



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL
TRAINING AT THE UNIVERSITY OF HELSINKI 2005–2010

RC-Specific Evaluation of SUVALUE – Sustainable Forest Value Chains

Seppo Saari & Antti Moilanen (Eds.)



Evaluation Panel: Biological, Agricultural and Veterinary Sciences

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Title: International Evaluation of Research and Doctoral Training at the University of Helsinki 2005–2010 : RC-Specific Evaluation of SUVALUE – Sustainable Forest Value Chains	Type of publication: Evaluations
Summary: Researcher Community (RC) was a new concept of the participating unit in the evaluation. Participation in the evaluation was voluntary and the RCs had to choose one of the five characteristic categories to participate. Evaluation of the Researcher Community was based on the answers to the evaluation questions. In addition a list of publications and other activities were provided by the TUHAT system. The CWTS/Leiden University conducted analyses for 80 RCs and the Helsinki University Library for 66 RCs. Panellists, 49 and two special experts in five panels evaluated all the evaluation material as a whole and discussed the feedback for RC-specific reports in the panel meetings in Helsinki. The main part of this report is consisted of the feedback which is published as such in the report. Chapters in the report: 1. Background for the evaluation 2. Evaluation feedback for the Researcher Community 3. List of publications 4. List of activities 5. Bibliometric analyses The level of the RCs' success can be concluded from the written feedback together with the numeric evaluation of four evaluation questions and the category fitness. More conclusions of the success can be drawn based on the University-level report.	
RC-specific information:	
Main scientific field of research: Biological, Agricultural and Veterinary Sciences	RC-specific keywords: Forest mensuration Remote sensing Geographic information system Forest management Forest planning Forest technology Wood technology Forest economics Forest products marketing Business management
Participation category: 5. Research of the participating community has a highly significant societal impact	
RC's responsible person: Valsta, Lauri	
Keywords: Research Evaluation, Meta-evaluation, Doctoral Training, Bibliometric Analyses, Researcher Community	

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Foreword

The evaluation of research and doctoral training is being carried out in the years 2010–2012 and will end in 2012. The steering group appointed by the Rector in January 2010 set the conditions for participating in the evaluation and prepared the Terms of Reference to present the evaluation procedure and criteria. The publications and other scientific activities included in the evaluation covered the years 2005–2010.

The participating unit in the evaluation was defined as a Researcher Community (RC). To obtain a critical mass with university-level impact, the number of members was set to range from 20 to 120. The RCs were required to contain researchers in all stages of their research career, from doctoral students to principal investigators (PIs). All in all, 136 Researcher Communities participated in this voluntary evaluation, 5857 persons in total, of whom 1131 were principal investigators. PIs were allowed to participate in two communities in certain cases, and 72 of them used this opportunity and participated in two RCs.

This evaluation enabled researchers to define RCs from the “bottom up” and across disciplines. The aim of the evaluation was not to assess individual performance but a community with shared aims and researcher-training activities. The RCs were able to choose among five different categories that characterised the status and main aims of their research. The steering group considered the process of applying to participate in the evaluation to be important, which led to the establishment of these categories. In addition, providing a service for the RCs to enable them to benchmark their research at the global level was a main goal of the evaluation.

The data for the evaluation consisted of the RCs’ answers to evaluation questions on supplied e-forms and a compilation extracted from the TUHAT – Research Information System (RIS) on 12 April 2011. The compilation covered scientific and other publications as well as certain areas of scientific activities. During the process, the RCs were asked to check the list of publications and other scientific activities and make corrections if needed. These TUHAT compilations are public and available on the evaluation project sites of each RC in the TUHAT-RIS.

In addition to the e-form and TUHAT compilation, University of Leiden (CWTS) carried out bibliometric analyses from the articles included in the Web of Science (WoS). This was done on University and RC levels. In cases where the publication forums of the RC were clearly not represented by the WoS data, the Library of the University of Helsinki conducted a separate analysis of the publications. This was done for 66 RCs representing the humanities and social sciences.

The evaluation office also carried out an enquiry targeted to the supervisors and PhD candidates about the organisation of doctoral studies at the University of Helsinki. This and other documents describing the University and the Finnish higher education system were provided to the panellists.

The panel feedback for each RC is unique and presented as an entity. The first collective evaluation reports available for the whole panel were prepared in July–August 2011. The reports were accessible to all panel members via the electronic evaluation platform in August. Scoring from 1 to 5 was used to complement written feedback in association with evaluation questions 1–4 (scientific focus and quality, doctoral training, societal impact, cooperation) and in addition to the category evaluating the fitness for participation in the evaluation. Panellists used the international level as a point of comparison in the evaluation. Scoring was not expected to go along with a preset deviation.

Each of the draft reports were discussed and dealt with by the panel in meetings in Helsinki (from 11 September to 13 September or from 18 September to 20 September 2011). In these meetings the panels also examined the deviations among the scores and finalised the draft reports together.

The current RC-specific report deals shortly with the background of the evaluation and the terms of participation. The main evaluation feedback is provided in the evaluation report, organised according to the evaluation questions. The original material provided by the RCs for the panellists has been attached to these documents.

On behalf of the evaluation steering group and office, I sincerely wish to thank you warmly for your participation in this evaluation. The effort you made in submitting the data to TUHAT-RIS is gratefully acknowledged by the University. We wish that you find this panel feedback useful in many ways. The bibliometric profiles may open a new view on your publication forums and provide a perspective for discussion on your choice of forums. We especially hope that this evaluation report will help you in setting the future goals of your research.

Johanna Björkroth
Vice-Rector
Chair of the Steering Group of the Evaluation

Steering Group of the evaluation

Steering group, nominated by the Rector of the University, was responsible for the planning of the evaluation and its implementation having altogether 22 meetings between February 2010 and March 2012.

Chair

Vice-Rector, professor **Johanna Björkroth**

Vice-Chair

Professor **Marja Airaksinen**

Chief Information Specialist, Dr **Maria Forsman**

Professor **Arto Mustajoki**

University Lecturer, Dr **Kirsi Pyhälä**

Director of Strategic Planning and Development, Dr **Ossi Tuomi**

Doctoral candidate, MSocSc **Jussi Vauhkonen**

Panel members

CHAIR

Professor Ary A. Hoffman

Ecological genetics, evolutionary biology,
biodiversity conservation, zoology
University of Melbourne, Australia

VICE-CHAIR

Professor Barbara Koch

Forest Sciences, remote sensing
University of Freiburg, Germany

Professor Per-Anders Hansson

Agricultural engineering, modeling, life cycle
analysis, bioenergy
Swedish University of Agricultural Sciences

Professor Danny Huylebroeck

Developmental biology
Katholieke Universiteit Leuven, Belgium

Professor Jonathan King

Virus assembly, protein folding
Massachusetts Institute of Technology MIT, USA

Professor Hannu J.T. Korhonen

Functional foods, dairy technology, milk hygiene
MTT Agrifood Research Finland

Professor Kristiina Kruus

Microbiological biotechnology, microbiological
enzymes, applied microbiology
VTT Technical Research Centre of Finland

Professor Joakim Lundeberg

Biochemistry, biotechnology, sequencing, genomics
KTH Royal Institute of Technology, Sweden

Professor Dominiek Maes

Veterinary medicine
Ghent University, Belgium

Professor Olli Saastamoinen

Forest economics and policy
University of Eastern Finland

Professor Kai Simons

Biochemistry, molecular biology, cell biology
Max-Planck-Institute of Molecular Cell Biology and
Genetics, Germany

The panel, independently, evaluated all the submitted material and was responsible for the feedback of the RC-specific reports. The panel members were asked to confirm whether they had any conflict of interests with the RCs. If this was the case, the panel members disqualified themselves in discussion and report writing.

Added expertise to the evaluation was contributed by the members from the other panels and by one evaluator outside the panels.

External Expert
Professor Anders Linde
Oral biochemi
Faculty of Odontology
Göteborg University
Sweden

Experts from the Other Panels

Professor Caitlin Buck, from the Panel of Natural Sciences
Professor Ritske Huismans, from the Panel of Natural Sciences
Professor Johanna Ivaska, from the Panel of Medicine, biomedicine and health sciences
Professor Lea Kauppi, from the Panel of Natural Sciences
Professor Holger Stark, from the Panel of Natural Sciences
Professor Peter York, from the Panel of Medicine, biomedicine and health sciences

EVALUATION OFFICE

Dr Seppo Saari, Doc., Senior Adviser in Evaluation, was responsible for the entire evaluation, its planning and implementation and acted as an Editor-in-chief of the reports.

Dr Eeva Sievi, Doc., Adviser, was responsible for the registration and evaluation material compilations for the panellists. She worked in the evaluation office from August 2010 to July 2011.

MSocSc Paula Ranne, Planning Officer, was responsible for organising the panel meetings and all the other practical issues like agreements and fees and editing a part the RC-specific reports. She worked in the evaluation office from March 2011 to January 2012.

Mr Antti Mollanen, Project Secretary, was responsible for editing the reports. He worked in the evaluation office from January 2012 to April 2012.

TUHAT OFFICE

Provision of the publication and other scientific activity data

Mrs Aija Kaitera, Project Manager of TUHAT-RIS served the project ex officio providing the evaluation project with the updated information from TUHAT-RIS. The TUHAT office assisted in mapping the publications with CWTS/University of Leiden.

MA Liisa Ekebon, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation. She also assisted the UH/Library analyses.

BA Liisa Jäppinen, Assisting Officer, served in TUHAT-RIS updating the publications for the evaluation.

HELSINKI UNIVERSITY LIBRARY

Provision of the publication analyses

Dr Maria Forsman, Chief Information Specialist in the Helsinki University Library, managed with her 10 colleagues the bibliometric analyses in humanities, social sciences and in other fields of sciences where CWTS analyses were not applicable.

Acronyms and abbreviations applied in the report

External competitive funding

AF - Academy of Finland
TEKES - Finnish Funding Agency for Technology and Innovation
EU - European Union
ERC - European Research Council
International and national foundations
FP7/6 etc. /Framework Programmes/Funding of European Commission

Evaluation marks

Outstanding (5)
Excellent (4)
Very Good (3)
Good (2)
Sufficient (1)

Abbreviations of Bibliometric Indicators

P - Number of publications
TCS - Total number of citations
MCS - Number of citations per publication, excluding self-citations
PNC - Percentage of uncited publications
MNCS - Field-normalized number of citations per publication
MNJS - Field-normalized average journal impact
THCP10 - Field-normalized proportion highly cited publications (top 10%)
INT_COV - Internal coverage, the average amount of references covered by the WoS
WoS - Thomson Reuters Web of Science Databases

Participation category

Category 1. The research of the participating community represents the international cutting edge in its field.

Category 2. The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.

Category 3. The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation.

Category 4. The research of the participating community represents an innovative opening.

Category 5. The research of the participating community has a highly significant societal impact.

Research focus areas of the University of Helsinki

Focus area 1: The basic structure, materials and natural resources of the physical world

Focus area 2: The basic structure of life

Focus area 3: The changing environment - clean water

Focus area 4: The thinking and learning human being

Focus area 5: Welfare and safety

Focus area 6: Clinical research

Focus area 7: Precise reasoning

Focus area 8: Language and culture

Focus area 9: Social justice

Focus area 10: Globalisation and social change

1 Introduction to the Evaluation

1.1 RC-specific evaluation reports

The participants in the evaluation of research and doctoral training were Researcher Communities (hereafter referred to as the RC). The RC refers to the group of researchers who registered together in the evaluation of their research and doctoral training. Preconditions in forming RCs were stated in the Guidelines for the Participating Researcher Communities. The RCs defined themselves whether their compositions should be considered well-established or new.

It is essential to emphasise that the evaluation combines both meta-evaluation¹ and traditional research assessment exercise and its focus is both on the research outcomes and procedures associated with research and doctoral training. The approach to the evaluation is enhancement-led where self-evaluation constituted the main information. The answers to the evaluation questions formed together with the information of publications and other scientific activities an entity that was to be reviewed as a whole.

The present evaluation recognizes and justifies the diversity of research practices and publication traditions. Traditional Research Assessment Exercises do not necessarily value high quality research with low volumes or research distinct from mainstream research. It is challenging to expose the diversity of research to fair comparison. To understand the essence of different research practices and to do justice to their diversity was one of the main challenges of the present evaluation method. Understanding the divergent starting points of the RCs demanded sensitivity from the evaluators.

1.2 Aims and objectives in the evaluation

The aims of the evaluation are as follows:

- to improve the level of research and doctoral training at the University of Helsinki and to raise their international profile in accordance with the University's strategic policies. The improvement of doctoral training should be compared to the University's policy.²
- to enhance the research conducted at the University by taking into account the diversity, originality, multidisciplinary nature, success and field-specificity,
- to recognize the conditions and prerequisites under which excellent, original and high-impact research is carried out,
- to offer the academic community the opportunity to receive topical and versatile international peer feedback,
- to better recognize the University's research potential.
- to exploit the University's TUHAT research information system to enable transparency of publishing activities and in the production of reliable, comparable data.

1.3 Evaluation method

The evaluation can be considered as an enhancement-led evaluation. Instead of ranking, the main aim is to provide useful information for the enhancement of research and doctoral training of the participating RCs. The comparison should take into account each field of science and acknowledge their special character.

¹ The panellists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics or comparable analyses.

² [Policies on doctoral degrees and other postgraduate degrees at the University of Helsinki.](#)

The comparison produced information about the present status and factors that have lead to success. Also challenges in the operations and outcomes were recognized.

The evaluation approach has been designed to recognize better the significance and specific nature of researcher communities and research areas in the multidisciplinary top-level university. Furthermore, one of the aims of the evaluation is to bring to light those evaluation aspects that differ from the prevalent ones. Thus the views of various fields of research can be described and research arising from various starting points understood better. The doctoral training is integrated into the evaluation as a natural component related to research. Operational processes of doctoral training are being examined in the evaluation.

Five stages of the evaluation method were:

1. Registration – Stage 1
2. Self-evaluation – Stage 2
3. TUHAT³ compilations on publications and other scientific activities⁴
4. External evaluation
5. Public reporting

1.4 Implementation of the external evaluation

Five Evaluation Panels

Five evaluation panels consisted of independent, renowned and highly respected experts. The main domains of the panels are:

1. biological, agricultural and veterinary sciences
2. medicine, biomedicine and health sciences
3. natural sciences
4. humanities
5. social sciences

The University invited 10 renowned scientists to act as chairs or vice-chairs of the five panels based on the suggestions of faculties and independent institutes. Besides leading the work of the panel, an additional role of the chairs was to discuss with other panel chairs in order to adopt a broadly similar approach. The panel chairs and vice-chairs had a pre-meeting on 27 May 2011 in Amsterdam.

The panel compositions were nominated by the Rector of the University 27 April 2011. The participating RCs suggested the panel members. The total number of panel members was 50. The reason for a smaller number of panellists as compared to the previous evaluations was the character of the evaluation as a meta-evaluation. The panellists did not read research reports or abstracts but instead, they evaluated answers to the evaluation questions, tables and compilations of publications, other scientific activities, bibliometrics and comparable analyses.

The panel meetings were held in Helsinki:

- On 11–13 September 2011: (1) biological, agricultural and veterinary sciences, (2) medicine, biomedicine and health sciences and (3) natural sciences.
- On 18–20 September 2011: (4) humanities and (5) social sciences.

³ TUHAT (acronym) of Research Information System (RIS) of the University of Helsinki

⁴ Supervision of thesis, prizes and awards, editorial work and peer reviews, participation in committees, boards and networks and public appearances.

1.5 Evaluation material

The main material in the evaluation was the RCs' self-evaluations that were qualitative in character and allowed the RCs to choose what was important to mention or emphasise and what was left unmentioned.

The present evaluation is exceptional at least in the Finnish context because it is based on both the evaluation documentation (self-evaluation questions, publications and other scientific activities) and the bibliometric reports. All documents were delivered to the panellists for examination.

Traditional bibliometrics can be reasonably done mainly in medicine, biosciences and natural sciences when using the Web of Science database, for example. Bibliometrics, provided by CWTS/The Centre for Science and Technology Studies, University of Leiden, cover only the publications that include WoS identification in the TUHAT-RIS.

Traditional bibliometrics are seldom relevant in humanities and social sciences because the international comparable databases do not store every type of high quality research publications, such as books and monographs and scientific journals in other languages than English. The Helsinki University Library has done analysis to the RCs, if their publications were not well represented in the Web of Science databases (RCs should have at least 50 publications and internal coverage of publications more than 40%) – it meant 58 RCs. The bibliometric material for the evaluation panels was available in June 2011. The RC-specific bibliometric reports are attached at the end of each report.

The panels were provided with the evaluation material and all other necessary background information, such as the basic information about the University of Helsinki and the Finnish higher education system.

Evaluation material

1. Registration documents of the RCs for the background information
2. Self evaluation material – answers to the evaluation questions
3. Publications and other scientific activities based on the TUHAT RIS:
 - 3.1. statistics of publications
 - 3.2. list of publications
 - 3.3. statistics of other scientific activities
 - 3.4. list of other scientific activities
4. Bibliometrics and comparable analyses:
 - 4.1. Analyses of publications based on the verification of TUHAT-RIS publications with the Web of Science publications (CWTS/University of Leiden)
 - 4.2. Publication statistics analysed by the Helsinki University Library - mainly for humanities and social sciences
5. University level survey on doctoral training (August 2011)
6. University level analysis on publications 2005–2010 (August 2011) provided by CWTS/University of Leiden

Background material

University of Helsinki

- [Basic information about the University of the Helsinki](#)
- [The structure of doctoral training at the University of Helsinki](#)
- Previous evaluations of research at the University of Helsinki – links to the reports: [1998](#) and [2005](#)

The Finnish Universities/Research Institutes

- [Finnish University system](#)
- [Evaluation of the Finnish National Innovation System](#)
- [The State and Quality of Scientific Research in Finland. Publication of the Academy of Finland 9/09.](#)

The evaluation panels were provided also with other relevant material on request before the meetings in Helsinki.

1.6 Evaluation questions and material

The participating RCs answered the following evaluation questions which are presented according to the evaluation form. In addition, TUHAT RIS was used to provide the **additional material** as explained. For giving the feedback to the RCs, the panellists received the evaluation feedback form constructed in line with the evaluation questions:

1. Focus and quality of the RC's research

- Description of
 - the RC's research focus.
 - the quality of the RC's research (incl. key research questions and results)
 - the scientific significance of the RC's research in the research field(s)
- Identification of the ways to strengthen the focus and improve the quality of the RC's research

The additional material: TUHAT compilation of the RC's publications, analysis of the RC's publications data (provided by University of Leiden and the Helsinki University Library)

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

2. Practises and quality of doctoral training

- Organising of the doctoral training in the RC. Description of the RC's principles for:
 - recruitment and selection of doctoral candidates
 - supervision of doctoral candidates
 - collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes
 - good practises and quality assurance in doctoral training
 - assuring of good career perspectives for the doctoral candidates/fresh doctorates
- Identification of the RC's strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.

The additional material: TUHAT compilation of the RC's other scientific activities/supervision of doctoral dissertations

A written feedback from the aspects of: processes and good practices related to leadership and management

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

3. The societal impact of research and doctoral training

- Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).
- Identification of the ways to strengthen the societal impact of the RC's research and doctoral training.

The additional material: TUHAT compilation of the RC's other scientific activities.

A written feedback from the aspects of: societal impact, national and international collaboration, innovativeness

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

4. International and national (incl. intersectoral) research collaboration and researcher mobility

- Description of
 - the RC's research collaborations and joint doctoral training activities
 - how the RC has promoted researcher mobility
- Identification of the RC's strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

A written feedback from the aspects of: scientific quality, national and international collaboration

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

5. Operational conditions

- Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).
- Identification of the RC's strengths and challenges related to operational conditions, and the actions planned for their development.

A written feedback from the aspects of: processes and good practices related to leadership and management

- Strengths
- Areas of development
- Other remarks
- Recommendations

6. Leadership and management in the researcher community

- Description of
 - the execution and processes of leadership in the RC
 - how the management-related responsibilities and roles are distributed in the RC
 - how the leadership- and management-related processes support
 - high quality research
 - collaboration between principal investigators and other researchers in the RC
 - the RC's research focus
 - strengthening of the RC's know-how
- Identification of the RC's strengths and challenges related to leadership and management, and the actions planned for developing the processes

7. External competitive funding of the RC

- The RCs were asked to provide information of such external competitive funding, where:
 - the funding decisions have been made during 1.1.2005-31.12.2010, and
 - the administrator of the funding is/has been the University of Helsinki
- On the e-form the RCs were asked to provide:
 - 1) The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation , EU, ERC, foundations, other national funding organisations, other international funding organisations), and
 - 2) The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005–31.12.2010.

Competitive funding reported in the text is also to be considered when evaluating this point.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, innovativeness, future significance

- Strengths
- Areas of development
- Other remarks
- Recommendations

8. The RC's strategic action plan for 2011–2013

- RC's description of their future perspectives in relation to research and doctoral training.

A written feedback from the aspects of: scientific quality, scientific significance, societal impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance

- Strengths
- Areas of development

- Other remarks
- Recommendations

9. Evaluation of the category of the RC in the context of entity of the evaluation material (1-8)

The RC's fitness to the chosen participation category

A written feedback evaluating the RC's fitness to the chosen participation category

- Strengths
- Areas of development
- Other remarks
- Recommendations

Numeric evaluation: OUTSTANDING (5), EXCELLENT (4), VERY GOOD (3), GOOD (2), SUFFICIENT (1)

10. Short description of how the RC members contributed the compilation of the stage 2 material

Comments on the compilation of evaluation material

11. How the UH's focus areas are presented in the RC's research?

Comments if applicable

12. RC-specific main recommendations based on the previous questions 1-11

13. RC-specific conclusions

1.7 Evaluation criteria

The panellists were expected to give evaluative and analytical feedback to each evaluation question according to their aspects in order to describe and justify the quality of the submitted material. In addition, the evaluation feedback was asked to be pointed out the level of the performance according to the following classifications:

- outstanding (5)
- excellent (4)
- very good (3)
- good (2)
- sufficient (1)

Evaluation according to the criteria was to be made with thorough consideration of the entire evaluation material of the RC in question. Finally, in questions 1-4 and 9, the panellists were expected to classify their written feedback into one of the provided levels (the levels included respective descriptions, 'criteria'). Some panels used decimals in marks. The descriptive level was interpreted according to the integers and not rounding up the decimals by the editors.

Description of criteria levels

Question 1 – FOCUS AND QUALITY OF THE RC'S RESEARCH

Classification: Criteria (level of procedures and results)

Outstanding quality of procedures and results (5)

Outstandingly strong research, also from international perspective. Attracts great international interest with a wide impact, including publications in leading journals and/or monographs published by leading international publishing houses. The research has world leading qualities. The research focus, key research questions scientific significance, societal impact and innovativeness are of outstanding quality.

In cases where the research is of a national character and, in the judgement of the evaluators, should remain so, the concepts of "international attention" or "international impact" etc. in the grading criteria above may be replaced by "international comparability".

Operations and procedures are of outstanding quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality.

Excellent quality of procedures and results (4)

Research of excellent quality. Typically published with great impact, also internationally. Without doubt, the research has a leading position in its field in Finland.

Operations and procedures are of excellent quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality.

Very good quality of procedures and results (3)

The research is of such very good quality that it attracts wide national and international attention.

Operations and procedures are of very good quality, transparent and shared in the community. The improvement of research and other efforts are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

Good quality of procedures and results (2)

Good research attracting mainly national attention but possessing international potential, extraordinarily high relevance may motivate good research.

Operations and procedures are of good quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of good quality.

Sufficient quality of procedures and results (1)

In some cases the research is insufficient and reports do not gain wide circulation or do not have national or international attention. Research activities should be revised.

Operations and procedures are of sufficient quality, shared occasionally in the community. The improvement of research and other efforts are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

Question 2 – DOCTORAL TRAINING

Question 3 – SOCIETAL IMPACT

Question 4 – COLLABORATION

Classification: Criteria (level of procedures and results)

Outstanding quality of procedures and results (5)

Procedures are of outstanding quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are in alignment with the documentation. The ambition to develop the community together is of outstanding quality. The procedures and results are regularly evaluated and the feedback has an effect on the planning.

Excellent quality of procedures and results (4)

Procedures are of excellent quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of excellent quality. The procedures and outcomes are evaluated and the feedback has an effect on the planning.

Very good quality of procedures and results (3)

Procedures are of very good quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and

management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of very good quality.

Good quality of procedures and results (2)

Procedures are of good quality, shared occasionally in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are documented and operations and practices are to large extent in alignment with the documentation. The ambition to develop the community together is of good quality.

Sufficient quality of procedures and results (1)

Procedures are of sufficient quality, transparent and shared in the community. The practices and quality of doctoral training/societal impact/international and national collaboration/leadership and management are occasionally documented and operations and practices are to some extent in alignment with the documentation. The ambition to develop the community together is of sufficient quality.

Question 9 – CATEGORY

Participation category – fitness for the category chosen

The choice and justification for the chosen category below should be reflected in the RC's responses to the evaluation questions 1–8.

1. *The research of the participating community represents the international cutting edge in its field.*
2. *The research of the participating community is of high quality, but the community in its present composition has yet to achieve strong international recognition or a clear break-through.*
3. *The research of the participating community is distinct from mainstream research, and the special features of the research tradition in the field must be considered in the evaluation.* The research is of high quality and has great significance and impact in its field. However, the generally used research evaluation methods do not necessarily shed sufficient light on the merits of the research.
4. *The research of the participating community represents an innovative opening.* A new opening can be an innovative combination of research fields, or it can be proven to have a special social, national or international demand or other significance. Even if the researcher community in its present composition has yet to obtain proof of international success, its members can produce convincing evidence of the high level of their previous research.
5. *The research of the participating community has a highly significant societal impact.* The participating researcher community is able to justify the high social significance of its research. The research may relate to national legislation, media visibility or participation in social debate, or other activities promoting social development and human welfare. In addition to having societal impact, the research must be of a high standard.

An example of outstanding fitness for category choice (5)⁵

The RC's representation and argumentation for the chosen category were convincing. The RC recognized its real capacity and apparent outcomes in a wider context to the research communities. The specific character of the RC was well-recognized and well stated in the responses. The RC fitted optimally for the category.

- Outstanding (5)
- Excellent (4)
- Very good (3)
- Good (2)
- Sufficient (1)

The above-mentioned definition of outstanding was only an example in order to assist the panellists in the positioning of the classification. There was no exact definition for the category fitness.

⁵ The panels discussed the category fitness and made the final conclusions of the interpretation of it.

1.8 Timetable of the evaluation

The main timetable of the evaluation:

- | | |
|--|-----------------------|
| 1. Registration | November 2010 |
| 2. Submission of self-evaluation materials | January–February 2011 |
| 3. External peer review | May–September 2011 |
| 4. Published reports | March–April 2012 |
| - University level public report | |
| - RC specific reports | |

The entire evaluation was implemented during the university's strategy period 2010–2012. The preliminary results were available for the planning of the following strategy period in late autumn 2011. The evaluation reports will be published in March/April 2012. More detailed time schedule is published in the University report.

1.9 Evaluation feedback – consensus of the entire panel

The panellists evaluated all the RC-specific material before the meetings in Helsinki and mailed the draft reports to the evaluation office. The latest interim versions were on-line available to all the panellists on the Wiki-sites. In September 2011, in Helsinki the panels discussed the material, revised the first draft reports and decided the final numeric evaluation. After the meetings in Helsinki, the panels continued working and finalised the reports before the end of November 2011. The final RC-specific reports are the consensus of the entire panel.

The evaluation reports were written by the panels independently. During the editing process, the evaluation office requested some clarifications from the panels when necessary. The tone and style in the reports were not harmonized in the editing process. All the reports follow the original texts written by the panels as far as it was possible.

The original evaluation material of the RCs, provided for the panellists is attached at the end of the report. It is essential to notice that the exported lists of publications and other scientific activities depend how the data was stored in the TUHAT-RIS by the RCs.

2 Evaluation feedback

2.1 Focus and quality of the RC's research

- *Description of*
 - *the RC's research focus*
 - *the quality of the RC's research (incl. key research questions and results)*
 - *the scientific significance of the RC's research in the research field(s)*
 - *Identification of the ways to strengthen the focus and improve the quality of the RC's research*
- ASPECTS: Scientific quality, scientific significance, societal impact, innovativeness*

This RC has identified forest value chains as their common research object and motivation. A concise and clear definition is given for value chains, yet this definition in principle covers almost everything beyond biological forest research. The research focus within the multitude of forest value chains is outlined by two basic value and information chains - one from forest measurements and planning to economic evaluation of forests and the other an industrial value chain from measurements and logistics to processing and product markets. Because quite a number of different actors are involved along the forest value chains, it is an interdisciplinary RC covering physical, technical, planning, economical, social and policy aspects.

The interlinking factors within these yet wide research fields are the notion that value chains are also chains of information and the prevailing quantitative research methodologies. Research in the RC is divided into four scientific subfields: Forestry, Economics, Operation Research and Remote Sensing, all being applied sciences focusing on the subjects of forest utilization and decision making. An additional field of the RC is material science on paper and wood.

The different subfields and their close connections to practical forest organizations, forest industry companies and public institutions are well-described and it is one of the strengths of RC.

Scientifically and operationally especially remote sensing methods for acquisition of forest planning data have developed rapidly. Another important research project in this community is the SIMulation and Optimization (SIMO) project which develops a system for next generation forest management decision support. Well qualified work has also been done in the fields of forest economics, policy and marketing. So the major research area in this RC community is focused on the development of information technology for forest applications on one hand and economic and policy related studies on the other hand. The latter includes challenging research topics of today related to changing values of non-industrial forest owners, corporate social responsibility, acceptability of forest and environmental policies, and climate change mitigation and biodiversity conservation objectives. The development of smart products from novel cellulose based material is an example of the new challenges.

The selected parts of forest value chain seem to be well-covered by the research, besides bioenergy, which seems to be of little interest. They have clearly identified important challenges in forest sciences. The SIMO project and the remote sensing developments are internationally recognized. The activities have a leading character within the European forest science research. However, more international recognition could be achieved if the methodological focus would not be so tightly oriented towards Finnish forest conditions. Science leadership in different fields might be possible.

For the success of their research, the co-operation with other research institutes and private companies within Finland seems to be a key-factor. They have a very intensive and well running national network. This is of benefit but misses a bit an international outreach. The research focus is definitely applied, which of course is a consequence of working in the applied science fields so important for Finland.

The publications are in high level journals of forest science. Although the group has a good number of publications, the impact might be improved if the RC would try to get more publications in sciences journals not only directed to forestry but to those areas which do not only apply to forestry, such as remote sensing and economics.

Numeric evaluation: 3.5 (Very good)

2.2 Practises and quality of doctoral training

- *Organising of the doctoral training in the RC. Description of the RC's principles for:*
 - *recruitment and selection of doctoral candidates*
 - *supervision of doctoral candidates*
 - *collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes*
 - *good practises and quality assurance in doctoral training*
 - *assuring of good career perspectives for the doctoral candidates/fresh doctorates*
- *Identification of the RC's strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.*
- *Additional material: TUHAT compilation of the RC's other scientific activities/supervision of doctoral dissertations*

ASPECTS: Processes and good practices related to leadership and management

The doctoral training seems to be well organized and the number of doctoral students is quite high in this RC. The doctoral students are allocated to different graduate schools according to their orientation. Most of the students are funded by grant money. A considerable number of PhD students work also in research or practical organizations, sometimes even in important positions. The PhD students are organized in supervisory groups which meet annually but interact more frequently. It might be of advantage to intensify the meeting intervals for at least twice a year.

A strength is a strong Nordic (NOVA University Network) cooperation in PhD courses (covering all agricultural sciences), which also includes a Baltic dimension. In forest technology, the first Finnish-Swedish graduate school has been established and wood science participates in an international school.

From the names of doctoral students one could conclude that the relationship between foreign and Finnish doctoral students is 25 % and 75 %. However, numbers are missing and today names do not necessarily indicate nationality. It is not reported how many Finnish students are going abroad as post-docs.

A clear strength in the doctoral program is the publication activity. It is highlighted that half of the papers must be accepted before submitting the thesis. One can see that papers in article-based dissertations are submitted to peer reviewed journals but information on how many papers need to be submitted in total and how many need to be published in peer-reviewed journals is not provided in the report. No information is given on the relation between cumulative theses and monographs. It would also be interesting to know the number of international examiners.

Ideas to improve the resource base for post-doctoral students are not described, although they are highlighted as important.

Numeric evaluation: 4 (Excellent)

2.3 The societal impact of research and doctoral training

- *Description on how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).*
- *Identification of the ways to strengthen the societal impact of the RC's research and doctoral training.*
- *Additional material: TUHAT compilation of the RC's other scientific activities.*

ASPECTS: Societal impact, national and international collaboration, innovativeness

The RC has good networks and communication with all major Finnish forest industries and organizations. This seems to be real for all the sub-fields of the RC. Within Finland there is an indication of a high societal impact by the group. A recent example is the development of regional forest programs, which relates to the whole Finnish society because forests are in general of high importance in Finland.

It may even be that while in Finland, the number of doctoral students is regarded to be in many fields more than sufficient, there is a social demand to increase doctoral degrees in the fields represented by the RC to further the innovation capacity and renewal processes in forest and related industries, including marketing and wood science. Also in this sense the work in the doctoral training within the RC deserves to be recognized.

While the national societal impact by the group is remarkable, it seems that international impact can be improved. It seems the RC is not represented for example in the international standardization work or similar constellations. This is not easy to understand for a group specialized in applied research.

Numeric evaluation: 4 (Excellent)

2.4 International and national (incl. intersectoral) research collaboration and researcher mobility

- *Description of*
 - *the RC's research collaborations and joint doctoral training activities*
 - *how the RC has promoted researcher mobility*
- *Identification of the RC's strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.*

ASPECTS: Scientific quality, national and international collaboration

It has been earlier recognized that the RC has quite a lot of national and intersectoral collaboration and joint doctoral training activities.

There are some activities described on international joint projects and international student exchange. However, even when taking the largely Nordic doctoral training program into consideration, it seems that there is room for international activities to be enhanced.

However, besides the Nordic research cooperation, which in some cases can already be seen as a common playground, in some fields the research connections to North America are well-developed, as in forest products marketing and economics. An important issue, although a less visible form of research cooperation, is the editorial boards of forest scientific journals, where the RC is well presented.

However, the number of international co-operations is limited and joint research projects are not described in detail.

Numeric evaluation: 3 (Very good)

2.5 Operational conditions

- *Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).*
- *Identification of the RC's strengths and challenges related to operational conditions, and the actions planned for their development.*

ASPECTS: Processes and good practices related to leadership and management

The operational conditions seem to be satisfying since the different forest units at the University are recently jointed into one Department of Forest Sciences. The larger size of the department compared to the situation before improves cooperation within the different forest science directions and makes forest research more visible to the outside. It also is supposed to bring savings in administration costs. The Department of Forest Sciences is a large department at European scale (excluding Russia) with 18 professors and 12 lecturers. The number of professors and lecturers relates well to the number of PhDs, in particular in the fields of the RC where there is no overproduction as also the private sector may provide employment. A lot of working capacity is probably needed for the relatively high number of MSc students.

The education stations seem to have top equipment in the field of remote sensing and they are in general of high importance for the training of doctoral students.

In total, the working conditions are described as very good but the administrative and teaching working load is mentioned as very high. The number of MSc and PhD students however seems not to be above of what can be observed in other countries. The workload in administration is not described quantitatively and cannot therefore be evaluated on the basis of the report.

2.6 Leadership and management in the researcher community

- *Description of*
 - *the execution and processes of leadership in the RC*
 - *how the management-related responsibilities and roles are distributed in the RC*
 - *how the leadership- and management-related processes support*
 - *high quality research*
 - *collaboration between principal investigators and other researchers in the RC*
 - *the RC's research focus*
 - *strengthening of the RC's know-how*
- *Identification of the RC's strengths and challenges related to leadership and management, and the actions planned for developing the processes*

ASPECTS: Processes and good practices related to leadership and management

There is no clear leadership structure within the RC. Depending on the research topic, leadership positions in the research group are formed ad hoc. The system of leadership is very flexible and changes according to the funded projects.

The research topic of the RC is very wide and therefore nearly all research topics of the research groups fit under the overall topic. It seems as if work to catalyze cooperation between research groups is not present.

A more focused discussion on research topics might give a better chance to achieve excellence in a certain area and provide better chances to go for larger national and international funding. Sustainable leadership and more intense cooperation between the leaders could support the process of focusing the research and making the best use of the existing expertise.

2.7 External competitive funding of the RC

- *The RCs were asked to provide information of such external competitive funding, where:*
 - *the funding decisions have been made during 1.1.2005–31.12.2010, and*
 - *the administrator of the funding is/has been the University of Helsinki*
- *On the e-form the RCs were asked to provide:*
 - 1) *The relevant funding source(s) from a given list (Academy of Finland/Research Council, TEKES/The Finnish Funding Agency for Technology and Innovation, EU, ERC, foundations, other national funding organisations, other international funding organizations), and*
 - 2) *The total sum of funding which the organisation in question had decided to allocate to the RCs members during 1.1.2005–31.12.2010.*

Competitive funding reported in the text is also to be considered when evaluating this point.

ASPECTS: Scientific quality, scientific significance, societal impact, innovativeness and future significance

The RC seems to be successful in gaining national funding, although the report does not clearly say if the achieved funding is sufficient for the research goals. It seems the received funding is in a slightly lower range compared to the funding of other RCs.

International funding is not reported. It may be a logical result of the fact that most applications seem to be based on individual ideas with a few working for the build-up of larger interdisciplinary projects. Strategies for successful international funding applications should be developed.

2.8 The RC's strategic action plan for 2011–2013

• *RC's description of their future perspectives in relation to research and doctoral training.*

ASPECTS: Scientific quality, scientific significance, societal Impact, processes and good practices related to leadership and management, national and international collaboration, innovativeness, future significance

The RC identifies a number of research fields in which they want to be active. The research fields identified are important, however a connecting overall idea is not clearly detectable. They identify by themselves that they need a more integrated approach. For the future, probably an interdisciplinary approach on one challenging topic or problem needs to be in the focus of the research.

2.9 Evaluation of the category of the RC in the context of entity of the evaluation material (1-8)

The RC's fitness to the chosen participation category.

Category 5. The research of the participating community has a highly significant societal impact.

The group has strengths in research especially in the fields of inventory technologies and management strategies. However, it seems that the whole community still has a lot potential to improve if they would make better use of the whole expertise existing within the RC. Especially in the international networking, there is still room for improvement.

The RC has chosen category 5 'Research of the participating community has highly significant societal impact', which is the correct category since societal impact is the major result of the applied research, which is in the focus for the RC.

Numeric evaluation: 4 (Excellent)

2.10 Short description of how the RC members contributed the compilation of the stage 2 material

The RC has taken a good approach to integrate the opinion of all staff members. All have given their inputs and after the compilation of the report they had the possibility to review the final outcome. However, workshops and discussions including PhD students to prepare the report might have been fruitful especially for the establishment of strategic action plans.

2.11 How the UH's focus areas are presented in the RC's research

Focus area 1: the basic structure, materials and natural resources of the physical world

The University of Helsinki's (UH's) focus areas are in many fields represented in this RC, especially those fields focusing on academic career and doctoral education. The RC might better exploit their potential by improving internationality and trying to build up internationally acknowledged infrastructures for research in the field of "Environmental and Climate Sciences".

2.12 RC-specific main recommendations

- Establish leadership structures to have a better support for a more focused multidisciplinary research development.
- Go for more international projects.
- Establish structures and financial support to actively increase research cooperation between groups within the RC.
- Methodologically the work of most of the sub-groups is very advanced and a wide range of scientific methods are used. The excellence of the work might even be increased by collaboration with researchers and departments of relevant basic sciences (such as economics, statistics etc) specialized in method development. To widen perspectives, it is probably better if these partners do not have forestry as their main research area.
- Bioenergy could be a challenging topic. Is the low interest towards this subject due to the national division of work?

2.13 RC-specific conclusions

This is a big RC with high valued applied research and with high national, societal value. However, there is a need to work in order to focus research and increase research collaboration, both within the RC and with external research partners.

3 Appendices

- A. Original evaluation material
 - a. Registration material – Stage 1
 - b. Answers to evaluation questions – Stage 2
 - c. List of publications
 - d. List of other scientific activities
- B. Bibliometric analyses
 - a. Analysis provided by CWTS/University of Leiden
 - b. Analysis provided by Helsinki University Library (66 RCs)



International evaluation of research and doctoral training
at the University of Helsinki 2005-2010

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW

NAME OF THE RESEARCHER COMMUNITY:
Sustainable Forest Value Chains (SUVALUE)

LEADER OF THE RESEARCHER COMMUNITY:
Professor Lauri Valsta, Department of Forest Sciences

RC-SPECIFIC MATERIAL FOR THE PEER REVIEW:

- Material submitted by the RC at stages 1 and 2 of the evaluation
 - STAGE 1 material: RC's registration form (incl. list of RC participants in an excel table)
 - STAGE 2 material: RC's answers to evaluation questions
- TUHAT compilations of the RC members' publications 1.1.2005-31.12.2010
- TUHAT compilations of the RC members' other scientific activities 1.1.2005-31.12.2010
- Analysis of publications data carried out by both CWTS and UH Library – results of UH Library analysis will be available by the end of June 2011

NB! Since Web of Science(WoS)-based bibliometrics does not provide representative results for most RCs representing humanities, social sciences and computer sciences, the publications of these RCs will be analyzed by the UH Library (results available by the end of June, 2011)



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE
UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

1 RESPONSIBLE PERSON

Name: Valsta, Lauri

E-mail:

Phone: +358 9 1915 7971

Affiliation: Department of Forest Sciences

Street address: Latokartanonkaari 7, 00014 University of Helsinki

2 DESCRIPTION OF THE PARTICIPATING RESEARCHER COMMUNITY (RC)

Name of the participating RC (max. 30 characters): Sustainable Forest Value Chains

Acronym for the participating RC (max. 10 characters): SUVALUE

Description of the operational basis in 2005-2010 (eg. research collaboration, joint doctoral training activities) on which the RC was formed (MAX. 2200 characters with spaces): The practical motivation for the researcher community (RC) is the common object of scientific research. Forest value chains are formed by the multiple processes where individuals, companies and societies transform the biological-physical characteristics and products of the forests into multiple values for the consumers and the society. The RC members study these value chains at their different stages and with different scientific disciplines. These studies are mostly classified as applied research: they take physical measurements and observations, apply statistics, geographical information processing, economics, marketing and policy analysis on the multiple forest products and services.

The scientific information of this RC forms a continuum across research groups. Two following paths of information flows are given as examples: forest measurements and assessment - forest modelling – silvicultural alternatives – forest planning – economic evaluation; measurements – harvesting of trees – transportation to processing – industrial wood processing – marketing of wood products. The research of each group builds on other parts of the chain and many studies cover two to three stages of a chain. Besides the physical forest variables, there is a chain of information, which can add the value of each separate decision. For instance, using modern laser scanning techniques and GIS in measurements rather than traditional visual observation may enhance forest plans concerning the silvicultural treatment alternatives resulting in higher income. Likewise, better information on the trees to be harvested may mean added value to the industry through precise bucking of stems, better utilization of the logs in the mills, and more customer-oriented products. In the end, economic evaluation of the value of information should enable an optimal level of information collection throughout the process.

The results of the different subgroups of the RC are being utilized in the same kind of activities in the society: forestry practices, forestry extension, forest industry, and forest policy design. In addition to research, the community shares PhD projects across individual research lines.



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE
UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

3 SCIENTIFIC FIELDS OF THE RC

Main scientific field of the RC's research: biological, agricultural and veterinary sciences

RC's scientific subfield 1: Forestry

RC's scientific subfield 2: Economics

RC's scientific subfield 3: Operations Research and Management Science

RC's scientific subfield 4: Remote Sensing

Other, if not in the list: Technology and Engineering; Materials Science: Paper and Wood

4 RC'S PARTICIPATION CATEGORY

Participation category: 5. Research of the participating community has a highly significant societal impact

Justification for the selected participation category (MAX. 2200 characters with spaces): Research in the Department of Forest Sciences is aligned with the mission of the Faculty of Agriculture and Forestry that promotes sustainable use of natural resources and human wellbeing through scientific research and teaching. Therefore, research in the Department is a combination of basic and applied research, and the SUVALUE research community aims to support decision making in forestry, forest industry, and forest policy.

Acquisition of forest-planning data is currently in a phase of radical change. In Finland, operative forest planning is evolving into a methodology through which stock characteristics are estimated by means of tree-wise measured sample plots and area-based statistical features of airborne laser scanning (ALS) data and digital aerial photographs. Research groups of the RC have been participants in the development of new forest inventory and planning systems based on this new level of information.

Research in forest and wood technology has been done partly in collaboration with the Finnish forest industry and helps the industry to manage its challenges on new raw material requirements and its logistics and processing.

For planning the Finnish forest policy, timely information about the goals and preferences of forest owners and the general public are essential. Research groups within the RC have provided important information on these topics. Some of the results have also generated vivid public discussion, for example the issues of forest conservation and clear cuts. Several studies have also contributed to other economics issues of forest policy and environmental policy, utilized by the Ministry of Agriculture and Forestry and the Ministry of the Environment. Moreover, methods and guidelines applicable for the National and Regional Forestry Programme planning processes have been developed together with the Ministry of and the responsible persons in Forestry Centres, in order to facilitate the next round of Regional Forest Plans preparation.



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE
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RC-SPECIFIC STAGE 1 MATERIAL (registration form)

5 DESCRIPTION OF THE RC'S RESEARCH AND DOCTORAL TRAINING

Public description of the RC's research and doctoral training (MAX. 2200 characters with spaces): The research community forms a multidisciplinary community that is linked to other research institutions participating in forest-related research, and all major forest organizations and companies.

Research in Forest mensuration and management has concentrated on developing next-generation forest management decision support systems in which the main project has been the SIMO-project, realized together with all major forest companies and organizations in Finland. Improved forest information and supply chain has been developed by means of advanced laser measurements at individual tree and stand level with airborne and terrestrial scanning methods.

In the field of wood technology the research has focused on clarifying the properties and usability of wood material for different processes and products. The research includes 1) the qualitative and quantitative potential of wood raw material when applying different sorting systems for round wood in spruce stands, 2) the use of pine pulpwood instead of spruce in mechanical pulping and 3) the tests and evaluation of novel cellulose based materials for different end-uses.

In forest technology and logistics there have been three major research focus areas: 1) Forest-level bucking optimization and timber allocation, 2) forest roads, and 3) forest procurement logistics (bioenergy).

In the field of forest products marketing and business management, the focused research areas include 1) the role of corporate responsibility in the forest sector and 2) the analysis of resources and capabilities for achieving firm-level competitive advantage. Growing societal and consumer awareness on environmental sustainability of forest products and services are also important topics of ongoing research in the field.

The values, preferences and behaviour of non-industrial forest owners has been a central research area in forest economics using both surveys and econometric models. The economic and environmental impacts of wood production, carbon sequestration and biodiversity have been analyzed at private and societal level. The acceptability of forest and environmental policy has been studied in a multidisciplinary team.

Significance of the RC's research and doctoral training for the University of Helsinki (MAX. 2200 characters with spaces): The Faculty of Agriculture and Forestry of the University of Helsinki promotes sustainable use of natural resources and human wellbeing through scientific research and teaching. The RC matches this goal because its central viewpoint is the reconciliation of different human needs for forests and its products in a sustainable way. As forests are the most dominant natural resource of Finland, the University is able to significantly contribute to this sector through the work of the RC.



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

Strengthening the national innovation system is one of the University's goals for societal interaction. The co-operation of the RC with key private companies and the TEKES, and the spin-up activity from the RC are valuable for the University. This has resulted in rapid dissemination of the results to the community, and the importance of the work to the community. Research co-operation has included the Finnish Forest Research Institute (Metla), the Technical Research Centre of Finland (VTT), KCL (Keskuslaboratorio Oy), Finnish Geodesic Institute, University of Eastern Finland, Aalto University School of Science and Technology and TEKES. Moreover, the research community is well connected with the forestry practice (e.g., Metsähallitus, Forestry Centres, Tapio, UPM-Kymmene, Tornator, Stora Enso).

The RC scientists publish in all major scientific journals of its field. Hence, the RC participates in developing the high international reputation of the University of Helsinki. Together with the international M.S. programme in the Department (one of the very first ones in the University), the RC research also attracts foreign doctoral students. The doctoral students have been employed domestically and also internationally to a variety of organizations, many already during their doctoral studies. The RC participates actively in the national and Nordic doctoral schools of its field.

Keywords: Forest mensuration

Remote sensing

Geographic information system

Forest management

Forest planning

Forest technology

Wood technology

Forest economics

Forest products marketing

Business management

6 QUALITY OF RC'S RESEARCH AND DOCTORAL TRAINING

Justified estimate of the quality of the RC's research and doctoral training at national and international level during 2005-2010 (MAX. 2200 characters with spaces): The RC scientists actively publish in all major scientific journals of its field. These include both North American journals: Forest Science, Canadian Journal of Forest Research, Remote Sensing of Environment; and European journals: Forest Ecology and Management, Forest Economics and Policy, European Journal of Forest Research, Journal of Forest Economics, Silva Fennica, Scandinavian Journal of Forest Research as well as domestic journals: Metsätieteen aikakauskirja. Several members of the RC have been active and held positions in the International Union of Forest Research Organizations (IUFRO).



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING AT THE
UNIVERSITY OF HELSINKI

RC-SPECIFIC STAGE 1 MATERIAL (registration form)

The high relevance to information needs of the forest sector is shown in the co-operation with all important forestry organizations in Finland, with the large forest industry companies, and the relevant ministries (Ministry Agriculture and Forestry, Ministry of the Environment, Ministry of Employment and the Economy)

The doctoral training utilizes domestic graduate schools (e.g., GSFOREST) and international networks. The RC participates in Nova University networks in wood technology, forest technology and logistics, and forest planning and inventory. Forest technology and logistics is involved in the FIRST Finnish-Swedish graduate school. Wood technology is also participating in the International PaPSaT Doctoral Programme. In addition, the WSE (Nordic-Baltic Network in Wood Material Science and Engineering) and OSCAR (Operations Systems Centre of Advanced Research) are arranging seminars for researchers and PhD students.

More than in the average, theses produced in the RC have been evaluated to belong to the higher grade of dissertations, "accepted with distinction", and have also received prizes by the Finnish Society of Forest Sciences. After graduation, the PhDs have been employed by a variety of organizations ranging from businesses to the academia. Also, several PhD students currently work in different forestry organizations and improve their knowledge and know-how by making a PhD while working at the same time. This means rapid dissemination of the results to the community, and the relevance of the work to the community.

Comments on how the RC's scientific productivity and doctoral training should be evaluated (MAX. 2200 characters with spaces): We propose that the RC's scientific productivity is assessed in a way that takes into account the average number of citations in the journal articles in the field of the RC (forest mensuration, management, technology, economics, and marketing). As we are participating in category 5, we propose that a panel for societal impact is established at least at the main scientific field level.

The publishing strategy encompasses a wide spectrum of channels. These include the primary international scientific journals in the fields of the research groups. It should be noted that the RC applies several scientific methods and, therefore, the journals are partly different. Additionally, the RC publishes in domestic journals such as Metsätieteen aikakauskirja and Maanmittaus. The co-operation with all the main forestry organizations and companies in Finland provides dissemination of research results.

LIST OF RC MEMBERS

NAME OF THE RESEARCHER COMMUNITY:		Sustainable Forest Value Chains (SUVALUE)			
RC-LEADER		L. Valsta			
CATEGORY		5			
	Last name	First name	PI-status (TUHAT, 29.11.2010)	Title of research and teaching personnel	Affiliation
	Alho	Petteri		Adjunct prof. (external)	University of Turku
1	Amberla	Tomi		Doctoral candidate	Pöyry Management Consulting
2	Barua	Sepul		Doctoral candidate	UH, Department of Forest Sciences
3	Bayazidi	Saeed		Doctoral candidate	UH, Department of Forest Sciences
4	Berghäll	Sami		University lecturer - scientific expert (external)	UH, Department of Forest Sciences
5	Cao	Tianjian		Doctoral candidate - professor (external)	UH, Department of Forest Sciences
6	Dahlin	Bo	x	Professor	UH, Department of Forest Sciences
7	Eyvindson	Kyle		Doctoral candidate	UH, Department of Forest Sciences
	Forsström	Juha		Researcher (external)	VTT
	Haggren	Henrik		Professor (external)	AALTO University/TKK
8	Haltia	Emmi		Doctoral candidate	Pellervo Economic Research Institute
	Hansen	Eric		Professor (external)	Oregon State University, USA
9	Havimo	Mikko		Doctoral candidate	UH, Department of Forest Sciences
10	Hokajärvi	Raili		Doctoral candidate	OAMK
11	Holopainen	Markus	x	University lecturer / Adjunct prof.	UH, Department of Forest Sciences
12	Horne	Paula		Doctoral candidate	Pellervo Economic Research Institute
13	Hovi	Aarne		Doctoral candidate	UH, Department of Forest Sciences
14	Hujala	Teppo		Doctoral candidate - post doc (external)	Finnish Forest Research Institute
	Hyypä	Juha		Professor (external)	Finnish Geodetic Institute
15	Hyypä	Hannu		Adjunct prof. (Aalto University/TKK)	AALTO University/TKK
	Hänninen	Riitta		Senior researcher (external)	Finnish Forest Research Institute
16	Ibrahim	Favada		Doctoral candidate - pos doc researcher (external)	the Observatory for European Forests
	Jaakkola	Anttoni		Researcher (external)	Finnish Geodetic Institute
17	Juslin	Heikki	x	Professor	UH, Department of Forest Sciences
18	Jylhä	Paula		Doctoral candidate	Finnish Forest Research Institute
	Jyske	Tuula		Researcher (external)	Finnish Forest Research Institute
19	Kaakkurivaara	Tomi		Doctoral candidate	Finnish Forest Research Institute
	Kaartinen	Harri		Researcher (external)	Finnish Geodetic Institute
	Kaasalainen	Sanna		Post doc researcher (external)	Finnish Geodetic Institute
	Kallio	Maarit		Senior researcher (external)	Finnish Forest Research Institute
	Kangas	Hanna-Liisa		Researcher (external)	Finnish Forest Research Institute
20	Kangas	Annika	x	Professor	UH, Department of Forest Sciences
21	Kantola	Tuula		Doctoral candidate	UH, Department of Forest Sciences
	Karjalainen	Mika		Post doc researcher (external)	Finnish Geodetic Institute
22	Karppinen	Heimo	x	Professor	UH, Department of Forest Sciences
23	Kettula	Kirsi		Doctoral candidate	UH, Department of Forest Sciences

24	Kivinen	Veli-Pekka		University lecturer	UH, Department of Forest Sciences
25	Korhonen-Sande	Silja		Doctoral cand. - postdoctoral researcher (external)	UH, Department of Forest Sciences
26	Korpela	Ilkka	✗	University researcher	UH, Department of Forest Sciences
27	Korpunen	Heikki		Doctoral candidate	Finnish Forest Research Institute
	Kukko	Antero		Researcher (external)	Finnish Geodetic Institute
28	Kuuluvainen	Jari	✗	Professor	UH, Department of Forest Sciences
	Laaksonen-Craig	Susanna		Research director (external)	Ministry of Forest and Range, British Columbia, Kanada
29	Laamanen	Risto		Doctoral candidate	Metsähallitus employee
	Laturi	Jani		Researcher (external)	Finnish Forest Research Institute
30	Laurila	Jussi		Doctoral candidate	Seinäjoki University of Applied Sciences
31	Leino	Olli		Doctoral candidate	Indufor oy
32	Li	Ning		Doctoral candidate	UH, Department of Forest Sciences
	Liang	Xinlian		Researcher (external)	Finnish Geodetic Institute
	Litkey	Paula		Researcher (external)	Finnish Geodetic Institute
33	Lyhykäinen	Henna		Doctoral candidate	UH, Department of Forest Sciences
	Lähtinen	Katja		Senior researcher (external)	Finnish Environment Institute
34	Manavakun	Nopparat		Doctoral candidate	UH, Department of Forest Sciences
35	Melkas	Timo		Doctoral candidate	Metsäteho Oy
36	Mynttinen	Sinikka		Doctoral candidate	AALTO University/Mikkeli
	Mäkelä	Matti		Researcher (external)	Finnish Forest Research Institute
37	Mäkinen	Antti		Doctoral candidate	SIMOsol employee
38	Mönkkönen	Petteri		Doctoral candidate	UH, Department of Forest Sciences
39	Neuvonen	Marjo		Doctoral candidate	Finnish Forest Research Institute
40	Petty	Aaron		Doctoral candidate	UH, Department of Forest Sciences
	Pingoud	Kim		Senior researcher (external)	VTT
41	Pohjola	Johanna		researcher - Post doc	UH, Department of Forest Sciences
42	Primmer	Eeva		Doctoral candidate	Finnish Environment Institute
	Puttonen	Eetu		Researcher (external)	Finnish Geodetic Institute
43	Rantala	Tapio		Doctoral candidate	UH, Department of Forest Sciences
44	Rasinmäki	Jussi		Doctoral candidate	SIMOsol employee
45	Rekola	Mika	✗	University lecturer	UH, Department of Forest Sciences
46	Rikala	Juha		University Lecturer	UH, Department of Forest Sciences
47	Rissanen	Antti		Doctoral candidate	UH, Department of Forest Sciences
48	Räty	Minna		Doctoral candidate	UH, Department of Forest Sciences
49	Saarela	Svetlana		Doctoral candidate	Finnish Forest Research Institute
50	Sipi	Marketta	✗	Professor	UH, Department of Forest Sciences
51	Talvitie	Mervi		Doctoral candidate	UH, Department of Forest Sciences
52	Toivonen	Ritva		Doctoral candidate	Tapio
53	Toppinen	Anne	✗	Professor	UH, Department of Forest Sciences
	Uusivuori	Jussi		Professor (external)	Finnish Forest Research Institute

	Vaaja	Matti		Researcher (external)	AALTO University/TKK
54	Valkeapää	Annukka		Doctoral candidate	UH, Department of Forest Sciences
55	Valsta	Lauri	x	Professor	UH, Department of Forest Sciences
56	Wan	Minli		Doctoral candidate	UH, Department of Forest Sciences
57	Wang	Lei		Doctoral candidate	UH, Department of Forest Sciences
58	Vastaranta	Mikko		Doctoral candidate	UH, Department of Forest Sciences
	Viitanen	Kauko		Professor (external)	AALTO University/TKK
59	Xia	Belle		Doctoral candidate	UH, Department of Forest Sciences
	Yu	Xiaowei		Post doc researcher (external)	Finnish Geodetic Institute



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RC-SPECIFIC STAGE 2 MATERIAL

BACKGROUND INFORMATION

Name of the RC's responsible person: Valsta, Lauri

E-mail of the RC's responsible person:

Name and acronym of the participating RC: Sustainable Forest Value Chains, SUVALUE

The RC's research represents the following key focus area of UH: 1. Maailman perusrakenne, materiaalit ja luonnonvarat – The basic structure, materials and natural resources of the physical world

Comments for selecting/not selecting the key focus area: None of the focus areas apply well on our RC because we study renewable natural resources (forests) as a source of human well-being.

1 FOCUS AND QUALITY OF RC'S RESEARCH (MAX. 8800 CHARACTERS WITH SPACES)

- **Description of the RC's research focus, the quality of the RC's research (incl. key research questions and results) and the scientific significance of the RC's research for the research field(s).**

The broad research focus is identified in the name of the RC, Sustainable Forest Value Chains. Forest value chains are formed by the multiple processes where individuals, companies and societies transform the bio-physical characteristics and products of the forests into multiple values for the consumers and the society. The RC members study and compose these value chains at their different stages and with different scientific disciplines. The activity is mostly classified as applied, empirical research that uses physical measurements and observations, apply statistics, geographical information processing, economics, marketing and policy analysis on the multiple forest products and services.

The RC scientists actively publish in all major scientific journals of its field. These include journals from N. Am.: Forest Science, Canadian J of For. Res., Remote Sensing of Environment; Europe: Empirical Economics, For. Ecology and Management, For. Economics and Policy, European J of For. Res., J of For. Econ., Silva Fennica, Scand. J of For. Res. and Finland: Metsätieteen aikakauskirja. Of these, For. Sci. (SNIP 0.861 2009), For. Ecol. & Mgmt (0.801), For. Pol. & Econ. (0.749), and J of For. Econ. (0.839) and Remote Sens. of Env. (1.436) are at least 1.5 times above the average in the field, measured with source-normalized impact per paper (SNIP), which relates the citations to the citation potential in the field.

The RC consists of seven research groups and each of them has its research focus.

The application-oriented research in optical remote sensing has focused on method development within digital photogrammetry as well as airborne and terrestrial laser scanning. Several RC members have influenced this emerging area where the technical advances in sensors, navigation, and data processing have opened new possibilities and have resulted in paradigm changes for forest inventories.

In forest planning, the main aim is to improve decisions at stand level, forest level and also at region level. New planning engines and calculation systems were defined that can be used with the new forest inventory data, new forest values and functions as well as various stakeholders. Also, more cost-efficient data acquisition techniques have been designed, enabling concentrating the measurement efforts to variables that improve the decisions most.

In wood technology the main research areas include 1) the raw material potential of spruce wood while applying different sorting systems for roundwood to evaluate suitability for different products and



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processes, 2) expanding the use of pine in mechanical pulping by examining the causes for the high energy consumption and 3) to evaluate the suitability of novel cellulose based materials produced by the laboratory of Organic Chemistry for smart end use products.

The research in the economics of stand management has focused on reconciling timber production and climate change mitigation objectives. Timber revenues, value of forest carbon storage as well as the avoided emissions due to wood material and energy used were included in optimization and simulation models to analyze tradeoffs and costs and benefits of climate policy measures.

The forest- and nature conservation policy group has had three foci. The legitimacy of forest and nature conservation policies as experienced by the Finnish population at large as well as by non-industrial private forest owners are studied using both qualitative and quantitative methods with data on print media discourses, interviews with administrative officials, and a mail surveys. The results also include the structural evolution of non-industrial private forest ownership and factors affecting forest owners' harvesting behaviour in Finland. The foci also include studies on the non-market benefits of forests produced by forest conservation programs as measured by stated preference methods, and forest owners' willingness to accept compensation on producing environmental benefits in their forests.

In the forest products marketing and management research group, the focused research areas include 1) the role of corporate responsibility (CR) in the forest sector and 2) the analysis of resources and capabilities for achieving firm-level competitive advantage. CR is important for identifying the role of multiple stakeholders and for helping to legitimize industry and manage various risks associated with globalizing operations. Concerning creating the forest industry company competitive advantage, the research emphasis has been in the wood industry.

The highlights of the remote sensing RG include 1) the first empirical proof of the applicability of the radar theory in LiDAR backscatter amplitude data, 2) the first results in directional reflectance anisotropy of trees in radiometrically calibrated aerial images, 3) the first results showing the importance of proximity effects in passive remote sensing caused by multiple scattering in the canopy. These results have general importance in the optical remote sensing of vegetation. The RG members have been active in setting the trend by applying sensor fusion and 3D object interpretation, which is becoming the standard in forest remote sensing applications.

The forest planning group has analyzed the effect of uncertainty on forest decisions. Compared to many research groups in the world, we have also been able to include new sources of uncertainty, such as uncertainty concerning the prices of timber, timber quality and growth predictions into the analysis. We have also been able to improve the realism in the description of uncertainty through analyzing the structure and distributions of the errors rather than just mean and variance. In addition, we have introduced data mining techniques in searching and correcting very large errors, in order to improve the quality of decisions.

In forest technology and logistics RG, a novel approach to forest-level bucking optimization was developed together with domestic partners. The model combines stem-level log bucking with stand-level log allocation through an iterative genetic algorithm process that maximizes the profit margin at the forest level. For the first time, the optimization process considered all the logistic costs, the processing costs of various wood products, product demands, and stand characteristics. This optimization tool can be used for both tactical and operative planning in wood procurement.



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The economics of stand management group has, together with the VTT scientists, developed a method to integrate forest management, carbon storage, and the amount of avoided emissions due to wood material and energy use. These analyses show the climatically optimal forest resource use.

The Legitimacy of Forest and Environmental Policy project initiated research on policy processes using methodologies of political sciences and social psychology, which was a new avenue in the forest economics studies in Finland. In the area of stated preference methods a new model type to estimate the citizens' willingness to pay for forest conservation was introduced. One RG introduced a new method of measuring forest owners' preferences which allows the direct inclusion of forest ownership objectives in the quantitative models explaining timber supply behavior. Also, for the first time in the field, nonindustrial private forest owners' timber supply decisions were modeled using a consistent econometric model which is able to take correctly into account the statistical properties of the survey data on forest owners' harvesting behavior.

• **Ways to strengthen the focus and improve the quality of the RC's research.**

The new merged forest sciences department will enhance co-operation between different disciplines in forest sciences. As an example, the business economics of forestry RG has teamed with ecological and climate science research at UH and has started in a new four-year research consortium where new elements of forest – climate change interactions will be covered in an ecological-economic model, including as new elements the albedo and aerosol effects.

Research priorities for the new Department have been developed as part of the University-wide process. The RC participates in three of the four research priorities in the Department: climate change, socio-economic change and the global forest industry, and the new methods for forest information management. The development of the research strategy of the new Department will be continued in 2011.

2 PRACTISES AND QUALITY OF DOCTORAL TRAINING (MAX. 8800 CHARACTERS WITH SPACES)

- How is doctoral training organised in the RC? Description of the RC's principles for recruitment and selection of doctoral candidates, supervision of doctoral candidates, collaboration with faculties, departments/institutes, and potential graduate schools/doctoral programmes, good practises and quality assurance in doctoral training, and assuring good career perspectives for the doctoral candidates/fresh doctorates.

Recruitment and selection of doctoral candidates takes different forms depending on the financial basis of research groups. The largest number of PhD students is funded by project and grant money from the Academy of Finland, Tekes and foundations – 14 students. Another major source is the Graduate School of Forest Sciences (GSForest) funded by the Academy of Finland – 7 students. Other sources are PhD student positions in the Department (currently 3) and the International Doctoral Program in Pulp and Paper Science and Technology (PaPSaT) - 2 students. Most commonly doctoral students come from the newly graduated masters. The positions are mostly announced internally in the department but sometimes also in the public through University recruiting. There are also several doctoral candidates working in the other research organizations outside the department.

Supervision of doctoral candidates is organized through supervisory groups (typically 3 professors or senior scientists) that meet usually annually but interact more frequently with the student as necessary, for example when individual study plans or manuscripts require attention.



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The doctoral candidates participate in the courses, seminars, meetings organized by different graduate schools in Finland, such as GSFforest, KATAJA for business administration, PAPSAT for pulp and paper science and technology and FIRST for industrial technology. In addition, the Nordic NOVA University system organizes doctoral courses in forest, agricultural and veterinary sciences, in which the students frequently participate. Nordic connections are also created through several groups that operate with SNS (the Nordic Forest Research Cooperation Committee).

All doctoral students seeking acceptance prepare a preliminary research and study plan. Together with the appointed advisor and within one year of acceptance, they prepare a detailed study plan that includes the selection of the advisory committee. The study plans are reviewed and approved by a Faculty-level committee to ensure consistency. The Faculty Office has a dedicated person for advising the doctoral students.

The majority of dissertations are compilations of peer-reviewed journal articles and a summarizing text. Faculty regulations require that at least half of the papers must have been accepted to publication before submitting the dissertation for grading, and the level of articles is high on the average (often all articles have been accepted). This gives the student invaluable training in how to get research published in international peer-reviewed journals.

The quality of doctoral dissertations is evaluated by two independent pre-examiners appointed by the Faculty Council. Based on their statements, the Faculty Council allows a dissertation to be printed and defended in the public. A third decision by the Faculty Council determines the grade for the dissertation based on a statement by the opponent, the pre-examiners and the custos.

The applied nature of research in our RC (solving problems that primarily have practical importance) results in expertise that is useful to several kinds of research and expert positions. Most doctorates have been employed outside the University in a variety of positions. In Finland, current employers include research institutes (Metla and SYKE) and expert organizations and companies such as Tekes, Tapio, Indufor and Simosol. Foreign appointments include Norwegian U of Life Sciences, Northeast A & F University in China and European Forest Institute office in France.

- RC's strengths and challenges related to the practises and quality of doctoral training, and the actions planned for their development.

In the future, development targets include, e.g., emphasizing the publication of doctoral research results in highest-quality, level A journals. Establishing a stronger resource base for the post-doctoral stage in the research career is also needed.

3 SOCIETAL IMPACT OF RESEARCH AND DOCTORAL TRAINING (MAX. 4400 CHARACTERS WITH SPACES)

- Description of how the RC interacts with and contributes to the society (collaboration with public, private and/or 3rd sector).

The high relevance to information needs of the forest sector is shown in the co-operation with all important forestry organizations in Finland, with the large forest industry companies, and with the relevant ministries (Agriculture and Forestry; Environment; Employment and the Economy).

In the Simo project, a new forest planning program was developed together with all major forestry organizations involved in forest planning, in private non-industrial, private industrial and state-owned forests. The open access program SIMO was developed in 2004-2007 in a project funded by TEKES, the forest organizations and the U of H. The project resulted in two PhD theses, and after the project, a spin-



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off company Simosol Oy was started and the company now further develops the SIMO system, being used by all major forestry organizations in Finland.

In the HyvAMO project, RC members in a research network with researchers from METLA and Oulu Polytechnic University were developing the planning process of regional forestry programs. The work was carried out in close co-operation with the Ministry and the Forestry Centres, which are responsible for the regional forestry program process in Finland. The project resulted in several peer-reviewed articles on the problems and possibilities of regional forest program (AMO) process as well as in detailed guidelines to be used in the next regional program process.

The new LiDAR-technology driven applications of forest inventory, in which we do R&D, are being adopted by stakeholders in Finland. These include forest companies, Metsähallitus, family forest owners and the businesses involved in the airborne work. The RC members are regular visitors at professional seminars as well as in continuing education events in Finland and Scandinavia. We have seen this as an essential part of dissemination of results and knowledge to speed up the technology transfer.

The wood technology researchers have a close cooperation with the forest industry, e.g., by participating in working groups developing a new research strategy for the Finnish wood product industry and revising the research strategy of the Finnish Forest Cluster and promoting the forest industry as a board member for the Centre of Expertise for Wood Products and as a member of the Finnish Support Group for the Forest Based Sector Technology Platform.

The stand management optimization models developed by the RC have been used in analyses for assessing the forest management recommendations in Finland issued by the Forest Development Centre Tapio. These recommendations influence strongly all forest management in Finland.

The policy researchers have participated in forest policy planning in Finland by, e.g., being a member of the Peer Review Group of the Indufor Oy and ITSU Oy assessing the Finnish National Forest Program 2015 (2007). The researchers also participated in a project financed by FAO on Forest Valuation and Financing in Serbia. Survey research on the opinions of Finnish citizens concerning forest harvesting, especially clear cuts, have initiated an active discussion on forest policy and various goals of forest owners. RC members in forest products marketing and management have acted in various scientific evaluation positions, and one chaired the Finnish Association of Forestry in 2005-6.

- Ways to strengthen the societal impact of the RC's research and doctoral training.

The continued strong societal impact will be based on policy and forestry relevant thesis topics with both short and long-term time horizons. Here we do not separate between doctoral training and research in general. We are actively supporting the activities of the Finnish Society of Forest Science and its sub-organizations, which arrange valuable seminars and meetings. RC members are available as experts for panels and working groups in various organizations in the forest sector and administration. More popularized articles could be written by the RC members and PhD-students. The alumni activity at UH will likely open new further possibilities. In all cases, high quality research and good reputation increase the impact.



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4 INTERNATIONAL AND NATIONAL (INCL. INTERSECTORAL) RESEARCH COLLABORATION AND RESEARCHER
MOBILITY (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the RC's research collaborations and joint doctoral training activities and how the RC has promoted researcher mobility.

Within the COST action FORSYS FTP0804 there is on-going active international co-operation in forest planning. In the short term scientific missions, young researchers can start developing their networks. Within these STSMs, Teppo Hujala has visited BOKU University, and Kyle Eyvindson will go to Spain. In addition, Isabella DeMeo from Italy visited the RC. Working in these groups provides good networks also for senior researchers. Similarly, working in IUFRO divisions enhances international collaboration. RC members have been officers in divisions 3, 4 and 5, and twice (Valsta) in the Scientific Committee of the IUFRO World Congresses.

At national level, there is close co-operation with research institutes within several research projects. Commonly researchers from both organizations work as supervisors of PhD students that work either in the University or in the research institute (with Metla for about 10 students, PTT Institute for two students, U. of Eastern Finland for 3 students, and also with the Finnish Geodetic Institute, Finnish Environment Institute - SYKE, Oulu U. of Applied Sciences and Lappeenranta U. of Technology. One PhD student in forest products marketing acts as managing director of Forestry Development centre Tapio.

The GSForest graduate school organizes and co-organizes several doctoral courses which are also open to doctoral students not funded in GSForest. The NOVA University network (e.g., in planning and inventory) provides a very good way for joint doctoral training, with one to two PhD courses organized every year, in four different universities.

In remote sensing, collaboration has included The Finnish Geodetic Institute (FGI), U of Eastern Finland, UMB in Norway, ETH Zürich, Håme U of Applied Sciences, Leica Geosystems AG, Metsähallitus, National Land Survey, as well as photogrammetry companies in Finland. Through co-operation we maintain two state-of-the-art experiments, Hyytiälä and Evo, which have attracted even sensor manufacturers. The FGI has provided the joint projects with radiometric instrumentation and expertise. Several research consortia were established in 2005 to 2010 to arrange for a special sensor and to collect substantial reference data to be shared amongst the consortium members. This see-through-and-share -approach has proven very beneficial.

The RG on climatic impacts of forest resource use works with the Technical Research Centre of Finland and Finnish Forest Research Institute through a common consortium and past activities. They include research co-operation with the Mid-Sweden University, SLU Umeå, UMB Norway and U. Washington, Seattle. These contacts have resulted in visits in both directions.

In remote sensing, the international research collaboration has involved only short visits (UMB – UH, ETH - UH, UH – ETH/Leica) after which work has continued, using daily internet-based on-line communication. This is not equivalent of mobility, but much more convenient, environment friendly and also cost-efficient. In 2009-2010, Felix Rohrbach from ETH was at UH for 4 months conducting reflectance anisotropy research.

Through arrangements in teaching, Valsta spent a six-month research period in 2005-6 in U. Washington, Seattle, for economics of climate change mitigation.



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- RC's strengths and challenges related to research collaboration and researcher mobility, and the actions planned for their development.

The RC members have a large number of research contacts with scientists in other Finnish institutions and abroad, as given in the member list. Co-operation in practice has been through joint research projects. It has proven difficult to maintain such co-operation for extended periods as funding opportunities tend to change. Part of the socio-economic research is country-specific and not always very interesting from the point of another country. However, methodological questions have enabled broader collaboration.

In remote sensing, collaboration between business partners and academic partners has been the key to success. Empirical research requires resources that are easiest available by collaboration. This is our strength - we have established personal relationships with foresters, researchers, data collectors, and some of the sensor manufacturers. In the near future, the potential of the new technology, LiDAR, will be mapped almost entirely. Active collaboration will then help in identifying the new areas in need of R&D.

5 OPERATIONAL CONDITIONS (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the operational conditions in the RC's research environment (e.g. research infrastructure, balance between research and teaching duties).

The RC operates mainly in the Department of Forest Sciences (DFS) that was formed 1.1.2010 by merging the existing three forestry departments. DFS is the larger of the two forestry science departments in Finland. It produces annually approximately 50 MS degrees (BS integrated), 10 doctoral degrees, has 18 professors, 12 lecturers, and about 13 BS+MS students (8 FTE) per teacher. The total staff of DFS is about 120. The budget amounts to about 9 million euros of which 1/3 is competitive, external funding.

Typically, a faculty member within our RC uses 15-20 % of time on doctoral students and 30 % on research. DFS has two research and education stations, Hyttiälä and Värriö. The first one is frequently used for research by the research groups in remote sensing and forest modeling and annually for teaching in several topics.

In remote sensing we now have the most versatile forest remote sensing experiment in the world at the Department's Forest Station in Hyttiälä. A particular advantage is the co-existence with the SMEAR-II station in Hyttiälä, which has state-of-the-art instrumentation for the monitoring of atmospheric conditions, weather parameters and the physiological status of the vegetation in the area.

- RC's strengths and challenges related to operational conditions, and the actions planned for their development.

The strengths of the RC build upon the several active research groups. The senior personnel are mostly in permanent positions. Many have fruitful co-operation with scientists outside DFS, e.g., the Finnish Forest Research Institute, the Geodetic Institute, the Technical Research Centre of Finland and the SIMOSOL company.

Key challenges include the lack of working time for research among professors and lecturers due to either administrative (the RC include a dean, a department head and a deputy department head) or student load (larger than the average in the department). Maintaining or increasing the funding level of the past (600 k€/a) will be a challenge and depends to a significant degree on the topical research



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programmes available at the Academy of Finland. An additional challenge is to increase the number of applicants for MS studies in order to be able to recruit gifted PhD students.

6 LEADERSHIP AND MANAGEMENT IN THE RESEARCHER COMMUNITY (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the execution and processes of leadership in the RC, how the management-related responsibilities and roles are distributed in the RC and how the leadership- and management-related processes support high quality research, collaboration between principal investigators and other researchers in the RC, the RC's research focus and strengthening of the RC's know-how.

The RC follows the strong research culture of freedom of science in the University of Helsinki. This means among other things that each scientist is guided by her/his personal research interests. In many cases that does mean linking with other people and forming research groups.

The Department of Forest Sciences has identified its main research topics. This has been done at a relatively general level and almost all research within the RC can be classified under these topics.

The actual leadership in the RC takes place in the seven research groups which are independent. The leadership varies according to the project setups existing at any given time and according to the dynamics in the group.

All management-related responsibilities are distributed to the research group level and assigned within research groups.

The RC works in varying networks. It means that the researchers in our field group and regroup according to each topic, and several PI's co-operate in each topic. The PI taking the leading role varies from topic to topic. Likewise, all researchers in the group work in several different networks including persons from different organizations around the world. These networks are thus not stable, and permanent or even long-term hierarchical leadership models do not apply.

One major factor affecting the organization of research groups are the funding opportunities. They influence on the formation of research groups filing in applications. Funding is usually very competitive. That forces the research groups to maintain high scientific quality.

- RC's strengths and challenges related to leadership and management, and the actions planned for developing the processes.

The bottom-up approach applied tries to maximize the creativity of research. The RC could organize more systematically larger-scale research brain storming and discussion sessions at times to nurture new ideas. The PIs of RC should all have taken formal training in research project leadership and management.

7 EXTERNAL COMPETITIVE FUNDING OF THE RC

- Listing of the RCs external competitive funding, where:
 - the funding decisions have been made during 1.1.2005-31.12.2010, and
 - the administrator of the funding is/has been the University of Helsinki



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- Academy of Finland (AF) - total amount of funding (in euros) AF has decided to allocate to the RC members during 1.1.2005-31.12.2010: 2530000
- Finnish Funding Agency for Technology and Innovation (TEKES) - total amount of funding (in euros) TEKES has decided to allocate to the RC members during 1.1.2005-31.12.2010: 380000
- European Union (EU) - total amount of funding (in euros) EU has decided to allocate to the RC members during 1.1.2005-31.12.2010: 0
- European Research Council (ERC) - total amount of funding (in euros) ERC has decided to allocate to the RC members during 1.1.2005-31.12.2010: 0
- International and national foundations – names of international and national foundations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
 - names of the foundations: Metsämiesten säätiö,
 - Suomen Luonnonvarain Tutkimussäätiö,
 - Nesslingin säätiö
 - total amount of funding (in euros) from the above-mentioned foundations: 430000
- Other international funding - names of other international funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
 - names of the funding organizations: SamNordisk Skogsforsking, European Space Agency
 - total amount of funding (in euros) from the above-mentioned funding organizations: 60000
- Other national funding (incl. EVO funding and Ministry of Education and Culture funded doctoral programme positions) - names of other national funding organizations which have decided to allocate funding to the RC members during 1.1.2005-31.12.2010, and the amount of their funding (in euros).
 - names of the funding organizations: U. of Helsinki funds, Scientific Advisory Board for Defence, Ministry of Agriculture and Forestry
 - total amount of funding (in euros) from the above-mentioned funding organizations: 330000

8 RC'S STRATEGIC ACTION PLAN FOR 2011–2013 (MAX. 4400 CHARACTERS WITH SPACES)

- Description of the RC's future perspectives in respect to research and doctoral training.

The RC covers a significant part of research in the Department of Forest Sciences (DFS). Therefore, the research strategy of the RC contains clear elements from that of the DFS.

The next three years will involve active R&D in optical airborne remote sensing. We will have a role in the development and adoption of radiometrically quantitative (optical, airborne) remote sensing. Our aim is to bridge gaps between the empirical and theoretically oriented approaches of RS. It will be challenging to find motivated PhD students from the forestry students.

In forest mensuration and remote sensing, the focus is in fully utilizing the possibilities of laser scanning. In planning, the main focus stays is in the uncertainty analysis and its effects on decision making. We will analyze the optimal data acquisition policies, including the timing, intensity, methodology and variables



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to be measured from the decision making point of view. In addition, we aim at finding a methodology to minimize the harmful effects on planning quality of the uncertainty in the preferences of the forest owners. This can be achieved through iterative preference information collection and planning efforts.

The research interests within the forest planning group will be better integrated in the future. We aim at maximizing the benefits of the DMs (from forest owner to society level) related to the costs in all research. We will base the forest inventory on the costs and benefits (due to improved decisions) of measuring given variables with given accuracy. Likewise, the C/B analysis is the basis for forest planning in a sense that planning should increase the benefits of a DM more than the planning efforts cost, the benefits measured in terms relevant to the DM. The same applies in the forest policy making, but related at the same time to several forest owners having different goals, attitudes and social norms. Last but not least, we aim at improving the cost-efficiency of all forest actions (or decisions concerning these actions) from cutting and bucking, logistics, processing and marketing of the products.

In forest and nature conservation policy group the research of forest owners' management behaviour will be emphasized. Forest management behaviour, e.g., stand improvement (SI) will be studied at the same time with two different theoretical approaches. First, the probability and the extent of SI will be analyzed applying regression-based models applying economic theory. Second, a socio-psychological attitude theory will be applied moving the focus of the research of SI to behavioral intentions, attitudes, beliefs and social norms. A socio-psychological perspective will be reinforced by studies on values. Schwartz's value theory will be applied in the studies on the values of the citizens, the forest owner' and the members of the parliament.

In forest products marketing and management, three future research themes are of importance, facilitating also closer collaboration with other RC members. (1) Due to increased industry internationalization and foreign investments, the forest sector faces greater supply chain complexity and exposure to new risks, including vulnerability to companies' corporate social responsibility image. Analysing stronger and more complex demands for overall accountability and social equity will therefore continue as important research topic, including also the rising role of consumption and production in China. (2) How environmental performance perceptions are associated with the market environment and values and attitudes in different socioeconomic groups (a new Nordic co-operation project initiated in 2011). An increased consumer interest for wooden products would entail substantial benefits in combating climate change. International research on consumer behavior is needed to determine how and on what grounds wooden products are chosen by the consumer by considering the whole landscape of environmental communication from producers to industrial buyers and end consumers at multiple stages in the value chain. (3) New business opportunities in the forest sector value chain have emerged in creation of markets for ecosystem services, non-wood forest products, as well as through rising energy prices and international and national policies towards promotion of wood-based bio-energy, creating important new forest products and services.

9 SHORT DESCRIPTION OF HOW THE RC MEMBERS HAVE CONTRIBUTED TO THE COMPILATION OF THE STAGE 2 MATERIALS (MAX. 1100 CHARACTERS WITH SPACES).

The principal investigators in the RC have given their views and texts on the different pieces of information. The texts were compiled on a wiki area by the PIs and finally edited by the RC leader to match the space limitations.



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1 Analysis of publications

- Associated person is one of Sepul Kanti Barua , Saeed Bayazidi , Bo Dahlin , Kyle Eyvindson , Emmi Noora Johanna Haltia , Mikko Havimo , Markus Holopainen , Aame Hovi , Heikki Juslin , Annika Kangas , Tuula Kantola , Heimo Karppinen , Kirsi Kettula , Veli-Pekka Kivinen , Ilkka Korpela , Jari Kuuluvainen , Jussi Markus Laurila , Olli Pekka Tapani Leino , Ning Li , Henna Tuulia Lyhykäinen , Timo Melkas , Antti Mäkinen , Petteri Mönkkönen , Aaron Petty , Johanna Pohjola , Tapio Rantala , Jussi Rasinmäki , Mika Rekola , Juha Rikala , Antti Rissanen , Minna Rätty , Marketta Sipi , Mervi Talvitie , Anne Toppinen , Annukka Valkeapää , Lauri Valsta , Sami Berghäll, Tianjian Cao , Minli Wan , Lei Wang , Mikko Vastaranta , Ibrahim Moulifa Favada, Teppo Hujala , Sijja Korhonen-Sande

Publication type	Publication year						Total Count 2005 - 2010
	2005	2006	2007	2008	2009	2010	
A1 Refereed journal article	21	23	15	17	23	41	140
A2 Review in scientific journal		1			3	4	8
A3 Contribution to book/other compilations (refereed)	8	14	7	8	6	5	48
A4 Article in conference publication (refereed)	3	1	9	17	15	10	55
B1 Unrefereed journal article	3	6	1	1	9	1	21
B2 Contribution to book/other compilations (non-refereed)	2	9	9	2	9	7	38
B3 Unrefereed article in conference proceedings		1	2	2	5	15	25
C1 Published scientific monograph	2	3	10	3	3		21
C2 Edited book, compilation, conference proceeding or special issue of journal		2	3	2	4		11
D1 Article in professional journal			1	1	2	2	6
D2 Article in professional hand or guide book or in a professional data system, or text book material		1		1	4	1	7
D4 Published development or research report				1	4	6	11
D5 Text book or professional handbook or guidebook or dictionary		1					1
E1 Popular article, newspaper article	7	8	6	3	4	4	32
E1 Popular contribution to book/other compilations	2	5	1		2		10



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2 Listing of publications

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D2 Article in professional hand or guide book or in a professional data system, or text book material

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RC-SPECIFIC TUHAT COMPILATIONS OF PUBLICATIONS DATA 2005-2010

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RC-SPECIFIC TUHAT COMPILATIONS OF OTHER SCIENTIFIC ACTIVITIES 2005-2010

SUVALUE/Valsta

1 Analysis of activities 2005-2010

- Associated person is one of Sepul Kanti Barua , Saeed Bayazidi , Bo Dahlin , Kyle Eyvindson , Emmi Noora Johanna Haltia , Mikko Havimo , Markus Holopainen , Aame Hovi , Heikki Juslin , Annika Kangas , Tuula Kantola , Heimo Karppinen , Kirsi Kettula , Veli-Pekka Kivinen , Ilkka Korpela , Jari Kuuluvainen , Jussi Markus Laurila , Olli Pekka Tapani Leino , Ning Li , Henna Tuulia Lyhykäinen , Timo Melkas , Antti Mäkinen , Petteri Mönkkönen , Aaron Petty , Johanna Pohjola , Tapio Rantala , Jussi Rasinmäki , Mika Rekola , Juha Rikala , Antti Rissanen , Minna Rätty , Marketta Sipi , Mervi Talvitie , Anne Toppinen , Annukka Valkeapää , Lauri Valsta , Sami Berghäll, Tianjian Cao , Minli Wan , Lei Wang , Mikko Vastaranta , Ibrahim Moullifa Favada, Teppo Hujala , Silja Korhonen-Sande

Activity type	Count
Supervisor or co-supervisor of doctoral thesis	22
Prizes and awards	7
Editor of research journal	71
Editor of research anthology/collection/conference proceedings	2
Peer review of manuscripts	108
Editor of series	4
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2 Listing of activities 2005-2010

Supervisor or co-supervisor of doctoral thesis

Heikki Juslin ,

Supervision of doctoral thesis, Heikki Juslin, 01.01.2005 → 31.12.2005, United States

Supervision of doctoral thesis, Heikki Juslin, 01.01.2006 → 30.06.2006, Switzerland

Supervision of doctoral thesis, Heikki Juslin, 01.01.2006 → 31.12.2006, Switzerland

Annika Kangas ,

Väitöskirjan ohjaus, Annika Kangas, 2000 → 2005, Finland

Väitöskirjan ohjaus, Annika Kangas, 2000 → 2009, Finland

Väitöskirjan ohjaus, Annika Kangas, 2004 → 2010, Finland

Supervision of doctoral thesis, Annika Kangas, 01.01.2005 → 31.12.2005, Finland

Väitöskirjan ohjaus, Annika Kangas, 2005 → 2009, Finland

Heimo Karppinen ,

Väitöskirjan ohjaus, Heimo Karppinen, 15.10.2006 → 08.10.2010, Finland

Ilkka Korpela ,

Supervision of PhD-thesis in forest inventory, Ilkka Korpela, 01.06.2003 → 19.10.2005

Supervision of PhD thesis in forest inventory, Ilkka Korpela, 01.04.2008 → 01.05.2010

Marketta Sipi ,

Supervisor of doctoral thesis, Marketta Sipi, 2005 → 2008, Finland

Supervisor of doctoral thesis, Marketta Sipi, 2005 → ..., Finland

Supervisor of doctoral thesis, Marketta Sipi, 2006 → 2010, Finland

Supervisor of doctoral thesis, Marketta Sipi, 2009 → ..., Finland

Supervisor of doctoral thesis, Marketta Sipi, 2009 → ..., Finland

Anne Toppinen ,

Sinikka Mynttinen, Anne Toppinen, 01.01.2008 → 10.06.2009

Supervision of doctoral thesis, Anne Toppinen, 01.01.2008 → 31.05.2009, Finland

Väitöskirjan ohjaus, Anne Toppinen, 01.01.2008 → ...

Väitöskirjan ohjaaja, Anne Toppinen, 01.01.2009 → ...

Väitöskirjan ohjaaja, Anne Toppinen, 01.12.2009 → ...

Lauri Valsta ,

PhD thesis supervision, Lauri Valsta, 18.05.2010, Finland

Prizes and awards

Veli-Pekka Kivinen ,

Prize for best Ph.D. dissertation of the Year in 2007, Veli-Pekka Kivinen, 10.04.2008, Finland

Prize for best Ph.D. dissertation of the year 2007 in the field of forest sciences, Veli-Pekka Kivinen, 24.04.2008, Finland

Good teacher of the year award, Veli-Pekka Kivinen, 25.05.2010, Finland

Ilkka Korpela ,

Hansa LuftBild Award 2008, Ilkka Korpela, 01.04.2008

Henna Tuulia Lyhykäinen ,



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Fulbright stipendi kaudelle 2008-2009, Henna Tuulia Lyhykäinen, 09.05.2008

Juhlarahaston apuraha, Henna Tuulia Lyhykäinen, 26.03.2008

Marketta Sipi ,

Knights First Class of the Order of the White Rose in Finland, Marketta Sipi, 2008, Finland

Editor of research journal

Bo Dahlin ,

Canadian Journal of Forest Research, Bo Dahlin, 01.01.2006 → 31.12.2006, Canada

Forestry studies, Bo Dahlin, 01.01.2006 → 31.12.2006, Estonia

International Journal of Forest Engineering, Bo Dahlin, 01.01.2006 → 31.12.2006, Canada

Silva Fennica, Bo Dahlin, 01.01.2006 → 31.12.2006, Finland

Heikki Juslin ,

Journal of Forest Products Business Research, Heikki Juslin, 01.01.2005 → 31.12.2005, United States

Journal of Forest Products Business Research, Heikki Juslin, 01.01.2005 → 31.12.2005, United States

Annika Kangas ,

Canadian Journal of Forest Research, Annika Kangas, 01.01.2005 → 31.12.2005, Canada

Decision support systems, Annika Kangas, 01.01.2005 → 31.12.2005

European Journal of Forest Research, Annika Kangas, 01.01.2005 → 31.12.2005, Germany

European Journal of Forest Research, Annika Kangas, 01.01.2005 → 31.12.2005, Germany

Forest Ecology & Management, Annika Kangas, 01.01.2005 → 31.12.2005, Netherlands

Forest Policy & Economics, Annika Kangas, 01.01.2005 → 31.12.2005, Netherlands

Metsätieteellinen aikakauskirja, Annika Kangas, 01.01.2005 → 31.12.2005, Finland

Scandinavian Journal of Forest research, Annika Kangas, 01.01.2005 → 31.12.2005, Sweden

Silva fennica, Annika Kangas, 01.01.2005 → 31.12.2005, Finland

Silva fennica, Annika Kangas, 01.01.2005 → 31.12.2005, Finland

Canadian Journal of Forest Research, Annika Kangas, 01.01.2006 → 31.12.2006, Canada

Ecological Informatics, Annika Kangas, 01.01.2006 → 31.12.2006

Forest Ecology & Management, Annika Kangas, 01.01.2006 → 31.12.2006, Netherlands

Forest Policy & Economics, Annika Kangas, 01.01.2006 → 31.12.2006, Netherlands

Journal of Applied Mathematics and Decision Sciences, Annika Kangas, 01.01.2006 → 31.12.2006

Metsätieteen aikakauskirja, Annika Kangas, 01.01.2006 → 31.12.2006, Finland

Silva Fennica, Annika Kangas, 01.01.2006 → 31.12.2006, Finland

Silva Fennica, Annika Kangas, 01.01.2006 → 31.12.2006, Finland

Annals of forestry, Annika Kangas, 01.01.2007 → 31.12.2007, France

Canadian Journal of Forest Research, Annika Kangas, 01.01.2007 → 31.12.2007, Canada

Forest ecology & management, Annika Kangas, 01.01.2007 → 31.12.2007, Netherlands

Forest policy & economics, Annika Kangas, 01.01.2007 → 31.12.2007, Netherlands

Forestry, Annika Kangas, 01.01.2007 → 31.12.2007, United Kingdom

Journal of environmental management, Annika Kangas, 01.01.2007 → 31.12.2007

Remote sensing of environment, Annika Kangas, 01.01.2007 → 31.12.2007

Scandinavian journal of forest research, Annika Kangas, 01.01.2007 → 31.12.2007, Sweden

Silva fennica, Annika Kangas, 01.01.2007 → 31.12.2007, Finland



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Sustainability: Science, practise & policy, Annika Kangas, 01.01.2007 → 31.12.2007

Canadian Journal of Forest Research, Annika Kangas, 01.01.2008 → 31.12.2008

Canadian Journal of Forest Science, Annika Kangas, 01.01.2008 → 31.12.2008, Canada

European Journal of Forest Research, Annika Kangas, 01.01.2008 → 31.12.2008

European Journal of Operational Research, Annika Kangas, 01.01.2008 → 31.12.2008

Forest Policy & Economics, Annika Kangas, 01.01.2008 → 31.12.2008

Forestry, Annika Kangas, 01.01.2008 → 31.12.2008

Journal Of Intelligent & Fuzzy Systems, Annika Kangas, 01.01.2008 → 31.12.2008

Metsätieteen aikakauskirja, Annika Kangas, 01.01.2008 → 31.12.2008

Scandinavian Journal of Forest Research, Annika Kangas, 01.01.2008 → 31.12.2008

Silva Fennica, Annika Kangas, 01.01.2008 → 31.12.2008

Heimo Karppinen ,

Small-scale Forestry, Heimo Karppinen, 01.01.2007 → 31.12.2007, Netherlands

Small-scale Forestry, Heimo Karppinen, 01.01.2007 → 31.12.2011, Netherlands

Silva Fennica, Heimo Karppinen, 11.03.2008 → ..., Finland

Jari Kuuluvainen ,

Canadian Journal of Forest Research, Jari Kuuluvainen, 01.01.2005 → 31.12.2005, Canada

Forest Science, Jari Kuuluvainen, 01.01.2005 → 31.12.2005, United States

Journal of Forest Economics, Jari Kuuluvainen, 01.01.2005 → 31.12.2005, Sweden

Forest Science, Jari Kuuluvainen, 01.01.2007 → 31.12.2007

Scandinavian journal of forest research, Jari Kuuluvainen, 01.01.2007 → 31.12.2007

Canadian Journal of Forest Research, Jari Kuuluvainen, 01.01.2008 → 31.12.2008, Canada

Environmental and resource Economics, Jari Kuuluvainen, 01.01.2008 → 31.12.2008, Netherlands

Forest Science, Jari Kuuluvainen, 01.01.2008 → 31.12.2008, United States

Journal of Forest Economics, Jari Kuuluvainen, 01.01.2008 → 31.12.2008, Sweden

Tapio Rantala ,

Futura, Tapio Rantala, 01.01.2005 → 31.12.2005, Finland

Futura, Tapio Rantala, 01.02.2006 → 28.02.2006, Finland

Futura, Tapio Rantala, 01.01.2006 → 31.12.2006, Finland

Futura, Tapio Rantala, 01.01.2007 → 31.12.2007, Finland

Mika Rekola ,

Silva Fennica, Mika Rekola, 01.01.2005 → 31.12.2005, Finland

Forest Science, Mika Rekola, 01.01.2006 → 31.12.2006, United States

Journal of Mathematical Psychology, Mika Rekola, 01.01.2006 → 31.12.2006, United States

Journal of Mathematical Psychology, Mika Rekola, 01.01.2007 → 31.12.2007, United States

Small-Scale Forestry, Mika Rekola, 01.01.2007 → 31.12.2007, Netherlands

Journal of Environmental Management, Mika Rekola, 01.01.2008 → 31.12.2008

Anne Toppinen ,

Metsätieteen aikakauskirja, Anne Toppinen, 04.03.2008 → 31.12.2008, Finland

Metsätieteen aikakauskirja, Anne Toppinen, 01.01.2008 → 31.12.2008, Finland

New Zealand Journal of Forest Research, Anne Toppinen, 04.01.2008 → 31.12.2011, New Zealand



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Silva Fennica, Anne Toppinen, 01.01.2008 → 31.12.2008, Finland

Tianjian Cao ,

Silva Fennica, Tianjian Cao, 01.01.2008 → 31.12.2008, Finland

Editor of research anthology/collection/conference proceedings

Marketta Sipi ,

Proceedings of the 3rd meeting of the Nordic-Baltic Network in Wood Material Science and Engineering (WSE), Marketta Sipi, 2007

Papers of the NOVA course Wood Engineering – products and their utilization, Marketta Sipi, 2008

Peer review of manuscripts

Annika Kangas ,

Vertaisarviointi, Annika Kangas, 11.2005

Vertaisarviointi, Annika Kangas, 08.2005

Vertaisarviointi, Annika Kangas, 08.2005

Vertaisarviointi, Annika Kangas, 02.2005

Vertaisarviointi, Annika Kangas, 07.2005

Vertaisarviointi, Annika Kangas, 11.2006

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Vertaisarviointi, Annika Kangas, 07.2007, Sweden

Vertaisarviointi, Annika Kangas, 06.2007

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Heimo Karppinen ,

Metsätieteen aikakauskirja, Heimo Karppinen, 02.12.2005, Finland
Scandinavian Journal of Forest Research, Heimo Karppinen, 13.04.2005, Sweden
Small-scale Forest Economics, Management and Policy, Heimo Karppinen, 16.09.2005, Australia
Forest Policy and Economics', Heimo Karppinen, 06.02.2006, Netherlands
Journal of Environmental Management, Heimo Karppinen, 13.10.2006, Netherlands
Small-scale Forestry (ent.Small-scale Forest Economics, Management and Policy), Heimo Karppinen, 01.10.2006, Netherlands
Forest Policy and Economics, Heimo Karppinen, 02.08.2007, Netherlands
Metsätieteen aikakauskirja, Heimo Karppinen, 24.04.2007, Finland
Small-scale Forestry, Heimo Karppinen, 08.06.2007, Netherlands
Metsätieteen aikakauskirja, Heimo Karppinen, 15.09.2008, Finland
Metsätieteen aikakauskirja, Heimo Karppinen, 01.01.2008, Finland
Silva Fennica, Heimo Karppinen, 13.08.2008, Finland
Silva Fennica, Heimo Karppinen, 01.01.2008, Finland
Society and Natural Resources, Heimo Karppinen, 04.11.2008, United States

Veli-Pekka Kivinen ,

Peer review of the manuscript "Adaptive Control of Bucking in a Douglas-fir Stand: Adjustment Frequency Effects", Veli-Pekka Kivinen, 17.04.2007 → 29.05.2007, New Zealand



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Peer review of the manuscript "Development of 3D Optimal Bucking System for Central Appalachian Hardwood Species", Veli-Pekka Kivinen, 28.11.2007 → 05.01.2008

Peer review of the manuscript "Planning wood bucking using a multicriteria approach", Veli-Pekka Kivinen, 04.06.2007 → 13.08.2007, United States

Ilkka Korpela ,

Peer reviewer activity since 2005, Ilkka Korpela, 01.01.2005 → 10.02.2011

Jari Kuuluvainen ,

Annals of Forest Science, Jari Kuuluvainen, 2010

Forest Policy and Economics, Jari Kuuluvainen, 2010

Forest Science, Jari Kuuluvainen, 2010

Juha Rikala ,

Peer review in Silva Fennica, Juha Rikala, 15.10.2008, Finland

Anne Toppinen ,

Agriculture and Food Science, Anne Toppinen, 03.04.2008 → 31.12.2008

American Journal of Agricultural Economics, Anne Toppinen, 15.03.2008 → 31.12.2008, United States

Applied Economics, Anne Toppinen, 30.10.2008 → 31.12.2008, United Kingdom

Forest Policy and Economics, Anne Toppinen, 03.04.2008 → 31.12.2008, Netherlands

Forest Products Journal, Anne Toppinen, 23.09.2008 → 31.12.2008, United States

International Journal of Emerging Markets, Anne Toppinen, 30.11.2008 → 31.12.2008, Netherlands

Silva Fennica, Anne Toppinen, 05.05.2008 → 31.12.2008, Finland

Small Scale Forestry, Anne Toppinen, 07.02.2008 → 31.12.2008, Netherlands

Corporate Social Responsibility and Environmental Management, Anne Toppinen, 24.01.2010

Käsikirjoituksen arviointi Business and Society, Anne Toppinen, 02.03.2010

Käsikirjoituksen arviointi Canadian Journal of Forest Research, Anne Toppinen, 19.02.2010

Käsikirjoituksen arviointi Environmental and Resource Economics, Anne Toppinen, 07.10.2010

Käsikirjoituksen arviointi Forest Policy and Economics, Anne Toppinen, 30.12.2010

Käsikirjoituksen arviointi Forest Science, Anne Toppinen, 17.06.2010

Käsikirjoituksen arviointi Resource and Energy Economics, Anne Toppinen, 21.01.2010

Käsikirjoituksen arviointi Scandinavian Journal of Forest Research 2 kpl, Anne Toppinen, 22.06.2010 → 18.10.2010

Käsikirjoituksen arviointi Silva Fennica, Anne Toppinen, 20.09.2010

Käsikirjoituksen arviointi Springerin kirjasarjaan, Anne Toppinen, 01.06.2010

Käsikirjoituksen tarkastus Silva Fennica, Anne Toppinen, 08.01.2010

Käsikirjoituksen arviointi Forest Policy and Economics, Anne Toppinen, 01.06.2010

Käsikirjoituksen arviointi Journal of Business Ethics, Anne Toppinen, 30.12.2010

Lauri Valsta ,

Forest Policy and Economics, Lauri Valsta, 28.11.2005, Netherlands

Forest Science, Lauri Valsta, 04.11.2005, United States

Metsätieteen aikakauskirja, Lauri Valsta, 04.10.2005, Finland

Maanmittaus, Lauri Valsta, 23.05.2007, Finland

European Journal of Forest Research, Lauri Valsta, 11.09.2008, Germany

Silva Fennica, Lauri Valsta, 23.11.2008, Finland

Forest Science, Lauri Valsta, 10.02.2009, United States



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Forest Science, Lauri Valsta, 14.08.2009, United States

Forest Science, Lauri Valsta, 26.09.2010

Mikko Vastaranta ,

Manuscript Review for Special Issues Photogrammetric Engineering and Remote Sensing (PE&RS), Mikko Vastaranta, 2010 → ...

Editor of series

Annika Kangas ,

Silva Fennica apu toimittaja, Annika Kangas, 01.08.2001 → 31.05.2006

Canadian Journal of Forest Research lehden apu toimittaja, Annika Kangas, 01.09.2004 → 02.08.2009, Canada

Editorial boardin jäsenyys, Annika Kangas, 2004 → ..., Germany

Vertaisarviointi, Annika Kangas, 07.2005

Assessment of candidates for academic posts

Annika Kangas ,

Lausunto professorin virantäytössä, Annika Kangas, 2005, Norway

Lausunto dosentuurista, Annika Kangas, 2006, Finland

Lausunto virantäytössä, Annika Kangas, 2008, Sweden

Lausunto virantäytössä, Annika Kangas, 07.2010 → 08.2010, Sweden

Heimo Karppinen ,

Pätevyyden arviointi dosentuuria varten., Heimo Karppinen, 20.01.2010 → 11.03.2010, Finland

Jari Kuuluvainen ,

Member of an expert advisor group, Jari Kuuluvainen, 2010, Sweden

Marketta Sipi ,

Statement for title of docent in wood material science, Marketta Sipi, 2007, Finland

Evaluation of the candidates for assistant professorship in wood science/technology, Marketta Sipi, 2009, Sweden

Evaluation of promotion to full professor, Marketta Sipi, 2010 → 2011, Norway

Member of Appointment Committee for professorship in building materials, Marketta Sipi, 2010 → 2011, Sweden

Anne Toppinen ,

Evaluation of applicants for Professor of forest economics and multifunctional forestry, Anne Toppinen, 19.04.2010, Austria

Membership or other role in review committee

Heimo Karppinen ,

Kasvun eväät. Metsä- ja puualan pienyritysten tutkimus- ja kehittämissuojelman arviointi, Heimo Karppinen, 15.11.2010 → 21.02.2011, Finland

Marketta Sipi ,

Chair of appointment committee to the professorship of logistics, Marketta Sipi, 2003 → 2005, Finland

Chair of appointment committee to the professorship of forest mensuration and management, Marketta Sipi, 2006 → 2007, Finland

Member of appointment committee to the professorship of biorefineries, Marketta Sipi, 2006, Finland

Member of appointment committee to the professorship of forest economics, Marketta Sipi, 2009 → 2010, Finland

Anne Toppinen ,

Assessment of strong research environments, Anne Toppinen, 01.02.2010 → 03.12.2010, Sweden

Väitöskirjan tarkastaja, Anne Toppinen, 01.09.2010 → 30.09.2010, New Zealand



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Membership or other role in research network

Juha Rikala ,

Innovative utilization and products of large dimensioned timber including the whole forest-wood-chain, Juha Rikala, 27.05.2004 → 16.07.2008

Nordic-Baltic Network in Wood Material Science and Engineering (WSE), Juha Rikala, 29.10.2007 → ...

Marketta Sipi ,

Member of board for International Doctoral Programme in Pulp and Paper Science and Technology, Marketta Sipi, 1997 → ..., Finland

Member of NOVA KUF, Marketta Sipi, 2004 → 2009

Member of board for Nordic-Baltic Network on Wood Material Science and Engineering, Marketta Sipi, 2004 → ...

Member of management committee of COST E40 Innovative utilization and products of large dimensioned timber including the whole forest-wood-chain, Marketta Sipi, 2004 → 2008

Member of Scientific Committee of the 5th International Symposium for Wood Structure and Properties, Marketta Sipi, 2006, Slovakia

Member of Technology Academy Finland, Marketta Sipi, 2008 → ..., Finland

Chair of Board of Ruralia Institute, Marketta Sipi, 2010 → 2013, Finland

Member of Advisory Board of Helsinki University Centre for Environment HENVI, Marketta Sipi, 2010 → 2012, Finland

Member of Board of Network for European Studies, Marketta Sipi, 2010 → 2013, Finland

Member of NOVA board, Marketta Sipi, 2010 → 2013

Member of Scientific Committee for Hardwood Science and Technology, Marketta Sipi, 2010, Hungary

Member of Scientific Committee of the Symposium for Wood Structure and Properties 2010, Marketta Sipi, 2010, Slovakia

Anne Toppinen ,

5.10 WG Forest products marketing and business management assistant co-ordinator, Anne Toppinen, 20.08.2010 → ...

Membership or other role in national/international committee, council, board

Bo Dahlin ,

IUFRO, Bo Dahlin, 01.01.2006 → 31.12.2006

Annika Kangas ,

Hyytiälän tutkimusaseman johtokunnan puheenjohtajuus, Annika Kangas, 2005 → 2010, Finland

Säätiön hallituksen jäsenyys, Annika Kangas, 2005 → 2015, Finland

Tutkijakoulun johtoryhmän jäsenyys, Annika Kangas, 2005 → ..., Finland

Metsäsuunnittelun tutkimusohjelman ohjausryhmän jäsen, Annika Kangas, 2006 → ..., Finland

Metsätieteen tutkijakoulu, Annika Kangas, 01.01.2006 → 31.12.2006, Finland

NOVA yliopiston verkoston koordinaattori, Annika Kangas, 2006 → 2010, Sweden

Suomen Luonnonvarain Tutkimussäätiö, Annika Kangas, 01.01.2006 → 31.12.2006, Finland

Helsingin yliopiston tieteellinen neuvosto, Annika Kangas, 01.01.2007 → 31.12.2007, Finland

Suomen Luonnonvarain säätiö, Annika Kangas, 01.01.2007 → 31.12.2007, Finland

Tieteellisen neuvoston jäsenyys, Annika Kangas, 01.01.2007 → 31.12.2009, Finland

Foundation for Research of Natural Resources, Annika Kangas, 01.01.2008 → 31.12.2008

The Finnish society of forest science, Annika Kangas, 01.01.2008 → 31.12.2008, Finland

the scientific counsel of University of Helsinki, Annika Kangas, 01.01.2008 → 31.12.2008

Työryhmän vetäjä COST-hankkeessa, Annika Kangas, 2009 → 2012, Belgium

Julkaisufoormin paneelin puheenjohtajuus, Annika Kangas, 09.2010 → 12.2011, Finland

Laitosneuvoston jäsenyys, Annika Kangas, 2010 → 2012, Finland

Metsäklusterin tutkimusvaliokunnan jäsenyys, Annika Kangas, 2010 → ..., Finland



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Tieteellisen seuran puheenjohtajuus, Annika Kangas, 2010 → 2011, Finland

Veli-Pekka Kivinen ,

Secretary of the Council of Forest Operations and Technology, Veli-Pekka Kivinen, 01.01.2009 → 31.12.2010, Finland

Jari Kuuluvainen ,

EFI, Member of Scientific Advisory Board, Jari Kuuluvainen, 01.01.2005 → 31.12.2005, Finland

Graduate School of Forest Sciences, Jari Kuuluvainen, 01.01.2005 → 31.12.2005, Finland

Osuuspankkijärjestöjen Kyösti Haatajan säätiö, tieteellinen toimikunta, Jari Kuuluvainen, 01.01.2005 → 31.12.2005, Finland

PTT, Tieteellinen neuvonantajakunta, Jari Kuuluvainen, 01.01.2005 → 31.12.2005, Finland

Osuuspankkijärjestöjen Kyösti Haatajan Säätiö, Jari Kuuluvainen, 01.01.2008 → 31.12.2008, Finland

Pellervon Taloudellinen tutkimuslaitos, Jari Kuuluvainen, 01.01.2008 → 31.12.2008, Finland

Tapio Rantala ,

Tulevaisuuden tutkimuksen seura, Tapio Rantala, 01.01.2005 → 31.12.2005, Finland

Tulevaisuuden tutkimuksen seura, Tapio Rantala, 01.01.2006 → 31.12.2006

Tulevaisuuden tutkimuksen seura, Tapio Rantala, 01.01.2007 → 31.12.2007, Finland

Mika Rekola ,

Suomen Metsätieteellinen Seura / metsäekonomistiklubi, Mika Rekola, 01.01.2008 → 31.12.2008, Finland

Association for European Life Science Universities (ICA), Mika Rekola, 16.06.2010

Marketta Sipi ,

Member of board for Centre of Expertise for Wood Products, Marketta Sipi, 1999 → 2005, Finland

Member of Finnish Support Group for the Forest-Based Sector, Marketta Sipi, 2007 → ..., Finland

Member of working group of research strategy for wood product industry, Marketta Sipi, 2007 → 2008, Finland

Member of Cooperation Network for Rural Development, Marketta Sipi, 2010 → 2013, Finland

Anne Toppinen ,

FORMAS, Anne Toppinen, 01.02.2008 → 30.11.2008, Sweden

Suomen Metsätieteellinen Seura, Anne Toppinen, 01.01.2008 → 31.12.2008, Finland

COST Domain expert, forest products and services, Anne Toppinen, 01.06.2010 → 31.05.2014, Belgium

Chairman, Anne Toppinen, 20.05.2010 → ...

Lauri Valsta ,

International Union of Forest Research Organizations, Lauri Valsta, 01.01.2005 → 31.12.2005, Austria

International Union of Forest Research Organizations, Lauri Valsta, 01.01.2007 → 31.12.2007, Austria

International Union of Forest Research Organizations, Lauri Valsta, 01.01.2008 → 31.12.2008, Austria

MEMO working group member, Lauri Valsta, 23.08.2010 → 31.12.2010, Finland

Membership or other role in public Finnish or international organization

Heikki Juslin ,

Metsäalan tulevaisuusfoorumin johtoryhmän jäsen (MMM nimittänyt), Heikki Juslin, 01.01.2005 → 31.12.2005, Finland

Puu-Eurooppa johtoryhmän jäsen (KTM:ssa toimiva kattoelin puun käytön edistämishojelmille), Heikki Juslin, 01.01.2005 → 31.12.2005, Finland

*: Metsäalan tulevaisuusfoorumin johtoryhmän jäsen (MMM nimittänyt), Heikki Juslin, 01.01.2006 → 31.12.2006, Finland

*: Rantasalmi-palkinnon työryhmä (Rantasalmi-palkinto on yksi Kulttuurirahaston rahastoista.), Heikki Juslin, 01.01.2006 → 31.12.2006, Finland

Puu-Eurooppa johtoryhmän jäsen (On KTM:ssa toimiva kattoelin puun käytön edistämishojelmille), Heikki Juslin, 01.01.2006 → 31.12.2006, Finland



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SUVALUE/Valsta

Jari Kuuluvainen ,

KMO, rinnakkaisarviointiryhmä, Jari Kuuluvainen, 01.01.2007 → 31.12.2007, Finland

PTT, Tieteellinen neuvottelukunta, Jari Kuuluvainen, 01.01.2007 → 31.12.2007, Finland

Marketta Sipi ,

Centre of Technical Training, Deputy member of board of trustees, Marketta Sipi, 2002 → 2014, Finland

Anne Toppinen ,

Hoitokunnan jäsen, Anne Toppinen, 01.12.2010 → ..., Finland

Lauri Valsta ,

Suomen biologista monimuotoisuutta koskevan toimintaohjelman Kestävä käyttö -asiantuntijaryhmä, Ympäristöministeriö, Lauri Valsta, 01.01.2005 → 31.12.2005, Finland

Membership or other role of body in private company/organisation

Heikki Juslin ,

Liikemetsänhoitajat r.y., Heikki Juslin, 01.01.2005 → 31.12.2005, Finland

Metsäteollisuustuotteiden Vientikaupan Edistämisseätiö, Heikki Juslin, 01.01.2005 → 31.12.2005, Finland

Suomen Metsäyhdistys, SMY, Heikki Juslin, 01.01.2005 → 31.12.2005, Finland

Liikemetsänhoitajat r.y., Heikki Juslin, 01.01.2006 → 31.12.2006, Finland

Metsäteollisuustuotteiden Vientikaupan Edistämisseätiö, Heikki Juslin, 01.01.2006 → 31.12.2006, Finland

Suomen Metsäyhdistys, SMY, Heikki Juslin, 01.01.2006 → 31.12.2006, Finland

Heimo Karppinen ,

Silva-kerho, Heimo Karppinen, 01.01.2008 → 31.12.2008, Netherlands

Veli-Pekka Kivinen ,

Managing director, Veli-Pekka Kivinen, 09.2004 → ...

Participation in interview for written media

Heikki Juslin ,

HAASTATTELU KALEVA-LEHTEEN, Heikki Juslin, 14.12.2000 → 31.12.2011, Malaysia

HELSINGIN ROTARYT - KUUKAUSIKOKOUS, Heikki Juslin, 22.02.2000 → 31.12.2011, Malaysia

LEHTIHAASTATTELU: METSÄ-SERLA NEWS (KEITH SILVERANG), Heikki Juslin, 08.02.2000 → 31.12.2011, Malaysia

METSÄNTUOTTAJAT 50 V -, Heikki Juslin, 24.11.2000 → 31.12.2011, Malaysia

METSÄVIIKON AVAJAISET, AVAJAISPUHE, Heikki Juslin, 30.03.2000 → 31.12.2011, Malaysia

PÄÄTTÄJIEN METSÄAKATEMIA - AVAJAISITELMÄ, Heikki Juslin, 25.05.2000 → 31.12.2011, Malaysia

PÄÄTTÄJIEN METSÄAKATEMIA - AVAJAISITELMÄ, Heikki Juslin, 20.09.2000 → 31.12.2011, Malaysia

SUOMI.PUOLA METSÄALAN YHTEISTYÖSEMINAARI : FOREST CERTIFICATION, Heikki Juslin, 07.11.2000 → 31.12.2011, Malaysia

WFC (WORLD FOREST CENTER) VUOSIKOKOUKSEN JÄRJESTÄMINEN HELSINGISSÄ, Heikki Juslin, 11.06.2000 → 31.12.2011, Malaysia

METYSÄVIIKON AVAJAISET, Heikki Juslin, 26.03.2001 → 31.12.2011, Finland

PELLERVO SEURAN LEHDISTÖSEMINAARI, Heikki Juslin, 24.04.2001 → 31.12.2011, Finland

PÄÄTTÄJIEN METSÄAKATEMIA, Heikki Juslin, 07.05.2001 → 31.12.2011, Finland

PÄÄTTÄJIEN METSÄAKATEMIA, Heikki Juslin, 03.10.2001 → 31.12.2011, Finland

Metsälehti Kustannus, kirjan julkistaminen, Heikki Juslin, 07.10.2002 → 31.12.2011, Finland

Metsäpäivien avajaiset, Heikki Juslin, 18.03.2002 → 31.12.2011, Finland



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- Päättäjien metsäakatemia, Heikki Juslin, 15.05.2002 → 31.12.2011, Finland
Päättäjien metsäakatemia, Heikki Juslin, 23.09.2002 → 31.12.2011, Finland
SMY 125v Juhlapäivälliset, Budapest, Heikki Juslin, 19.10.2002 → 31.12.2011, Finland
WISA-Center, Seminaari, Heikki Juslin, 02.09.2002 → 31.12.2011, Finland
Academy for Ambassadors, Heikki Juslin, 18.12.2003 → 31.12.2011, Finland
Forest Academy Finland, Heikki Juslin, 03.12.2003 → 31.12.2011, Finland
Päättäjien Metsäakatemia, Majvik, Kirkkonummi, Heikki Juslin, 28.04.2003 → 31.12.2011, Finland
Päättäjien Metsäakatemia, Majvik, Kirkkonummi, Heikki Juslin, 06.10.2003 → 31.12.2011, Finland
Academy for Ambassadors, Lohja, Heikki Juslin, 23.06.2004 → 31.12.2011, Finland
Forest Academy Finland, Helsinki, Heikki Juslin, 02.06.2004 → 31.12.2011, Finland
Forest Academy Finland, Majvik, Kirkkonummi, Heikki Juslin, 27.10.2004 → 31.12.2011, Finland
Forest Academy Finland, Unitas congress center, Helsinki, Heikki Juslin, 15.09.2004 → 31.12.2011, Finland
Metsäpäivät, Heikki Juslin, 29.03.2004 → 31.12.2011, Finland
Päättäjien Metsäakatemia, Majvik, Kirkkonummi, Heikki Juslin, 22.09.2004 → 31.12.2011, Finland
Päättäjien Metsäakatemia, Unitas kurssikeskus, Helsinki, Heikki Juslin, 28.04.2004 → 31.12.2011, Finland
Päättäjien Metsäakatemia, Heikki Juslin, 27.04.2005 → 31.12.2011, Finland
Päättäjien Metsäakatemia, Heikki Juslin, 21.09.2005 → 31.12.2011, Finland
Suomen metsäsektorin julkisuuskuva, Heikki Juslin, 14.03.2005 → 31.12.2011, Finland
Forest forum (Finnish EU presidency): Renewable Resources Sustainable Future Majvik, Kirkkonummi, Heikki Juslin, 02.11.2006 → 31.12.2011, Finland
Majvik, Kirkkonummi, Päättäjien metsäakatemia, kutsuttu puheenvuoro, Heikki Juslin, 08.05.2006 → 31.12.2011, Finland
Metsäpäivät Finlandia talo, Helsinki, Heikki Juslin, 30.03.2006 → 31.12.2011, Finland
Päättäjien Metsäakatemia 10-vuotta Pörssiklubi, Helsinki, Heikki Juslin, 03.10.2006 → 31.12.2011, Finland
- Annika Kangas ,**
Metsälehti, Annika Kangas, 14.02.2002 → 31.12.2011, Finland
- Heimo Karppinen ,**
Aktivaattori, Heimo Karppinen, 01.03.2005, Finland
Talous-Sanomat, Heimo Karppinen, 08.10.2005, Finland
Haastattelu. Metsälehti 6/2007, Heimo Karppinen, 29.03.2007, Finland
Haastattelu. Metsäntutkimus 3/2007: 18-19., Heimo Karppinen, 05.10.2007, Finland
Tapahtuma; Viikki-päivä, Heimo Karppinen, 10.10.2007, Finland
Tilaisuus; Sampo Pankin koulutustilaisuus, Heimo Karppinen, 30.08.2007, Finland
Haastattelu. Maaseudun tulevaisuus, Heimo Karppinen, 07.05.2008, Netherlands
Haastattelu. Uutispäivä Demari, Heimo Karppinen, 31.01.2008, Netherlands
- Henna Tuulia Lyhykäinen ,**
Metsälehti 10:2006. Sivut 10-11., Henna Tuulia Lyhykäinen, 01.01.2006, Finland
- Tapio Rantala ,**
Metsälehti, Tapio Rantala, 01.03.2006 → 31.12.2011, Finland
- Anne Toppinen ,**
Aarre, Anne Toppinen, 15.11.2008 → 31.12.2011, Norway
Karjalainen, Anne Toppinen, 11.09.2008 → 31.12.2011, Norway
Kauppalehti, Anne Toppinen, 23.07.2008 → 31.12.2011, Norway



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Metsälehti, Anne Toppinen, 29.09.2008 → 31.12.2011, Norway

Lauri Valsta ,

Virkaanastujaiset Helsingin yliopistossa, Lauri Valsta, 29.05.2002 → 31.12.2011, Finland

Seminar on "Adapting to Climate Change in Finland: Research Priorities", Finnish Environment Institute, SYKE (Auditorium),
Mechelininkatu 34A, Helsinki, Lauri Valsta, 14.11.2003 → 31.12.2011, Finland

Metsänhoitaja, Lauri Valsta, 07.11.2008 → 31.12.2011, Finland

Participation in TV programme

Anne Toppinen ,

MTV3 Talousuutiset, Anne Toppinen, 01.07.2008 → 31.12.2011, Norway



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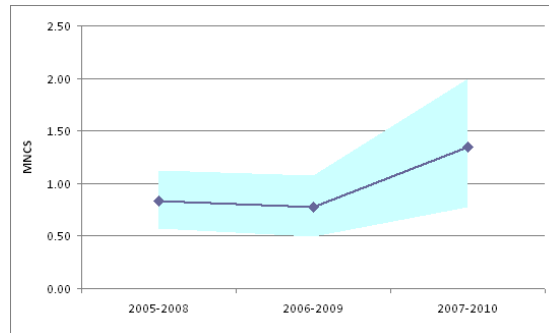
Web of Science(WoS)-based bibliometrics of the RC's publications data 1.1.2005-31.12.2010
by CWTS, Leiden University, the Netherlands

Research Group: Valsta L

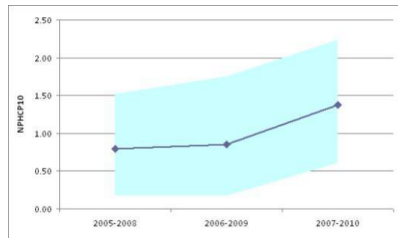
Basic statistics

Number of publications (P)	101
Number of citations (TCS)	231
Number of citations per publication (MCS)	2.29
Percentage of uncited publications	45%
Field-normalized number of citations per publication (MNCS)	1.21
Field-normalized average journal impact (MNJS)	1.07
Field-normalized proportion highly cited publications (top 10%)	1.17
Internal coverage	.50

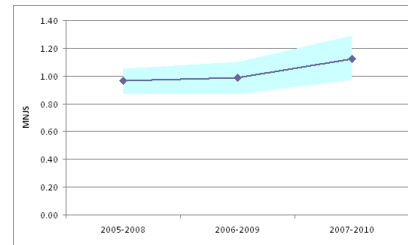
Trend analyses



MNCS

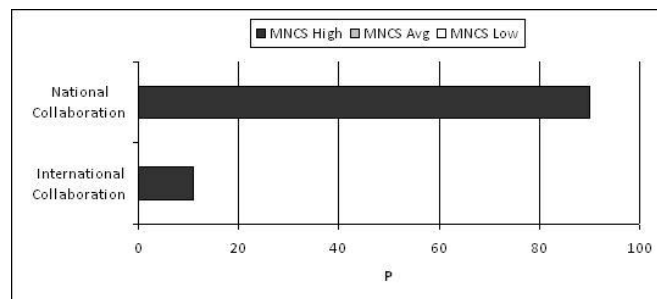


THCP10



MNJS

Collaboration



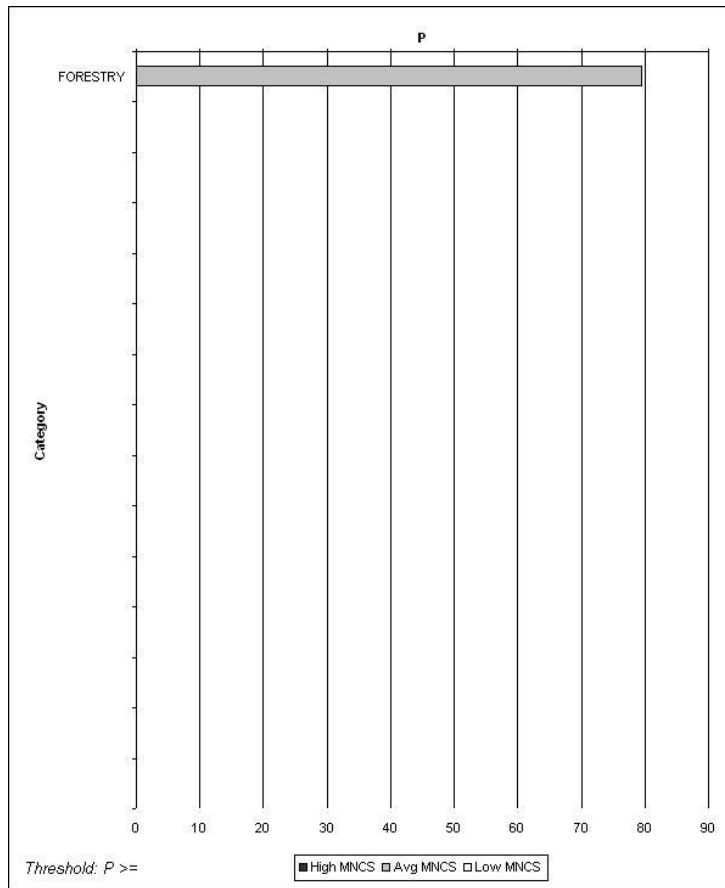
Performance (MNCS) by collaboration type



INTERNATIONAL EVALUATION OF RESEARCH AND DOCTORAL TRAINING
AT THE UNIVERSITY OF HELSINKI

Web of Science(WoS)-based bibliometrics of the RC's publications data 1.1.2005-31.12.2010
by CWTS, Leiden University, the Netherlands

Research profile



Appendix B.b.

Maria Forsman, Chief Information Specialist, DSocSc
Helsinki University Library 7.7.2011

The bibliometric analyses by Helsinki University Library (HULib)

Background: The bibliometric analyses – especially citation analyses – have raised a lot of discussion and critics among researchers in social sciences and humanities. Researchers view that bibliometric analyses are often unfair to these fields of sciences because they do not give a good enough picture of the publishing. Citation databases – Web of Science and Scopus – cover only weakly the main publications in these fields. Also, in humanities and social sciences monograph is still the main form of publishing, and it does not include in these article databases.

At the University of Helsinki, the above mentioned concerns have been taken into account in the evaluation. The Evaluation Office has ordered analyses from the Helsinki University Library (HULib) for the participating researcher communities that are weakly represented in Web of Science. The database for the HULib analyses is TUHAT (<https://tuhat.halvi.helsinki.fi/portal/en/>) including all the publications that the researchers have considered important.

Based on this data, information specialists at HULib have carried out the following analyses:

- 1) Number of authors/publication/year as a table; a pie of authors/publication in the period 2005-2010;
- 2) Language of publication/year; a pie of language of publication in the period 2005-2010;
- 3) Articles/journal/year; journals have been compared by ISSN with the Norwegian, Australian and ERIH (2007-2008) journal ranking lists; number of articles in ranked journals;
- 4) Publisher/monograph type (according to TUHAT database); monographs have been compared with the Norwegian publisher ranking list. According to this, it has been counted how many monographs are published by a leading scientific publisher (2) or a scientific publisher (1).
- 5) Conference publications (from TUHAT database) especially in computer sciences; compared with the Australian conference ranking list.

Where relevant, some additional analyses and notes concerning the publication culture of a scientific field have been added. Overall, these analyses complement the other evaluation material and lists of the publications of the participating researcher communities.

If the publications of the RCs were less than 50 or/and the internal coverage less than 40 percentage, the WoS analyses were considered not reliable. These RCs were 58 altogether.

In addition, both Leiden and Library analyses were done to the RCs if WoS analyses covered less than 40 per cent of the peer review (A+C) publications of the RC. These RCs were 8 altogether.

The appendix includes the analyses of the RC under discussion.

**Analysis of publications by Helsinki University
Library – 66 RCs altogether**

Biological, Agricultural and Veterinary Sciences

Luukkanen, Olavi – VITRI
Valsta, Lauri – SUVALUE

Natural Sciences

Abrahamsson, Pekka – SOFTSYS
Kangasharju, Jussi – NODES
Ukkonen, Esko – ALKO
Väänänen, Jouko – HLG

Humanities

Aejmelaesus, Anneli – CSTT
Anttonen, Pertti – CMVG
Dunderberg, Ismo – FC
Havu, Eva – CoCoLaC
Heikkilä, Markku – RCSP
Heinämaa, Sara – SHC
Henriksson, Markku – CITA
Janhunen, Juha – LDHFTA
Kajava Mika, – AMNE
Klippi, Anu – Interaction
Knuuttila, Simo – PPMP
Koskenniemi, Kimmo – BAULT
Lauha, Aila – CECH
Lavento, Mika – ARCH-HU
Lukkarinen, Ville – AHCI
Lyytikäinen, Pirjo – GLW
Mauranen, Anna – LFP
Meinander, Henrik – HIST
Nevalainen, Terttu – VARIENG
Pettersson, Bo – ILLC
Pulkkinen, Tuija – Gender Studies
Pyrhönen, Heta – ART
Ruokanen, Miikka – RELDIAL
Saarinen, Risto – RELSOC
Sandu, Gabriel – LMPS
Tarasti, Eero – MusSig
Vehmas-Lehto, Inkeri – TraST
Östman, Jan-Ola – LMS

Social Sciences

Airaksinen, Timo – PPH
Engeström, Yrjö – CRADLE
Granberg, Leo – TRANSRURBAN
Haila, Anne – Sociopolis
Hautamäki, Jarkko – CEA
Heinonen, Visa – KUMU
Helén, Ilpo – STS
Hukkinen, Janne – GENU
Jallinoja, Riitta – SBII
Kaartinen, Timo – SCA
Kettunen, Pauli – NordSoc
Kivinen, Markku – FCREES
Koponen, Juhani – DEVERELE
Koskenniemi, Martti – ECI
Kultti, Klaus – EAT
Lahelma, Elina – KUFÉ
Lanne, Markku – TSEM
Lavonen, Jari – RCMSE
Lehtonen, Risto – SocStats
Lindblom-Yläne, Sari – EdPsychHE
Nieminen, Hannu – MECOL
Nuotio, Kimmo – Law
Nyman, Göte – METEORI
Ollikainen, Markku – ENFIFO
Pirttilä-Backman, Anna-Maija – DYNASOBIC
Rahkonen, Keijo – CulCap
Roos, J P – HELPS
Simola, Hannu – SOCE-DGI
Sulkunen, Pekka – PosPus
Sumelius, John – AG ECON
Vaattovaara, Mari – STRUTSI
Vainio, Martti – SigMe

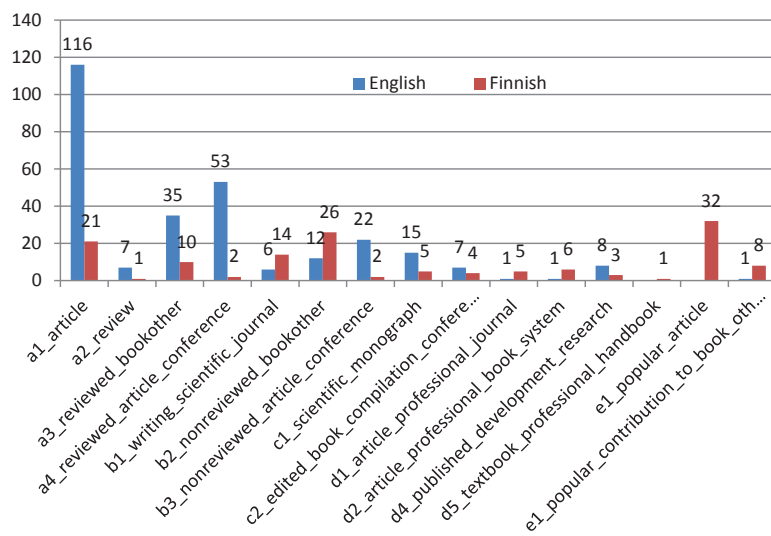
The next appendix includes the analyses of the
RC under discussion.

SUVALUE / Valsta

Category 5.

Basic Statistics

The group has 434 publications in TUHAT, showing a peak in A1 refereed journal articles, and additionally, varying amounts of publications in other categories, as shown in a chart with publication counts per classification for English and Finnish publications separately.

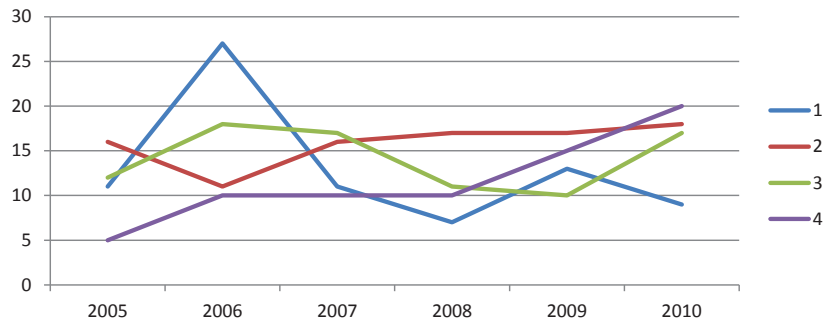


The collaboration statistics was not counted, but there seem to be a significant amount of national collaboration .

Typically, the publications of this group have 1-4 authors. The following table shows the yearly breakdown of papers with 1...18 authors:

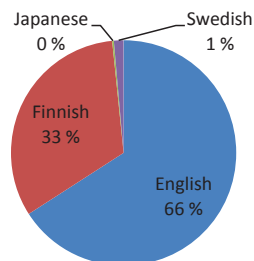
# of Authors	2005	2006	2007	2008	2009	2010	Total
1	11	27	11	7	13	9	78
2	16	11	16	17	17	18	95
3	12	18	17	11	10	17	85
4	5	10	10	10	15	20	70
5	1	5	4	4	11	8	33
6	1	1	2	3	12	6	25
7		1	1	1	6	6	15
8	1			2	4	3	10
9...18	1	2	2	1	5	7	18
Total	48	75	63	56	93	94	429

The yearly trends for 1...4 authors are shown below:



Languages

One third of the publications are in Finnish and two thirds in English.



Journal / Year / Total

Journal title	2005	2006	2007	2008	2009	2010	Total
Allgemeine Forst- und Jagdzeitung						1	1
Ambio	1						1
American Journal of Agricultural Economics	1						1
Applied Mathematical Modelling						1	1
Atmospheric Chemistry and Physics	1						1
BioEnergia						1	1
Biomass & Bioenergy					1		1
Canadian Journal of Forest Research	2	4	2	1		3	12
Computers and Electronics in Agriculture	1				1		2
Ecological Modelling					1		1
Electronic Journal of Business Ethics and Organization Studies						1	1
Empirical Economics					1		1
Engineered Wood Journal			1				1
Environmental Modelling & Software					1		1
European Journal of Forest Research			1			5	6
Farmi-Uutiset						1	1
Fiskeritidskrift för Finland : organ för Fiskeriföreningen i Finland.					1		1
Forest business solutions research brief		3					3
Forest Ecology and Management	3			3	3	2	11
Forest economy, monthly	1						1
Forest Policy and Economics	3	3	2	1		5	14
Forest Products Journal		1					1
Forest Science	1	3	1	1	2	2	10
Forestry						1	1
Forestry Chronicle		1					1
Forests						1	1
Futura		1			1		2
Helsingin Sanomat		1	2	2	1		6
Helsingin Yliopisto. Metsäekologian Laitos. Julkaisuja		1					1
Helsingin Yliopisto. Metsävarojen Kayton Laitos. Julkaisuja					1		1
IEEE Transactions on Geoscience and Remote Sensing						1	1
Ilkka						1	1
International Forestry Review				1			1
International journal of computer science and software technology					1		1
International Journal of Remote Sensing		1				1	2
ISPRS Journal of Photogrammetry and Remote Sensing						1	1
Journal of Business Ethics					1		1
Journal of Environmental Management				1			1
Journal of Forest Economics				1			1
Journal of forest products business research		1				1	2
Journal of Forest Products Business Research (Online Edition)		1			1		2
Journal of Materials Chemistry					1		1
Journal of Sustainable Forestry	1						1
Koneyrittäjä : koneyritysalojen ammattilehti.			1	1	1		3

Lehtikuusi		1					1
Liiketaloudellinen Aikakauskirja	1						1
Maanmittaus : aikakauskirja maanjako- ja karttatieteitä sekä geodesiaa varten			1				1
Maaseudun Tulevaisuus	1						1
Metsätieteen aikakauskirja	4	4	1	3	13	5	30
Metsä.fi : Metsähallituksen henkilöstölehti.			1				1
Metsälehti		3	1		1	1	6
Metsänhoitaja	2	1			1		4
Metsätalous : metsäalan ammattilehti		1			1		2
Metsäylioppilas						1	1
New Zealand Journal of Forestry Science	1						1
Operational Research Society. Journal					1		1
Photogrammetric Journal of Finland			1		2	1	4
Photogrammetrie, Fernerkundung, Geoinformation			1				1
Piirtoheitin verkko-opetuksen verkkolehti	1						1
Progress in Paper Recycling						1	1
Puumies				1		1	2
Päätäjien metsäakatemia	3	1					4
Remote sensing						3	3
Remote Sensing of Environment				1		1	2
Scandinavian Journal of Forest Research	1	1	2		1	1	6
Silva Fennica	1	5	2	3	1	6	18
Small-Scale Forestry			2				2
Särmä : Puu- ja erityisalojen liiton jäsenlehti.	1						1
Teho			1				1
Urban Forestry & Urban Greening		1					1
Wood Science and Technology					1		1
Total	31	39	23	20	41	50	204

Most of the articles have been published in the Finnish forestry journal *Metsätieteen aikakauskirja* that belong to the Australian category C . The international journals on the top are *Silva Fennica* that belong to the Australian ranking B, *Forest Policy and Economics* that belong to the Australian Category C, *Canadian Journal of Forest, Forest Ecology and management and Forest Science* that belong to the Australian Category A. Six of the articles have been published in the leading Finnish newspaper *Helsingin Sanomat* and the Finnish forestry journal *Metsälehti*.

Journal Ranking (Norway, Australia)

Journal title	Australia	Norway	Count
Allgemeine Forst- und Jagdzeitung		1	1
Ambio	B	1	1
American Journal of Agricultural Economics	A*	2	1
Applied Mathematical Modelling	B	1	1

Atmospheric Chemistry and Physics	A	1	1
Biomass and Bioenergy	A		1
Canadian Journal of Forest Research	A	1	12
Computers and Electronics in Agriculture	C	2	2
Ecological Modelling	A	1	1
Electronic Journal of Business Ethics and Organization Studies	C		1
Empirical Economics	B	1	1
Environmental Modelling and Software	A		1
European Journal of Forest Research	B	1	6
Forest Ecology and Management	A	1	11
Forest Policy and Economics	C	1	15
Forest Products Journal	C	1	1
Forest Science	A	1	10
Forestry	A	1	1
Forestry Chronicle	C	1	1
Forests		1	1
IEEE Transactions on Geoscience and Remote Sensing	A	2	1
International Forestry Review	C	1	1
International Journal of Remote Sensing	B	2	2
ISPRS Journal of Photogrammetry and Remote Sensing	A		1
Journal of Business Ethics	A	1	1
Journal of Environmental Management	B	1	1
Journal of Forest Economics	C	1	1
Journal of Materials Chemistry	A	2	1
Journal of Sustainable Forestry	B	1	1
Journal of the Operational Research Society	A	1	1
Liiketaloudellinen Aikakauskirja	C	1	1
Metsätieteen aikakauskirja	C		31
New Zealand Journal of Forestry Science	B	1	1
Photogrammetrie, Fernerkundung, Geoinformation	C		1
Remote sensing		1	3
Remote Sensing of Environment	A*	2	2
Scandinavian Journal of Forest Research	B	1	6
Silva Fennica	B	1	18
Small-Scale Forestry	C		2
Teho		1	1
Urban Forestry and Urban Greening	C	1	1
Wood Science and Technology	B	1	1

Amount of ranked articles (Norway)

Norway	Journal articles
Level 2	9
Level 1	102
Total	111

Level 2 = highest scientific, Level 1= scientific

Amount of ranked articles (Australia)

Australia	Journal articles
Rank A*	3
Rank A	43
Rank B	39
Rank C	58
Total	143

Australian ranking

A*

Typically an A* journal would be one of the best in its field or subfield in which to publish and would typically cover the entire field/subfield. Virtually all papers they publish will be of a very high quality. These are journals where most of the work is important (it will really shape the field) and where researchers boast about getting accepted. Acceptance rates would typically be low and the editorial board would be dominated by field leaders, including many from top institutions.

A

The majority of papers in a Tier A journal will be of very high quality. Publishing in an A journal would enhance the author's standing, showing they have real engagement with the global research community and that they have something to say about problems of some significance. Typical signs of an A journal are lowish acceptance rates and an editorial board which includes a reasonable fraction of well known researchers from top institutions.

B

Tier B covers journals with a solid, though not outstanding, reputation. Generally, in a Tier B journal, one would expect only a few papers of very high quality. They are often important outlets for the work of PhD students and early career researchers. Typical examples would be regional journals with high acceptance rates, and editorial boards that have few leading researchers from top international institutions.

C

Tier C includes quality, peer reviewed, journals that do not meet the criteria of the higher tiers.

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