SCANDINAVIAN SOCIETY OF FOREST ECONOMICS

SSFE Board

Denmark
Bo Jelesmark Thorsen (bjt@life.ku.dk) and
Tove Enggrob Boon (deputy) (tb@life.ku.dk)

Norway
Sjur Baardsen (sjur.baardsen@umb.no) and
Even Bergseng (deputy) (even.bergseng@umb.no)

Finland
Anne Toppinen (chairman) (anne.toppinen@helsinki.fi) and
Heikki Pajuaja (deputy) (heikki.pajuaja@metsateho.fi)

Sweden
Anders Roos (Anders.roos@sprod.slu.se) and
Lars Lönstedt (deputy) (Lars.Lönstedt@sprod.slu.se) and
Peichen Gong (deputy to the deputy)
(peichen.gong@sekon.slu.se)
Foreword

During four warm and sunny days, 19\textsuperscript{th}-22\textsuperscript{nd} May 2010, close to 70 researchers gathered in Gilleleje, Denmark to present and discuss ongoing research at the Biennial Meeting of the Scandinavian Society of Forest Economics (SSFE).

SSFE was established in 1958 and has been active ever since. It is a sign of its quality that it remains vigorous and is able to attract also a large number of young researchers in the field. This will keep the SSFE alive for many decades to come.

On behalf of the SSFE, I thank our three keynote speakers who gave us some very interesting inputs for reflection and discussion: Professor Peter Berck, UC Berkeley, USA, Professor Marc Hanewinkel, Baden-Württemberg Forest Research Institute, Germany, and Professor Arild Angelsen, Norwegian University of Life Sciences.

In full compliance with tradition, the programme also included an excursion. The theme was the decision process and implementation of the new national park in Northern Zealand. The SSFE is grateful to its former member and now Forest District Chief Dr. Jens Bjerregaard Christensen, for setting up the programme and giving the participants an interesting insight into the political, economic and environmental aspects of the new national park.

This Biennial Meeting followed up on the tradition of appointing worthy Honourable Fellows, which was established in Lom, Norway in 2008. This year, Professor Lars Lönnstedt, Swedish University of Agricultural Sciences in Uppsala and Professor Colin Price, University of Bangor, UK were appointed Honourable Fellows of the SSFE. A Diploma and a small gift followed the appointment.

The organisers and the participants wish to express their gratitude to SamNordisk Skogforskning (SNS) under the Nordic Council of Ministers for its indispensable financial support to the Biennial Meeting. We also wish to thank Mrs Charlotte Bukdahl Jacobsen and Ms Petrine Steen Nielsen for their great effort in making all practical and organisational matters work so smoothly. And we appreciate that Ms Petrine Steen Nielsen and Professor Emeritus Finn Helles have edited this volume of the Proceedings series of the SSFE.

Frederiksberg, October 2010.

Bo Jellesmark Thorsen
Table of contents

Foreword 3
Table of contents 5

Honorary Fellows

Colin Price 11
Lars Lönnsted 15

Business Economics of Forestry & Forest Management Planning
Eyvindson, K., Hujala, T., Kangas, A. and Kurttila, M.

Effect of information content on the choice among alternative forest plans 21
Nilsson, M. and Eriksson, L. O.

How forest knowledge is used in forest planning – a case study 34

Price, C.

Appraising the economic impact of tree diseases in Britain: several shots in the dark, and possibly also in the wrong ball-park? 45

Price, C.

Threat, discount premiums, net present value and rotation: a real-world example 62

Price, C.

Valuing landscapes with trees: subjectivity versus objectivity, holistic versus components-based approaches 80

Thorsen, B. J.

Risk, returns and possible speculative bubbles in the price of Danish forest land? 100
# Table of contents

Foreword .......................................................... 3

Table of contents ............................................... 5

**Honorary Fellows** ...........................................

Colin Price ....................................................... 11

Lars Lönnsted .................................................... 15

**Business Economics of Forestry & Forest Management Planning** .............................................

*Eyvindson, K., Hujala, T., Kangas, A. and Kurttila, M.*
Effect of information content on the choice among alternative forest plans .......................... 21

*Nilsson, M. and Eriksson, L. O.*
How forest knowledge is used in forest planning – a case study ........................................... 34

*Price, C.*
Appraising the economic impact of tree diseases in Britain: several shots in the dark, and possibly also in the wrong ball-park? 45

*Price, C.*
Threat, discount premiums, net present value and rotation: a real-world example .................. 62

*Price, C.*
Valuing landscapes with trees: subjectivity versus objectivity, holistic versus components-based approaches ................................................................. 80

*Thorsen, B. J.*
Risk, returns and possible speculative bubbles in the price of Danish forest land? ............... 100
Abstracts

Berck, P.
The Fuel for Land Use Change 112

Brazee, R. J. and Meilby, H.
Volvo Theorem Revisited 112

Favada, I.
An Economic Analysis of Forest Rotation without Interest Rate – Setting the Scene 113

Hankala, A., Wikström, P., Öhman, K. and Eriksson, L. O.
An integrated MCDA software application for forest planning: a case study in Southwestern Sweden 113

Jacobsen, J. B. and Thorsen, B. J.
Varying levels of information and strategies for adapting forest management to climate change 114

Kurttila, M., Hiltunen, V. and Pykäläinen, J.
Generating top-level plans in hierarchical forest planning – the case of Metsähallitus 115

Petty, A., Kärhä, K. and Mutikainen, A.
Cost-efficient small-diameter wood harvesting method in early thinnings 116

Rößiger, J. and Knoke, T.
An optimization model for a mixed species stand management with determination of the harvest sequence under uncertainty 117

Solberg, B., Bergseng, E. and Lindstad, B. H.
Potential impacts of international regimes for biodiversity protection and carbon sequestration in forestry – a quantitative approach 118
Forest Policy

Broch, S. W., Strange, N. and Wilson, K. A.
How spatial variation influences landowner willingness to provide ecosystem services 121

Broch, S. W. and Vedel, S. E.
Investigation of landowners’ preferences for afforestation contracts in Denmark 127

Brukas, V.
Model of State forestry administration and media thriller in Lithuania 131

Hujala, T., Kurttila, M., Korhonen, K. and Pykäläinen, J.
Reasoning of family forest owners – survey of forest management and biodiversity protection problems 146

Korhonen, K., Kurttila, M. and Hujala, T.
Typical social networks of family forest owners in timber trade 161

Liu, J.-C. and Chen, W.-H.
Survey and analysis of forest land trade centers in southern China: A case study of Jiangxi Province 172

Leppänen, J.
Finnish family forest owner 2010 survey 184

Lönnstedt, L., Lagerlöf, P. and Scheibenpflug, A.
Small scale forest owners’ economic, social and environmental responsibilities - literature review, discussion about responsibilities and results from case studies 196

Abstracts

Abildstrup, J., Garcia, S., Bøye, S. and Stenger, A.
Recreation value of forests in Lorraine: A spatial analysis 218

Boon, T. E.
Images of forest owners – a review of owner typologies 218
Jacobsen, J. B., Lundhede, T. H. and Thorsen, B. J.
Are Economists Valuing Biodiversity at Gunpoint? Evidence of no or decreasing willingness to pay for population levels above preservation 219

Kamelarczyk, K. and Holmgren, P.
Measuring the performance of forestry – a proposed Forest Management Index as boundary spanner at the science-policy Interface 220

Moiseyev, A., Solberg, B. and Kallio, M.
Impact of the future global scenarios on the EU forest sector development 221

Vanhatalo, A., Uusivuori, J., Mikkola, J., Neuvonen, M. and Sievänen, T.
Visits to National Parks and Hiking Areas: A Panel Data Analysis of Their Socio-Demographic, Economic and Site Quality Determinants 222

Vierimaa, M.
Policies and processes for improving forest holding size and structure in Finland 222

Forest Industry & Forest Products Markets

Baardsen, S.
Contracts as a Tool for Improving Efficiency in the Norwegian Roundwood Markets 227

Gustafsson, Å. and Rask, L.-O.
Proposing a Research Agenda for Swedish Sawmill Distribution Channel Challenges 244

Hujala, M., Puimalainen, K., Tuppura, A. and Toppinen, A.
The Role of National Culture and Environmental Awareness in Recovery and Utilization of Recycled Paper 257

Kärhä, K., Elo, J., Lahtinen, P., Räsänen, T. and Pajuoha, H.
Availability and Use of Wood-based Fuels in Finland in 2020 274

Lauri, P., Kallio, A. M. I. and Schneider, U. A.
Substitution between coal and wood in Europe 284
Li, N., Toppinen, A., Tuppura, A., Puualainen, K. and Hujala, M.
The patterns and determinants of sustainability disclosure in the
global forest industry 298

Roos, A., Lindberg, S., Kihlstedt, A., Woxblom, L. and Olsson, U.
Product semantics and sensory analysis on wood – a pilot study 314

Saastamoinen, O.
Failed strategies, external events or just life in the global markets?
Discussing the downturn of the pulp and paper industry in Finland 334

Abstracts

Favada, I., Rogieux, P. and Requardt, A.
Improving International Forest Products Price Information 348

Assessing the Finnish targets for the energy use of forest chips
with a spatial market model 349

Lähtinen, K.
Multidimensional sustainability framework to evaluate forest
and wood energy production (BioSus-project) 350

International Forestry

Chhetri, B. B. K., Larsen, H. O. and Smith-Hall, C.
Stakeholder perspectives on patterns and causes of forest crimes
in Community Forestry in Nepal 353

Hofstad, O. and Sankhayan, P. L.
Exploring possibilities for reducing woodland deforestation and
degradation at village level in Sub-Saharan Africa 365

Pouliot, M.
Relying on nature’s pharmacy: a case study of households’
dependency on medicinal plants in Burkina Faso’s central plateau 383
Shrivastava, V. K., Theilade, I. and Meilby, H.
Trade chain analysis of *Ophiocordyceps sinensis* and *Tricholoma matsutake* in Bhutan 396

Abstracts

Barua, S. K., Uusivuori, J. and Kuuluvainen, J.
Carbon based policy instruments versus agricultural commodity market in stopping tropical deforestation 417

Carlsen, K. and Lund, J. F.
Corporate social responsibility, forestry and societal change – a developing country perspective 418

Nielsen, M. R.
Improving the conservation status of the Udzungwa Mountains? The effect of Joint Forest Management on bushmeat hunting in the Kilombero Nature Reserve, Tanzania 419

Nielsen, Ø. J., Rayamajhi, S., Chhetri, B. B. K., Meilby, H., Larsen, H. O. and Smith-Hall, C.
Livelihood strategies and poverty in rural Nepal 420

The Gilleleje Poem

Price, Colin
Despite Volcanic Ash… 421

List of Participants 425
Colin Price

Colin Price was in 1970 awarded a B.A. degree (Forestry) from Oxford University, with Jubilee Prize for best forestry student. The degree was in 1975 converted to M.A. In 1975 he was awarded a D.Phil. degree also from Oxford University. Colin was in 1976 appointed as lecturer in environmental and forestry economics at University College of North Wales, now Bangor University, promoted to senior lecturer in 1990 and to professor in 1995.

Colin has always had a major teaching responsibility at Bangor University, mainly for teaching environmental and forestry economics. He also took an early initiative in designing an economic development option suitable for overseas students, and over the years he has introduced and taught courses in landscape design, recreation, environmental management, and computing. Other examples of his teaching are natural resource economics, practical forestry and estate economics, and economic, environmental and social appraisal.

Colin is an eminent lecturer and is therefore in great demand also outside Bangor University. He has given occasional seminars on topics of current interest at a number of universities in the UK, he has been a frequent speaker at conferences in many countries in and outside Europe, and over recent years he has often been guest lecturer in, for instance, the three Scandinavian countries. He has supervised numerous studies for M.Sc., M.Phil., and Ph.D. degrees.

Colin’s research has lain very broadly in the field of land economics, ranging from urban economics to economics of biodiversity. Most comes under the heading of environmental and forestry economics. His most enduring and absorbing preoccupation has been with the economics of time, as represented by the process of discounting. His first published paper on this topic appeared in 1973, and the work culminated in the publication of *Time,*
Discounting and Value in 1993. These and also more recent works should have led to a major revolution of economic appraisal in the world’s economies — but most economists are apparently not as open minded as they believe. Equally fundamental has been his work on economic ripples — the indirect welfare effects via price changes consequent on project implementation.

Colin’s work on evaluation of non-market benefits and costs originated long before popular interest arose in the subject. It has covered a wide range of effects, including physical ones but mostly he has concentrated on “aesthetic” aspects, with a number of papers on recreational congestion and site substitution, and on statistical problems in fitting recreation demand curves. Landscape Economics 1978 was the world’s first book on aesthetic valuation. His contributions to forestry economics have been at both macro and microeconomic level, much of the material being assembled in the textbook The Theory and Application of Forest Economics 1989 which is in widespread use. More recent developments have been in economic evaluation of transformation to continuous cover forestry and engagement in the debate about whether forest certification really provides a route for evaluating the environmental and social consequences of different modes of production. Colin is also heavily involved in research on climate change and biodiversity economics.

In 2000 Colin’s contributions to environmental and forestry economics were recognised by the award of the International Union of Forest Research Organizations’ Gold Medal for Scientific Achievement.

His list of publications is impressive: books, chapters in books and series, papers in academic and professional journals and series, book reviews.

Colin has participated in all biennial meetings of Scandinavian Society of Forest Economics since 1991. This is really an accomplishment. And he has become an indispensable participant: he always presents — several — papers and he is very active in the discussions. It has become a tradition that he writes a Conference Poem. These poems are funny, but they are not just for fun — he may have an unequalled sense of humour but don’t fail to recognise that there is very often an edge to it.

Colin is also a great poet in the time between the SSFE biennial meetings. In the poems he demonstrates a great ability to convey to the reader “moods” experienced over many years and they are multi-layered, they are “tessellations” (see list), they are very English, and very much Colin Price. It pays to lose oneself in reading them — with a dictionary at hand.

In one word: Colin is gorgeous.

Selected publications
Tessellations: Poems of Celebration and Reflection. Available from eim- price@btinternet.com


Project appraisal and planning for over-developed countries: I. The costing of nonrenewable resources, Environmental Management, 8 (1984), 221-32.


Low discount rates and insignificant environmental values. Ecological Economics (in press).

FH
Lars Lönnstedt received his B.A. in 1968 and his M.Sc. 1969 at Stockholm University. His main subjects were business administration, economics, and statistics. Lars earned his Ph.D. degree in 1971, also at Stockholm University. His thesis developed knowledge on the introduction of operations research in organization. Lars was in 1971 assigned as an assistant professor at the Department of Forest Economics at the College of Forestry, which at that time was in Stockholm. In 1975 he was appointed as an associate professor at the College, which in the following year became the Faculty of Forestry Sciences, The Swedish University of Agricultural Sciences, SLU. In 1999 Lars was promoted as a professor at the Department of Forest-Market-Industry Studies, SLU and he is now professor of business administration at the Department of Forest Products, SLU, Uppsala. Over his career Lars has also held positions at, and developed important research contacts with, research institutions outside Sweden, e.g. the Norwegian University of Forest Economics, IIASA Vienna, ENGREF France, and universities in North America.

Lars' research spans a broad spectrum of topics, from forest owners' decision making to research on the global forest sector. One distinguishing feature of Lars' research is its manifestation in publications that combine high scientific quality with societal relevance. The simultaneous transformation of farming enterprises and the growth of the forest industries created a need for a better knowledge about the economic planning among private forest owners. Lars was a pioneer in this research field and the main contributor to the enhanced understanding of the topic from the 1970s, highlighting the forest owners' multiple goals and long time perspective in their decision making. His publications on Non-Industrial Forest Owners ranged from their motivations, goals, decision making, and timber supply - to the benefit of policymakers and forest owners.
Lars Lönnstedt

Lars Lönnstedt received his B.A. in 1968 and his M.Sc. 1969 at Stockholm University. His main subjects were business administration, economics, and statistics. Lars earned his Ph.D. degree in 1971, also at Stockholm University. His thesis developed knowledge on the introduction of operations research in organization. Lars was in 1971 assigned as an assistant professor at the Department of Forest Economics at the College of Forestry, which at that time was in Stockholm. In 1975 he was appointed as associate professor at the College, which in the following year became the Faculty of Forestry Sciences, The Swedish University of Agricultural Sciences, SLU. In 1999 Lars was promoted as a professor at the Department of Forest-Market-Industry Studies, SLU and he is now professor of business administration at the Department of Forest Products, SLU, Uppsala. Over his career Lars has also held positions at, and developed important research contacts with, research institutions outside Sweden, e.g. the Norwegian University of Forest Economics, IIASA Vienna, ENGREF France, and universities in North America.

Lars’ research spans a broad spectrum of topics, from forest owners’ decision making to research on the global forest sector. One distinguishing feature of Lars’ research is its manifestation in publications that combine high scientific quality with societal relevance. The simultaneous transformation of farming enterprises and the growth of the forest industries created a need for a better knowledge about the economic planning among private forest owners. Lars was a pioneer in this research field and the main contributor to the enhanced understanding of the topic from the 1970s, highlighting the forest owners’ multiple goals and long time perspective in their decision making. His publications on Non-Industrial Forest Owners ranged from their motivations, goals, decision making, and timber supply - to the benefit of policymakers and forest owners.
Alongside this research Lars produced prominent articles based on forest sector analyses. The research later expanded to applications on forest industries in different regions of the world and also investigations of paper recycling. And naturally, having a genuine knowledge of both the forest owners’ situation and insights about the economic challenges to the Swedish forest sector, Lars has contributed constructively to the Swedish forest policy dialogue through articles and presentations. Over time he frequently provided recommendations for an improved operation of the forest sector. In 1992 he was appointed by the Government of Sweden as the Secretary in the Forest Commission preparing the new Swedish Forest Policy and other engagements have followed.

Lars has published in the most respected and prestigious journals in the field. He has also published chapters, books, and articles in professional journals.

The scientific achievements have not hindered Lars to engage actively in research related committees at the University and in international scientific organizations.

Lars is truly a hard working scientist! Thanks to his endurance and energy he made the Forest industrial economy education at SLU a real success. The education is now popular among students and also in the forest industry sector. He also contributes to the education by lecturing and participating in seminars. Over the years he has also supervised thesis studies, including several at Ph.D. level.

Lars has for a long time been a dedicated member of the SSFE, often presenting paper at the bi-annual conferences, and he was for several years its Swedish board member. In 2006 he successfully organized the SSFE-meeting in Uppsala.

In brief, Lars is a sharp and curious scientist and a friendly and supportive colleague – combined with devotion and perseverance this is an optimal combination!

Selected publications
Alongside this research Lars produced prominent articles based on forest sector analyses. The research later expanded to applications on forest industries in different regions of the world and also investigations of paper recycling. And naturally, having a genuine knowledge of both the forest owners' situation and insights about the economic challenges to the Swedish forest sector, Lars has contributed constructively to the Swedish forest policy dialogue through articles and presentations. Over time he frequently provided recommendations for an improved operation of the forest sector. In 1992 he was appointed by the Government of Sweden as the Secretary in the Forest Commission preparing the new Swedish Forest Policy and other engagements have followed.

Lars has published in the most respected and prestigious journals in the field. He has also published chapters, books, and articles in professional journals. The scientific achievements have not hindered Lars to engage actively in research related committees at the University and in international scientific organizations. Lars is truly a hard working scientist! Thanks to his endurance and energy he made the Forest industrial economy education at SLU a real success. The education is now popular among students and also in the forest industry sector. He also contributes to the education by lecturing and participating in seminars. Over the years he has also supervised thesis studies, including several at Ph.D. level.

Lars has for a long time been a dedicated member of the SSFE, often presenting paper at the bi-annual conferences, and he was for several years its Swedish board member. In 2006 he successfully organized the SSFE-meeting in Uppsala.

In brief, Lars is a sharp and curious scientist and a friendly and supportive colleague – combined with devotion and perseverance this is an optimal combination!

Selected publications


AR
BUSINESS ECONOMICS OF FORESTRY
&
FOREST MANAGEMENT PLANNING
Effect of information content on the choice among alternative forest plans

Kyle Eyvindson1, Teppo Hujala2, Annika Kangas1 and Mikko Kurttila2

1 Department of Forest Sciences, University of Helsinki, 2 Finnish Forest Research Institute (METLA)

Abstract

Multi-criteria decision support (MCDS) tools assist the decision-maker (DM) in selecting an appropriate forest plan among specified alternatives. The selection of appropriate criteria to compare the alternatives is related to the scales of planning and the availability of appropriate inventory data. Anyway, the criteria should reflect the DM's objectives and address the production possibilities of the forestry unit at hand. The objectives of this study is to determine if DMs are able to identify/construct similar preferences for the forest with varying levels of information regarding the plans, and to determine if the identified preferences result in the selection of the same forest plan. A group of forest sciences students were chosen as testees. A representative sized forest tract from a forest managed by Metsähallitus was used as a case holding providing semi-authentic data. The MESTA internet application was used to guide participants into selecting a single forest plan, depending on the criteria presented to the participant. Results of a systematic experiment showed that approximately half of the participants selected the same forest plan in two out of three different decision scenarios. This result suggests one carefully pre-defined default set of criteria, but it also calls for further study.

Keywords: decision criteria, decision support, forest planning, multi-criteria decision support (MCDS).

1. Introduction

Contemporary research into multi-objective decision making has focused on developing methods and tools which allow for a comparison between alternatives. The comparison between alternatives focuses on relevant criteria which are (or are expected to be) important to the decision-maker (DM). The selection of criteria can be done with guidance from the planning coordinator (Diaz-Balteiro and Romero, 2004; Gómez et al., 2006; Eyvindson et al., 2010a) or independent selection from a list (cf. Kazana et al., 2003; Kajanus et al., 2004).