

Forestry Commission response to the report of the 2017 Independent Review Group on science quality at Forest Research

The Forestry Commission (FC) welcomes the report of the External Independent Review Group of science quality in the FC's research agency - Forest Research (FR). The FC thanks the members of the review group for contributing their time and expertise to this important review.



Northern Research Station, Roslin.

Background

The purpose of this review is to provide Forestry Commissioners with assurance that the science being delivered is of a high standard, is fit for purpose, and robust enough to withstand external, or internal, challenge when policies are based on its conclusions.

The review team was charged with focussing on opportunities to improve fitness for purpose and science quality, and to improve on knowledge exchange and delivery.

The Independent Review was chaired by Professor Julian Evans OBE, and took place between the 6th and 9th November 2017. Interviews with senior managers and all of Forest Research's Programme group managers were held at the Northern Research

Station. In addition, a number of structured interviews with key FC customers for research were undertaken by the Chair. The Review Group membership is at para 20 of the final report.

The criteria used were based on those for the previous review, but reflecting the applied nature of much of Forest Research Science and the additional functions, such as IFOS and Statistics which were transferred to Forest Research in 2015.

Main headlines

Overall, the Review found that Forest Research science was of high quality, relevant, and formed a sound basis for policy decisions. It concluded that, on the whole, clear agreements and effective working relationships exist between programmes and CFS analysts group. This interaction along with informal contacts, participation in some programme steering groups, ensures that customers, within and outside FC are well linked to FR to influence priorities and receive scientific advice.

The review team applauded the fact that Forest Research has taken steps to 'ring fence' its legacy of older experiments, and believes it is a sound investment.

The review remarked positively on the new matrix working pattern introduced at the start of this Science Strategy period. It comments that the matrix approach helps to ensure both relevance and underpins ethical considerations and QA. The matrix structure is delivering new synergies and collaboration, and although there are frustrations over lack of funding control, it is functioning well.

Interviews with users and customers, as well as other evidence users, all indicate the influence of FR on policy, with many specific examples given. The important point being that all customers unreservedly appreciate knowing that there was expertise in FR to call upon.

The review team were impressed by FR's delivery of robust, quality science, noting that there are effective procedures in place for QA, with a stringent internal refereeing process. Specific highlights in the report are:

- Several areas of FR's research are demonstrably world-class.
- FR undersells itself and could substantially increase its engagement, visibility and impact.
- FR's matrix structure is delivering the benefits of interdisciplinary working.
- Going forward, the perception of FR must change:
 - o it must not only pursue research of relevance to whole of GB and NI, but be seen to do so and engage in ways that demonstrate it;
 - o FR clearly serves the whole tree and forestry sector, but it needs to be perceived to do so and take deliberate steps to work more with the private sector and non-government bodies – a key element of increasing impact.



Measuring Douglas fir after wind blow

- FC's Inventory, Forecasting and Operational Support (IFOS) group have brought some outstanding competencies to FR. Their greater integration, in terms of scientists appreciating better what IFOS does and vice versa, will enrich both communities.

In summary, we support the conclusions and recommendations of the review group. Discussions with Forest Research will be held to set out a timetable for implementing the recommendations within their responsibility. As research commissioning arrangements will be changing in 2018 to reflect the transition towards full devolution of forestry, those recommendations relating to the commissioning of science and the new science strategy will be part of the discussions around new commissioning governance arrangements.

Recommendations and FC response

The Review makes recommendations in five key areas. They are listed below, together with the Forestry Commission response.



Monitoring young oak trees for acute oak decline.

1. Management of research

Matrix structure: The review team strongly recommend that no change is made to the matrix system in the next quinquennium nor to the number of research programmes. More could be done to foster interdisciplinarity among more junior staff.

We respond: *We are pleased that the matrix management structure has been independently reviewed and found to be working well. There are some frustrations in its application around holding budgets, which FR should take forward and review/adapt as necessary.*

Singleton expertise and succession planning: We recommend that FR address the issue of succession by a more deliberate approach to supporting and developing young researchers wishing to pursue a career in forest science so as to grow the next generation of champions, both to pursue the science itself and to be FR's flag wavers. The issue applies across FR and particularly affects senior

scientists, who are often also the key advisers to policy makers and practitioners, and to many IFOS staff with highly transferable skills.

We respond: *With efficiency savings over the last decade, and the continuing scope of work undertaken by Forest Research, it has been challenging to ensure succession planning in all areas. A notable exception has been in plant health, where capacity has been increased to respond to new and emerging threats. This is one for FR management to take forward, but will need continuing support, both financially and to the principle of succession planning, from funders to achieve this.*

Closer working of FR & the Inventory Forecasting and Operational Support group: The review team were impressed by what IFOS has brought to FR and it is recommended that senior management organise a one day seminar in both NRS and at Alice Holt where all heads of IFOS groups and all on-site Programme and Science Group leaders present overviews of their work. Agree that the successful integration of IFOS will require managed effort to get the potential synergies in future.

We respond: *The FC agrees that this is an important aspect of a fully interdisciplinary research programme, and will work with Forest Research to identify opportunities and find ways of achieving this in the current research programmes. We will also examine the opportunities for improving the capacity for undertaking economic analysis as part of research programme activity.*

2. Science issues

Quality assurance: FR consider a formal QA system, such ISO 9001, to embed practices and processes throughout the organisation.

We respond: *Quality assurance at all levels of science is key to science quality and robustness. There will be an opportunity for the new FR Chief Scientist to review the current QA system, and amend it, where necessary.*

Securing legacy of long-term experiments: We recommend funding is 'ring-fenced', that ways are explored to maximise their use, and that publications are written explaining their strategic importance.

We respond: *The importance of retaining long term experiments was recognised some years ago, and FR undertook a rationalising of the long term plot network. In the light of pests and diseases and the need to look at potential new species for*



Testing wood density of Sitka spruce on site

British forestry, as well as the monitoring of forest response to climate change, maintaining long term experiments is critical to providing advice and guidance for future policy and operational practice. This is an issue which needs to be discussed by the Research Strategy Management Board and funders, as well as FR, to factor this into longer term financial planning for FR.

Sitka Spruce: Many pests and diseases confront Britain's trees and attract a high profile, but we recommend that potential threats to the nation's principal commercial species continue to receive research investment and be given due attention.

We respond: We agree this recommendation, and the current programmes are very much focussed on delivering this.

High power computing (HPC) capacity: We recommend structured and dependable access to HPC facilities for analysis and modelling of big datasets.

We respond: FR will have its own IT system post devolution, and this will need to be factored into it. Research funders will need to acknowledge the importance of having such capacity, and FR management should work with them to prepare capital funding bids to support this.

High quality fieldwork: We endorse the view that Technical Support Unit should remain an in-house competence; it is a critical part of QA of good forest science and field experimentation.

We respond: We support this recommendation, and encourage FR management to take it forward as required.

3. Impact and profile

Planned impact and stakeholder engagement: Scientists are well networked and have many opportunities to give briefings and research updates, but we recommend a more structured approach, fostered by each of the research centres and senior management, to further increase impact and raise profile. This is a matter both of profile and of adequate representation/participation in official bodies, committees and groups.

We respond: We support this in principle. However, this will require sufficient

resource to be made available by funding bodies to allow this to happen, and FR needs to adopt this as part of its core operating model. The Forest Research Executive Board should assess the implications of this, and what the resource requirements to deliver it might be.

Monitoring impact: We recommend a greater focus on outcomes and 'Outcome mapping' as a helpful approach to monitor impact. Comprehensive documentation of impact provides a powerful evidence base to demonstrate FR's role in developing the tree and forestry sector. It's effectively a cultural change from a focus on outputs to a focus on impact.

We respond: As outcomes often occur well after the research has been undertaken and published, this will be up to the funding administrations to conduct regular reviews of the impact of the science they have commissioned. This is currently built into the SIS on a triennial basis. The new research commissioning arrangements will need to consider whether this continues or a new process is adopted.

Visibility and profile: We recommend that FR strives to increase its visibility and the impact of all its outputs. This is a role the new Chief Scientific Adviser should embrace. Even measurement of impact, including citation analysis of scientific papers, will help raise FR's profile as do major capital investments in infrastructure and laboratories.

We respond: We agree that this is important. This is an action for FR to take forward, with the appointment of the new Chief Scientist.

Publication issues: Occasional causes of blockages in the publishing process need addressing. FC Guides and similar policy focused publications should acknowledge authorship more directly. We recommend FR creates an accessible and complete e-archive/database to provide a central listing of all publications.

We respond: FR has this in hand. FC publications are produced to a very high standard, and have high levels of credibility within the forestry sector. Detailed specifications for each type of publication need to be adhered to ensure that work can be scheduled appropriately, and this should reduce the incidence of blockages. The devolved administrations will need to consider what system they require for planning for publication release and promotion, and whether FR holds all the publications, or they reside somewhere else.

Access to Technical Development outputs: We recommend that a back catalogue of work by TD is preserved and accessible in an e-archive.

We respond: The Forestry Commission has recently created an archive of all of its previous publications, which is now available to anyone who wishes to access it. This may provide a suitable model for the technical development archive. FR should explore the feasibility and potential methods for achieving this, including how the recommendation above may fulfil this.

FR the GB forestry agency of choice

Increased focus on private sector: The old paradigm of the public forest estate acting as a surrogate for all forestry needs to change in both fact and perception.

We recommend that FR should be seen and known as the research agency for all trees and forests regardless of ownership.

We respond: *FR has always provided its research to the private sector, but we acknowledge that the sector could do more. At present, the private sector does not have a lot of influence in determining the research agenda. However, discussions with the sector are underway to encourage greater engagement and potential for cost sharing with it, and it is hoped that this will evolve into a much more collaborative approach to commissioning and using forestry research in the UK.*

A GB-wide agency: We recommend that FR positions itself even more strongly as the forestry science and research agency of choice for the whole country with appropriate investments to demonstrate local presence.

We respond: *We agree. Under devolution, FR will remain an agency of the Forestry Commission and will continue to be a major player in delivering forestry research. Key roles for FR will be to:*

- *maintain necessary scientific input into tree health and other environmental emergency response capability to meet the forestry component of international obligations*
- *provide an expert advisory service to ministers and government policy functions e.g. natural flood measures modelling and tree planting opportunity mapping*
- *protect and improve nationally important scientific skills in areas already highlighted as vulnerable e.g. forestry, forest pathology, plant breeding and entomology*
- *retain access to critical research assets e.g. the National Forest Inventory, forest and pest & pathogen monitoring, long-term datasets and experimental sites, and*
- *ensure delivery bodies, operational partners, and the forest industry have access to a source of applied expertise and advice*

However, the Forestry Commission will only operate in England after March 2019. Ministers have agreed that publicly funded forestry research should remain a cross GB function, and new structures are being established to deliver this. FR will have a new management board with membership from the FC and devolved administrations. This will strengthen governance, while increasing engagement and deployment of research on the public forest estate. FR wishes to provide a comprehensive research function to England, Scotland, and Wales, and is planning to strengthen its presence on the ground in Wales.

4. Chief Scientific Adviser/Chief Scientist

We recommend that the post is filled quickly, that it is full-time and at the same level, and that the appointee should not only be a scientist of standing but one who can be ambassadorial for FR.

We respond: *We agree. This appointment is underway, and the new FR Chief Scientist will be in post early in 2018.*

5. Science and Innovation Strategy

The 2015 SIS has served FC well and much remains fit for purpose, but in preparing for its revision (2019) we recommend that greater attention is given to engaging with the private forestry sector as well as wider interests concerned about trees, woodlands and forests.

We respond: We agree this recommendation. The SIS will be due for revision in 2019, and will be produced under new commissioning arrangements. This will need to be done with greater engagement by the private sector than the current SIS, and discussions are underway as to how this can be done. We believe that the current strategy remains fit for purpose and can be extended for a few years. With the current devolution changes underway it is sensible to allow them to bed in before embarking on a major review exercise for the SIS. This will require further consideration, and will be referred to the Research Strategy Management Board when it next meets.

Forestry Commission
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