

## Evaluation of progress with delivering NERC's Biodiversity Theme

### Management Response

#### Background

1. NERC Commissioned this evaluation in order to meet the need for evidence on progress with implementing the science themes set out in NERC's strategy.
2. This document provides the management response to the evaluation report from NERC's Director for Science Delivery (DSD), who is the customer for the evaluation. The evaluation report has been discussed by SISB and, alongside the management response, reported to Council.

#### Management response

3. The evaluation report provides valuable evidence on progress with delivering the Biodiversity (BIO) theme. This evidence is reinforced by NERC's Science & Innovation Strategy Board (SISB) discussions of the panel's findings, culminating in the Board being assured that good progress has been made in delivering the theme.
4. I welcome the overall finding that NERC has made a promising start to delivering the theme through an appropriate combination of existing and new investments. I am pleased that the Panel believes that "NERC has an extremely strong biodiversity research portfolio that has made and will continue to make major scientific advances of international importance", and note the importance of new programmes, such as *Ecosystem Services & Poverty Alleviation* and *Biodiversity & Ecosystem Service Sustainability*, to the delivery of this theme.
5. The report raised a number of specific issues and concerns and made proposals to tackle them. These proposals are considered, alongside actions to address them, in the action plan below.
6. SISB discussions emphasised three areas, all raised in the panel's proposals:
  - i. The specific ecosystems studied to deliver the theme need to be explicitly justified in terms of why they are the most appropriate ecosystems to focus on to meet the theme challenges in a global context;
  - ii. Challenges 3<sup>1</sup> and 4<sup>2</sup> require more emphasis in future;
  - iii. The proposal to use strategic fit as an assessment criterion in responsive mode should not be accepted.
7. The outcomes of these discussions are taken into account in the Action Plan below.
8. SISB also noted that several of the proposals are generic to all themes, rather than specific to the Biodiversity theme. Amongst these, the panel's concern about the time lapse from ideas to investments will be partly considered within the spring 2011 evaluation of the commissioning process, which will be discussed by SISB at the June 2011 meeting.

#### Action Plan

9. This section addresses the ten proposals made on pages 2-3 of the evaluation report. The words in italics are taken from the evaluation report.

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<sup>1</sup> Develop integrated tools for assessing the values and benefits of biodiversity and associated services, from very small to very large scales and across different ecosystems.

<sup>2</sup> Develop new approaches and technologies to describe, understand and quantify biodiversity and associated functions.

*Proposal 1: If NERC wishes to achieve the theme’s first overarching outcome “Reducing the rate of loss of biodiversity”, it should through strategy delivery processes consider ways to increase its focus on the mitigation side of the agenda.*

10. This overarching outcome can be contributed to by NERC only through working in partnership with those that can influence mitigation. Building on the sorts of partnerships forged through the *Rural Economy & Land Use* and *UK PopNet* programmes, NERC will ensure that newer research programmes (e.g. *BESS*, *ESPA*, *Insect Pollinators Initiative*) develop and implement the appropriate partnerships, designed within the broader frameworks of *Living With Environmental Change* and *Global Food Security*. This guidance will be passed to the relevant Theme Leaders, Research Programme Directors and Centre Directors, to consider during the development of current programmes and future TAP actions.

<b>Action 1</b>	<b>Communicate need for appropriate partnership development to Theme Leaders, Programme Directors and Centre Directors</b>
Responsibility	Portfolio Planning Manager & Head of Research
Deliverables	Development of approaches to enhance mitigation.
Due	Ongoing

*Proposal 2: Delivery of aspects of the theme, particularly challenge 2 (prediction and mitigation) requires interdisciplinary and partnership working. NERC has made excellent recent progress with partners, but needs to strengthen this area further. Suggestions include:*

- a. further developing and directing strategy and effort on the mitigation side of the portfolio (as set out in proposal 1);*
- b. if NERC wishes to maintain the interdisciplinary communities built up by previous programmes that are now coming to an end, it should consider supporting the expertise and partnerships that have been developed through these programmes; and*
- c. to enhance delivery of strategic research, NERC should consider working more closely with partners in this area (e.g. BBSRC and ESRC with respect to food security, LWEC with respect to environmental change more generally).*

11. Implementing Action 1 (above) will be large part of addressing this proposal. There has been good recent progress in working more closely with the key partners cited under Proposal 2c. In respect of food security, NERC will create a new role to champion, co-ordinate and develop food-related NERC research and national capability, within the *Global Food Security* programme. Within *LWEC*, closer working with BBSRC is creating potential investments in mitigation-relevant areas of soils/water/greenhouse-gases in agricultural systems.

12. Giving these ongoing activities and Action 1 above, no further action will be taken under this proposal.

*Proposal 3: To address the risks associated with the long time between the generation of an idea and award of funding, NERC should consider ways in which it could adopt a more flexible, less process-focused approach to implementing strategic investments.*

13. Actions have already been taken, where appropriate, to speed up the TAP process for the second and third cycle: the number of interim scoping studies has been reduced; a reduction in advisory steps; direct commissioning; fast-track peer-review. There is a balance to be struck in programmes that will benefit significantly from capacity building or substantial partnership working, which generally require longer development times. We are nevertheless developing leaner processes to shorten commissioning.

14. There is an ongoing evaluation of NERC's commissioning process (March-May 2011, to be considered at June SISB meeting), which may also make recommendations for streamlining.

<b>Action 2</b>	<b>Consider recommendations of commissioning process evaluation</b>
Responsibility	Head of Research
Deliverables	Modified processes
Due	Summer 2011

*Proposal 4: Challenge 1 (resilience of ecosystems) - the range of ecosystems covered in TAPs 1 and 2 is not as broad as it could be. NERC should consider ways of addressing this through TAP and Centre planning processes. The Panel notes that the proposed TAP3 actions will improve the range.*

15. SISB's discussions finessed this proposal, such that the specific ecosystems studied to deliver the theme need to be explicitly justified in terms of why they are the most appropriate ecosystems to focus on to meet the theme challenges in a global context (paragraph 6 above). Both the Panel and SISB recognise that the proposed TAP3 actions are expected to tackle this issue.

<b>Action 3</b>	<b>Communicate amended proposal to Biodiversity Theme Leader and relevant Centre Directors.</b>
Responsibility	Portfolio Planning manager
Deliverables	Increased focus on delivering challenges
Due	March SISB (TAP3), and ongoing.

*Proposal 5: Challenges 3 (value and benefits) and 4 (new approaches and technologies) - theoretical approaches to enable both upscaling and downscaling in understanding ecosystem function, biodiversity dynamics and predicting ecosystem responses to change is a current gap. NERC should consider ways of taking this area forward through strategy delivery processes.*

16. These suggestions will be highlighted to the Theme Leader and Centre Directors. The evolving ESPA Knowledge Strategy explicitly mentions the need for ESPA research projects to deal with both of these areas.

17. The Panel also commented (Paragraph 17 of the Report) that the NERC Environmental Bioinformatics Centre (NEBC) and underpinning work by the Biomolecular Analysis Facility (BAF) are examples of good outputs contributing to achieving this Challenge. NERC's 'omics strategy, and the strong recommendation within it to continue to support our investments in the NEBC and BAF, are likely to lead to strengthened delivery towards this challenge.

<b>Action 4</b>	<b>Communicate proposal to relevant Theme Leaders and Centre Directors.</b>
Responsibility	Portfolio Planning manager
Deliverables	Increased focus on these challenges.
Due	Ongoing.

*Proposal 6: Challenge 4 – to increase impact in this area, NERC needs to work with other Research Councils to facilitate the biodiversity community's uptake of technologies developed elsewhere, and to encourage peer review panels to be more open to the risks associated with using technologies in a novel way.*

18. There are several mechanisms which link NERC into the activities of other Councils and other funders, and which enable NERC to be kept aware of relevant new research initiatives and new and emerging technologies. For example, in the biodiversity area, NERC's participation in UKBRAG plays a key role. In addition, the NERC 'omics strategy will help facilitate a more

joined-up approach to the uptake of new technologies where other Councils, such as BBSRC, play prominent roles. Another example of working with other Councils is NERC's Network of Sensors research programme, co-funded with STFC (2 of 6 proposals funded in biodiversity-related areas).

19. The new reviewer and moderating panel guidance, developed as part of the harmonization across the Research Councils, makes explicit reference to defining "excellence" as including "adventurous science", and states that "NERC understands that risk-taking is very often necessary to answer the challenging questions in environmental science". In addition, in 2010 NERC implemented changes to the way responsive-mode panels handle technology-led proposals, to reduce potential bias (as part of first Responsive Mode Action Plan).

20. Given the above recent and ongoing activities, no further actions will be taken.

*Proposal 7: If NERC wishes to retain a goal-focus in strategy delivery, the 'key outcomes' identified when the strategy themes were designed should be given more prominence.*

21. The "key outcomes" in the theme reports will be routinely considered during the strategy refresh process.

<b>Action 5</b>	<b>Consider the "key outcomes" in the 2011 strategy refresh.</b>
Responsibility	Strategy Refresh Process Manager
Deliverables	Decision on whether to revise or re-focus key outcomes.
Due	Late 2011

*Proposal 8: If NERC wishes to judge performance against challenges, the wording of the challenges needs to be adjusted to make them more specific and measurable.*

22. SMART wording for challenges will be considered as part of the strategy refresh.

<b>Action 6</b>	<b>Consider more SMART wording for strategy challenges in 2011 strategy refresh</b>
Responsibility	Strategy Refresh Process Manager
Deliverables	SMARTer challenges
Due	Late 2011

*Proposal 9: If it is considered to be a priority that retained Research Programmes at Centres are aligned to NERC strategy, NERC should consider how to better manage the link between Centre research development and TAP delivery during the ramp down to RP funding through open competition.*

23. NERC is addressing the issue of improving the links between Centre Research and TAPs. For example, Centres are generally represented on working groups, and at community meetings, as the TAP actions are developed. The Centres' business planning processes also help over the long term to make sure that Centre programmes align with strategy (and hence TAP actions). There is scope for Theme Leaders to be better informed about Centre Research Programme activities, being addressed through other ongoing actions. As retained Research Programmes in Centres are being phased out, the issue declines over the next three years.

24. Given the above ongoing work, no further action is required.

*Proposal 10: NERC is encouraged to consider whether strategic relevance should be one of the assessment criteria for responsive mode proposals, especially when they are otherwise equal in science quality and at the funding borderline.*

25. Scientific Excellence is the primary criterion for Responsive Mode proposals, with Pathway to Impact a secondary criterion, i.e. potential for impact becomes the “tie breaker” for proposals of otherwise equal science quality at the funding border line. The only exception is that strategic fit is used as a “tie breaker” for Consortium Grants.
26. SISB concluded that to employ strategic fit as a secondary criterion across responsive-mode schemes more broadly would be very likely to drive behaviours that would compromise the intended open remit of the responsive-mode funding stream. SISB therefore advised that strategic fit as an assessment criterion in responsive mode should not be accepted.
27. No further action is required.

**Director, Science Delivery.**