

EXECUTIVE SUMMARY AND RECOMMENDATIONS

1. This is the report of Stage 2 of the Quinquennial Review of Forest Research (FR). The Review was carried out by a small Forestry Commission team, overseen by a Steering Group including relevant government departments, academic interests and a representative of the forestry industries.
2. FR was established in 1997 as an executive agency of the Forestry Commission (FC), responsible for carrying out forestry research and allied work and providing authoritative advice to support the development and implementation of forestry policy.

Conclusions of Stage 1

3. Stage 1 of this Review reported to Ministers in January 2002. In line with its recommendations, and those of the Forestry Devolution Review which were announced in August 2002, Ministers concluded that FR should continue as a GB-wide executive agency of the FC. Stage 1 of the Review concluded that:-
 - FR achieved a lot in its first 5 years. It met all its performance targets. Its reputation is high among its stakeholders. It greatly improved its financial focus and there are strong and purposeful arrangements for the FC to commission research from FR, in accordance with the FC Research Strategy;
 - The present arrangements have only 2 significant shortcomings. There needs to be more positive involvement of stakeholders (including the devolved administrations) in drawing up FR (and FC) research priorities. Technology transfer arrangements also need to be improved;

Aims and objectives

4. Section 2 of the Report looks at FR's aims and objectives.
5. The Review Team **recommends (paragraph 2.5) the following new aim:-**
 - "To support and enhance forestry and its role in sustainable development, by providing high-quality research and development in a well-run organisation."**
6. The Review Team **recommends (paragraph 2.7) the following new objectives:-**
 - **"To inform and support forestry's contribution to the development and delivery of the policies of the UK Government and the devolved administrations;**

➤ To provide research, development and monitoring services relevant to UK forestry interests;

➤ To transfer knowledge actively and appropriately;

and to meet these objectives FR will:-

➤ be an internationally-recognised centre of excellence in forestry research;

➤ act in partnership with other organisations where appropriate;

➤ in its operations, be efficient, cost-effective and commercially and environmentally aware;

➤ maximise income and recover full economic costs from research purchasers;

➤ be a caring and fair employer."

Performance targets

7. Section 3 identifies the performance targets which best reflect and support FR's aims and objectives.

8. The Review Team **recommends (paragraph 3.20) the following key performance indicators against which FR's annual performance should be judged:-**

➤ **Independent Visiting Group review of quality and relevance of research of each branch;**

➤ **Number of published peer-reviewed scientific papers;**

➤ **Customer satisfaction;**

➤ **Number of published papers and articles with significant FR prime authorship;**

➤ **Unit cost of researcher day;**

➤ **Unit cost of support services;**

➤ **Proportion of costs funded by customers;**

➤ **Amount of externally-generated funding.**

9. To improve the quality of the performance indicators, the Review Team:-

- **Recommends (paragraph 3.6) that a summary of the reports of the Visiting Groups should be published on the FR website;**
- **Recommends (paragraph 3.8) that:-**
 - **FR's Bulletins (which are the principal academic published reports) should be formally peer reviewed;**
 - **Other reports should specify the quality assurance process which has applied to them (which always involves internal refereeing and customer review, and may also involve external refereeing).**
- **Recommends (paragraph 3.10) that FR should devise a simple way of sampling the views of "users" of its research outputs;**
- **Recommends (paragraph 3.12) that the number of external FR presentations to disseminate FR's research results should be a performance indicator;**
- **Recommends (paragraph 3.13) that FR should consider the best indicator to show the performance of its expanded website, to be adopted once the expansion takes place;**
- **Recommends (paragraph 3.14) that FR should submit a "partnership report " to FC every year, setting out how it has fostered partnership working with other research organisations and other bodies;**
- **Recommends (paragraph 3.17) that FR's Annual Reports should describe what has been done to commercialise its results and the part that it has played in knowledge transfer;**
- **Recommends (paragraph 3.18) that FR 's Annual Reports should describe its "good housekeeping" measures more widely, and the impact on sustainable development of its recent research work;**
- **Recommends (paragraph 3.19) that the average number of days sick absence per employee, and the proportion of FR staff who are "satisfied" with their job (in the FC's biennial surveys of the views of all staff), should be performance indicators;**
- **Recommends (paragraph 3.21) that, during the preparation of the Corporate Plan, the Chief Executive should propose to the FC Director General the level at which the targets should be**

set for the next year, considering the range of values for each target to ensure that options are suitably tested;

- **Recommends (paragraph 3.23) that the information systems underlying all the key performance targets, and the values of the data they produce, should be validated by a body external to FR.**

Governance and reporting

10. Section 4 considers the ways in which FR's work is overseen, and the reports which it submits as part of that oversight.
11. The Review concludes that the arrangements for oversight by the Forestry Ministers have worked reasonably well, but need to be improved in the light of the Forestry Devolution Review. In line with its conclusions, the Review Team **recommends (paragraph 4.4) that the FC Research Strategy and the FR Corporate Plan/Business Plan should be explicitly adopted by Forestry Ministers at one of the new periodic meetings of the "Ministerial Committee"; and that the Framework Document should be drafted to reflect the fact that Scottish and Welsh Ministers now answer to the Scottish Parliament and National Assembly for FR's work for Scotland and Wales.** The Review Team also recommends (paragraph 4.5) that there should be an opportunity for FR's Chief Executive to meet Ministers at least once a year, probably in the margin of a "Ministerial Committee" meeting.
12. The oversight of FR's work by the Forestry Commissioners (a statutory board comprising 3 executive and 8 non-executive members which oversees FC's work) has also worked well. As a matter of detail, the Review Team **recommends (paragraph 4.8) that the Framework Document should specify that Commissioners will grant to FR the first right to exploit the commercial potential of the intellectual property arising from its work unless that would not be in the public interest (for instance, if FR acted too slowly or ineffectually).**
13. The FC Director General acts as the FR link with the FC. These arrangements have worked well and need no amendment.
14. The responsibilities of FR's Chief Executive have also worked satisfactorily. Because of the importance of scientific skills and values to the work of the agency, and since FC does not have a more senior scientist, the Review Team **recommends (paragraph 4.14) that a senior scientist from another government department should be involved in the appointment of the FR Chief Executive (and the Chief Research Officer, particularly if the Chief Executive is not a scientist).**

15. The arrangements for corporate/business planning and financial control have also worked well but, in the interests of simplification and because the corporate plan gives enough information about the first year of the 3 year planning period, the Review Team **recommends (paragraph 4.17) that the Framework Document should no longer require FR to submit an annual Business Plan.**
16. The Annual Report and Accounts have been prepared and published without problem, and in the case of the Accounts without qualification, since the establishment of the agency. Plans exist to publish them more quickly in future. External audit is provided by the National Audit Office and internal audit by the FC's Internal Audit Unit.
17. FR's Science Strategy dates from 1999 and is a little out of date; it is being revised.
18. The boundary between the FC and FR has been generally satisfactory, but the "customer" relationship, with FC acting as FR's main paymaster, should be made more transparent and the Review Team **recommends (paragraph 4.26) that the FC Research Strategy should explain the way it is drawn up and approved.**
19. Three advisory committees have an impact on FR's work. The Forestry Research Co-ordination Committee brings together all British forestry research "purchasers". The Advisory Committee on Forest Research guides FR on the quality and direction of its research. The Forestry Commission Advisory Panel gives users' views on the research commissioned by FC (from FR and other providers). The work of these 3 Committees is satisfactory but the Review Team **recommends (paragraph 4.30) that the Welsh Assembly Government be invited to join the Forestry Research Co-ordination Committee**, in the interests of securing representation from all parts of the UK. The Review Team also **recommends (paragraph 4.32) that the membership of the Advisory Committee on Forest Research should be reviewed to secure social forestry expertise and (paragraph 4.36) that:-**
 - **Its role and remit, and the balance of expertise in its membership, should be more prominently available (eg on FR's website);**
 - **Its members should be appointed by the Forestry Commissioners, on FR's recommendation;**
 - **FR should draw up procedural rules on members' rights and responsibilities and handling conflicts of interest, in line with the Code of Practice for Scientific Advisory Committees;**

- **Relevant papers (particularly summaries of the conclusions of meetings and Visiting Group reports) should be made available on FR's website.**

Responsiveness

20. Stage 1 of the Review noted that FR was highly responsive to the needs of 'customers' – in the sense of its paymasters. Consultation showed an impressive degree of satisfaction with the work of FR. But other stakeholders ('users' or potential users who were in a position to put FR's work into practice) felt a lot more distant – both in influencing the research which FR carried out, and in learning of its findings. Section 5 of the Report describes how the processes of commissioning research and knowledge transfer can be improved.
21. The key document is the FC's Research Strategy, which has hitherto been revised annually following external consultation with other government departments and with actual and potential users. The FC intends to move to a 3 year cycle for updating the Strategy and the Review Team **recommends (paragraph 5.2) that the present annual update of the FC Research Strategy should continue meantime, changing to a three-yearly document only when it is clear that stakeholder involvement in the Strategy, which should be the basis of a dialogue about research priorities is satisfactory.** Greater attention needs to be given to the research priorities of other departments in England, Scotland and Wales and the Review Team **recommends (paragraph 5.4) that Defra, the Scottish Executive and the Welsh Assembly Government should be asked explicitly to suggest issues for consideration at the start of each review of the FC Research Strategy, which should be the basis of a dialogue about research priorities.** To give a greater voice to private sector foresters, and other stakeholders such as voluntary organisations, the Review Team **recommends (paragraph 5.5) that FC should organise a meeting to discuss the draft Research Strategy, in each of the 3 countries, to which are invited government organisations, the FC's own Regional Advisory Committees, the industry representative bodies and other stakeholders (including the community forests and voluntary environmental bodies).**
22. Greater attention is also needed to internal FC consultation on the Research Strategy and the Review Team **recommends (paragraph 5.6) that better mechanisms must be found to allow all relevant parts of FC to feed their views into the research commissioning process.**
23. FR has identified useful ways of improving its dissemination of research results and the Review Team **recommends (paragraph 5.11) that FR should press ahead with its plans for a new series of regional research update seminars, and for a greatly expanded website.** Stage 1 of the Review identified a demand for a popular

report of recent FR research findings and the Review Team **recommends (paragraph 5.17) that FR should prepare and publish annually (in hard copy and on its website) a short research update report easily read by forestry practitioners and others who are interested but not expert in research.**

24. The FC has a key role to play in solving the knowledge transfer problem, since it is responsible for publishing FR's research reports. Again, improvement plans exist and the Review Team **recommends (paragraph 5.14) that the FC should press ahead with its plans to set up a Technical Publications Committee (which must have sufficient executive power to secure a step change in knowledge transfer), to prepare a written statement of publications policy and practice, and to simplify the series of publications. The Committee should ensure that research users' views are taken into account in the process.** So that research results are published more rapidly and users more clearly identify FR with its research outputs, the Review Team **recommends (paragraph 5.15) that the Technical Publications Committee should, in simplifying the publications series, ensure that FR has more scope to publish its research results.** To tackle the lack of knowledge about FR's output, which was evident from the consultation carried out for the Review, the Review Team **recommends (paragraph 5.16) that a small group should urgently consider how marketing of publications could sensibly be improved.**

Partnerships and joined-up government

25. FR carries out most of its research in partnership with others and it has close policy links with FC and the other government departments who commission its work. Section 6 considers how that partnership working can be improved.
26. Devolution has changed the background to FR's work - particularly by leading England, Scotland and Wales (as well as Northern Ireland) to develop forestry policies in different ways, reflecting their distinctive needs. The Review Team **recommends (paragraph 6.4) that FR should do more to ensure high-level liaison with policy-formers in each of the 4 countries in the UK, about the results of its research and the contribution which it can make in future.** In Wales, where FR has only a small staff and where a member of staff has recently been appointed to liaise with FC's National Office and the Welsh Assembly Government, the Review Team **recommends (paragraph 6.5) that FR's intention to strengthen its research presence should be taken forward speedily.**
27. Most of FR's research projects involve collaboration with other research bodies. FR's recommended new objectives include working in partnership and FR should take opportunities to make clear its willingness to collaborate. FR should also take opportunities to

broaden the existing interchange of staff and students with other research institutions, wherever that will increase the effectiveness of its work. The Review Team **recommends (paragraph 6.7) that the FC, in commissioning research, should look favourably on jointly funding FR and another suitable institution, to carry out work in partnership on appropriate topics.**

28. There are advantages and disadvantages in the FC out-sourcing more of its work. Outsourcing can allow the FC to react more quickly to changing research priorities, can reduce dependence on one source of advice, can ensure that its research retains its cutting edge and can achieve more transparent value for money. On the other hand, outsourcing can lose a long-term view of research and research synergy, can reduce the coherence of policy advice, can increase commissioning costs and can damage links with users. FC already has sound information about the quality of FR's science and management, informed by external peer review comparable to the university Research Assessment Exercise. Because FC commissions work from a variety of research providers, it can already benchmark FR's outputs, and inputs such as the cost per researcher day. It also has the evidence from other benchmarking, such as FR's success in competition for EU funding. So far as can be detected from such information, which will be strengthened by a current review of GB forestry research resources, there is no value for money case for diverting work away from FR.
29. These principles give a sound basis for future decisions by FC about which work should be placed with FR, which work should be placed with another institution, and which work should be openly tendered. The Review Team considers that decisions on the form of procurement should be led by the needs of the research which the FC wishes to commission and the nature of the market, rather than by any predetermined proportion of work which should be outsourced. But these decisions need to be taken more transparently. The Forestry Research Co-ordination Committee gives the right forum: it already considers the content of FC's Research Strategy, is reviewing GB forestry research resources and brings together expert commissioners of research and key research providers. The Review Team **recommends (paragraph 6.15) that the Forestry Research Co-ordination Committee should be invited, in considering the FC Research Strategy, to identify any projects where there is the opportunity for a more competitive approach to procurement.** The opportunity to bid for work should be openly tendered, with FR bidding if it chooses to. Decisions should take account of the quality of scientific expertise and research management, and the scope for synergy with other research work, as well as costs. The outcome should be reported to the Forestry Research Co-ordination Committee.

Financial issues

30. Section 7 considers financial issues which are important to Forest Research.
31. The existing financial delegations have operated without problem and have imposed no unnecessary restriction on FR. The Review Team **recommends (paragraph 7.3) that the financial authorities delegated to the Chief Executive should remain unchanged.**
32. FR has been extremely successful in achieving its objective of recovering its full economic costs from customers. But a number of stakeholders remarked that the system to charge full project costs needs to be simplified and the criteria for full cost recovery relaxed slightly, since it was felt to rule out important research of wider benefit, which could lead to policy changes. The Review Team concludes that the best decisions on which research will bear fruit are more likely to be taken by researchers working with actual or potential stakeholders, than by researchers in isolation - because the stakeholders will bring to bear a better knowledge of how useful the results are likely to be. So, rather than allocating a blanket 5% or 10% of the FC's research budget to innovative research, which would proportionately reduce the amount of research of direct and known benefit to users, the Review Team **recommends (paragraph 7.8) that the FC, in taking decisions about funding research projects, should always consider including in the project definition an element of exploratory research, beyond the normal project outputs. The detail of the research would be at the researchers' discretion, but the investment of time and money should be agreed as part of the contracted service and account for no more than 10% of the time of the team members involved.**
33. FR wins about 10% of its income from customers other than the FC. Its existing business development work suggests that there are opportunities to generate more income from external sources. FR has the right financial incentive to win external business, since it effectively retains generated income. But FR could be more energetic in its efforts to develop new customers, attract more EU funding and win greater access to Research Council funding. The Review Team **recommends (paragraph 7.12) that FR continues its efforts to develop the market, concentrating on the EU and the devolved administrations**, which are the sources of funding most likely to yield fruit.
34. Over the years, FR has developed ideas with commercial potential and there are a number of current examples of such ideas. While it is important to ensure that research benefits are quickly applied in the field, the balance between rapid introduction of an idea (helped by free access to research results) and the generation of income to plough back into more research needs careful consideration by FC and FR.

The Review Team concludes that FR needs to be more aware of opportunities for commercialisation and **recommends (paragraph 7.17) that FR should systematically identify commercial opportunities from current and future research; protect intellectual property rights to relevant research at an early stage; and seek commercial partners to develop the ideas.**

35. FR's total assets employed are a little over £8.7 million. The largest asset (£5 million) is the research station at Alice Holt on the Surrey/Hampshire border, which has development potential. The Review Team **recommends (paragraph 7.22) that FR should examine in detail, as a potential major project, the options for obtaining best value from the Alice Holt site.** This will involve considering the best future location, size and nature of the accommodation likely to be required in future. It will also require careful consultation with staff and the local community. There is scope for real improvement in quality (with a positive effect on staff morale and efficiency) if it were possible to significantly upgrade the Research Station buildings.
36. FR shares an accounting system with the rest of the FC. It is a satisfactory system - but more elaborate than is necessary for the needs of FR. FR is free to buy any accounting package. It appears unlikely that there is a value for money case for a separate FR system - but that is an option which could be considered when the FC's system is replaced.

Staffing issues

37. Section 8 considers staffing issues of importance to Forest Research. Turnover of "permanent" staff in Forest Research is very low. There is a tension between ensuring that staff are at the cutting edge of research and providing an attractive long-term career for able staff who wish it.
38. Traditionally, forestry staff (about 20% of the total) have transferred between FR and other parts of the FC. The advantages of doing so, however, are nowadays not so strong (because research itself has become a specialised business) and the number of transfers of professional foresters has decreased. The Review Team concludes that the accent for most posts should be on offering a medium-term career to people transferring from elsewhere in the FC, rather than on expecting a large number of professional foresters to spend a short time in FR.
39. There has in the past been little transfer of scientific staff (over 30% of total staff) between FC and FR and many scientists have spent a substantial part of their working lives in FR. FR greatly benefits from that staff stability - but long service carries the danger of a lack of fresh perspectives. FR needs to ensure that its scientific staff do not grow

stale and the Science Strategy which is being developed should codify this. More attention needs to be given to staff interchange and the Review Team **recommends (paragraph 8.10) that, in its contact with other research establishments, FR management should canvass the scope for inward and outward secondment of appropriate staff.** Continuing professional development is also a route to keep staff at the cutting edge.

40. FR staff are employees of the Forestry Commissioners, with the same conditions of service as other Commission employees. The report examines the case for giving FR delegated authority to vary terms and conditions of service and concludes that there is no evidence that the present arrangements hamper FR's delivery of service. The Review Team **recommends (paragraph 8.15) that FR should continue to require the approval of the FC Director General to any proposal to alter the standard terms and conditions of service of FR staff.** The Review Team also **recommends (paragraph 8.14) that FR's delegated authority should be increased to include recruitment to Senior Civil Service posts other than the Chief Executive, although there should always be an FC representative on the recruitment board and the recruitment rules of the Civil Service Commission must be followed.**
41. FR's human resources service is delivered partly through a small personnel section (with 3 staff) and partly through the FC Personnel Division under a Service Level Agreement. The Review Team **recommends (paragraph 8.16) that a new Service Level Agreement be drawn up, and published on the FC/FR Intranet, for the work carried out on FR's behalf by FC's Personnel Division, giving a clearer definition of the remits of FR and FC personnel staff and giving FR a clearer avenue to pursue any difficulties in the delivery of the service.**
42. The Review Team concludes that the present arrangements for training and development meet FR's needs. FR achieved Investors in People status in 2000, and its status is due for review in 2003. Staff relations within FR are generally good, with a well-developed mechanism for collective discussion and a constructive dialogue with the trade unions. Since 2001, FR has taken part in an FE-wide programme of change, focussed on improvements on the way staff relate to the organisation and tackling problems to which a staff survey in September 2000 drew attention.

Use of new technology

43. Section 9 considers how FR can make better use of technology.
44. Like any scientific establishment, FR has sophisticated laboratory equipment which needs to be carefully managed in the interests of efficiency and cost-effectiveness. The Review Team concludes that

FR's high-technology equipment is adequate for the efficient discharge of its functions, although suffering slightly from under-investment.

45. FR's researchers use a wide variety of specialised IT systems, both commercial and bespoke. This is essential because of the specialism of individual researchers, and because of the need to interact with researchers outwith the FC. The diversity of software makes it particularly important for FR to maintain a full catalogue of software holdings which is monitored for compliance with software licence regulations. Several key FR projects involve the development of IT tools by use for practising foresters, as well as researchers, or a compilation of data which needs to be shared with the FC or other stakeholders. The electronic form in which the results are available needs to be compatible with the IT equipment available to users and FR researchers are alert to this.
46. Rather than having a separate website, FR uses a section of the FC's website. But it has not been making a sufficient impact on the dissemination of research results and FR has recruited a dedicated "webmaster" to develop its presence on the FC site.
47. FR is well on its way to meeting the government-wide target that citizens and businesses should be able to deal with FR electronically, if they choose, by 2005. Most of FR's transactions with businesses and citizens involve the provision of information - but transactional services including the ordering of priced publications are also being developed. Increasing use is being made of electronic forms of payment for FR's purchases.
48. FR obtains its office IT systems by a "mixed economy" of in-house and contracted-out work. Its common office systems are provided by the FC, under a Service Level Agreement. Almost all the office, statistical, scientific and specialised software is commercial packaged software, with in-house effort being concentrated on software developed as part of research projects. The needs of users are focussed by 2 user groups, while a strategic view is taken by the FR IS/IT Steering Group. To ensure that FR strategies are linked with those of the FC, FR is represented on the FC IS/IT Strategy Committee. These arrangements work well - but the Review Team **recommends (paragraph 9.12) that the Service Level Agreement which governs the FC's provision of computing services to FR should be clearer about which services are provided by FC and which by FR, and should be published on the FR Intranet.**
49. The Review Team concludes that FR has adequate systems for the use of technology, although there is a risk of under-investment handicapping its work. To help guard against that possibility, the Review Team **recommends (paragraph 9.13) that the remit of the external Visiting Groups should be extended to cover the question of whether technology is used to an appropriate extent.**