”. One noted that there are potentially very large differences in area between the types, and therefore in their impacts. It was also thought by one respondent from the voluntary sector that the scales may be appropriate in themselves, but they are irrelevant unless the cumulative impacts of different sites can be assessed and properly managed; they felt that the draft SPS must clearly lay out how cumulative effects on the marine

environment will be addressed, particularly effects on birds and mammals such as displacement, loss of habitat or species disturbance.

- 5.12.5 Of those who did not agree with the size classifications, concerns were expressed regarding the size scale categories and the degree of significant environmental effect that has been attributed to each (particularly shellfish scale). It was also felt that the arbitrary size of the categories has little meaning, and that to be economically viable, most seaweed farms would fall into the “extensive” category for which no policy is currently being proposed.
- 5.12.6 Many of the public bodies who did not support the proposed size limits cited the size limits used as their reasons. One felt that the general terminology is acceptable but that the size limits were inappropriate. Several noted that the SPS’s use of “small” was actually quite large in practice and, on the basis of their experience, suggested that more appropriate size limits would be: small (shellfish) 1 – 20 x 200 m lines, medium 21 – 40 lines and extensive more than 40 lines. They also noted that seaweed cultivation undertaken for marine origin biofuels would be very large and could affect food production in the marine environment through conflict with, for example, the fishing and aquaculture industries.
- 5.12.7 Several suggested that scale be defined by area and/or biomass production rather than number and length of lines. For example, the use of “small”, “medium” and “large” based on site area or overall footprint was thought to be less confusing and more flexible to allow for likely changes in technology as the industry develops. This was echoed by those who noted that different technologies are currently in development, and therefore considered that the use of long lines to define scale was not appropriate.
- 5.12.8 The consenting process was discussed by a few respondents and detailed comments are discussed in Section 6 of this report. In general, however, it was felt by one respondent that setting different scales of development that will be treated in different ways by different planning regimes would complicate the process unnecessarily.
- 5.12.9 Another respondent from the fishing sector felt that the question was redundant as, in their geographic area, any size of seaweed farm would conflict with the established fishery, causing displacement, gear conflict and fishing pressures in other areas.
- 5.12.10 One seaweed sector respondent stated that it is important that regulations and policy regarding infrastructure are in line with the ability of the industry to provide them, since they have financial implications that can be detrimental to small businesses.

### *Shellfish (small) scale*

- 5.12.11 There were mixed views regarding the example provided for this size scale. Some respondents considered it to be reasonable. Others, from public bodies and the fishing industry, amongst others, were not supportive. They felt that the use of “shellfish” scale was misleading and inappropriate, as they did not consider it to be small scale development nor was the example given in the SPS representative of the current industry in Scotland. It was the view of one respondent that the “shellfish scale” proposed is actually “very extensive” compared to shellfish farms in operation. Another respondent suggested that the term “small” should be removed.
- 5.12.12 Concern was raised by several respondents that sites of this scale could have significant environmental effects, particularly with respect to designated sites, Priority Marine Features (PMFs) and sensitive habitats and species. They suggested that it may be more appropriate to either reduce the scale to be more representative of the current shellfish industry, highlight that significant effects are possible and that mitigation measures may be required for shellfish scale, or provide clarity regarding the potential “regional” issues which should be taken into account when determining suitable locations for shellfish-scale development.
- 5.12.13 Another respondent noted that planning or consent applications must reflect the full area that will be affected; for example, mooring lines can add about 30% to the area of aquaculture sites.

### *Medium scale*

- 5.12.14 One public body respondent noted, in commenting on Policy 7, that the definition of “medium scale” was given in “shellfish equivalents”, and added that they considered this scale of development to be more transitional between small and extensive. They also suggested that regulatory consideration should address the type of equipment proposed rather than size/acreage of development. Another felt that the upper limit for medium size farms is rather small for an economically viable venture.

### *Extensive scale*

- 5.12.15 Concerns were raised by a range of sectors regarding extensive or large scale cultivation, particularly about possible negative effects. Other concerns were raised regarding navigation, with one public body of the view that it would be extremely hazardous to place cultivation of this scale into inshore waters without major mitigation measures for the safety of navigation. The recreational sector also raised concerns regarding additional pressures on recreational yachting, which they felt was already under pressure from other developments. Several respondents felt that sites of this size should not proceed in advance of a detailed and extensive

investigation of nutrient balances and the impacts on the marine ecosystem, or without greater consideration and consultation.

Question 5 summary:

- Answers regarding the size scales used were evenly split: half thought they were appropriate and half did not.
- Concerns were expressed regarding the size scale categories and the degree of significant environmental effect that has been attributed to each (particularly shellfish scale). Several respondents considered that shellfish (small) scale has more potential for significant environmental effects than was identified in the Consultation Document.
- Many felt that the size limits quoted were inappropriate and suggested alternatives, e.g. small (shellfish) 1 – 20 x 200 m lines, medium 21 – 40 lines and extensive more than 40 lines.
- Several suggested that scale be defined by area and/or biomass production rather than number and length of lines, which would facilitate future changes in equipment.
- Concerns were raised about extensive or large-scale cultivation, particularly regarding navigation and additional pressures on other marine users such as yachting and fishing. Respondents called for additional research and consultation prior to progressing this scale of seaweed cultivation.

## 6 Section 2 – Consenting

This section sets out the quantitative analysis of responses about consenting arrangements for seaweed cultivation, and a summary of the comments made and issues raised by respondents. (These are summarised and discussed under the relevant questions.)

Summaries of the findings are presented in boxes at the end of the discussion on each consultation question.

### 6.1 Overview

6.1.1 This section of the SPS discussed the current consenting arrangements for seaweed cultivation and outlined four options for consenting in the future.

6.1.2 The four options were:

1. No change (i.e. continue with marine licensing and, as required, Works Licences).
2. Provide main consent through terrestrial planning regime.
3. Use both planning and marine licensing regimes but differentiate by scale.
4. Transfer seaweed to planning only if it is part of IMTA development.

### 6.2 Question 6: Which consenting option would be most appropriate for seaweed cultivation?

Sector	Option 1	Option 2	Option 3	Option 4	Not answered
1. Seaweed Industry	1		1	1	1
2. Aquaculture Industry	1	1			
3. Fishing and Aquaculture Industry		1			
4. Fishing Industry		1			4
5. Cultural Heritage/ Archaeological		2			
6. Recreational Sector					1
7. Voluntary Sector	1				
8. Academic Sector		1		1	1
9. Public Body	1	7	1	1	2
10. Farming and Land Use					1
11. Individual					2
12. Withheld				1	1
<b>Overall</b>	<b>4</b>	<b>13</b>	<b>2</b>	<b>4</b>	<b>13</b>

### *General/overarching views*

- 6.2.1 The response to question 6 was mixed. Of the respondents who answered the question, the most support was for Option 2 (13), with less support for Options 4 (4), 1 (4) and 3 (2). Thirteen respondents (36%) had no preference or did not provide an answer to the question.
- 6.2.2 Many of the responses contained comments on and suggestions for the options, with several providing the rationale for their preference as well as their views on the other options. For example, some felt that a mixture of two options could provide the best solution, depending on the size and purpose of the development. Several respondents were of the view that none of the options presented provides a holistic and consistent approach.

### *Option 1: no change*

- 6.2.3 Four respondents, from four different sectors, expressed support for Option 1. In general, these respondents felt that the regulation of marine developments, such as aquaculture, should ultimately be via the marine licensing process.
- 6.2.4 Another felt that the links between terrestrial and marine planning were important in ensuring consistency across the planning regimes and in decision-making, so that together the two systems achieve sustainable management of the marine environment. Another respondent, a public body, added that they would also support Option 4 related to transferring seaweed to planning in the interim, but only if it is part of an IMTA development.
- 6.2.5 One respondent reiterated their comments on the Aquaculture and Fisheries Bill, stating that both seaweed harvesting and cultivation should be brought into the marine licensing regime, regardless of scale or links to other aquaculture. They felt that this would help to ensure that environmental interactions were appropriately and fairly managed, and would also allow for better consideration of cumulative environmental impacts with other similar and wider activities. A key concern was that cumulative effects, particularly those on biodiversity, would not be captured by separate consenting regimes.
- 6.2.6 Others felt that small-scale, inshore developments should be consented through planning, and that larger (medium and extensive), offshore and deep water development should be consented through marine licensing.

## *Option 2: Provide main consent through terrestrial planning regime*

### *General views*

- 6.2.7 Thirteen respondents supported consenting through the terrestrial planning regime; the public bodies were most supportive of this option. This support largely centred around the view that seaweed is a form of aquaculture and, as such, should be considered within the same consenting regime as other forms of aquaculture (i.e. finfish and shellfish), to provide a “consistent”, “clear” and “holistic” regime.
- 6.2.8 In their response, a public body stated that option 2 was “the only reasonable and feasible option set out in the consultation”. They felt that having all forms of aquaculture considered under the terrestrial planning regime would provide an opportunity to streamline the process; that all sites should be considered under the same process, regardless of their scale; and that this would help to make it easy to understand for all involved, including developers. They cited a recent situation involving an application for sea urchin and seaweed cultivation on an existing Atlantic salmon farm that was dealt with through separate regimes (i.e. sea urchins under planning and seaweed under TCE lease application, and marine navigation consent for both).
- 6.2.9 Respondents noted that this option had several advantages over others. For example, one felt that this option would allow IMTA developments to be considered holistically, would promote closer integration between the marine and land use planning processes, and would involve the amendment of just one piece of legislation (the relevant Planning Act).
- 6.2.10 Others supported the consistency this option would offer, particularly in relation to modifications, for example the addition of seaweed cultivation to shellfish and/or finfish aquaculture (IMTA). They added that, of all the options presented, Option 2 would be best placed to assess both marine and coastal impacts and allow for community input into decision-making. Another broadly agreed, stating that it would provide an opportunity to consider local context and detail in the process, for example incorporating factors such as the undesignated historic environment that is protected through the Local Development Plan.
- 6.2.11 Benefits in transparency and local accountability for aquaculture development applications were also noted by some. One local authority felt that the marine licensing process does not benefit from local democracy in decision-making, particularly in instances where there are conflicting issues on a development application. One stated that they considered that “seaweed farming should be brought under planning control as a matter of urgency”.

### *Spatial considerations*

- 6.2.12 One respondent discussed the consideration of a development's scale. They felt that the only definition of scale needed would be to set the area of surface equipment at which a proposal is defined as a "major development" under the development hierarchy. They suggested the adoption of the 2 hectare (ha) threshold set for finfish and shellfish farming<sup>7</sup>.

### *Expertise in regulation*

- 6.2.13 A key concern was the need for provision of adequate expertise in considering seaweed developments, particularly in assessing the marine biology/science aspects of proposals. For example, one respondent noted that it is vital that those with knowledge and an understanding of the marine environment and ecosystems, including consideration of the precautionary principle, be responsible for the consenting process.
- 6.2.14 There was no consensus as to who might be able to provide such expertise. Some respondents considered that local planning authorities do not have an understanding of these issues, and cited planning consents for major fish farm developments as being of particular concern. Another felt that site-specific advice (rather than generic guidance) should be provided to local authorities by those with the appropriate expertise. In contrast, several local authorities noted their existing experience and expertise, the appropriateness of their existing policy frameworks for guiding future seaweed farm development, and their experience of dealing with complex and detailed Environmental Statements associated with terrestrial and/or marine development. This was supported by other respondents, including public bodies and the fishing sector. The experience developed by local authorities in dealing with aquaculture developments and the need for linkage with planning for shoreside support and infrastructure were cited as important reasons for respondents holding these views.

### *Links with wider planning*

- 6.2.15 The tie-in of terrestrial and marine planning systems under the National Marine Plan and Regional Marine Planning was broadly discussed by respondents, including the links between this consultation and the separate Planning Scotland's Seas Consultation.

### *Roles and responsibilities*

- 6.2.16 A public body recommended that clear guidance be set outlining the roles of each consultee when responding to consultations related to seaweed cultivation. They felt that this could be done either by updating existing

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<sup>7</sup> The Schedule to The Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009 identifies a fish farm as a major development, where the surface area of water covered is or exceeds 2 hectares.

aquaculture working arrangement documents or providing separate guidance.

- 6.2.17 The role of Marine Scotland was also discussed by several respondents, with one considering that they would likely be made a statutory consultee for seaweed cultivation, given their status in relation to marine finfish farm development. However, several questioned the statement in the Consultation Document that the "Scottish Government considers that potential significant environmental impacts are best considered and regulated by Marine Scotland". One felt that the perception that Marine Scotland are best placed to consider and interpret the environmental significance of seaweed farms was a misconception, adding that Scottish planning authorities have significant expertise in these matters. Another cited concerns they held over Marine Scotland's role in finfish farming, stating that while it has powers to regulate the environmental impacts of marine fish farms in relation to sea lice numbers on fish in cages and containment, they were "not aware of Marine Scotland having taken meaningful regulatory action" against "poorly performing sites".

#### *Proximity to shore*

- 6.2.18 The proximity to shore was also discussed in terms of which option and regulatory regime would be appropriate for consideration of seaweed developments. For example, one respondent felt that, as it is likely that these forms of development would generally be located near the shore, the potential for impacts on people and environmental resources on land (e.g. visual, etc.) may be most appropriately considered under existing planning legislation.
- 6.2.19 One public body felt that Option 2 would be the best approach, but suggested a slight adaptation based on location. Their view was that authorisation by Local Authorities under the town and country planning regime was the most appropriate for small-, medium and extensive-scale developments in inshore locations or in locations within the seaward extent of planning. Extensive-scale sites would need to be handled differently, largely as these developments would normally be developed further offshore and would also likely involve a different suite or scale of issues to be considered during the determination process. In such instances they supported marine licensing as an appropriate means of authorisation.

#### *Costs*

- 6.2.20 One respondent felt that while costs are likely to be significant in using this option, this may also deter any spurious applications.

### *Option 3: Use both planning and marine licensing regimes but differentiate by scale*

- 6.2.21 Two respondents felt that using both planning and marine licensing regimes and differentiating between them by scale was the most appropriate method for consenting. One felt that, in using both regimes, developments will have been assessed both for their environmental issues and for navigational safety, citing the current process for the aquaculture industry as a precedent. The other respondent added that this option stood the best chance of taking into account the many different seaweed species involved, although noting that there could be potential issues with the definition of these species.
- 6.2.22 Several respondents considered that Option 3 was “disjointed and confusing”. They added that the use of criteria to determine scale, and hence the appropriate licensing regime, would also be complicated and confusing. They clarified that this could be of particular relevance if a development was to be modified, and this could result in a requirement that the modified development be considered under a different consenting regime.

### *Option 4: Transfer seaweed to planning only if it is part of IMTA development*

- 6.2.23 Option 4 received some support amongst respondents from the seaweed industry, and from the public and academic sectors. Support for including IMTA developments under terrestrial planning was seen by these respondents as a “sound option”, but only with the continuation of the existing marine licensing system for wider cultivation activities. One public body felt that whilst supporting this option in relation to IMTA, the characteristics of seaweed cultivation suggested that a single regulatory and consenting regime, such as the current marine licensing regime, would be best placed to address cultivation on a case-by-case basis.
- 6.2.24 One public body recommended this approach, adding a preference for them to act as consenting authority where the proposal forms part of an IMTA development. Otherwise, they felt that consents should be issued under the Marine (Scotland) Act, adding that this could in the future be delegated to a Regional Marine Partnership.
- 6.2.25 Several respondents had concerns about the current system, and an industry respondent felt that “historically, terrestrial planning can be problematical” and that this “could be disadvantageous” to marine-related development. Another felt that this option would be beneficial for IMTA, and could also benefit commercial cultivation, although potentially not at a medium or extensive scale.

- 6.2.26 However, another expressed concerns with this option, stating that this could lead to developments progressing “under the radar” if it was stated that it would be better environmentally to have a seaweed development in the same body of water as other aquaculture developments. They felt that additional research was needed into IMTA.

### *Combination of options*

- 6.2.27 Several respondents suggested a combination of options. For example, one respondent suggested using a combination of Options 3 and 4, differentiated by scale, location and purpose of cultivation. They supported the regulation of small-scale farms with other aquaculture as they “will almost always be near to the shore”. However, they felt that “larger farms need more space, thus will be more likely to be located further offshore”, adding that it may be more sensible for them to be regulated under the marine licensing regime. They did, however, add that if any such farms were working within an IMTA site, it may be sensible to consider them under the 1997 Act, but that their consideration could also depend on the scale of the seaweed farm and the IMTA development.

### *Other views*

- 6.2.28 Several respondents did not state a preference for any particular option, including some stating that they were not best placed or did not wish to comment. Some acknowledged the situation, with comments noting the benefits of a “simple consenting regime” and “one that involves the least bureaucracy”, particularly in creating opportunities for development of the industry. Another respondent acknowledged the need for a “solution” to the “dilemma” of the current system where different marine activities in the same area are covered by different regulatory regimes, but had no strong views as to what the solution should comprise.
- 6.2.29 With regard to Policy 1, the question of what “regulatory consideration” is most appropriate was raised by one respondent. They felt that this required consideration and that there is a strong case for the same authority consenting and monitoring both aquaculture and seaweed farms, especially given the proposals for IMTA. Another respondent, from the fishing industry, agreed that involvement of the same consenting body was important. They felt that this should apply regardless of the size of any seaweed development, and added that this would “ensure transparency, clarity, consistency and a streamlined consenting process”.
- 6.2.30 Some respondents also raised other issues related to consenting, mainly aligned with the respective respondents’ areas of remit. A recreational sector respondent felt that close coordination between the Local Authority and Marine Scotland was necessary at an early stage, citing an instance where a finfish farm had been approved by a Local Authority, but that the

application for a marine licence showed that navigational concerns had not been considered earlier. A fishing industry respondent agreed that consultation was important, and asked that relevant fishing interest groups be consulted in advance regarding any applications that may affect their area due to concerns regarding possible displacement. Scottish Water also requested to be consulted.

- 6.2.31 A public body noted that the consultation for Planning Scotland's Seas - Draft Circular stated that while Item 76 of Planning for Marine Aquaculture associates fish farming framework plans with terrestrial planning, Item 77 expressed an aspiration that all aquaculture will move to marine planning in the future. One individual respondent stated that there needed to be much fuller consultation about these options, especially outside the finfish farm and seaweed cultivation sectors.

**Question 6 summary:**

- More than half of the respondents considered that seaweed cultivation should be consented through town and country planning, in line with other forms of aquaculture. There was less support for marine licensing, or combinations of the two. Several felt that none of the options were appropriate.
- There were suggestions that small-scale, inshore developments be consented through planning, and larger (medium and extensive), offshore and deep water development consented through marine licensing.
- There was disagreement about whether planning authorities or Marine Scotland is best placed to provide the necessary expertise to support decision-making.
- The respondents identified a need for a streamlined consenting process; consistency between terrestrial and marine planning systems, and between planning and marine licensing; and capture of cumulative effects. They wanted to see a consenting process that would bring benefits to decision-making, including increased community input and increased transparency and accountability.
- There was a call for guidance on roles and responsibilities of all those involved.
- Several respondents noted that, should consenting be through planning, a marine licence would still be required. A few noted that responsibilities could be transferred to Regional Marine Planning Partnerships when they are established.

## 7 Section 3 – Related issues

This section sets out the quantitative analysis of responses about the harvesting of wild seaweed, and widening the range of species that can be farmed using aquaculture. It provides a summary of the comments made and issues raised by respondents. (These are summarised and discussed under the relevant questions.)

Summaries of the findings are presented in boxes at the end of the discussion on each consultation question.

### 7.1 Overview

7.1.1 This section of the Consultation Document discussed the harvesting of seaweed in the wild, with particular focus on aspirations for the sector and options for managing its sustainable growth through promoting good practice and mitigating against potential adverse environmental effects.

### 7.2 Question 7: Should guidance be developed for the harvesting of wild seaweed? If not, what (if any) alternative arrangements would you suggest?

Sector	Yes	No	Not answered
1. Seaweed Industry	4		
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry			1
4. Fishing Industry	1		4
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector	1		
7. Voluntary Sector	1		
8. Academic Sector	3		
9. Public Body	9		3
10. Farming and Land Use			1
11. Individual	1		1
12. Withheld	2		
<b>Overall</b>	<b>25</b>	<b>0</b>	<b>11</b>

7.2.1 Of those who answered the question, all respondents supported the development of guidance.

#### *Support for guidance*

7.2.2 There was general consensus that wild harvesting effort is likely to increase in future as popularity grows and new opportunities arise and, as such, it was felt by many that guidance is necessary to avoid over-exploitation of the resource and to promote sustainability.

## *Support for regulation*

- 7.2.3 Eight respondents considered that control of the wild harvesting sector is needed, as well as guidance. Of these eight, most felt that it would be prudent to develop a regulatory mechanism now, before the industry expands and adverse impacts occur that will affect the sustainability of harvesting or result in significant adverse environmental effects. One or two considered that regulation would only be necessary as the wild harvesting sector targets larger areas or begins to use mechanised harvesting equipment. It was suggested that, for small-scale activity, using an approach such as General Binding Rules<sup>8</sup> and accompanying best practice guidance might be more appropriate than regulation.
- 7.2.4 There was little consensus regarding the form that regulation should take. Both planning consent and marine licensing were suggested; one respondent suggested using the Norwegian regulatory framework as a model. Only one respondent, a public sector body, suggested a mechanism for control of existing (as opposed to new) commercial harvesting activities; they proposed that a certificate of lawfulness (or similar) be issued by the planning authority. Several noted that exemptions would be needed for personal use and/or use by crofters. It was, however, noted that some definition of scale would be needed to ensure that potentially damaging large-scale mechanised activity can be adequately controlled.
- 7.2.5 A few other respondents, however, while supportive of the development of guidance, were not supportive of a regulatory regime being developed or proposed a mix of both a regulatory mechanism and guidance. They felt that without evidence that the current level of wild harvesting is having an impact, and while this activity continues at a small scale, there appears to be little requirement for regulation.
- 7.2.6 One respondent from the seaweed industry requested that licensing should be such that it allows both a commercially and environmentally sustainable harvest. They made suggestions about the preferred physical extent, duration and territorial exclusivity of leases to facilitate, for example, rotational harvesting, return on investment, etc.

## *Guidance development*

- 7.2.7 Some respondents noted current and existing work that could be drawn upon. One public body respondent, for example, noted that they have worked with Natural England to draw up a harvesting Code of Conduct and are currently in discussion with SNH about developing a similar approach in

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<sup>8</sup> Certain activities in the aquatic environment are automatically authorised by General Binding Rules; these represent a set of mandatory rules which cover specific low risk activities and are defined by The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)

Scotland. Other examples of codes of practice included that developed by the Environmental and Heritage Service in Northern Ireland, and company-specific guidance prepared by one of the industry respondents.

7.2.8 Some of the respondents, from a range of sectors, offered to assist with the development of guidance and/ or a Code of Practice (CoP), or requested that they be consulted, possibly through some sort of formal process, to ensure that their area of expertise is taken into account during guidance development. One respondent from the seaweed industry felt that the process of developing guidance should be co-led by industrial users so that the guidance is balanced between commercial practicality and effective marine management. They also considered that guidance should be informed by actual experience of harvesting in Scottish waters rather than relying on experience elsewhere that may not be relevant.

7.2.9 It was suggested that the guidance should include:

- best practice, based on a “whole system approach” both to protect the marine environment and to prevent over-exploitation of wild stocks e.g. by avoiding negative impacts on the seaweeds’ reproductive cycle.
- advice on sustainable methods for harvesting on the foreshore; need for rotation of harvesting locations; and advice on the necessary evidence of aptitude, qualifications or regulatory compliance with Food Standards Agency strictures.
- baseline information, e.g. existing seaweed stocks; measures of ecosystem functioning such as the role of storm-cast material in supporting beach and dune ecosystems; other stressors on the local environment, including climate change and other relevant land, coast and marine usages and their environmental implications (e.g. agricultural run-off); awareness of the risks to water quality from sewage discharges.
- advice on the potential impacts of seaweed harvesting, including: species and habitat loss/damage or disturbance, e.g. fish breeding grounds, nursery areas for commercially important fish species, otters and their habitat, micro and macro fauna and other associated macro-algae, seabirds, designated sites (including the duration of identified effects on functioning ecosystems); visual impacts; public access across the foreshore; and the potential impacts of harvesting on Scottish Water assets.
- possible mitigation measures, for example, avoiding the commercial harvest of wild seaweed within the six MPAs proposed to protect black guillemot; avoiding seaweed harvesting close to wild fisheries.
- monitoring. One respondent from the seaweed industry felt that implementation of monitoring procedures should not be a “paper exercise” but must actually be undertaken, both at harvesting sites and of product e.g. to ensure that it is being cut correctly, amongst others.

- It was suggested by one public body respondent that guidance should also consider the promotion of potential environmental benefits.
- 7.2.10 Two respondents felt that any guidance or CoP would need to give consideration to how the requirements of the Habitats Directive regarding Natura sites and European Protected Species will be fulfilled; one of these suggested that “the absence of legal controls on the harvesting of seaweed might entail an infringement of the Habitats ...Directive in the case of European sites”.

### *Research and current lack of evidence*

- 7.2.11 Current lack of evidence about the potential impacts of wild seaweed harvesting was noted by a few respondents. It was felt by one respondent that if wild harvesting is to be expanded in a sustainable manner, updated surveys should be undertaken to determine current standing stocks and the recommended level of exploitation to ensure sustainability of the resource. It was also recommended by another respondent that the research needed to underpin guidance should take into account other stressors on the local environment, for example, climate change and other coastal and marine usages.

### *Scale of wild harvesting activities*

- 7.2.12 The potential scale of harvesting activities was discussed in relation to both the provision of guidance and implementation of regulatory measures. One public body respondent felt that, given that interest in the use of seaweed is increasing, it would seem sensible to consider a scale at which some form of consent process would be required, to allow potential environmental impacts from large-scale harvesting to be managed.

#### Question 7 summary:

- All respondents supported the development of guidance for the harvesting of wild seaweed. Many felt that this sector will expand in the future and that control is essential.
- Several respondents felt that the Scottish Government should introduce regulation of seaweed harvesting, instead of or as well as guidance. There was little consensus regarding the form that regulation should take: planning consent, marine licensing and use of General Binding Rules were all suggested.
- There was also disagreement about the timing of regulation. Some wanted it now, in preparation for expansion of the industry; others felt that it should wait until expansion begins.
- Several respondents noted that there was current and existing work that can be used to underpin the development of guidance and provided examples.
- There were many helpful suggestions for the content of the guidance, as well as calls for research into the environmental effects of wild seaweed harvesting to assist guidance preparation.

**7.3 Question 8: Should the 1997 Act be amended to provide the flexibility to farm other species or specifically named species? State what named species should be included, and provide your reasons.**

Sector	Yes	No	Not answered
1. Seaweed Industry	4		
2. Aquaculture Industry	2		
3. Fishing and Aquaculture Industry	1		
4. Fishing Industry	1		4
5. Cultural Heritage/Archaeological	1		1
6. Recreational Sector			1
7. Voluntary Sector			1
8. Academic Sector	2	1	
9. Public Body	8	1	3
10. Farming and Land Use			1
11. Individual			2
12. Withheld	2		
<b>Overall</b>	<b>21</b>	<b>2</b>	<b>13</b>

- 7.3.1 Twenty-one respondents supported this policy, across a range of sectors, including most public bodies. The proposal was opposed by two respondents from two different sectors.
- 7.3.2 Many of those who supported an amendment to the Act felt that this would support the industry by ensuring that planning legislation is sufficiently flexible to allow for diversification. One public body respondent felt, however, that regard must be given to ensure that there is no risk of any potential invasive species being introduced out with their native range. They further stated that, to ensure compliance with the Wildlife and Natural Environment (Scotland) Act 2011, it must be guaranteed that any species cultured are not released or allowed to escape out with their native range.
- 7.3.3 Concern was raised by one respondent, not supportive of this proposal, that the farming of additional, currently wild, marine organisms could have a detrimental effect on both natural communities and currently farmed species.
- 7.3.4 Views varied on whether specific species should be named. Some respondents thought that this should remain open, providing flexibility as technology and markets develop. They felt that defining a species in the legislation would be unnecessarily restrictive. One respondent felt this was especially pertinent to IMTA systems, as the combinations (and relative

quantities) of species that might be used remain unclear. Another respondent felt that if species are to be named, this should not limit farmers but provide a useful reference to build upon.

- 7.3.5 Other views were that the species of seaweed should be kept open and only limited to native species; the genetic integrity of the local environment should be respected; and research should be carried out to ensure that cultivation of specifically named species will not have a negative impact. Another respondent felt that the possible ecological and environmental impacts of farming new species should be at the heart of any consent process, while another respondent suggested that consideration should be given on a case-by-case basis after an evidence-based assessment has been carried out.
- 7.3.6 It was suggested, however, by another respondent not supportive of amending the 1997 Act, that there needs to be more detailed information on types of species and methods of farming and a greater understanding of potential impacts before it can be fully understood if the 1997 Act and the planning process comprise the most appropriate legislation and regime.
- 7.3.7 Those respondents who provided views on particular species recommended: that the 1997 Act be amended to replace sea-urchins with echinoderms, as this allows for current and potential future species (sea cucumbers and starfish) to be included; and the inclusion of abalone, macroalgae/seaweed species and marine worms such as lug worm and rag worm, amongst others. It was noted by a couple of respondents that the developing practice of locating wrasse and other small fish alongside farmed salmon to control sea lice could also be considered to constitute IMTA.

#### Question 8 summary:

- The majority of respondents supported an amendment to the 1997 Act that would provide the flexibility to farm other species or specifically named species.
- Proviso that this should not encourage invasive non-native species.
- There was disagreement as to whether specific species should be named.
- Respondents opposed to this move considered that there needs to be more detailed information on types of species and methods of farming and a greater understanding of potential impacts before taking it forward.

## **8 Partial Business and Regulatory Impact Assessment (BRIA)**

### **8.1 Question 9: Do you have any comments to make on the BRIA content?**

- 8.1.1 Thirteen respondents provided comments on the BRIA. Several noted that the BRIA's assessment of potential costs and benefits focused on the potential impact of these on the seaweed cultivation industry. They considered that the BRIA should have assessed both cultivation and wild harvesting of seaweed.
- 8.1.2 Others felt that more information was needed in the BRIA, and provided suggestions, including: the cost of the future consenting process (including EIA) for both seaweed cultivation and seaweed harvesting in the wild; a statement on how the social and financial implications for other marine users will be managed, particularly fisheries but also other users such as tourism, etc.; a "proper evaluation of the losses to the fishing sector in particular, in relation to the interdependent nature of fishing in Orkney" and in relation to "the socio-economic impacts of the cumulative loss of spatial area to fishing in Orkney".
- 8.1.3 In contrast, a public body felt that further cost analysis was needed, but that the financial implications could not be identified until a clear decision on the consenting process has been made.
- 8.1.4 A public body stated that they are aware of industry concerns about the current fee system for aquaculture development under town and country planning. They noted that the same fees are applied to finfish and shellfish developments, which may result in lower profit margins for the latter, and cautioned that these concerns may also apply to seaweed cultivation.
- 8.1.5 A fishing sector respondent reiterated their concern that they had not been consulted previously, and suggested that further consultation with Marine Scotland on these issues and the potential implications for fishermen be undertaken. A seaweed industry respondent agreed that wider consultation should have been held with industry during drafting of the Consultation Document. They also felt that in, preparing the BRIA and the Consultation Document, a supply-based approach was taken. They added that, at present, the market "is very small and nascent", and noted that supply must be undertaken in line with market demand or it "risks the development of the supply side being redundant or ineffective".
- 8.1.6 A respondent from the seaweed sector noted that while "seaweed cultivation and wild harvesting can be successful, with no environmental impacts as long as appreciation is given to ecosystems", they had concerns

regarding over-exploitation of these natural resources. They stated that the seaweed industry must act with “environmental care, awareness and respect, in order to prevent detriment to marine ecosystems”.

Partial BRIA summary:

- Thirteen respondents provided comments on the BRIA.
- Several respondents considered that the BRIA’s assessment of potential costs and benefits should have included both cultivation and wild harvesting of seaweed.
- Others made suggestions about additional information that they felt should have been included.
- Concerns were raised by some on the supply-based approach taken in the BRIA, and caution given that the market is presently “very small and nascent”.
- Concerns were raised regarding the potential use of a fee system for aquaculture development under the Town and Country Planning Act, particularly for the viability of sectors with lower profit margins.

## 9 Additional comments

### Additional comments summary:

- A key concern was that care must be taken not to over-exploit resources in general.
- Several respondents considered that seaweed cultivation, including IMTA, should be subject to an Environmental Impact Assessment (EIA).
- Respondents felt that all marine users should be taken into account when determining planning applications for all types of aquaculture, not just seaweed cultivation.
- One respondent requested financial support for the seaweed cultivation industry from the Scottish Government.
- Several respondents, particularly from the fishing industry, raised the issue of spatial pressures in the marine/coastal environment, and the effects these were having on their industry. They were of the view that consenting does not give due consideration to the displacement of fishing activities by marine/coastal development, or to the cumulative environmental pressures from e.g. Marine Protected Areas (MPAs), renewable energy, and/or existing aquaculture developments, which may result in fisheries displacement. They drew particular attention to the Orkney fishery and called for a moratorium on further aquaculture developments, including seaweed, in Orkney.
- One respondent opposed to seaweed cultivation in the marine/coastal environment suggested that such cultivation would be acceptable if it were undertaken in tanks on land.

### 9.1 Overview

- 9.1.1 Some responses to the consultation document covered wider issues than those covered by the consultation questions. This section summarises these additional comments.
- 9.1.2 A key concern was that care must be taken not to over-exploit resources in general.
- 9.1.3 A few respondents from a range of sectors (including public bodies, the academic sector and the fishing industry, amongst others) suggested that Environmental Impact Assessment (EIA) should be required for seaweed cultivation. It was felt that EIA would provide a structured means of providing environmental information alongside an application for consent, e.g. potential environmental and social impacts, including those on the benthos and water column; interactions with other marine organisms; implications for fisheries and other marine/coastal activities; visual/other coastal impacts; and evidence of mitigation measures. Another respondent felt that these requirements should also apply to shellfish farms. It was also proposed that the SPS should require that IMTA-scale cultivation undergo EIA, including the consideration of cumulative impacts.

- 9.1.4 Supporters of policy 5 (other marine users and activities should be considered in the siting of farms) requested guidance to assist in the assessment of potential impacts of seaweed cultivation on other marine and/or coastal users. However, they also considered that such users should also be taken into account when determining planning applications for other types of aquaculture.
- 9.1.5 One respondent welcomed the Scottish Government's support for seaweed cultivation, and noted that financial support would also be welcomed, stating that this would be greatly beneficial for small businesses trying not only to exist in this industry, but to grow the seaweed industry in Scotland. In addition, they felt that the funding of research would fill a large gap in the knowledge of seaweeds, their lifecycle, nutritional benefits and seasonal variability.
- 9.1.6 Several respondents, particularly from the fishing industry, raised the issue of spatial pressures in the marine/coastal environment, and the effects these were having on their industry. They were of the view that consenting does not give due consideration to the displacement of fishing activities by marine/coastal development, or to the cumulative environmental pressures from e.g. Marine Protected Areas, renewable energy, and/or existing aquaculture developments, all of which may result in fisheries displacement.
- 9.1.7 They considered that the Orkney fishery is now highly vulnerable to erosion of the critical mass of harvesting needed to sustain dependent industries, as well as the fishing skill and practitioner base. They called for an evaluation of all the impacts on the Orkney fishery and felt that Orkney should be exempted, at a national level, from any further threat to its low impact and sustainable fishery.
- 9.1.8 One respondent opposed to seaweed cultivation in the marine/coastal environment suggested that such cultivation would be acceptable if it were undertaken in tanks on land.
- 9.1.9 Policy 9 builds on existing Scottish Government policy on the spatial location of aquaculture development, which comprises a presumption against finfish farming on the north and east coasts, to safeguard migratory fish species. One respondent considered that Policy 9 would push seaweed farms onto the west coast, with attendant environmental problems, and felt that the policy was not equitable.
- 9.1.10 In contrast, one respondent felt that the existing policy should be widened to include Orkney and amended as follows: "There should be a presumption against further finfish and IMTA developments in Orkney due to the fact that Orkney is now at full capacity in terms of aquaculture sites". This respondent considered that Orkney waters are fully exploited by a sustainable and low impact wild inshore fishery, that Orkney is under

greater pressure than any other area of the UK to accept large-scale renewable developments as it lies within the north region, and that the inshore fishery therefore requires special protection. One respondent called for a moratorium on further aquaculture developments, including seaweed, in Orkney, to support the existing inshore fishing industry.

- 9.1.11 One public sector body noted that, if this policy is to use area-based restrictions, it should apply to all sectors of the aquaculture industry. They cited examples of non-native species having been introduced as an aquaculture product and having become naturalised (e.g. rainbow trout in Scottish freshwater lochs), and raised concerns about escapes of non-native strains of salmon.



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