

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

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Consultation Questions

Question 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 Co-ordinated Agenda?

No, It is not clear how these general categories have been derived. Although there is a description of a process by which clustering, down-selection and prioritization was achieved, it is difficult to rationalize in the context of this consultation how themes emerged. The cascade from the highest level policy issues to these issues and then to the more specific issues and how prioritization was achieved is not articulated clearly. For example, are gaps present because these issues have simply been missed or because there has been a structured approach to consideration of the complete range of potential issues and active prioritization with a well-argued approach to exclusion as well as inclusion? If this type of approach has not been carried out then it probably should be. Some form of description of the differences in the issues as they apply to marine as opposed to terrestrial concerns would have been helpful. While there are many common high-level issues, there are also fundamental differences not least of which is the current state of basic knowledge of the marine system compared with the terrestrial system. This reflects the relative practical research challenges presented by these two systems. Even if the current Headline Themes are accepted as being appropriate the extent to which

	<p>it is possible to progress our knowledge varies widely between the marine and terrestrial systems. Lack of any discrimination will simply lead to continuation of chronic underinvestment, relative to the challenges presented and the potential economic value of the assets, in marine research. While “Local Responses to Global Change” fits with a large number of non-specific issues, and therefore provides flexibility, it does seem to be too general. “Optimising the Potential of Scotland’s Natural Assets” is similarly very non-specific and “optimisation” could really mean anything depending upon one’s point of view. What processes are going to be used to define optimization. The themes fail to address some of the most important economic drivers, especially those involving the extraction of energy from the environment, food security and how these essential environmental products are tensioned against the agenda of sustainability. There is also a strong case for including rural economies as a major issue, and offshore renewable energy as specific, focussed headline issues over the time period of this programme.</p>
<p><i>Question 2: Are the descriptions of these set out in Section 3 (and Annex 3) comprehensive?</i></p>	<p>No, Given that these themes seem not to be entirely appropriate, the descriptions are not comprehensive in the sense that important issues are missed.</p>
<p><i>Question 3: Do these cover the major policy challenges where science can contribute as you see them?</i></p>	<p>No, The major policy issues that will drive the economy concern (i) where Scotland is going to find energy in future, and (ii) also how it is going to sustain or enhance agricultural production including aquaculture and fisheries - while, at the same time comply with its legal commitments to environmental sustainability both in</p>

	<p>terms of its commitments to the maintenance of biodiversity and its commitments to meeting targets for a low carbon economy.</p>
<p>Question 4: Are they likely to remain broadly relevant over the longer time horizon (well beyond the 2016 focus of this Coordinated Agenda)?</p>	<p>No, They probably miss the target. See comments above.</p>
<p>Question 5: Do you agree with the description of support for the National Capability Theme set out in Section 3 (and Annex 3)?</p>	<p>No, Overall, this is a minimal description. The National Capability is much more wide ranging than listed here and should include the training as well as the data collection and interpretation elements. Built infrastructure, major facilities and national capability already identified to sit within the Research Councils is just as important as any that sit within the remit of the SG. The SG also needs to engage much more with the agenda of academic pooling as a means of building new and more effective NC. At present the two most relevant pools are SAGES and MASTS, but some others are likely to have peripheral importance to CAMERAS. One issue that is of great concern to the Marine Science community is what is currently happening to FRS. Absorption of its excellent research components in to Marine Scotland is not appropriate.</p>
<p>Question 6: What facilities, resources and data do you think are important for Scotland to maintain?</p>	<p>A process of due diligence needs to be forthcoming before it is possible to respond to such a question. This question reflects one of the weaknesses in this whole exercise. It really is not rational to ask such an open question without a complex background of information as a foundation upon which priorities can be built. To ask respondents to produce ad hoc opinions in this important field is a concern in itself. If the intention is then to try and synthesis across these as a method</p>

	<p>of prioritizing then it is likely that some very poor decisions will be forthcoming.</p>
<p>Question 7: Are there other resources that Scotland needs to acquire to support future policy development?</p>	<p>Yes, Scotland needs to invest heavily in the infrastructure and training to support the sustainable development of exploitation of offshore resources. In general marine science is grossly under-supported relative to its importance.</p>
<p>Question 8: Have we correctly identified the key policy issues and the associated scientific opportunities in Section 3?</p>	<p>No, The policy issues could be cut several ways but, overall, the questions set out here appear to cover most of the ground. However, this could all be boiled down in to three specific challenges: (i) how can the environment provide for the future energy needs of Scotland; (ii) how can the environment support food production; and (iii) how can we maximise (i) and (ii) without ruining the environment? Most of the questions set out in the document are “second order” questions that feed into these types of “first order” questions. A gap analysis looking at the mapping of the first- and second-order questions might reveal gaps. There is one “third order” question in the list. This relates to reduction of social inequality. An issue not covered is the identification of policy trade-offs. Ideally all policies would match and be aligned but we know this will not be the case. There is a need to face up to the positives and negatives associated with particular policy approaches. Research needs to be structured to reflect this need. For example, there might be a tendency only to invest in those areas of research that purport to investigate win-wins. This could end up being highly damaging and very short-sighted.</p>
<p>Question 9: Are there additional issues that should be included?</p>	<p>Yes, There needs to be an appropriate articulation of policy</p>

	<p>conflicts and inconsistencies. For example, some biodiversity objectives may be incompatible with the objectives of the Climate Change (Scotland) Bill 2008.</p>
<p>Question 10: What do you think will be the most important influences on Scotland's future in the Marine, Environment, Rural Affairs and related areas?</p>	<p>(i) Meeting renewable energy target; (ii) sustaining North Sea Oil and Gas production – and hydrocarbons in general; (iii) developing more efficient uses for bioresources (both terrestrial and marine); (iv) preventing progressive or acute environmental degradation [as a result of (i)-(iii) and also as a result of poor waste management], (v) sea level rise and some related climate change issues.</p>
<p>Question 11: Why do you think these are important?</p>	<p>Energy in all forms will be central to the economic wellbeing of Scotland; food production and biomass production as sustainable sources of energy will be almost as important; the trade-off against these imperatives will be that they will force decisions that will cause environmental damage that will have implications for long-term sustainability. Sea level rise is one of the few most challenging climate change issues that we could probably prepare for far enough in advance to mitigate the economic costs.</p>
<p>Question 12: Are there other scientific opportunities which should be highlighted?</p>	<p>Yes, There are many but, again, it reflects a weakness in this process that such an open-ended question is deemed necessary. It is difficult to see how such a question will result in a constructive consensus.</p>
<p>Question 13: What existing areas of Scottish based scientific expertise should be maintained to contribute evidence to key policy issues?</p>	<p>It is likely that all current areas need to be maintained and, if anything, expanded. The real question is how it should be organised. Marine science in particular needs a boost, especially in the face of the energy issues (hydrocarbons and offshore renewables).</p>
<p>Question 14: How clear is the</p>	<p>Up to a point there is an appropriate</p>

<p><i>relationship between the scientific areas and the key policy issues?</i></p>	<p>link if one considers government-funded institutional research alone. However, this is not generally the case for University-based research which, if appropriately mentored, could be much more effective at delivering towards policy.</p>
<p><i>Question 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?</i></p>	<p>Probably in all areas. Scottish science has to be nested within an international community and a coordinated international effort, especially at the UK/EU level. However, UK/EU science does not work well, often because of similar problems to those being tackled by CAMERAS and SFC pooling, but Scotland needs to have leading science in the areas of greatest relevance to it so that it can lead the agenda for change at the UK and EU levels.</p>
<p><i>Question 16: In the time frame for CAMERAS (2011-2016) what new emerging areas of science are likely to mature and become available for more general use or application?</i></p>	<p>Scotland will emerge as a world-leader in the environmental trade-offs associated with renewable energy. It should also be the leader within the EU in fisheries science.</p>
<p><i>Question 17: Do we have the expertise available to be able to use these new opportunities?</i></p>	<p>Yes, A qualified “yes” – but only up to a point. Our current infrastructure is completely insufficient to cater for the demand in the key, relevant areas of marine environmental sciences.</p>
<p><i>Question 18: In which areas does Scotland need to be self reliant?</i></p>	<p>None – Scotland cannot be self-reliant in science. See response to 15.</p>
<p><i>Question 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?</i></p>	<p>Yes, Yes – KE is the key to making science work towards economic development.</p>
<p><i>Question 20: How can we continue to improve the integration of evidence from a diverse range of sources into forms that are</i></p>	<p>As mentioned above, improving the structure of research and making sure there is appropriate networking and critical mass is important. However,</p>

<p><i>accessible to end users?</i></p>	<p>we need to provide training to help both end-users and research to interact more effectively. On the research side, training needs to start at the Masters and PhD level so that researchers have an improved view of how they fit in to the wider strategic objectives.</p>
<p><i>Question 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?</i></p>	<p>It is perfectly possible to accommodate both, one nested within the other. But there needs to be explicit recognition by funders of the need to support both and of research managers to strike a balance between the different approaches required to deliver on both objectives.</p>
<p><i>Question 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?</i></p>	<p>Much more needs to be done. There is considerable misunderstanding amongst many policy makers of what drives and underpins the science that allows policy objectives to be achieved. Similarly there are misunderstandings amongst research about the immediacy of the needs of policy makers. Exchanging individuals from research to policy can help but, in general, this comes back to providing sufficient funding, and appropriate career recognition, to enable additional time on both sides to build a common understanding.</p>
<p><i>Question 23: Are there alternative structures/systems or new approaches/organisations that could enhance these flows?</i></p>	<p>Yes, See 22. The proposal for “centres of excellence/one stop shops” seems like a good idea.</p>
<p><i>Question 24: Are there science delivery models which could provide examples of good practice for Scotland to follow?</i></p>	<p>Yes, Combinations of research institutions embedded within universities, that tend to maximise the benefits of both structures and minimise the costs/disadvantages, are a good model to follow and there are a number of successful operational examples of this approach within Scotland.</p>
<p><i>Question 25: We would also welcome any other general</i></p>	

***comments you may have on any of
the issues raised in this document.***