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Developing National Priorities for the Forest-Based Sector Technology Platform

Foresight Brief No. 166

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Type:	Field/sector specific: forest-based sector R&D	
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Duration:	03 – 06/2005 **Budget:** N/A **Time Horizon:** 2030 **Date of Brief:** Dec. 2009	

Purpose

In 2005, a national foresight process was conducted in Finland to support the development of the Strategic Research Agenda of the European Forest-Based Sector Technology Platform. The national process was systematically run to identify key national priorities in connection with the European process. This national process was based on the Robust Portfolio Modelling (RPM) screening methodology, which consisted of the Internet-based solicitation and assessment of research themes, identification of promising research themes through RPM and several participatory workshops.

The Formulation of a European Strategic Research Agenda

Since 2003, the Commission has encouraged industrial stakeholders to set up European Technology Platforms, which the European Council, too, has promoted as one of the coordination tools to set up European research and technology development priorities, action plans and timeframes. Among nearly 30 parallel initiatives, the planning of the technology platform for the forest-based sector was started in autumn 2003 by the European Confederation of Woodworking Industries, the Confederation of European Forest Owners and the Confederation of European Paper Industries.

As a result of a Europe-wide consultation of the key stakeholders, the Vision for 2030 document on the key challenges, opportunities and strategic objectives for the sector was published

in February 2005. This document served as the basis for the further preparation of the European Strategic Research Agenda (SRA) process. The approved European SRA process consisted of four phases in 2005:

i) The collection of prospective research themes from national support groups, confederations and other European stakeholders by June 15.

ii) The synthesis of priorities based on collected research themes by the European value-chain working groups by September 15.

iii) The elaboration of the strategic objectives of the SRA and the selection of the most important European research themes by October 31.

iv) The compilation of and consultation on the first draft of the SRA by November 30.

Following this plan, the project group organised the development of the final SRA. To endorse this process plan, the corresponding guidelines for the preparation of SRA were compiled and communicated to key stakeholders in Europe. These guidelines reflected several vertical and horizontal coordination challenges:

Vertical Coordination in FTP: While European dimensions were well represented in the management structure of the Forest-Based Sector Technology Platform (FTP) (e.g., through the representatives of multi-national companies, industrial confederations, and the Commission), the recognition of national, regional and local interests called for additional inputs from member states. This was achieved by establishing national support groups that acted as "mirror groups" of the European FTP and also by establishing national value chain working groups. The national support groups consisted of representatives of industrial firms, research organizations and funding agencies with interests in the forest-based sector. They provided national views and inputs to SRA and were in charge of mobilising the national SRA work.

Horizontal policy coordination in FTP: The management of FTP, as many other technology platforms, was requested not only to design and coordinate efficient processes for the establishment of the platform but also to search for linkages to other policy areas and initiatives. The FTP had inherent connections with some four to five other technology platforms, whereby responsibilities for synchronisation were assigned to the Scientific Council and Advisory Committee. Moreover, the Vision for 2030 document highlighted links with other policy areas.

The consideration of national dimensions – especially the involvement of national actors and the coordination between national SRA processes – posed challenges due to the specific conditions of the member states. Here, the national support groups were responsible for mobilising national SRA processes with the help of the SRA guidelines that were made available to them.

The SRA Process in Finland

In Finland, as in the other FTP countries, the national SRA process was coordinated by a national support group that consisted of representatives of industrial firms, research organisations and governmental bodies. This process was started in March 2005 with the objective of collecting about ten strategic priority areas as a key input to the European SRA process. This was to be achieved in a remarkably short time by June 15.

With the aim of developing a structured and systematic SRA process, methodological requirements were discussed between the national support group and the support team (the authors of this brief) at the Helsinki University of Technology.

Starting from the Vision for 2030 document and the SRA guidelines, the plan for the national SRA process was drafted through the collaboration of the national support group and the support team. Shortly thereafter, the support team launched a project website to facilitate the work of five value chain working groups in the following areas: forestry, pulp and paper products, wood products, bio-energy and specialties/new businesses. Each value chain working group was given the opportunity to take part in the Internet-based solicitation and assessment of research themes, the results of which were further analysed with RPM.

Results from the Internet-based consultation process were envisaged as a key input to the value chain workshops where promising themes were to be discussed with the aim of synthesizing the ten most essential ones from the national process to the European SRA process. Apart from this core objective, the national SRA process was expected to assist the national actors in participating in the European context, to offer an opportunity for methodological development, and to provide experience on how national stakeholders could be best engaged in European coordination tools. It was expected that the process would attract quite a bit of interest in Europe, wherefore English was adopted as a working language. Below, we describe the main roles and responsibilities in this process, with an emphasis on process design and the explicit consideration of multiple perspectives.

Coordinators, Respondents and Referees – Roles and Responsibilities

In the national process, different kinds of stakeholders were invited based on their expertise and responsibilities. The steering group consisted of the coordinators of the value chain working groups and invited experts to gather together research, industry and policy expertise. The coordinators identified and invited respondents to submit research themes and referees who were responsible for assessing them. The support team at the Helsinki University of Technology contributed to the process design and provided the methodological expertise and the IT infrastructure. This team also produced tentative analyses of solicited and assessed research themes for the value chain workshops.

To support the value chain coordinators in inviting the most suitable respondents and referees, their roles and responsibilities were explicitly defined. Respondents were established researchers or research managers at universities, research institutes and industrial firms with the capacity for producing innovative research themes for each value chain. Specifically, the respondents were requested to study the Vision for 2030 document and to propose research themes through the project website. Referees were highly competent researchers and industrials capable of evaluating research possibilities in view of the Finnish and European forest-based sector. They were responsible for assessing the solicited research themes.

Some participants assumed several roles in the process. For example, many respondents were invited to participate in the value chain workshops and to contribute to the further analysis of the themes. Furthermore, although the roles and responsibilities were identified formally, the organisation was many-faceted with partly overlapping duties. For instance, the coordinators participated both in management activities and expert workshops while in some value chains there were experts who assumed the responsibilities for respondents and referees alike or even participated in several value chains. This created additional interactions between value chains and process steps enabling the efficient cross-feeding between the value chains.

Iterative Process Design

The Finnish SRA process consisted of seven steps (see Table 1). These were largely fixed early on due to the tight schedule and the need to provide similar methodological support for all value chains. The process design relied heavily on the use of Internet-based group support systems because it would have been impossible to organise a large number of face-to-face meetings within the seven-week period that was allotted to the process. A further reason for this was that Internet-based distributed work can provide efficient and systematic support for stakeholder participation while permitting features such as anonymity and flexibility in terms of time and place. Due to the limitations of the Internet as a platform for social interaction, however, the process was run in conjunction with the workshops.

Table 1: Seven steps in the Finnish SRA process.

Process steps	Weeks (W) (I-VII)	Key participants
Step I: Process design and identification of participants	W I	NSG/steering group and the support team
Step II: Internet-based solicitation of research themes	W II/III	Value chain coordinators and respondents
Step III: Coordination workshop	W III	Value chain coordinators and steering group
Step IV: Internet-based assessment of research themes	W III/IV	Value chain coordinators and referees
Step V: Multi-criteria analysis of research themes	W IV/V	Support team
Step VI: Value chain workshops for the formulation of relevant research areas	W V/VI	Value chain coordinators and invited respondents, referees and other experts
Step VII: Steering group workshop for the formulation of Finnish SRA priorities	W VII	Steering group

Considering Multiple Perspectives

The consideration of multiple perspectives was supported, among other things, by multi-criteria assessments where the referees evaluated research themes with regard to three criteria (novelty, feasibility and industrial relevance). The simultaneous consideration of multiple criteria led to the question of how the relative importance of these criteria should be weighted: for example, research themes that are not very novel may still be industrially relevant and hence interesting.

Because it may be difficult if not impossible to justify 'exact' criterion weights, analyses for identifying 'most interesting themes' should arguably accommodate different interpretations of which criterion weights are feasible. This realization was the rationale for adopting the robust portfolio modelling (RPM) methodology (Liesiö et al., 2006) in the analysis of research themes. In this methodology, different perspectives can be accommodated not only through the consideration of multiple criteria (as the basis of the participants' assessment ratings) but also by incorporating different interpretations about the relative importance of the three criteria. The task of identifying most promising themes for workshop discussions was framed as a project portfolio selection problem with incomplete information about the relative importance of assessment criteria. For a detailed exposition of RPM screening methodology and its use in the screening of innovation ideas, we refer to Könnölä et al. (2005).

The visualisations of the results of the analysis were presented at the value chain workshops, where they were taken up in the discussions and used in the clustering of themes and formation of national SRA priorities. The RPM framework contributed to the legitimacy of the results because this systematic methodology was also described transparently on the project website.

Results from RPM screening were used as supporting information only because final syntheses and analyses were carried out in the workshops. This also made it possible to devote attention to overlaps and synergies between the proposed themes (i.e., interactions), which were not explicitly accounted for in the formal RPM analysis.

In the RPM-analysis, the value chain coordinators had a major role in the adoption and shaping of results. In each value chain workshop, approximately half of the submitted research themes were taken up in the discussions that guided the final decisions. In some value chains, themes with high core index and/or high novelty and/or industrial relevance were identified first; after that the final themes were defined by synthesising these themes. In some other chains, the coordinator had already developed a tentative clustering before the workshop so that the final themes were created by assigning the solicited themes to the proposed clusters. This helped in the identification of missing themes and served to highlight what clusters were apparently important apart from the solicited research themes.

Towards Innovative Products and Societal Perspectives

The national foresight process contributed to the development of the European SRA, which defined the following strategic key objectives for the platform:

1. Development of innovative products for changing markets and customer needs.

2. Development of intelligent and efficient manufacturing processes, including reduced energy consumption.

3. Enhancing availability and use of forest biomass for products and energy.

4. Meeting the multifunctional demands on forest resources and their sustainable management.

5. The forest sector in a societal perspective.

The Prospects of Applying RPM

This foresight process was embedded in the broader strategy process. This integrated approach supported the strong connection with the decision-making involved in strategy formulation. At a more general level, the deployment of the RPM screening method in the Finnish SRA process can be assessed against the backdrop of emerging foresight needs at the international level. First, several analogous processes in other countries may be amenable to similar methodological support, for instance, within European coordination tools that seek to respond to the challenges of vertical coordination of multi-layered innovation systems. Second, methodologies such as RPM screening can respond to the challenges of horizontal coordination by permitting the participation of different stakeholders, adopting complementary criteria and varying the interpretations by which the relative importance of these criteria is assigned. Third, the Finnish SRA process is relevant to the management of international foresight activities because its design is scalable and can be adapted to the international context.

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