Forest sciences in the world of tomorrow

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The need is stressed for forest researchers to keep abreast of not only what is happening in their own fields, but also what is happening in related fields and in global forest policy. It is argued that this expansion of forest research will bring it in potential competition with allied sciences but, in the world of tomorrow, this integrative nature will actually be the strength of forest science.

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It can always be said that forest research is in a time of major change. Science is a continuous process, and the mass of knowledge is always accumulating. However, the speed of change seems to be accelerating, and forest researchers may sometimes be ill-equipped to cope with these changes. There is an urgent need for forest researchers to keep abreast of not only what is happening in their own fields, but also what is happening in related fields. In addition, now more than ever, they need to be informed of what is happening in the global forest policy arena, as this can strongly influence the research priorities set by countries and funding institutions and through this, the research undertaken by individual scientists.

The changes are having far-reaching implications. Traditional research institutes are seeing their mandates expand and new areas of scientific endeavour are being identified continuously. For example, the whole area of biomass energy was previously relegated to studies of firewood, often seen as a by-product over timber production, but has recently become significant as countries search for alternative sources of energy to fossil fuels. The many different uses that lignin can be put to are only now being explored in detail, and the combination of wood products and advanced biochemical and engineering products offers great potential.

This expansion of forest research brings it into potential competition with allied sciences. Forestry is often seen as an integrative science that brings both biophysical and social sciences together. However, there are increasing pressures to become ever more specialized. We have seen this particularly in fields such as biotechnology. Forest science is often seen as the "poor relation" of some of the biophysical sciences, perhaps because of its integrative nature. However, in the world of tomorrow, this integrative nature is actually the strength of forest science. Forest scientists understand the links between natural and human systems, understand the links between atmospheric and terrestrial systems and can link natural processes such as photosynthesis and carbon sequestration to the final products being used by consumers. Wood is one of the world's most sustainable products, yet we have not been very successful at championing its use.

Traditional subjects such as forest economics are having to be rethought; some of the fundamental principles are being revised as new products and values are identified and the means to place an economic value on them developed. In the market place, companies such as Canopy Capital Ltd. are developing innovative ways to ensure that ecosystem services are properly valued and combining these with investment opportunities, whereas companies such as C-Questor plc are developing technologies (including silvicultural solutions) to combat global warming. Both of these examples are based on sound scientific research, and there are many other examples.

Researchers and research institutions are also seeing their value being questioned. Increasingly, governments are demanding that all publicly-funded scientists demonstrate their value to society. This may involve massive research evaluation exercises, as has happened in the United Kingdom, or it may involve the regular review of research institutions and researchers by groups of external scientists. Such exercises can be difficult, particularly for individuals and institutions that are not keeping up with changing societal expectations.

Researchers themselves are seeing the ways in which scientific information is communicated changing rapidly. The recent surge in open access journals is one manifestation of this, whereas the increasing popularity of tools such as Wikipedia illustrates the desire of the general public for trustworthy information. Such information sources are a potential threat to the traditional peer-reviewed scientific process, a problem that we need to solve, quickly.

IUFRO will try to facilitate the adaptation of the forest research community to these changes, but it will require a concerted effort by us all if we are to be successful.

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