CONSULTATION ON SCIENCE IN SUPPORT OF MARINE, ENVIRONMENT, RURAL AFFAIRS AND RELATED POLICIES OF THE SCOTTISH GOVERNMENT

A COORDINATED AGENDA FOR MARINE, ENVIRONMENT AND RURAL AFFAIRS SCIENCE (CAMERAS) 2011 – 2016

CONSULTATION REPORT

1. The single purpose of the Scottish Government is "to focus Government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth". Part of this requires a firm commitment to simplifying Scotland's public services to deliver more effective government.

2. The consultation proposed that each public body supporting science relevant to the Scottish Government's policies relating to Marine, Environment and Rural Affairs would use the Coordinated Agenda (CAMERAS) to assist in aligning their scientific activities and that this would help to avoid duplication and foster efficient and effective collaboration between them.

3. The consultation was published on 23 January 2009 inviting responses before 20 March 2009. Twenty five questions were asked in the consultation seeking views on underlying principles of CAMERAS along with additional comments. Questions in the consultation were structured around headline themes which were then used as the scaffold for the analysis.

4. Fifty four responses were received from various organisations and other interested parties. The Scottish Government Main Research Providers (MRPs) all responded to the consultation as did a number of University Departments, Scientific Societies and Local Authorities. A few individual responses were received but most of these found the consultation too strategic and broadly based for them to usefully comment.

5. Responses were received from various interested parties as detailed below:

- Individuals 5
- University Departments 10
- Main Research Providers 7
- Local Authorities 1
- Other Government Departments 3
- Others 23

6. An Analysis of these consultation responses are included at paragraphs 9 – 36 below. This report will be published on the Scottish Government website and respondents will be notified.

7. Issues raised from the consultation will be considered with reference to:

- the original information and advice used to draw up the consultation document
- the strength of evidence given in support of the issue raised in the response
- the number of responses raising the same/similar issue and whether these are a coordinated or appear to be from unconnected sources

8. A commentary on how each major issue has been dealt with will be prepared and the CAMERAS document revised. The revised document will then be published on the Scottish Government website and respondents again notified.

ANALYSIS OF RESPONSES

9. Questions in the consultation were grouped to provide structured responses to issues. Responses to individual questions were analysed within their group and then summarised. On occasion, relationships between questions extended beyond groups and for the analysis these were considered together. Many of the questions in the consultation asked for information rather than a yes/no response and so rather than a numerical analysis, a collation and distillation of comments was undertaken. Where appropriate, numerical scores are given as evidence of support or rejection of concepts. The four headings of **Headline themes, Policy, Science** and **Delivery** with their associated questions have been used to structure the analysis.

Headline themes

10. The Headline Themes consist of the major long-term issues that the Scottish Government is likely to face in Marine, Environment and Rural Affairs over the next 30 years. Questions 1-7 relate to these themes.

1. Do you agree that the two broad categories of 'Local Responses to Global Change' and 'Optimising the Potential of Scotland's Natural assets are helpful in providing an overlying structure to the Coordinated Agenda?

2. Are the descriptions of these stated in section 3 (and Annex 3) comprehensive?

3. Do these cover major policy challenges where science can contribute as you see them?

4. Are they likely to remain broadly relevant over the longer time horizon (well beyond the 2016 of this Co-ordinated Agenda?

5. Do you agree with the description and support for the National Capability Theme set out in Section 3?

6. What facilities, resources and data do you think are important for Scotland to maintain?

7. Are there other resources that Scotland needs to acquire to support future policy development?

11. In general, the overall concept of CAMERAS was well supported by respondents although some omissions were noted. The areas felt to be lacking related to human and plant health, sustainable energy and food security. There was also a perception that the marine and animal disease sciences suffered from under-

investment. Some respondents felt that the CAMERAS concepts were very broad and at too high a level for them to usefully comment.

12. The two categories of 'Local Responses to Global Change' and 'Optimising the Potential of Scotland's Natural Assets' were strongly supported although there was some concern that "local" could be interpreted as parochial, regional, national or global. The majority of respondents did not feel that the descriptions of the two categories given in section 3 were particularly good and that food security, human health, animal disease and energy should have been explicitly mentioned.

13. Question 3 related to the relevance of the broad categories to policy and most respondents did not feel that they mapped particularly well. The urban environment, fresh water resources, livestock and human health were all policy areas that should have been explicitly mentioned.

14. The majority of responses to Question 4 recognised that the broad CAMERAS categories were likely to remain relevant beyond the proposed 2011 – 2016 timeframe but to achieve this a flexible approach to resources would be necessary. There were concerns that insufficient forecasting had been carried out to identify the likely requirements for energy.

15. The concept of National Capability mentioned in Question 5 was strongly supported by 28 of the respondents although some were unsure what would be included in this. Additional responses indicated qualified support with only 2 rejecting the principle outright.

16. Most responses to Question 6 indicated that existing facilities and resources should be maintained but that there was a requirement for additional investment in long term data sets particularly relating to climate change. Facilities for animal disease research and marine science were specifically mentioned as areas that required additional funding.

17. Question 7 asked for additional resources that Scotland might need to acquire and these were identified as investment in social sciences, long term data sets, educational facilities, maintenance of taxonomic skills, improved biodiversity, knowledge exchange and enhanced plant and animal breeding through genetic manipulation. Lack of funding in general was seen as being a major threat to maintaining a strong and vibrant science base in Scotland which would be able to respond to future needs.

Policy Issues

18. CAMERAS relates to a large number of policy areas across Scottish Government's national outcomes and these are reflected in consultation questions under this heading. Questions 8 – 12 relate to Policy Issues.

8. Have we correctly identified the policy issues and the associated scientific opportunities in Section 3?
9. Are there additional issues that should be included?

10. What do you think will be the most important influences on Scotland's future in the Marine, Environmental, Rural and related areas?

11. Why do you think that these are important?

12. Are there other scientific opportunities which should be highlighted?

19. In general respondents indicated that they were content with how policy was addressed within the document. Areas that were felt to be lacking related to investment in future energy requirements, food security and disease challenges resulting from climate/environmental change.

20. A small majority of respondents to Question 8 agreed that CAMERAS had identified the main policy issues and associated scientific opportunities. Areas that were felt to be lacking related to food security, future energy requirements and the apparent low priority for animal disease science.

21. Question 9 asked whether additional issues should be included and these were identified as food security, demographic changes, biodiversity and exploitation of coastal zones.

22. Respondents to Question 10 identified climate change, environmental impacts, food security, disease challenges and future energy requirements as being the most important influences on Scotland's future.

23. Responses to Question 11 indicated that these influences were important as these would be future drivers of human hardship.

24. Question 12 asked for other scientific opportunities and these were identified as investment in research relating to offshore renewable energy sources and GMOs.

Science

25. The areas of science considered most important now and for the future were assessed through Questions 13-18. The information is needed to assess what research needs to be commissioned to enable policy makers to meet challenges that will appear in the future.

13. What existing areas of Scottish based scientific expertise should be maintained to contribute evidence to key policy issues?

14. How clear is the relationship between the scientific areas and the key policy issues?

15. In which areas of science can we continue to make use of expertise supported elsewhere e.g. at the UK, EU and international levels?

16. In the time frame for CAMERAS (2011-2016) what new emerging areas of since are likely to mature and become available for more general use or application?

17. Do we have the expertise available to be able to use these new opportunities?

18. In which areas does Scotland need to be self reliant?

26. As in the replies to Question 6 (What facilities, resources and data do you think are important for Scotland to maintain?), many respondents considered Scotland should maintain its current strengths. The response to this question may also be linked to Question 18, where several replies pointed out that Scotland does not have the capacity to be expert in everything and should not try to be independent, but should focus on topics that are of particular relevance to Scotland.

27. An appropriate balance between use of expertise that is supported at UK, EU and International levels (Question 15) and Scottish funding of areas that are distinctive to Scotland would appear to cover science that spans the range from broad generic topics or methods through to matters specific to this country. An overwhelming majority of the responses to Question 15 pointed out that science is already a collaborative activity and Scottish science should sit nested within national and international activity. Again, this chimes with the feeling that wider collaboration or activity can support national science to address topics that are distinctively Scottish and probably reflects the current situation, with Scottish scientists actively collaborating with UK and International consortia in joint projects.

28. The responses to Question 16 reflect the difficulty in predicting future requirements. Nevertheless, science that addresses renewable energy, carbon cycle modelling, informatics, plant, animal and human health and food production were identified as significant for the future. In order to utilise new and emerging areas of science effectively, there was a strong desire to see significant investment in training and infrastructure, such as for marine environmental science.

29. Question 14 was key in this section and produced a strong response; 7 respondents considered the relationship between scientific areas and key policy areas was clear and 11 replies thought the relationship was not clear. However, there was some qualification of this with comments that the clarity of the link between science and policy varies according to the deliverer and the policy area. Universities were considered to be less likely to produce science of direct policy relevance than are the Main Research Providers. This should not be construed as a criticism of either model; it reflects the range of science carried out, from the applied to the more fundamental and perhaps less immediately relevant. There was recognition that policy should be based on sound scientific research, and that this could be promoted by funding streams directly aimed at policy-relevant science.

Delivery

30. The delivery of science to policy was addressed in the final section of the consultation. The requirement for and mechanisms to exchange knowledge between science and policy were investigated in Questions 19-24.

31. Scientific evidence is provided by a network of individuals and organisations

and this underpins policy. It is important that the evidence is appropriate, accurate and fit for purpose. The following questions explore delivery of science evidence and whether current methods of delivery are robust enough to rise to future challenges.

19. Knowledge Exchange is essential for scientific activity to achieve impact. Do you agree that KE should be an explicit and integral aspect of the delivery of this Coordinated Agenda?

20. How can we continue to improve the integration of evidence from a diverse range of sources into forms that are accessible to end users?

21. How can we reconcile the requirement for science to be responsive and flexible to short term demands while at the same time ensuring that longer term strategic research continues to progress our knowledge and understanding?

22. How can we ensure that the 2 way flow of knowledge from science to policy and from policy to the academic community is optimised?

23. Are there alternative structures/systems or new approaches/organisations that could enhance these flows?

24. Are there science delivery models which could provide examples of good practice for Scotland to follow?

32. There was strong support for the inclusion of Knowledge Exchange in this Agenda and acknowledgement that KE should be an integral part of all science. Responses to Questions 19, 20 and 22 recognised the importance of two-way or multi-way communication, involving all stakeholders. Mechanisms to assist this included networking, online resources, centres of excellence or 'one stop shops', secondments, and posts specifically designed to act as 'interpreters' or communicators. All these models already exist to varying degrees in different areas of science and policy and a review of their effectiveness for specific purposes may be useful.

33. It should be noted that no policymakers were included among the respondents to this consultation therefore the views on KE have largely come from the providers of science. Policy users of science should be canvassed for views on this topic before any final decisions are made on methods to assist KE or transfer of knowledge to policymakers.

34. Question 21, although perhaps not directly related to KE, is a key point in the consultation. One respondent likened the task of achieving a balance between short and long-term science to 'nailing jelly to the ceiling'! There was clear recognition of the need to support both short-term responsive science and the longer-term, strategic and capacity-building work. Several responses pointed out that the existing mechanisms to fund short and long-term science provide clarity and distinction between the two.

35. It was generally recognised that the balance between long-term commitment to the Main Research Providers and science and funding work to meet immediate

needs is required but is extremely difficult to define or stipulate. Highlighting and acknowledging this issue is an important matter that should not be forgotten in consultations of this type, although answers may never be clear cut.

Additional Comments

36. Additional comments to the consultation reiterated many of the points already highlighted in answers to the questions. The consultation itself was felt to be confusing or too broad by some. The need for cooperation and collaboration in science, from national to international levels, was noted again. The exclusion of animal science, particularly health science, was considered a failing of the consultation.

CONCLUSIONS

- In general, most respondents welcomed the principles of CAMERAS although some had reservations about how it would deliver.
- There were concerns that the principles were too broad and that this made responding difficult for some individuals.
- The headline themes were well supported although it was felt that the importance of human health relating to nutrition, animal disease and energy security were not addressed.
- The formation of National Capability was strongly supported although some were unclear what this would comprise. There was a strong view that this should address not only physical collections but also education and maintenance of scientific skills.
- Most respondents felt that Scotland needed to maintain all of the current science base but some felt that additional funding should be made available for increased research in animal disease, human health, energy and food security and the marine environment.
- There were concerns that diversion of resources could threaten the integrity of long term data sets in all areas.
- It was felt that stronger relationships between scientists and policy makers could be forged by secondments and other staff exchange schemes. Policy makers should be consulted on this topic as none responded to the consultation.
- Respondents also felt that the Scottish science base needed to continue to engage with English and European counterparts to ensure that we took advantage of research and expertise funded elsewhere, to remain world class.
- The need for both long term research and short term policy-relevant work was acknowledged but many responses pointed out the difficulty of defining and achieving the optimum balance.

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1 July 2009