

Current challenges in the management of forest research

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ABSTRACT

The presentation firstly describes the frame conditions in which forestry is presently acting in Central Europe. It is influenced by the experience of the author as director of the Baden-Württemberg Forest Research Institute (FVA) in Freiburg, Germany. In a second step emerging issues in forest research are listed, clearly dominated at present by the case of climate change. The core competences of forest research institutes as integral parts of public administration are described and special emphasis is put on the question how the agenda in defining research topics is set. Finally the most important present challenges in the management of forest research concerning cooperation with other institutions, personnel recruitment, funding and financing, organisation and quality management are discussed.

KEY WORDS

cooperation, financing, forest research, quality research

FRAME CONDITIONS

Globalisation and internationalisation deeply influence all aspects of the branch of forestry in Europe. This holds true especially for timber trade, European and international regulation on the protection of biodiversity, standards of sustainability and many other activities in the sector. Invasive species as a result of international trade flow also are important research fields in forestry. At the same time forestry as a sector is increasingly under pressure and it is obvious that the political marginalisation of the sector is progressive. Forestry as such is not a field of high political importance at present. This assessment may change in the future as there is an increasing demand for wood and wood products including energy to be observed dur-

ing recent years. At the same time the importance of forests as places of biodiversity and nature protection remains undoubtedly high. Concepts to integrate both requirements are still not fully developed. A further characteristic of forest research is the increasing competition inside the sector but also with other research institutions. This is due to the fact that more and more institutional donors for forest related research (and of course other research fields too) turn to problem-oriented and integrated research programs and less the funding of single research projects or funds for clearly defined sectors like forestry. As a result of this it becomes more and more difficult for a single scientist to maintain a full overview of the funding landscape of research programs related to the expertise and competence of a single scientist. In the case of Germany

(I dare not judge the situation in Poland in this respect) additionally there is a vast fragmentation of forest research. Four forest research faculties, 10 state forest research institutes and more than 200 associations and interest groups work in parallel to each other thus making it rather difficult for political decision makers to form a consistent picture of the necessities and demands of the sector.

EMERGING ISSUES

In order to understand current challenges of forest research some of the most important issues in the sector need to be addressed. Sources of this assessment are:

- IUFRO Directors Forum, Washington DC 2007,
- IUFRO Division 6 proposals 2009,
- USFS main challenges,
- European Forest Institute (EFI) strategy 2007,
- Forest Technology Platform (FTP) strategic research agenda,
- National Forest Research Institutions.

Generally speaking it can be observed that in the past decades, especially the eighties and nineties of the XX century, questions and research on topics related to natural sciences, biodiversity and ecosystem functions were dominating. It is only since some 5 years or so that this seems to change and issues related to economics, sustainable forest utilisation and forest management in general are gaining importance. Taking into account the findings of many scientists and the broad public discussion it is obvious that the issue of climate change in all aspects related to it will be the most important field of research in forestry for the coming years. Without going into it in more detail other research fields also are important, such as:

- Sustainability of forests & forest management,
- Biodiversity,
- Economic viability of forests,
- Valuation of non commercial forest products,
- Bio-energy,
- Forests and water,
- Genetics and breeding,
- Forest ecosystem services,
- Urbanisation,
- Invasive species,
- Forest fires.

CORE ACTIVITIES OF NATIONAL FOREST RESEARCH INSTITUTES

An old forest research institution with a long standing tradition of now 80 years seems to be legitimate to analyse the specific expertise and core activities of forest research institutions, as part of public administration, as opposed to universities or private research institutes. Why are institutions like this needed? In principle they stand for 3 main tasks:

- They provide state of the art knowledge to political decision making processes in public administrations and politicians.
- They provide services for customers and experts related to the respective administration/ministry.
- They serve as control bodies in the execution of public regulative policies.

In a world which is increasingly relying on scientific results, their experts are mostly immediately available at call and short notice and provide for qualified and unbiased information. The standing expertise is based on long term forest monitoring data collected with reliable and scientifically sound methods sometimes over many decades. Especially the monitoring activities become more and more important for qualified political decision making processes. Such research institutions stand for solutions for relevant and applied problems in practical forestry. In order to be able to warrant the above mentioned benefits the research institutes must be well rooted in the scientific community. According to a survey carried out by the European Forest Institute in 2007 the number of forest researchers at forest research institutes in Europe add up to some 3600 researchers having more than 300 Million € annually at their disposal. These figures show, that a substantial part of forest related research is carried out by these institutions. Knowledge transfer to political decision makers, foresters, forest owners and the whole variety of other stakeholders is an important task assigned to forest research institutes.

SETTING THE AGENDA

One of the crucial challenges in the management of forest research is the question who and how the topics for research projects are defined. Signs of high quality research are:

- originality of ideas,
- validity and appropriateness of methodologies,
- documentation of results,
- relevance of the results.

Consequently scientists need to be given a high degree of autonomy. Excellent science can only grow and flourish in an atmosphere of creativeness and freedom. It is the scientists themselves who know the actual state of the art and the current methodologies. Who else but the scientists would be able to judge the feasibility of an envisaged project. So let scientists set the research agenda by themselves?

Unlike universities where scientists or chair holders autonomously define their field of research, setting aside the question of how to find funding for it, forest research institutes are not free in deciding on the agenda of their research. Funded and governed by ministries they have to observe the demands and needs of political decision makers. Needless to say that the topics of research can be influenced by ministries but of course not the results of research. So will politicians set the agenda for research?

In the real world this is a rather theoretical question because it is quite obvious that the right thing to do is to merge both aspects. Political decision makers influence the agenda by expressing needs with respect to specific questions or problems, they provide resources for programmes and projects. But they must be aware of the fact that a good question does not make a good research project. Scientists need to be aware of the relevance of their scientific interest and transfer emerging questions into high quality research following the above mentioned principles. These iterative processes are one of the strengths of forest research institutions as part of public administrations. Another advantage of forest research institutes are interdisciplinary skills. It is an inbuilt characteristic of forest research institutes to support and foster interdisciplinary. With respect to the nature of their mandate to carry out applied science they are often confronted with the necessity to bring together different disciplines and methodologies in order to find solutions for concrete problems. In that context it is increasingly important to involve other stakeholders.

With decreasing resources in personnel and funding it therefore seems inevitable for bigger research institutions to apply structured processes in setting a coher-

ent research agenda. This includes strategic processes in which long-term competencies are defined based on which midterm objectives can be derived which eventually open out into clear and concise annual plans including all resources in personnel as well as finances. Many national and international research institutions have undergone such useful processes. They also give the possibility to define together with the ministries or other funding institutions the share of assigned tasks versus the share of “free research”. In this context structured foresight studies seem to be a good instrument for defining fields of research.

CURRENT CHALLENGES

Further current challenges for the management of forest research can be seen in many fields such as cooperation with other research institutions, recruiting personnel, funding and financing, organisation and quality management..

Integration into scientific networks is an increasingly important aspect in order to secure high quality research. Especially our forest research institutes profit significantly from successful participation in national and international networks far beyond their own core competence. One sign of this is the degree of third party funding or soft money acquired by a research institution. It also is a good possibility to have some quality control of the own scientific work. Cooperation with other scientific institutions often leads for beyond own disciplinary boundaries and is a possibility to widen the horizon. Definitely mere top down processes initiated by the management of research institutions are not promising. Good research grows in a surrounding of voluntariness. From a research management point of view it is a challenge to find or influence the establishment of appropriate programmes, project clusters or other incentives to bring this issue forward. When announcing such incentives (most often funding research programmes) the selection of successful partners should follow transparent and comprehensible review processes.

It can be observed not only in the sector of forestry or the field of forest research that the share of permanently employed personnel is decreasing significantly. Funding institutions be they public or private increas-

ingly hesitate to offer unlimited positions. Contracts are often only given for clearly defined projects or limited times of employment. Besides the fact that this involves a lot of administrative and legal know how on the side of management, it also causes various problems inside an institution where persons with lifetime jobs work together with persons who do not know where and how they find a new employment after their current engagement expires. A reasonable share of limited employments should therefore not be overrun. On the other hand limited employments also render flexibility to the management of the institution.

Another challenge we presently observe can be seen in the fact that more and more special know how is in demand for the treatment of scientific projects. Decades ago it was a characteristic of forest research to be vastly carried out by persons with a background in forest education at best extended by further training in some special fields. This is no longer true! In order to pursue good research institutions increasingly need to employ specialists with a significantly narrower but deeper spectrum of skills and abilities. This is an additional challenge in the pursuit of interdisciplinarity. Transparent and professional recruitment processes are inevitable to find the best suited qualifications.

A core challenge in the management of forest research is the issue of funding and financing. In Central Europe we currently observe a tendency of decreasing financial resources simply due to the fact that forestry as such in public perception is not considered to be a "hot issue". Only recently with the increasing demand for wood as a renewable and environmentally friendly resource this trend seems to be broken. At the same time it has to be said that there is a clear shift towards competitive funding. Donors in general turn to project based funding versus permanent structures. This aggravates long term planning significantly and consequently there is a necessity for clearly defined and consistent project management structures. Core funding should not be less than 50% of the total. Otherwise there is a risk of following money sources rather than core competences and expertise. On the long run this can hamper the scientific profile of a research institution.

Organisation is a permanent challenge for forest research management. With limited resources it is important to identify emerging fields where investments

make sense. Especially for this purpose the mentioned foresight studies and strategy processes are valuable instruments. At the same time it is as important to maintain fields of proven expertise and know how where this makes sense. Finding a balance is often not easy. Often the management of a scientific institution is somewhat alone in finding the right way forward since ministries as governing bodies tend to be very much tied up in current instantaneous issues, whereas the more disciplinary oriented responsible leaders of subdivisions of the institution have to follow their own interests. Consequently the identification of new fields of research and the allocation of resources is one of the most challenging but also rewarding tasks for the management of an institution.

With limited resources quality management (QM) also or even more so for research institutions becomes a crucial instrument. There are two elements to this: external QM and internal QM.

The external more classical elements have already been mentioned: reviewed publications and the share of soft money. They are undoubtedly important elements to safeguard quality of the scientific performance. Needless to say, that there are also important shortcomings to these indicators. They should be seen as indicators not more. This holds especially true for reviewed publications with high impact factors where more and more the applied sciences fall behind. The strength of applied sciences often lie in the ability to combine findings from various scientific fields and find solutions under real life conditions.

Under quality management aspects internationally accepted performance indicators can sometimes help to evaluate and benchmark own output. In July 2010 the new NFRI-survey (National Forest Research Institutes) for National Forest Research Institutions in Europe carried out under the guidance of Niels Elers Koch, Denmark, will be available.

For a comprehensive quality management it is important to observe not only external but also internal aspects. Such elements are the definition of internal ethical standards for scientific work including of course all consequences for organisation, structures and documentation of the own institution which poses additional managerial tasks. A clear and concise project management is the fundament for an effective science controlling system. It in a nutshell answers the ques-

tion: By when and with which resources do we want to accomplish which objective/result? Part of this system is the clear and transparent allocation of personnel and finances to projects.

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