

University of Eastern Finland, Joensuu

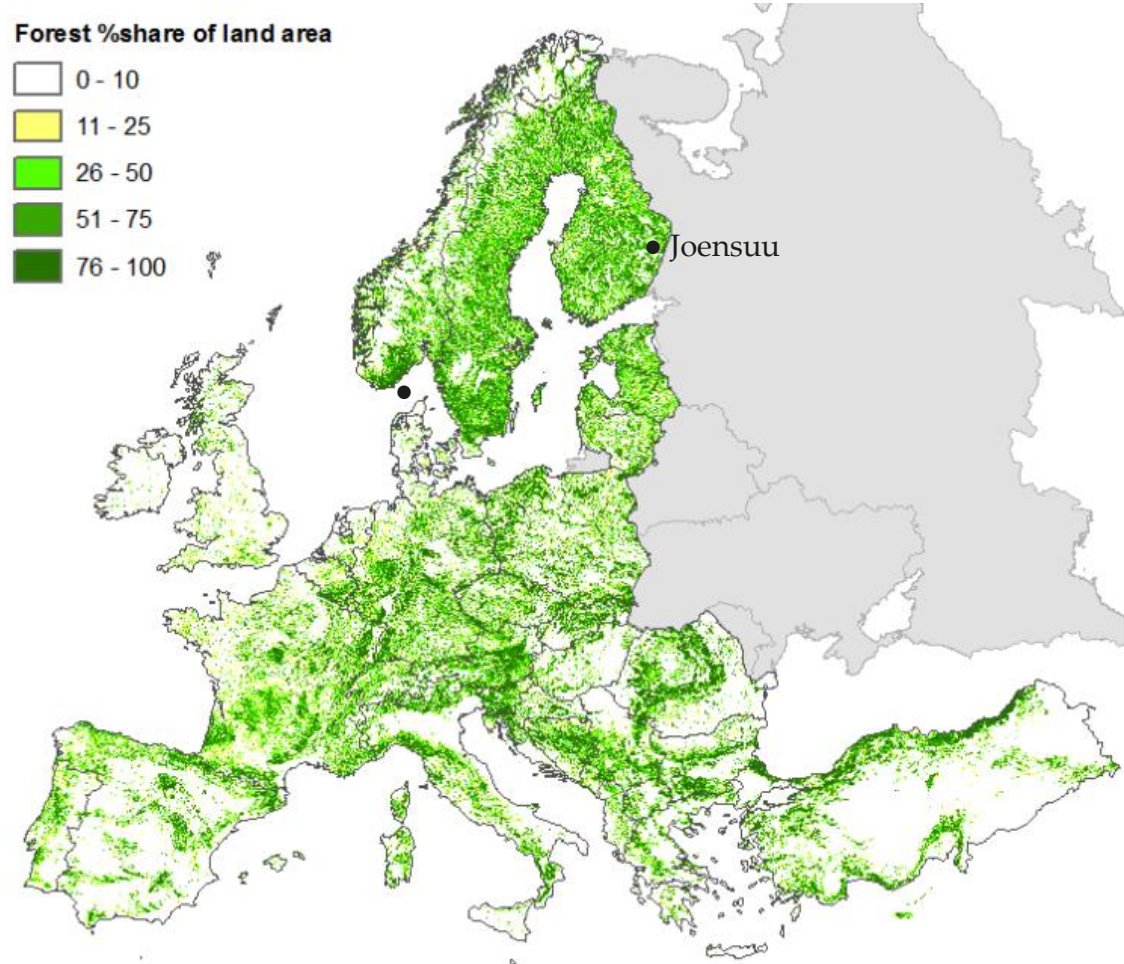
School of Forest Sciences

Bioeconomy-hub of Northern Europe

BOR, Organisations visits 3.11.2017

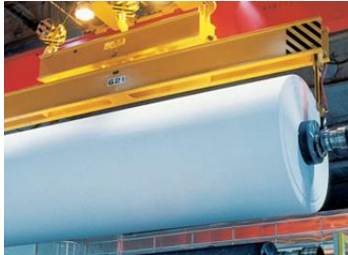
Jukka Tikkanen

Finland's forest cover in European context



Finland's top export products

1
Paper and
paperboard
6,8 bill. EUR



4
Wood pulp
1,8 bill. EUR



5
Softwood sawnwood
1,7 bill. EUR



2. Diesel fuel
3,7 bill. EUR



3. Stainless steel
2,3 bill. EUR



Photo Valmet Automotive

5. Motor vehicles
for personal
transport 1,1
bill. EUR



Photo ABB

7. Electric
generators and
motors
1.1 bill. EUR



8. Special
machinery
1,1 bill. EUR



9. Earth movers and
excavators and other
similar machinery
1,0 bill. EUR



Photo Platimica

10. Medical instruments
1,0 bill. EUR



**SMART
SCIENCE BY
SMART PEOPLE**

UNIVERSITY OF EASTERN FINLAND JOENSUU | KUOPIO | SAVONLINNA



UNIVERSITY OF
EASTERN FINLAND

University of Eastern Finland – A multidisciplinary and international university

UEF// 3

campuses
JOENSUU
KUOPIO
SAVONLINNA



4

faculties

Philosophical Faculty
JOENSUU | SAVONLINNA

*Faculty of Science
and Forestry*
JOENSUU | KUOPIO

Faculty of Health Sciences
KUOPIO

*Faculty of Social Sciences
and Business Studies*
JOENSUU | KUOPIO | SAVONLINNA

#24

*in the QS Top 50
Under 50 ranking*

15,000

DEGREE STUDENTS

20,000

ADULT EDUCATION STUDENTS

2,700

STAFF MEMBERS

300

*Among the leading 300
universities in the world
in several international
rankings*

13

fields of study

100

DEGREE PROGRAMMES
AND MAJOR SUBJECTS

2,500

DEGREES, including 160
doctoral degrees (2014)

1,000

INTERNATIONAL EXCHANGE AND
DEGREE STUDENTS EVERY YEAR

uef.fi



4 *global challenges*

*We have identified four global challenges.
We seek to find solutions for these challenges through
our strong research areas rooted in the basic sciences
and through research-based education that meets the
challenges of tomorrow's working life.*

4 global challenges



*Ageing, lifestyles
and health*



*Learning in a digitised
society*



*Cultural encounters,
mobilities and borders*



*Environmental change
and sufficiency of natural
resources*

BASIC SCIENCES

Finding solutions to the complex challenges of our changing world calls for an ability to think and combine things in a novel way. Research and education are expected to provide interdisciplinary solutions and skills to create a responsible and sustainable future.

www.uef.fi/strategy

Research areas

Top-level international research areas

- Aerosols, climate change and human health
- Cardiovascular and metabolic diseases
- Forests, global change and bioeconomy
- Neurosciences
- Borders, mobilities and cultural encounters

Advanced-level strong research areas

- Photonics: theory, materials and applications
- Sustainable governance of natural resources
- Learning in interactive environments
- Translational cancer research
- Musculoskeletal disorders

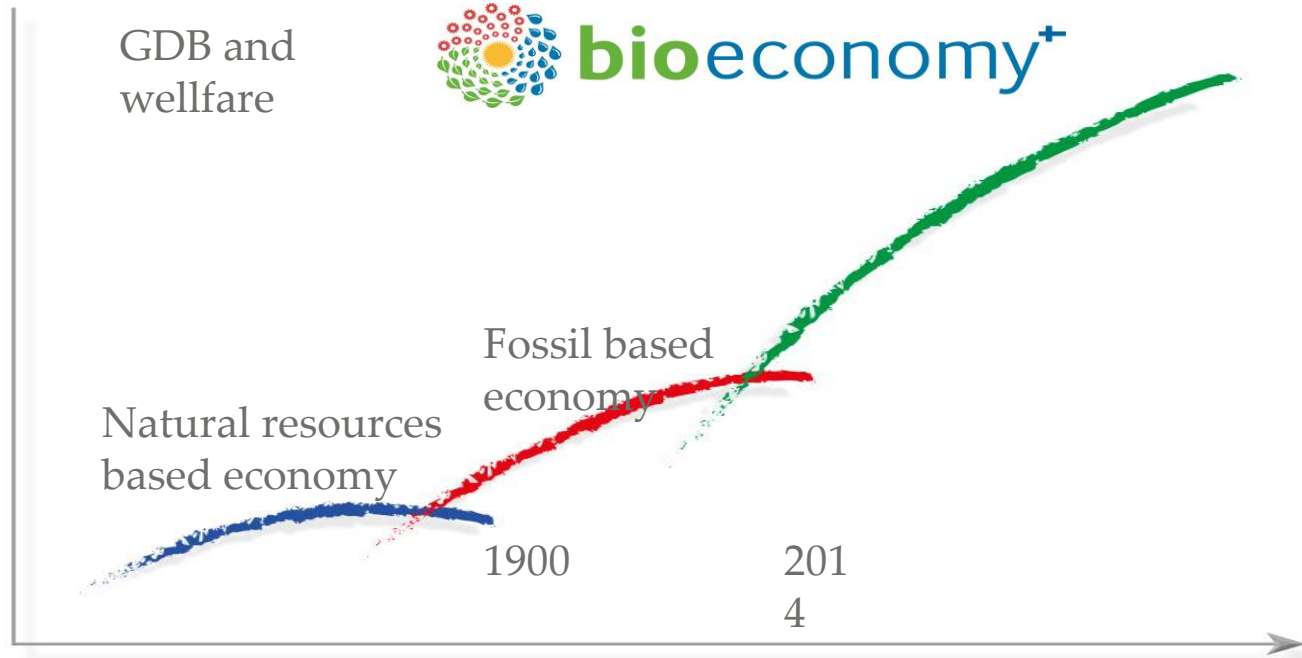
Emerging research

- Methods and Applications of Uncertainty Modelling
- Aquatic Research in Changing World
- Effectiveness in Healthcare and Social Services
- Targeted Drug Delivery with Emphasis on Ocular Drug Treatment
- Bioinformatics in Health Sciences
- Welfare Ruptures (MURTUMA): Recognising Uncertainties, Finding Solutions

The research areas are characterised by:

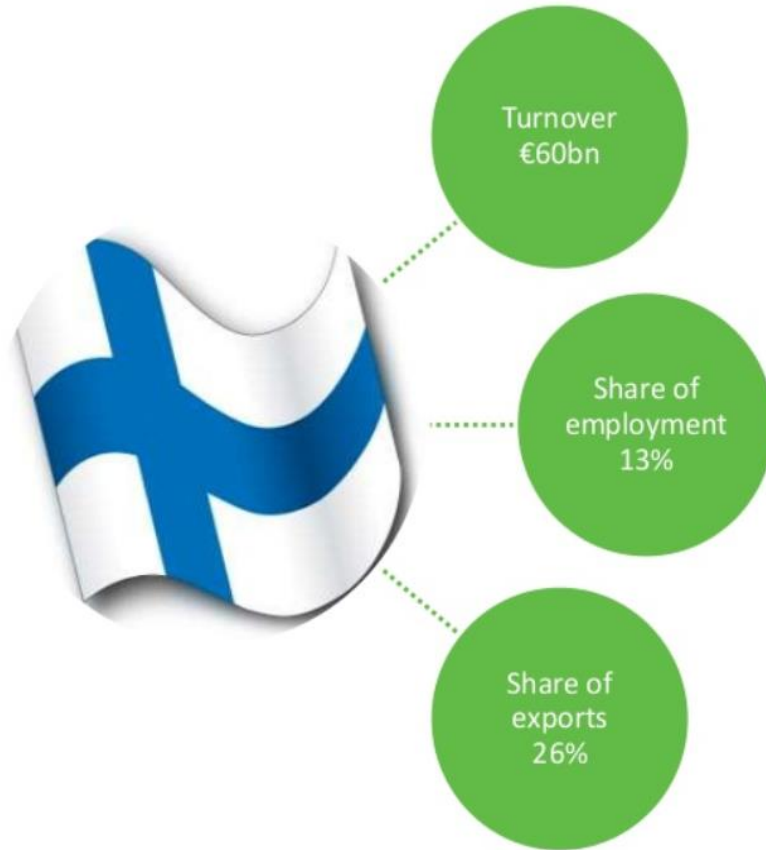
- A high scientific quality
- Interdisciplinarity
- Constant renewal
- International networking
- Focus

Why bioeconomy? It is the next wave of economy from fossil based economy towards sustainability



Lähde: Biotalous.fi

Bioeconomy's significance in Finland



Finland seeks to increase its bioeconomy output to 100bn euros by 2025 and to create 100,000 new jobs in the process.

Bioeconomy combines wood processing, chemistry, energy, construction, technology food and health.

About half of Finland's bioeconomy consists of forest bioeconomy.



UEF's Bioeconomy Policy 2016-2020

- UEF promotes the growth of the bioeconomy, related innovations and the use of novel forest and wood-based materials through its research and education; also addressing the ecological and social implications of the bioeconomy, including the sufficiency of natural resources and the acceptability of their use
- At UEF, the bioeconomy is seen as an extensive and new way of thinking and doing, reaching to the very foundations of society and striving for sustainable development
- **From the bioeconomy viewpoint, the main strengths of UEF are the university's true multidisciplinary and the diverse expertise in the forest-and-wood based bioeconomy**
- Strategically, UEF's bioeconomy focus is on **forests, wood and land use**; goal is to make the competence cluster formed in eastern Finland by UEF and its partners the most sought-after academic partner in bioeconomy research and education addressing forests, wood and land use in Europe
- Many of the university's research groups representing different disciplines address the bioeconomy – UEF has great potential to make significant research breakthroughs that are cross-disciplinary and have great scientific and practical relevance not only in the forest-based bioeconomy, but also in other fields of the bioeconomy

School of Forest Sciences

Internationally reputable unit for research and education

One BSc programme

Four MSc programmes

- Three International

One international PhD
programme

14 Professors

12 Senior researchers

80 studying for Doctorate

50 Exchange students

380 MSc Students



Joensuu – Center for forest bioeconomy



Forest capital of Europe

BEST IN THE WORLD IN COOPERATION...BUT

- In North Karelia the environment for bioeconomy is the best possible: active companies, strong know-how and commitment.
- How all this will be utilized as new products and growing business?
- Are we open enough?
 - *Ideas and innovations are born when different know-how is combined*
 - *All knowledge – how is, however, not in this area*



Green Hub



**Green Hub team
and companies...**



**...working
together**



Challenges

Other knowledge from the area

Ideas

External experts

Green Hub

Input from companies and business!

Input from the academia knowledge pool, openness, involvement, enthusiasm

Community

Other comp

of practice
Needs from the customers

Research and education

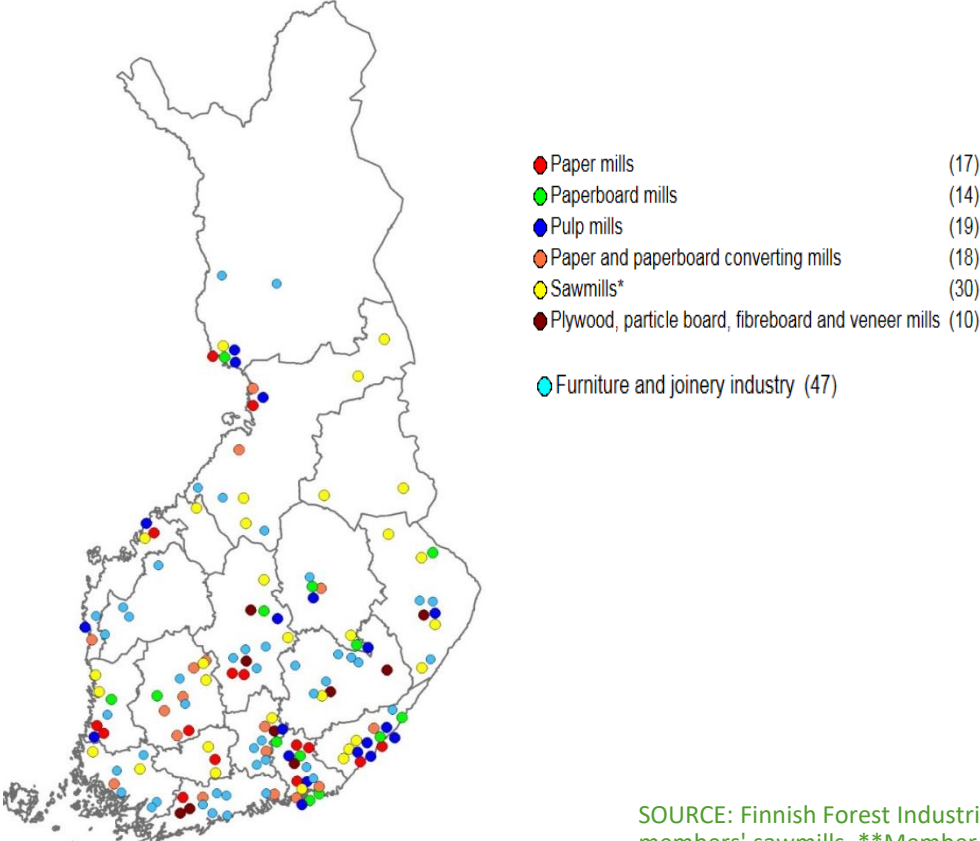
Problem

Development agencies

Commitment
Trust



Forest industry production plants in Finland (2016)

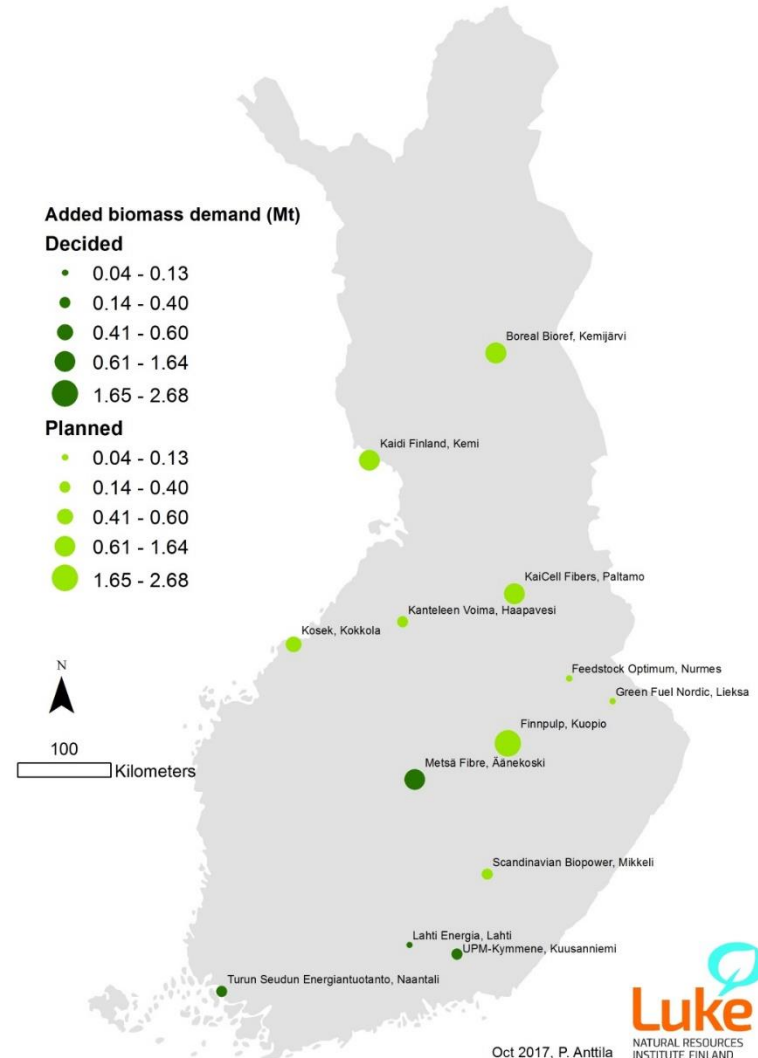


SOURCE: Finnish Forest Industries Federation; *FFIF members' sawmills, **Member companies of the Association of Finnish Joinery and Furniture Industries

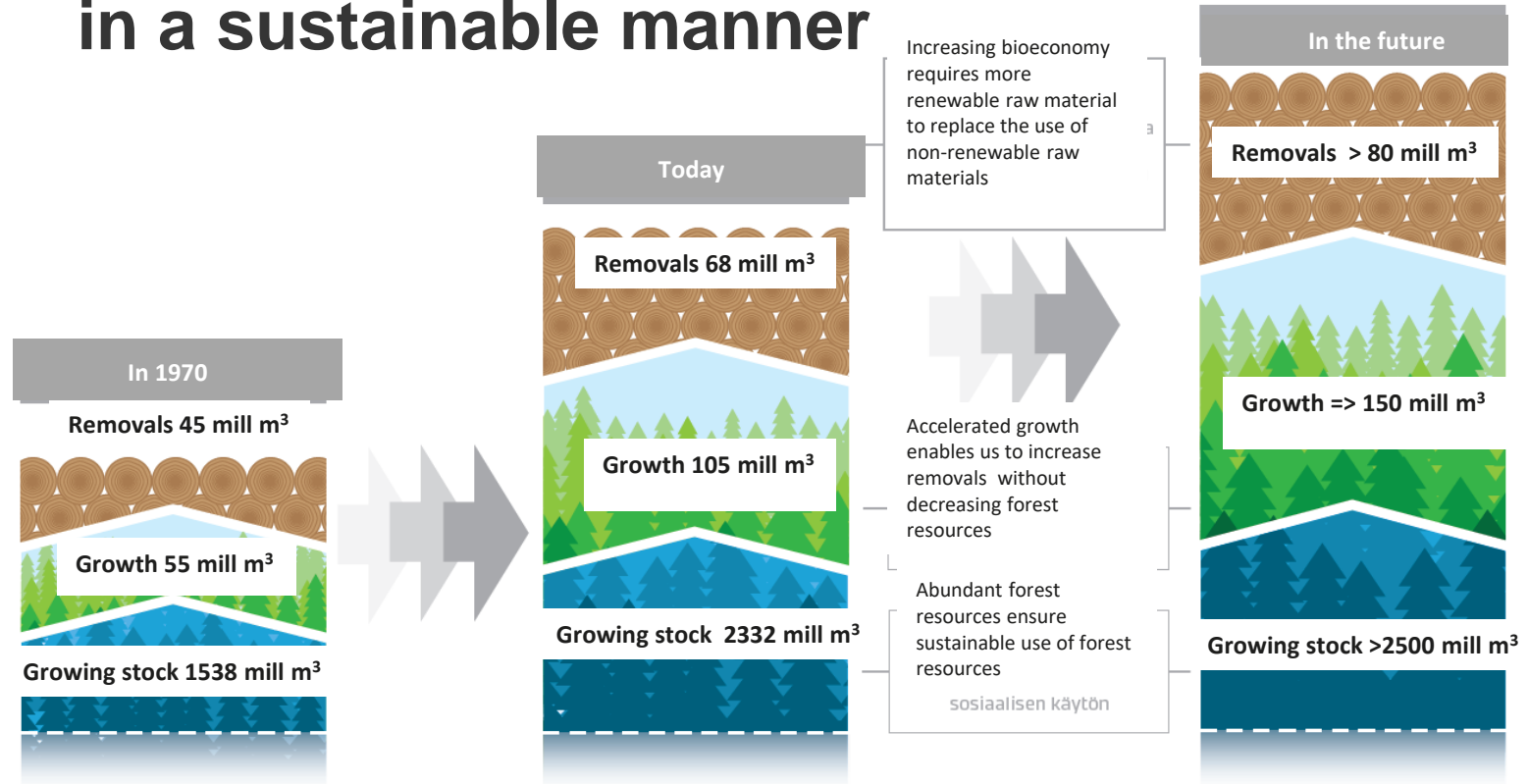
Investments: Planned and under implementation

- Biorefineries and pulpmills
- Biocoal
- Bioethanol
- Bio-oil, biodiesel and biogasoline

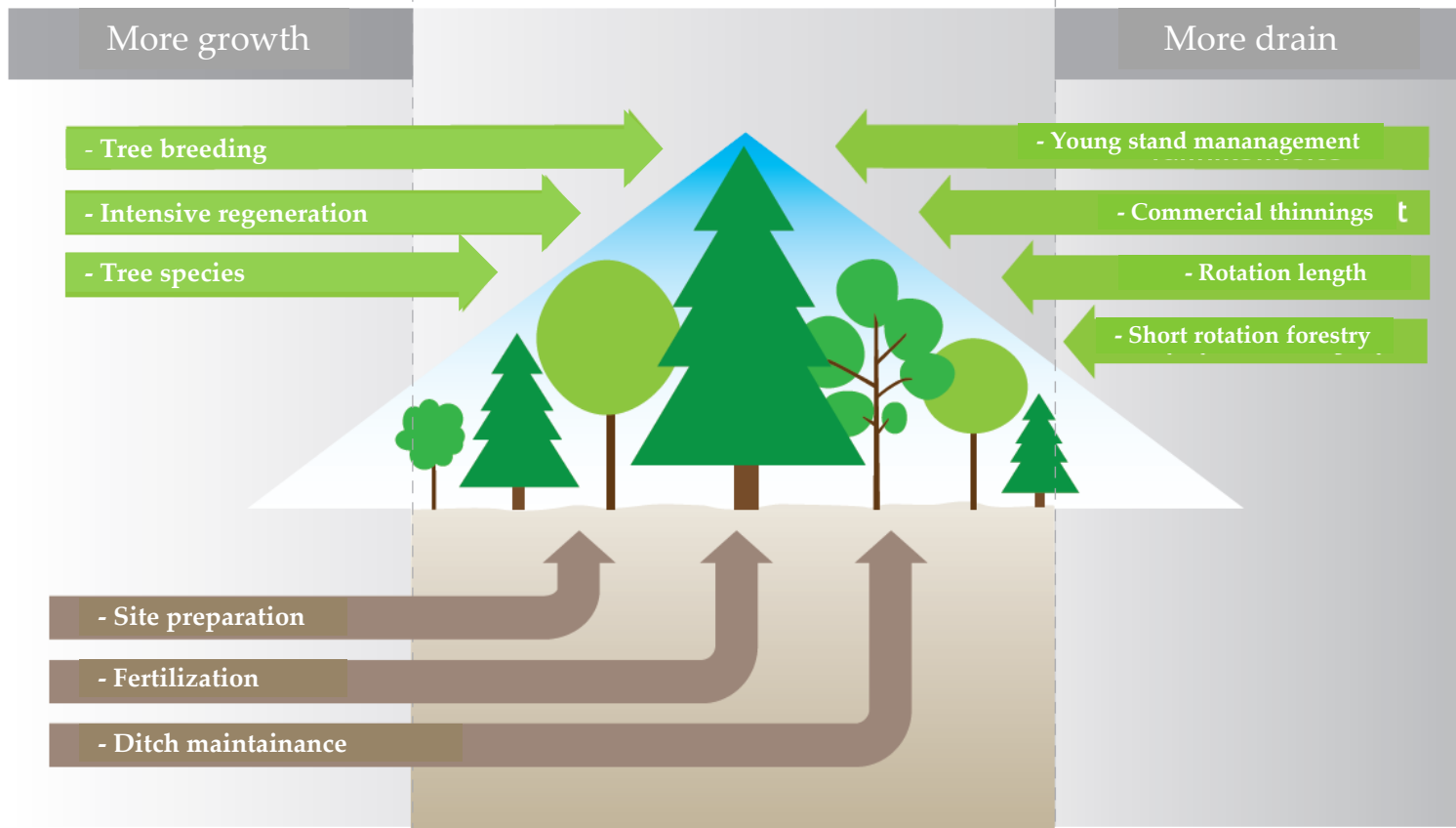
Added demand of forest biomass by selected new investments



Increase of forest growth is prerequisite for increasing cutting for the bioeconomy in a sustainable manner



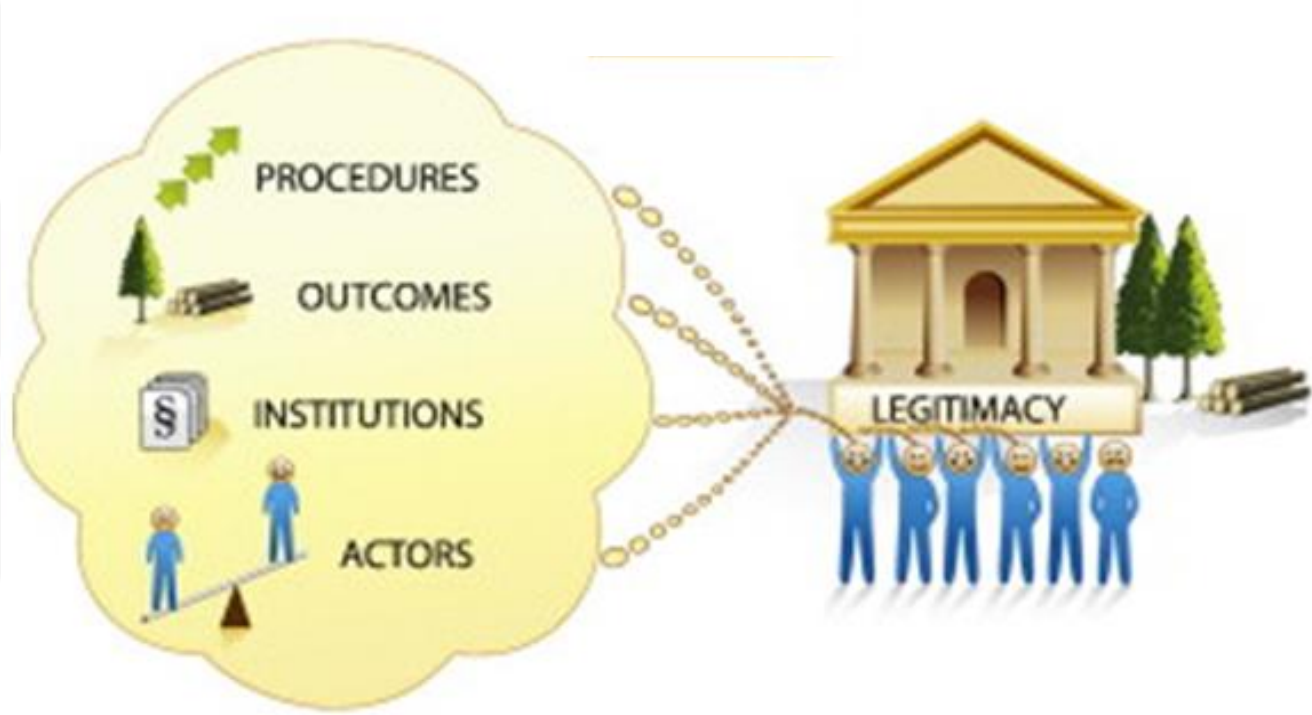
Intensive forest management practices to further increase forest biomass production in a sustainable



Sustainable and multifunctional use of forest



Legitimacy of Bioeconomy in Finland?

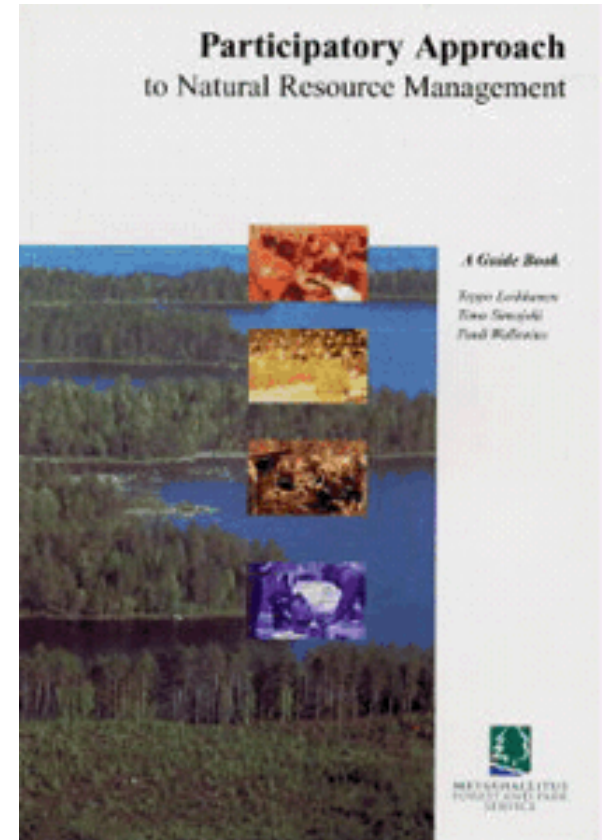


Legitimacy of Bioeconomy in Finland?

- In the creation of bioeconomy strategies and programmes, traditional forestry and industry maintain strong position
 - Weakening position of various other stakeholder groups?
- Discussion on negative effects of increased utilization of natural resources on biodiversity and carbon sinks has emerged rather rapidly
- In addition to traditional actors, also researchers became active

A call for co-management approach in order to safeguard balanced development of bioeconomy

- Participative element is built in Nordic societies, with a strong corporatist orientation
- A call for open participation from mid 1990 catalyzed by global environmental debate and national conflicts
- Act on Environmental Impact Assessment 1994
- **Participatory approach to natural resource management guidelines for state forests 1997**
- Land use and Building act 1999
- Forest act from 1997: **Forest Programmes and simultaneously Forest Councils as co-management forums**



Research network: Decision Analysis on Natural resource Management

Around ten reputable researchers at Uef, Luke, EFI, SYKE

Jyrki Kangas, Annika Kangas, Pekka Leskinen, Jouni Pykäläinen, Teppo Hujala, Mikko Kurttila, Miika Kajanus, Jukka Tikkanen, Katri Hamunen, Tuomo Takala, Arto Haara

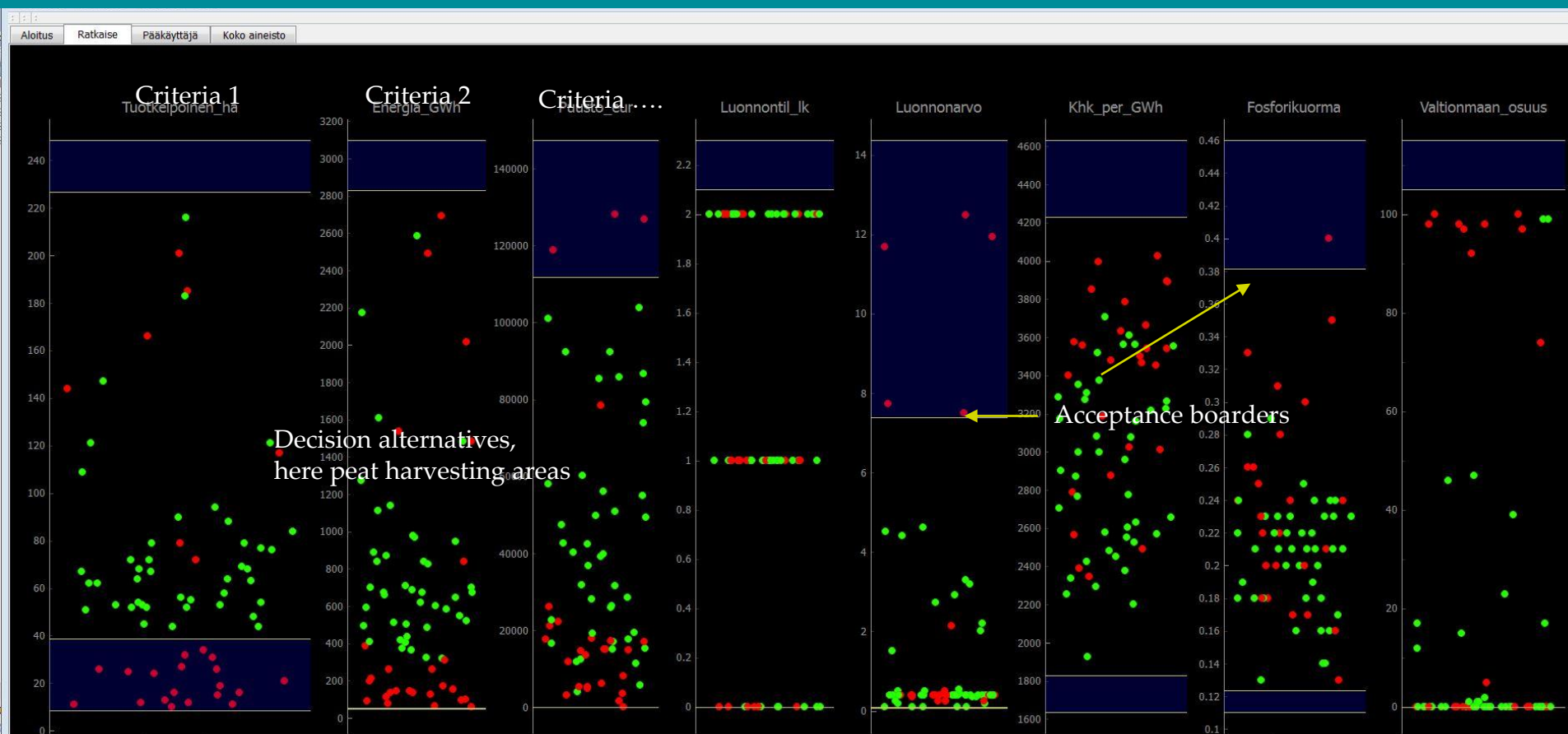
More than 150 scientific papers, some are among the most downloaded articles of Journals

Intensive network in academia and with businesses

Research network on Decision Analysis on Natural resource Management at Joensuu

- Development of decision support approaches and methodologies to enhance participatory decision making
 - Examples of innovations
 - Checklists and process models for involving stakeholders and citizens in decision making
 - Qualitative problem structuring methodologies
 - A'wot improvement to SWOT-analysis
 - Utility analysis
 - Yoda: a dis-aggregative analysis
 - Cases/consultancy with businesses / administration
 - State forests
 - Municipality forests
 - Natural resource policy analysis
 - Land-use planning
 - Scenario-analysis for forest industry investments
 - Selection of peat harvesting sites ...
 - Active participation in European Research and Development projects
- > interest to continue such efforts

An example of disaggregative decision support tool: YODA



- Stake-holders adjust acceptance borders according to their own value structure
- Software collects options according to defined rules -> e.g. options accepted in all solutions

Support material for Co-NRM professionals and educators



english | čeština | deutsch | magyar | nederland | slovenčina | suomi

You are here: [CoPack](#) »

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- + 3 Methods and tools
- + 4 Documentation
- + 5 Evaluation
- Downloads
- Authors
- Copyright & Disclaimer

CoPack

CoPack is a toolkit containing training instructions and materials on the subject of **collaborative planning**. It has been designed to be used in vocational training and at universities, for the education of students and professionals involved in natural resources and environmental management planning.

CoPack consists of a set of **materials** such as **handouts**, **exercises** and **slide shows** to be used in lectures and courses. At the core of these materials, a separate **Methods Manual** comprises the descriptions of more than 20 methods and tools for collaborative planning and instructions on how to use them.

The **CoPack website** and its offline version, the **Trainer's Guide**, display and explain the materials for the trainer's benefit. Materials can be downloaded directly from individual web pages or bundled as a complete package from the **Downloads** page. In accordance with the [CoPack terms of use](#), we also offer source files so that trainers can adapt the materials to their own purposes.



TraCoPi

Learners will be presented with the materials in the course of lectures and exercises. They do not need to visit the website or read the trainer's guide, but for those interested, CoPack is also suited for self-study.

CONTENTS

CoPack is divided into five sections, each one corresponding with a module of practical training that can be built on the materials provided:

1. The [Introduction](#) section gives an overview of basic concepts of collaborative planning.
2. [Preparing for a collaborative process](#) outlines the special knowledge and skills



EnTraCoP

