



FOREST ECONOMICS DEPARTMENT

NEWSLETTER

Editors: Michael Jones and David Cope

Finnish Forest Research Institute, Helsinki, Finland

Kaisaniemenkatu 1, 00100 Helsinki 10

21.4.1972 No. 27

DEPARTMENTAL PERSONNEL

Head of Department:

Prof. Lauri Heikinheimo

Prof. of Business Economics (acting):

Prof. Lorenzo Runeberg (plastics and wood)

Prof. Emeritus:

Prof. N.A. Osara (Finland's forestry in the world economy)

Research specialist (acting):

Dr. Esko Salo (removal measurement)

Senior research scholarship:

Dr. Matti Palo (forecasting and optimization models)

Researchers:

David Cope (outdoor recreation)

Matti Heikinheimo (standard of living of forest workers)

Jan Heino (social benefits of forests)

Terho Huttunen (wood consumption)

Jouko Hämäläinen (economics of thinning)

Buddhi Jha (Finnish scholarship)

Dr. Michael Jones (land tenure)

Heikki Juslin (consumer behaviour)

Kari Keipi (wood-purchase budgeting)

Tatu Ollikainen (fertilization)

Simo Penttilä (nursery economics)

Aarne Reunala (structural change in forest ownership)

Olli Saastamoinen (social benefits of forests)

Sampsa Sivonen (regeneration economics)

Ilpo Tikkanen (forestry behaviour of non-farmer forest owners)

Hannu Vehviläinen (forest labour)

Extra-departmental researchers:

Prof. Seppo Ervasti (forest balance)

Dr. Veli-Pekka Järveläinen (silvicultural behaviour of forest owners)

Heikki Kunnas (forestry in national accounting)

Research secretary:

Marja Harmanen

Research assistants, typists and others:

Erkki Berg, Juhani Hongisto, Aune Kankkunen, Anita Korvenranta, Maija Kuusi-järvi, Antero Mäkinen, Erkki Raittila, Jaakko Salo, Katarina Salo, Rakel Seppälä, Anna-Leena Simula, Brita Sjöstrand, Maija-Liisa Soveri, Mikko Tervo, Kaija Westin

Colloquium: International social-development policy

Professor Heikki Waris will discuss international social-development policy at the next meeting of the colloquium, which will be held on Monday, 24th April, in the Department's conference room, starting at 14.00. The topic will be examined under the following headings:

1. The need for social-development policy in the world - global concepts
2. Social-development policy: programmes and goals
3. Social-development policy in practice

Pirkko Kuitunen: The time-budget study in the Finnish Forest Research Institute

A part of the State's internal budgeting work at present being developed and tested in administration takes the form of time-budget studies, which in their present form are being tried out this year as an experiment in the Institute together with four other State offices. The purpose of internal budgeting is to produce the information required by directors and managers for planning and supervision. With this aim in mind, internal budgeting is being used in the Institute to find out the total costs of existing projects each month.

Since over half the total expenditure in State administration is in the form of salaries, it is clear that it is useful to know how these funds are used. While administrative book-keeping allows supervision of the way in which the approved income and expenditure are used the most important matters, it does not sufficiently explain the division of salary costs in the Institute among actual projects. For example, a total budget of c. 9.7 million marks was allocated to the Forest Research Institute in 1971. Of this, it is known that 6.7 million marks were used for salaries, but there is no accurate knowledge of the division among separate projects. A time-budget study has been shown to be one means of dividing personnel costs among projects. Every employee keeps a daily record of how his working time is divided among separate projects, and at the end of the month the total for each project is calculated. The amount of each person's monthly salary is fed into the computer beforehand, and, with the help of the time-budget forms filled in by the employees, the computer divides the salary costs among projects in the same proportion as the recorded work time used on each.

Since in administrative offices and research institutions it is almost impossible to determine output in concrete units, work time provides a substitute measure of output. It can only be a substitute, since it merely explains for what the work time is used, without saying anything about the quality of the work.

In addition, the time-budget study assists in the planning of the use of personnel, since it provides information concerning the use of working time by the present personnel as well as possible existing faults in its use.

(Pirkko Kuitunen is the Institute's accountant and is in charge of administering the time-budget scheme.)

New research projects in the Forest Economics Department
(Supplement to Folia Forestalia 87)

Project no. 1.10

Project title: Small sawmills in Finland, 1972

Personnel: Terho Huttunen, Seppo Ervasti

Date of commencement: 1971

Planned date of completion: 1973

The main purpose of the study is to determine the present roundwood consumption of small sawmills for total-drain and forest-balance calculations. At the same time, light is thrown on the activity of small sawmills in general.

The study method used is systematic cluster sampling, in which the sawmills to be investigated are those falling in squares drawn on the map of Finland at even distances from each other. The results are then enlarged to correspond to the total number of small sawmills in the country.

The required information is collected by interviewing personally sawmill owners. Interviews will be undertaken by three specially trained forestry students.

Project no. 1.11

Project title: Calculation of sample size needed ^{for} determination of total drain:
preliminary investigation for 1975

Personnel: Esko Salo

Date of commencement: 1972

Planned date of completion: 1972

In accordance with the long-term research programme, the total drain from Finnish forests should be determined in 1975. In deciding the method to be used, it is essential to estimate the cost and precision of alternative methods. One of the methods is to take a sample of forest units.

In this study, the sample size needed in simple random sampling for the estimation of the drain from private forests by forestry board districts will be calculated. For this purpose, the material obtained from the sample farms of the National Board of Agriculture's sample study in 1970 will be used.

Project no. 1.12

Project title: Removal and flow of commercial roundwood by districts in 1970

Personnel: Matti Palo (with Esko Pälä, Ministry of Labour)

Date of commencement: 1971

Planned date of completion: 1972

The project involves the collection from roundwood buyers of data on regional removals of commercial roundwood and flows to the districts of consumption in Finland in 1970. Such data is useful for calculating regional drain, as well as for the regional planning of transportation facilities.

Project no. 1.13

Project title: Accuracy of seasonal statistics on the removals of commercial roundwood, 1965-1971

Personnel: Matti Palo (with Esko Pakkanen, of Jaakko Pöyry & Co.)

Date of commencement: 1971

Planned date of completion: 1972

The project is concerned with computing the standard errors of the seasonal felling statistics from the Ministry of Labour, and appraising the accuracy of the Ministry of Labour statistics by comparing them with the statistics on wood consumption.

Project no. 2.12 b

Project title: Forestry behaviour of non-farmer forest owners

Personnel: Ilpo Tikkanen

Date of commencement: 1972

Planned date of completion: 1972

The study attempts to formulate a theoretical model of the forestry behaviour of non-farmer forest owners. Further, the aim is to examine how applicable

this type of model is as an instrument of forest policy, especially from the viewpoint of forestry-promotion organizations.

The study is planned as a thesis for the degree of MMK (Master of Agriculture and Forestry).

Project no. 2.14 a

Project title: Economic comparison of land-use alternatives in the Saariselkä-Itäkaira region

Personnel: Olli Saastamoinen (with Päiviö Riihinen and Matti Keltikangas, University of Helsinki)

Date of commencement: 1969

Planned date of completion: 1972

The project was started at the Department of National Economics of Forestry at Helsinki University in 1969, and included in the Forest Economics Department's research programme in 1972. The object of the study is to make economic comparisons of the following land uses in the Saariselkä-Itäkaira region: outdoor recreation, reindeer husbandry, and timber growing and harvesting. The comparisons are made from both the local and national points of view, and the method of comparison is cost-benefit analysis.

Project no. 2.14 b

Project title: Relationships between wood production and outdoor recreation

Personnel: Jan Heino

Date of commencement: 1971

Planned date of completion: 1973

The aim of the project is to examine the possibilities of reconciling wood production and outdoor recreation. The conflicts arising from different wood-production methods are given particular attention.

The focus of interest will be on forest areas owned by towns in Finland, and information concerning their use will be collected by interviewing those responsible for the management of these areas.

The project forms part of an inter-Nordic investigation into the multiple use of forests. Part of the project will be a thesis for the degree of Master of Agriculture and Forestry (MMK).

Project no. 2.15

Project title: Rural labour-force reserves in the Finnish development areas in the 1970s

Personnel: Hannu Vehviläinen

Date of commencement: 1972

Planned date of completion: 1973

The project serves the development of structural rationalization in forestry and the planning of forest labour-force policy. The aim of the study is to investigate what level of mechanization in forestry would be suitable for the rural labour force in general, and especially for the use by farms of their own labour force and machine capacity, in the 1970s.

In addition, it is proposed to construct a model of the relationship between the degree of mechanization on one side and the degree of industrialization and the employment structure on the other. The model will be applied to the Finnish development areas and perhaps later to some developing countries. The preliminary report will be made in 1972, and in 1973 a deeper interview study will be undertaken.

Project no. 2.18

Project title: A stumpage model

Personnel: Lauri Heikinheimo

Date of commencement: 1972

Planned date of completion: 1973

The idea of a stumpage model based on von Thünen's model of economic location was originally put forward in a lecture given in 1958. Three variables were used: labour costs, transport costs and stumpage price.

The present project plans to develop the model further, by taking into consideration alterations in the prices of the end products of the woodworking industry, alterations in the costs of transportation, distortions brought about by the forest-ownership pattern, and the effects of the geographical distribution of and the area served by the woodworking industry.

Earlier publications:

Heikinheimo, Lauri. Om inkomstfördelning (prisbildning) i kombinationen skogsbruk och skogsindustri (On the distribution of income (price formation) in the combination of forestry and forest industry). Norrlands Skogsvårdsförbunds Tidskrift, 3. Stockholm. 1959.

Heikinheimo, Lauri. Kantorahamalli. 1. Raakapuun kuljetuskustannusten vaikutus kantorahaan. Summary: A stumpage value model. The impact of raw timber transport costs on forest owners' stumpage income. Metsätaloudellinen Aikakauslehti, 83:12. Helsinki, 1965.

Project no. 2.19

Project title: Non-farmer forestry owners and forestry promotion

Personnel: Ilpo Tikkanen

Planned date of commencement: 1973

Planned date of completion: 1975

The aim of the study is to examine factors affecting the use of and the need for forestry-promotion organizations, services and professional aid in forests owned by non-farmers.

The commencement of the project is dependent on the allocation of funds.

Project no. 3.09

Project title: Theoretical framework for an annual wood-purchase budgeting model for a forest-industry firm

Personnel: Kari Keipi

Date of commencement: 1971

Planned date of completion: 1973

The project consists of two parts: the creation of an annual aggregate production-planning model based mainly on the use of linear programming; and combining it with an automatized book-keeping system. A pilot study is under preparation, in which goal programming has been used in an optimization model combined with a manual matrix-based book-keeping system.

The whole model should provide solutions to problems of seasonal variations in the supply of saw material and logging manpower, optimal combinations of transport and storing, and optimal timing. By using shadow prices, it should be possible to analyse the evaluation of timber from a firm's own forests. The model should also answer the question of when it is profitable to use a certain type of saw material for particular purposes (e.g. using saw logs for sawnwood). The time horizon of the gross loading is 1-2 years, and in addition it should produce aggregate production plans for periods of 3-4 months. The model should also provide information for the detailed scheduling and short-term planning of a wood-purchasing forest-industry firm.

Project no. 3.12

Project title: Economic and ecological prospects of recycling more paper

Personnel: Matti Palo

Date of commencement: 1971

Planned date of completion: 1972

The economic and ecological prospects of recycling more paper are being studied on a global basis, with special reference to Finland and the USA. The theoretical frame of reference focusses on the transformation of the linear technology of the pulp and paper industry into a circular technology. Models are developed to explain regional differences in paper recycling.

Personal information

(Supplement to Folia Forestalia, 87)

Saastamoinen, Olli Juhani

b. 22.9.1945

Family: Marja-Liisa Pennanen

Children: Mirka, b. 1969; Katja, b. 1971

Degrees: MH 1968, VTK 1971

Positions held:

1966-68 Forest Research Institute. Research assistant

1968-69 Leningrad Forest Academy. Scholarship

1969-72 University of Helsinki. Researcher

1972 f. Forest Research Institute. Researcher

Present academic studies: Licentiate degree in forest economics

Languages: Finnish, Russian, English, Swedish

Addendum and corrigenda

The following project was omitted from the current research programme published in the last issue of the Newsletter:

Project	Project title	Personnel	Date of start	Planned completion date
2.07	National income accounting for forestry	Heikki Kunnas, Lauri Heikinheimo	1968	1973

Some changes have also been made in project numbers, as follows:

1.12 a) becomes 1.12; 1.12 b) becomes 1.13; 2.15 and 2.17 are reversed; 2.19 should be added (see new research projects, above).

Departmental mailing list

A quick check through the card catalogue shows that the foreign mailing list for the Department's publications contains 329 addresses in 45 different countries. Topping the list is the U.S.A., with 68 addresses, followed by Sweden, with 36 addresses, the U.S.S.R., with 35 addresses, Norway, with 26 addresses, and Canada, with 23 addresses. West Germany has 17, Great Britain 13 and Australia 12 addresses. The remaining countries each have 10 or less.

The mailing list was compiled from the returnable address cards sent out with Folia Forestalia 87 ("Economics research in the Finnish Forest Research Institute, 1969-1971"), which was sent to forest economists and economics institutions throughout the world in 1970. The list includes all members of the Nordic Forest Economics Seminar, as well as most of the economists connected with IUFRO.

If institutions abroad are interested in receiving a copy of the mailing list for their own purposes, please contact the Research Secretary, Forest Economics Department, Finnish Forest Research Institute, Kaisaniemenkatu 1, SF. 00100 Helsinki 10, Finland.

Forest Economics Outside Finland, V

Details of some current research in forest economics at North Carolina State University, U.S.A., are reproduced below from SoFew News (vol. 3, no. 3, and vol. 4, no. 1).

School of Forest Resources,
North Carolina State University,
Raleigh, N. C. 27607

The faculty and graduate students of the School of Forest Resources are engaged in about 50 different research projects. The following is a list of some of them with special economics interest:

H. Chang and W.T. McKean: Pulp-industry pollution abatement through process modification

Drs. Chang, McKean, Gratzl and Davey: Slow-release fertilizer from pulping waste.

G.A. Hammon: Development of a system of determining the capacity of water resources to support various types and combinations of recreation use.

- D.L. Holley: Economic assessment of hardwood production
- L.G. Jervis: Growth response of pine to bedding practices in the Piedmont
- J.O. Lammi: Management characteristics of urban green space
- Drs. Levi, McKean and Gratzl: Protection of wood products against fire, decay and insect hazard with brominated lignin preparations
- T.E. Maki: Bedding, ditching or furrowing, and fertilizing effect on growth of pines on wetland sites
- T.E. Maki: Drainage, site preparation and improvement for reforestation on pocosin lands
- T.E. Maki: Economic evaluation of changes in land use of a municipal watershed as a guide to decision-making
- T.E. Maki: Productivity of lower Piedmont forest land for pines and hardwoods
- T.E. Maki, W.L. Hafley and J.W. Duffield: Performance of out-planted stock from forest tree nurseries
- W.T. McKean: Elimination of odour in kraft pulping
- A.G. Mullin: Prototype computerized rough-end system in the furniture industry
- A.G. Mullin: Study of optimum sequence of cutting bills
- C.N. Rogers: Water re-use in pulp and paper manufacturing
- D.H. Steensen and J. Hedgecock: Wood-residue production and feasibility of conversion to a saleable product
- J.L. Warren and J.O. Lammi: Utilization of urban green space for the alleviation of air pollution
- C.W. Welby and J.O. Lammi: Utilization of the earth resources technology satellite - Data in geological evaluation, regional planning, forest management and water management in North Carolina.

Fuller details about the computerized rough mill project, on which A.G. Mullin and A.J. Barr are working, are as follows:

A grant for the design fabrication of a "computerized rough mill system" was received in March, 1971, from the National Association of Furniture Manufacturers. The purpose of the system is to improve the yield of usable-dimension stock from hardwood lumber. Previous research at the School of Forest Resources indicates that approximately 10% of the cost of lumber can be saved by using such a system. The savings come from better utilization of the lumber, and because the manufacturer can cut lower grades without seriously reducing production. It is estimated that the system will save the furniture industry millions of dollars annually.

The computerized rough-end incorporates the following: (1) lumber defects are marked with reflective paint and are subsequently located using a computer-driven optical scanner; (2) the location of defects is fed into a mini-computer, programmed to determine the "best" way of cutting up the board for the particular company's dimension-stock requirements; and (3) the computer then drives a coding device that marks each board for cutting. The system is designed for use in existing rough mills. The boards, coded for cutting, will be cut manually. However, the system could be modified to drive automated saws.

Forestry Week

The 44th Forestry Week, organized annually by the Finnish Forestry Association, took place in Helsinki from 20th to 23rd March. The opening address, held in the new Finlandia Hall and televised, was given on 21st by Lasse Heikinheimo. He spoke on "Labour-force and social-policy challenges of mechanization in forestry". On 22nd, he addressed the Swedish-language Forestry Day at the Scientific Societies' Building, where his topic ^{was} "The economics of primary production in forestry." The following day, he had a radio interview for the Oulu regional station. The week also featured the reunion lunches of former forestry students, held in restaurants all over Helsinki on 22nd.

Multiple Use of Forests Planning Group

A planning group to plan and co-ordinate research within the Institute on the multiple use of forests was established at the beginning of this year. The chairman is Lasse Heikinheimo and the secretary Olli Saastamoinen. Jan Heino is the third member of the group from our Department. In addition it includes representatives from the Departments of Peatland Forestry, Silviculture, Forest Inventory and Yield, and Forest Technology, from the Nature Conservation Office and from the Rovaniemi Forest Experiment Station. The group has recently completed a preliminary report outlining research undertaken so far and research planned in this field both within and outside the Institute. The report is stencilled and is entitled "Metsäntutkimuslaitoksen ja sen ulkopuolisten laitosten metsien moninaiskäyttöön ja ympäristönsuojeluun liittyvästä tutkimuksesta" (Research on the multiple use of forests and nature conservation undertaken at the Forest Research Institute and other institutes).

Agricultural Economics Research Institute

Eleven members of the Department spent the morning of 12th April as guests of the Agricultural Economics Research Institute at Malminkartano, on the edge of Helsinki. Professor Matias Torvela, Head of the Department of Land Management, Dr. Risto Ihamuotila, Head of the Department of Agricultural Policy and Marketing, and the other researchers of the Institute outlined their research programme, and afterwards there was an opportunity for discussion over an excellent lunch. The Institute, which has a total personnel of about 30, forms a part of the Agricultural Research Centre, a State research institution.

Environmental change in the Finnish archipelago

The natural and environmental problems arising from the rapid changes currently taking place in the Finnish archipelago were discussed at a weekend seminar held on 18th and 19th March at Helsinki University's zoological Research Station at Tvärminne. The meeting was arranged by Norden-skiöld - Samfundet (The Nordenskiöld Society), which is planning to publish a book dealing with these problems. Michael Jones, from our Department, and Pekka Borg, from the Institute's Nature Conservation Office, both attended

Personnel changes

Katarina Salo joined the Department at the beginning of April as assistant to Professor Heikinheimo. She will be working here until September, when she will begin studying forestry at Helsinki University. She speaks fluent Russian and has recently returned from Leningrad, where she studied for six months at the Leningrad Forest Academy.

Jaakko Salo is working in the Department during April. He is editing hitherto unpublished departmental research investigations, ready for publication.

Congratulations

Matti Heikinheimo is now a Master of Political Science (valtiotieteiden kandidaatti or VTK in Finnish). He received his papers on 10th April.

Miscellaneous news

Olli Saastamoinen was in Rovaniemi from 7th to 13th April collecting material about reindeer husbandry for his project on land-use alternatives in the Saariselkä-Itäkaira region.

Hannu Vehviläinen has just been awarded 4 000 marks from the Kyösti Haataja Fund. This will enable him to start work in May on his new project dealing with rural labour-force reserves in the Finnish development areas. SITRA (the Finnish Independence Fund) has also allocated funds for the project.

Terho Huttunen will be spending $1\frac{1}{2}$ months, starting on 24th April, travelling around Finland to interview the managers of 30 pulp, veneer and board factories. He will be investigating possible causes of errors, resulting from the introduction of mechanized methods in timber harvesting, in the wood-consumption quantities reported for the Industrial Statistics. He also wants to find out the size of possible errors and means of diminishing them.

Working Saturdays

Despite some initial confusion, it seems we have to work two extra Saturdays to make up for the Ascension Day and Whit Monday holidays. The working Saturdays will be April 22rd and May 13th.

Pilfered

Murphy's Law, which appeared in the January issue of the Newsletter, was quoted, with due acknowledgement, in the February issue of the Ministry of Labour Planning Division's publication "Labour Reports". What they didn't know was that we pinched it from the Ministry of Education" - **who**, we hear, stole it in turn from the Ministry for Foreign Affairs.

Guide to Finglish abbreviations

For the benefit of readers of English-language articles published in Finland, we publish an explanatory guide to some of the curious abbreviations you may come across:

Finglish abbreviation	Explanation
ab.	about (not to be confused with A.B. - able-bodied seaman)
a.o.	and others, among others
appr., approx.	approximately
aso., a.s.o.	and so on
B.F.	Bachelor of Forestry (<u>not</u> Bloody Fool)
cl.	class
e.t.c.	etc.
f.ex.	for example, e.g.
f.i.	for instance
f.r.	Forest road
i.a.	<u>inter alia</u> (not to be thought a misprint of i.e.)
imp. op.	improvement operation
md	man-days
n:o	Finnish for no.
pcs	pieces (= no.), per cents (Finglish plural of per cent)

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