

Submission to the Quinquennial Review of the Royal Botanic Gardens, Kew

This is the Royal Society's formal submission to the Quinquennial Review of the Royal Botanic Gardens, Kew (RBG Kew). Our response addresses the questions set out in the public consultation document produced by MAFF. This has been prepared in consultation with Dr Timothy Barraclough (University Research Fellow), Professor John Harper FRS, Professor Christopher Leaver FRS and Professor David Read FRS and endorsed by the Council of the Royal Society.

1 What is the nature of your contacts with Kew, if any?

1.1 What is the relationship between your organisation and RBG Kew?

The Fellows of the Royal Society and University Research Fellows who have contributed to this response have links with Kew through their University departments in the form of research collaboration and/or have been on Scientific Visiting Groups to RBG Kew in the past. But the Royal Society as such has no formal relations with RBG Kew.

1.2 Does RBG Kew contribute to your corporate objectives and, if so, in what way?

University Plant Sciences Departments share many of their corporate objectives with RBG Kew.

2 What is your perception of RBG Kew's national and international standing?

RBG Kew's profile is strong and unrivalled internationally. Its standing has increased in recent years as a result of activities such as the construction of the Millennium Seed Bank and the appointment of Professor Peter Crane FRS as Director. The Molecular Systematics Section is a world-leader and has a peerless reputation for the quality and quantity of systematic DNA sequence data collected in its core research.

This is in contrast with the situation ten years ago when the science programme was perceived to be diffuse and the institutional strategies with regard to conservation, economic botany and UK activities were unclear.

3 Do you have any comments on the current scope of its mission, remit and collaboration?

Under the new Director, RBG Kew is developing a new and focused science strategy with the study of biodiversity at its core. Clear decisions are being made with regard to those areas of the world in which it will specialise. RBG Kew has adopted the role of lead partner in a number of international endeavours such as the Molecular Systematics Programme and the Plant Names Index. This is a more appropriate approach than RBG Kew attempting to manage these activities itself.

The Millennium Seed Bank is a valuable programme, performing an important heritage role. This particular role would be difficult for Universities to take on since staff are on short-term contracts and cannot provide the necessary continuity, which is crucial given the current rates of extinction.

The value of the Millennium Seed Bank comes not only from the number of seeds stored but, perhaps more importantly, from the effect it has had on collaborating institutes. By forming an agreement with RBG Kew for seed donation, these institutes have been prompted to take a hard look at their own regional biodiversity and what strategy they should adopt. We welcome this.

The Molecular Systematics Section, apart from its important core research of collecting DNA sequence data, is also increasingly using its data to address fundamental questions of plant evolution and molecular evolution. Members of the section enter enthusiastically into collaborations with outside institutions.

There is some confusion in the boundary between the roles of RBG Kew and the Natural History Museum in the study of the plant kingdom, which should be resolved.

Sir Ghilleen Prance FRS, the previous Director, achieved considerable success in fundraising, which allowed RBG Kew to become less dependent on MAFF for research. We hope that this will continue, since prior to this MAFF was often seen as having a negative influence on research. However the correct balance is necessary as there are some concerns that too much time may be dedicated to raising money, as noted in the response to question 4 below.

4 What do you think are RBG Kew's main strengths and weaknesses?

4.1 Strengths

Excellent new Director, strong international role and links, focused science strategy, good quality of the collection, successful international conservation programmes, success in molecular systematics, independence and freedom to carry out projects.

4.2 Weaknesses

Unfocused and shaky education programme, two science groups (Jodrell and Herbarium) often perceived in competition, some problems with senior management effectiveness, illogical division of responsibilities for the plant kingdom between the Natural History Museum and RBG Kew, concern that excessive effort may be spent on raising money.

5 Are there any other functions that RBG Kew could usefully provide now or in the future?

RBG Kew should consider making low-grade information about its collections readily available through the web page. As it becomes more focused in the UK and Europe, RBG Kew should provide far more useful information on biodiversity and its conservation within the UK.

6 How effectively do you think RBG Kew balances its scientific, conservation and amenity functions?

The present balance is difficult to assess since RBG Kew is in a state of flux with the arrival of a new and active Director. Based on the previous situation, more focus on opportunities offered by its amenity function is needed but we understand that the new Director has this in hand. We expect the conservation function of RBG Kew to increase strikingly with the growing international role of the Millennium Seed Bank.

7 How effectively does RBG Kew engage with other user communities (the academic community, scientific and non-scientific visitors)?

Kew engages effectively with the academic community through traditional links. Examples of this include the strong links with the University of Reading and Imperial College. The collaboration between Imperial College and RBG Kew has been very effective, leading to a number of projects and successful grant applications. Members of the Molecular Systematics Section have co-supervised PhD students at Imperial College and will soon be doing the same for undergraduate students. The interaction has been very positive, with both partners actively seeking involvement from the other on problems requiring joint expertise.

With the restructuring process, the new educational programme could handle scientific and non-scientific visitors more effectively. As the web site becomes progressively more interactive, visitors at all levels will be able to acquire a much better idea of what is available at Kew before visiting.

8 How effective is RBG Kew's exploitation and knowledge transfer mission?

In the past Kew has not been particularly effective in its knowledge transfer mission. A history of publication in its own journals and arrangements with publishers such as Oxford University Press to generate expensive projects like Index Kewensis have restricted knowledge transfer. The situation has considerably improved over the last five years with RBG Kew's involvement in enterprises such as the Plant Names Index. RBG Kew now has a valuable web page.

9 How effective is its training, higher education and schools programme: its promotion of public understanding of science?

The higher education programme is well managed within RBG Kew and sensible links have been established with both UK and non-UK universities. The Horticulture Diploma course is without doubt the best of its type in the world. Participation in university research fellowship schemes is strongly encouraged.

The public education profile needs to be improved both with regard to schools and adult programmes, including "lifelong learning". The promotion of the public understanding of science could also be improved. The new Director is aware of these needs and action is being taken to rectify the situation.

10 What is the standard of service that RBG Kew operates to customer and collaborator? What improvements could be made to this service?

Interactions with Kew as a collaborator are generally reported as being of excellent standard.

In the interest of building its effectiveness, RBG Kew should build bridges with other Government departments, particularly the FCO, DfID and DETR.

11 To what extent do you feel RBG Kew operates a transparent policy and an openness of operations?

Operations at the higher management level seem to be reasonably transparent but there is a certain amount of opacity with regard to decision-making at lower levels within RBG Kew, particularly with regard to the integration of programmes within the planning process. We hope that new programmes based on a clear science strategy will markedly improve the situation.

12 Do you have any comments on the role of the Board of Trustees?

The Scientific Visiting Groups, which report to the Trustees, play an important role in shaping the management of RGB Kew.

In order to fulfil the role required of them, the Trustees must be in a position to question programmes/policies put forward by management and provide real help in their implementation. We have some concern that the opening up of the Board of Trustees to applicants, whilst good from a democratic point of view, could present problems finding individuals with the right expertise.

13 Is it possible to discharge some or all of RBG Kew's responsibilities through alternative means? If so, who else could take them on?

It is vital that RBG Kew remains both a coherent body and within the public sector.

14 Could UK government do more to help RBG Kew meet its objectives?

We recommend that firm links be formed between RBG Kew and other government departments, as referred to previously in response to question 10. This would enable advice provided by RBG Kew to be far more pervasive through government and not remain restricted to MAFF.

15 Do you see any *prima facie* case for changing RBG Kew's current status as an executive Non-Departmental Public Body sponsored by MAFF? If so, please explain.

We support the current status of RGB Kew as an NDPB, with a sponsoring body that is limited to an overseeing role.

In addition to MAFF, the DETR or the research councils (NERC/BBSRC) could contribute to the sponsorship of RGB Kew. However, it is vital that no reduction in budget results from a change in these responsibilities and that the integrity of RGB Kew is maintained.