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ABSTRACT Compiled is a selected bibliography of social sciences in forestry, including economic, historic, sociological, and business aspects. Five major inclusive categories are the following: social science applied to forestry at large, applied to forestry's productive agents, applied to forest production, applied to manufacturing, and applied to marketing, trade, and demand for forest output. Arranged alphabetically by author, each entry contains the source of information, place and date of publication, volume number, and number of pages. A brief description of each resource is given. Compilation sources include many periodical professional journals, FORESTRY ABSTRACTS, DISSERTATION ABSTRACTS, the USDA BIBLIOGRAPHY OF AGRICULTURE, FAO DOCUMENTATION, and publication lists from the United States Forest Service experiment stations. (BP)
SOCIAL SCIENCES in FORESTRY

A CURRENT SELECTED BIBLIOGRAPHY

NO. 38 OCTOBER 1975

COMPILED BY AMY MCKEE
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SOCIAL SCIENCES IN FORESTRY
A CURRENT SELECTED BIBLIOGRAPHY

No. 38 October 1975

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VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
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SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Naive assumptions in American forestry: impending resource scarcity, social stability, certainty in planning; the American approach to forestry should be altered drastically.


Illustrated reference book.


Includes the following papers: (1) Supplementary statistics on size and ownership of woodlands and on land use in Britain (J. R. Aldhous); (2) Problems in the management of broad-leaved woodland, with special reference to privately owned woods (J. E. Garfitt); (3) Past, present, and future values of broadleaved timbers (E. J. Agate); (4) The value of broadleaved woodland for nature conservation (G. F. Peterken); (5) Broadleaved woodland in the British landscape (J. H. B. Workman); (6) Broadleaved woodland in relation to recreation (R. M. Sidaway); (7) The management of upland broad-leaved woodlands for nature and landscape conservation (R. Goodier and M. E. Ball); (8) Aims of research in relation to broadleaved woods and amenity trees (J. R. Aldhous).


The timber resource in 1974 is described in terms of land classification, forest type, timber size class, timber volume, growth and removals, timber quality, and management attitudes of a sample of private woodland owners.
I. SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Volumes of softwood and hardwood growing stock, which had been increasing slightly before 1964, have increased by 34 and 31 percent since then. There has been relatively little timber activity in this 21-county area. Almost 8 of every 10 acres of commercial forest showed no evidence of treatment or major disturbance in the last 10 years.


Highlights and statistics on forest area and timber volume, growth, mortality, ownership, and use in 1972.


Newfoundland's forest-land resources, protection, management, utilization, economic importance, environmental value.


One-fourth of Montana is forested. The forest's wildlife, recreation opportunities, forage, water, minerals, and timber are important to the economy and environmental quality of the state. Progress has been made in reducing the conflicts among these uses and in reducing threats to air and water quality.


Summary of an in-depth study of the forest resources and use of forest products in Florida as of 1970, projected to 2000.


Third timber inventory of Missouri's river border Forest Survey unit shows that the total volume neither of growing stock nor of saw-timber changed significantly between 1959 and 1972.


Statistics for 1974 on total volume of growing stock.
I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Topography, climate, soils, vegetation, changes in land use, reforestation, and transport. Private ownership, forest labor, future developments, and timber yield, harvesting, marketing, and transport.


Statistics and analysis of forest resources, labor force, forestry production, wood consumption, output by forest industries, and foreign trade.


Forestry policy issues; problems and situation of wildlife management and national parks; forestry development programs.


Forestry policy, institutions for forestry development. Timber resources and management, watershed management, wildlife conservation, national parks. Situation of forest industry, research, education.


Overview of Finnish forestry including enforcement of forest laws, economic cooperation of forest owners, and forestry programs.


A history of viewpoints toward applied science in Britain, dealing with the problems of timber supply and use.
I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Development of forest industries in China generally has been handicapped by shortage of machinery and skilled labor and a lack of official forestry policy. Specifics regarding Kwantung province.


Development and management of softwood plantations in South Australia and Victoria, and the industries dependent on them. Revised edition; data in metric units.


Characteristics of forest areas, nature of man-made forests, tree species planted, general forestry legislation and regulations, methods used in forest operations.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Timber and industrial wood production, domestic demand projections, export possibilities.


Social and economic constraints upon forestry development in Southeast Asia. Potential forestry labor, especially in the tribes involved in such forestry activities as shifting cultivation.


African and Caribbean forestry development and rural sociology. Goals and outcomes of planning communication programs.

SCHRODER, B. Forestry in Tunisia and Algeria--its bases, development and significance; representing at the same time a contribution to the systematics of world forestry. In German; French and English sum. Mitteilungen der Bundesforschungsanstalt fur Forst- und Holzwirtschaft No. 97, 346 pp. 1974.

Description and history of the vegetation of these countries; forest ownership, law, and administration; productivity, policy, development plans.


A replanting program on 120,000 acres of public lands already logged or due to be logged in the British Solomon Islands; financial evaluation of the project; summary of the importance of logging and sawmilling in the national economy.


Definitions of forest policy and political economy, the latter interpreted as the structural and political basis of economic systems. The two have become increasingly separated; they should be combined as academic subjects.
SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Lecture on definition of the concepts.


Forest legislation, management, West Germany.


Influences on forest policy of competing demands for the use of land, socio-economic factors, and environmental and biological factors. Prepared for the 10th Commonwealth Forestry Conference.


Efforts at major reform in the legal and governmental systems can protect natural resource values in a new era of exploitation.


Review of national legislation for wildlife protection, creation of game reserves, and national parks.


Court decisions affecting U.S. federal Forest Service land management.

Proliferation of legislation affecting forest cutting practices may lead to overreactive, inefficient regulation. Benefit-cost analysis provides a means for evaluating the consequences of such legislation, but would require collecting data not generally available. Type of data needed; possible application in coordination with land-use planning.


How much land to devote to forests, how much timber to harvest and the best means of harvesting it, and the compatibility or incompatibility of forest uses: wilderness, recreation, wildlife refuges, watersheds, wood production. Five criteria are used to deal with policy issues: physical and biological feasibility of policy, its economic efficiency, whether costs and benefits are distributed equitably among forest users, whether it is socially or culturally acceptable, and whether it has administrative practicability.


Three new acts from Oregon, California, and Washington: What has been learned from them; a list of suggested guidelines for further acts.


If the U.S. is serious about improving private incentives to forestry, farm experience suggests that we should try to correct imperfections in the basic institutions of markets, ownership, credit, and information.


Expert report on forest policy, forestry legislation, and forestry administration in Panama.
I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

C2


Beneficial effects of the programs, from the national point of view, will be primarily on timber supply, consumer savings through increased sawtimber supplies, increase in national income through increased timber-products output, and energy saved in wood-products manufacture as compared with other materials (steel, aluminum). Similar benefits will accrue to regions and sectors.

C2


Forestry legislation on wildlife and national parks in Sudan. Recommendations for and proposed draft of basic legislative act on wildlife protection and national parks and related forestry regulations.

C2

TENTH BRITISH COMMONWEALTH FORESTRY CONFERENCE. Progress reports, mostly for 1966-72, presented by the public forestry authorities of British Commonwealth nations. 1974.


Dla


D1b


D1c


Meaning and application of Section 631 (a) and (b) of the Revenue Code.
1 SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

D2


Procedure for calculating the market value of a forest estate composed of two types of high forest, coppice woodland, grassland, and fallow land.

D2

TUPYTSYA, YU YU. Principles of the ecological and economic evaluation of forest resources. In Russian. Lesnoe Khozyaistvo No. 6, pp. 30-33. 1974.

Theories and approaches for quantifying benefits of wood, nonwood products of vegetable origin, animal resources, and intangible useful functions or services of the forest.

D6


Results of a study in a state forest in Copenhagen.

D7

DAVIS, LAWRENCE S., ALFRED POLCHOW, and LAWRENCE ROYER. Citizens and natural resources, a perspective on public involvement. Utah State Univ., Dept. of Forestry and Outdoor Recreation. 1975.

This publication results from a study supported by the National Science Foundation, concerned with improving the effectiveness of public involvement in public natural-resource management.

F

BECKER, M., and C. WIEBECKE. The teaching of forestry and wood-industry policy and marketing at universities in Germany, Austria, and Switzerland and in the equivalent forestry faculties of technical universities in Austria and Switzerland. In German; Eng. sum. Forstarchiv 45(10): 185-189. 1974.

Teaching offered in these disciplines and their subdivisions and in related subjects in the Forestry Faculties at Freiburg, Gottingen, Hamburg-Reinbek, Munich, Vienna, and Zurich; importance attached to these subjects.

F


Survey of forestry education throughout South America, with suggestions for the reform and coordination of curricula.
I. SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Directory of schools at university and nonuniversity levels.


Possibilities for and advantages in instituting a forestry program in the public schools of New York state.


The foundations of forestry are laid out not only in the schools and in continuing education programs, but also in the communes, where forestry is an important part of economic activity.


Role of forestry sector, especially forest industry, in national plans for economic development.

G. ADEYOJU, S. K. The role of aid in developing countries. Ibadan, Nigeria; Dept. of Forest Resources Management, Univ. of Ibadan. Prepared for the 10th Commonwealth Forestry Conference. 23 pp. 1975.
I. SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Timber-production decisions can have direct and indirect impacts on regional economic growth and stability.


Prepared for the 10th Commonwealth Forestry Conference, 1974; the role of forestry research in the economic expansion of developing countries, especially in tropical Africa.


Forestry policies need to be formulated as an intrinsic part of national development plans.


Prediction of forestry development in Poland up to 2030; expected post-industrial era of European civilization. Projections are made of standing timber volume, population, wood supply and demand, etc.
I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE


Regional employment and income multipliers were evaluated for a plantation project in Queensland and were used to show the likely impact of a large plantation project on a regional economy.


Problems and potentials of input-output analysis: an examination of the model and its assumptions.


This study looks at the costs and consequences of different levels of recycling and demonstrates that recycling is an economic phenomenon, subject to markets.


Likely economic effects of increasing environmental concern on the primary forest-products industry.
II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS


History of an example of the system of resident laborers with tenant-farming rights that was introduced into large private and public forests in Hokkaido around 1910, practiced during the capitalist development period, 1918-1948, and discontinued in the national land reform, 1948.


Principles of staff management in forestry administration.


Concept of analyzing income components separately and then combining the significant determinants to derive their total effect on income.
II APPLIED TO FORESTRY’S PRODUCTIVE AGENTS


Proposed method of quantifying the productivity and efficiency of the administrative staff in Soviet forest enterprises.


Potential of private woodlands for owners and industry is demonstrated by two organizations in Scotland.


Direct public assistance to encourage timber production can be efficient only if investments are ranked according to an explicit priority scheme. A prerequisite to priority ranking is a concrete, operational program goal.


A study of small-holding sample plots from the latest Georgia forest survey, which are classified by region, timber site, type, and physiography. Four alternatives, ranging from planting to "no management," are tried for each plot, to find the financially best one. Inferences are drawn about the rationality of present timber programs and the potential supply on small holdings.


Incentives available for use by public policy makers.
II  APPLIED TO FORESTRY'S PRODUCTIVE AGENTS


Various obstacles prevent different private owners from contributing as much as they might to the timber production goal. A number of policy instruments are available to various agencies for overcoming these obstacles.

B3c  HART, CYRIL. A guide to home-grown timber prices and forestry costings. Chenies, Coleford, Forest of Dean, Gloucestershire. 60 pp. 1975.


Sample of 46 estates containing 24,000 hectares of forest.


Effects on employment and incomes of a switch from agriculture to forestry.


Creation of employment opportunities.


A method by which alternative uses of natural environments can be evaluated in a benefit-cost analysis, demonstrating that resource or extractive activities undertaken on public lands often receive preferential tax treatment and other financial advantages that obscure the actual cost of the project. By taking into account all the costs of a development project, and the changes over time that will affect the benefits of either development or preservation, they find that the scale is often tipped in favor of preserving a natural area.
II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS


A review of methods available to states and communities for effectuating land-use plans, under the broad headings of police power, eminent domain, taxation, and transfer of development rights. Federal, state, and local responsibilities for land-use regulation. Application to the state of New Jersey.


The recent timber boom in Indonesia and the problems of land-use and nature conservation were leading topics in a symposium on lowland rain-forest organized by the Regional Centre for Tropical Biology and the Forestry School of the Agriculture Institute, Bogor, Java, June 1973.


Review and analysis of the current push for state-wide, comprehensive land-use planning.


Problems faced by U.S. and host country. What motivates the host country to encourage investment and the foreign investor to invest. Specific recommendations for eliminating conflicts which arise during project negotiations. Forest conditions and the production, trade, and consumption of forest products. Comparison of the U.S. investment processes in the forest sector with those in other sectors.


Forest property can be one of the best investments available to forest growers. The prudent owner will carry out management practices which maximize the value and development of his property consistent with his personal interests and financial situation.

D1 SPEARS, J. Methods of financing forestry. FAO of the UN, Rome, Italy. 11 pp. + 8 Appendices. 1974.

Methods of financing public and private forestry development: sources of funds, terms and conditions of loans, criteria used by lending agencies in the evaluation of projects. Paper prepared for the 10th Commonwealth Forestry Conference.
II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS


Importance of long-term forestry policy; role of forest services in decision making for land use. Effects of technological innovations on forest product-processing techniques and of petroleum price increase on wood demand in the near future.

III APPLIED TO FOREST PRODUCTION


Part A--Techniques and major results of a study of the forests of Garmisch-Partenkirchen; B--Method for the quantitative evaluation of protection forests for erosion control and use of the Delphi or Seer method for arriving at a valuation of the hydrological importance of forests.


Economic analysis can provide for economically efficient allocation of resources among competing uses if the production relationships among the uses are known. Production relationships between timber and forage are developed for ponderosa pine land in Arizona. How the relationships can be used in economic analysis is determined and demonstrated.


Latin America.


Decision-making in multiple use.


Relation of multiple use to social development in the Near East.
III APPLIED TO FOREST PRODUCTION


Colloquium on the position of wood production in relation to the other lines of forest production: administrative, ecological, environmental, and economic aspects of multiple-use planning in Bavaria.

A1 ILINSKII, V. O. Game management, an important stage in the organization of integrated forestry and game enterprises. In Russian. Lesnoe Khozyaistvo No. 6, pp. 76-80. 1974.

Organization, since 1969, of integrated forestry and intensive game management in the Nurimanov enterprise, a former leskhoz concerned only with forestry.


Land use and forest management in Madeira. A policy of multiple use is suggested to include timber production from the more valuable indigenous species, measures for erosion control and the provision of hunting grounds and recreation landscapes.


The importance of wildlife, particularly nontimber plants and nongame animals, in adding to the quality of the forest environment has become increasingly recognized. Foresters are aware of the need to broaden their management skills to practice environmental forestry. Only by cooperation between forest research workers and their colleagues in such fields as recreation, economics, landscape architecture, and wildlife management will it be possible to develop mutual understanding of the specialist techniques and language and to incorporate these in forest management for the future.


Is chaparral conversion on national forests in the Salt-Verde Basin economical? The costs of converting portions of 139 chaparral areas to grass and maintaining the conversion over a 50-year period are compared with the benefits to society in terms of increased water yield and forage for livestock, and reduced firefighting costs.
III  APPLIED TO FOREST PRODUCTION

A3

Properly planned, carried out, and maintained, chaparral-to-grass conversions should reduce the occurrence of large, expensive wildfires. Value of "fire benefits," though not as high as water and forage benefits resulting from conversion, is an important addition to a benefit-cost analysis.

A5a

A special number containing articles on protection of recreation forests.

A5a

A5a

Aims and basic planning considerations in the establishment of recreation forests in the montane zone of southern Kazakhstan for the benefit of city dwellers in the hot, dry plains.

A5a

A review of some European and N. American literature: definitions of concepts; classification of forests as a recreation resource; identification of recreation-management tasks, especially as affected by number and characteristics of tourists (recreationists).

A5a

Analyzes the replies to a questionnaire circulated throughout the country. The main factor governing the numbers of visitors to the forest, their types, habits, and wishes, is the large proportion of forest land in Czechoslovakia and its distribution.

A5a
III. APPLIED TO FOREST PRODUCTION


Examination of the public's perception of water quality, the influence of water quality on water-oriented recreation, and the willingness of the public to pay for improvement.


Forest recreation and the recreational needs of people, in relation to wild forests and managed exotic and indigenous forests in New Zealand.


Attempt to evaluate the effect of tourists and recreationists on the forest as a basis for planning forest recreation.


A year's observations in Europe, including discussions of coarse visual textures in which timber harvests are seldom noticed, management and interpretation to help visitors understand forestry, effective zoning, and a computer-assisted technique for displaying the consequences of alternative land management choices.


Environmental and biological factors that affect the welfare of game animals of the arid shrublands of the U.S., and some aspects of their use as a recreation resource.
III. APPLIED TO FOREST PRODUCTION


Methods of measuring the intensity of recreation use, especially in developed areas.


Problems of recreation in municipal forests of big cities, in West Germany.


Issues regarding proposed regulations on the Great Gulf wilderness area, White Mountain National Forest.


Shortened version of a handbook; aspects of special interest to foresters are the organization of and legislation on protection and conservation in German-speaking countries.


Principles and practice.


Preferences expressed in a national public-opinion survey in Czechoslovakia in 1971, stressing the high value placed on a varied structure both within the forest and in the landscape as a whole (a "structurally differentiated environment," in the terms of experimental psychology). 


Research in progress at the Tagel Foundation, Smaland, into problems of landscape conservation.


A plan for replacing many of the trees and hedgerows that have disappeared recently because of changes in agricultural practice, the felling of woodland for agriculture and housing, and the incidence of Dutch Elm disease.


Application of landscape management skills to the visual management system.

DOUGLASS, JAMES E. Watershed values--Important in land-use planning on southern forests. Jour. of Forestry 72(10): ??., Oct 1974.

Although water quality is emerging as the major water problem in forest management, quantity and timing of streamflow are also important and interrelated watershed values which should be considered in land-use planning. Protection or improvement of hydrologic performance of forest soils will continue to be an important consideration in planning.


Water quality as influenced by forest operations: groundwater and surface runoff in forest lands. Causes of water pollution in forest areas: eutrophication, logging, clear felling, use of herbicides.
III APPLIED TO FOREST PRODUCTION


Wildlife as source of fresh meat in Botswana. Wildlife management, wildlife protection measures, hunting regulations, game licences for tribesman, profits from wildlife in 1972.


Number of households, by type, participating in hunting, fishing and other wildlife-related activity on national forests in the South; values placed on hunting and fishing; prospects for greater wildlife-related use of the forests. Participants favor intensifying wildlife management on public and private lands and increasing license fees for the purpose.


Superior National Forest has instituted a forest wildlife habitat management program which identifies vegetation type, age class, and stand distribution as prime management components. The program incorporates basic ecological principles pertaining to diversity and stability, enabling land managers to pinpoint wildlife management needs more accurately.


Urban people's wants for forest services will continue to be met primarily through the market system. But if that system is not completely satisfactory, then there are several governmental routes that lead to change.


A review of existing means, showing that the means are varied but many are outdated and are being amended by current legislation.

A8 LANINA, V. V., and N. S. KAZANSKAVA. Protecting and improving the stability of stands in forest parks. New Zealand Forest Serv., Wellington. 6 pp. 1974.

III APPLIED TO FOREST PRODUCTION

The forest owners, direct users, and preservationists all have some overt goals which may be served by forestry programs. However, a very large number of urban Americans are not personally aware of their dependence on the forests, and foresters must protect the interests of these people while at the same time responding to the goals of more vocal groups.


There is the need, justification, and opportunity to increase timber supplies from national forests under current laws. The intent of basic related laws has not been fulfilled partly because of difficulties in implementing later legislation. Funding has been a major problem. There is hope for improvement under the most recent legislation.


A long-term experiment on the Earl of Bradford's estate in Shropshire, where 100 acres of even-aged woodland are being converted to a selection forest. Advantages of the method, especially flexibility of management; problems of species choice; lay-out of units, marking, felling, extraction, and yield control.


Although high-quality timber is in increasingly short supply, total harvest of hardwoods could be more than doubled over the next few decades for products such as pulpwood, pallets, and construction timber. Additional increases could be obtained by greater use of limberwood.


Results of a feasibility study of afforestation based on a pilot program in the San Jose catchment. The project is feasible, promising a rate of return greater than 4 percent; the optimum rotation is 30-40 years.
APPLIED TO FOREST PRODUCTION


Computer system developed to provide a data base for the intensive management of a large plantation: data on area, inventory, cost, wood production.


Summary of a report completed in 1972, aimed at evaluating the worth of an exotic afforestation scheme for Tawarau forest, central North Island, New Zealand, from the national point of view.


Resource base, demand and market analysis, technical and cost analysis, cost-benefit analyses.


Regeneration of loblolly pine stands in the West Gulf Coastal Plain involves accounting costs of $29 to $75 per acre, but at 10-percent interest, charges against the next crop may vary from $633 to $3,644 per acre. Typical delay in regeneration may account for nearly 25 percent of the higher costs.


1974 reforestation goals were met. Increasing use of modern reforestation methods together with methods long used in Southeast Asia, has resulted in an increase in annual accomplishments from practically none in 1971 to 15,000 hectares in 1974.
III APPLIED TO FOREST PRODUCTION


Costs and income in a thinning operation in a 20-acre, 75-year-old stand of Douglas-fir, lodgepole pine, and grand fir.


Timber stand improvement is an ideal practice to attract landowners to the forestry incentives program because it can fulfill the desires of the typical owner.


Results of a commercial thinning trial in 1971 indicate that such an operation would still be profitable to the logger, and that the forest owner would realize a net return because of future sawlog gains.


Aspen rotations may be moderately shortened with substantial increases in yields if utilization standards are tightened.


Advantages of short-rotation silviculture with special emphasis on Nigeria. This system should encourage investment in timber growing, alleviate the problem of uneven distribution of timber resources, supply industry, and provide employment in rural areas.


The key to successful regulation for combined timber and wildlife production, with minimum impact on costs and timber yields, is long-term planning of cutting schedules and comparisons of yields under alternative schedules for small units of land.
III APPLIED TO FOREST PRODUCTION


Theory and principles of yield regulation; description of methods used in the USSR and in other communist and capitalist countries; relation of methods to the principle of sustained yield and the normal forest.


Partial analysis of the comparative costs of the clear-felling and shelterwood systems, based on the costs of shelterwood fellings at several sites in Rumania, and of various measures for artificial regeneration.

D1 FOLKMAN, WILLIAM S. Butte County, California, residents: their knowledge and attitudes about forest fires reassessed. USDA Forest Serv. Pacific Southwest Forest and Range Exp. Sta. Res. Note PSW-297, 5 pp. 1975.

Data from a 1964 and a 1970 survey of Butte county, California, residents are analyzed to identify the characteristics of people who might be considered high fire risks because of their limited knowledge and negative attitude about fire and their frequent use of wildlands. Age, sex, education, and income are the variables most closely related to variations in knowledge, attitudes, and activity.


The forest production decision problem in general; management decisions related to investment, particularly thinning and rotation.


In forest management.
III APPLIED TO FOREST PRODUCTION


Geographical, biological, and economic factors affecting the profitability of timber growing in the eight forestry regions of the Republic of South Africa. Data on costs and revenues of coniferous plantations in each region.


A computerized system to measure the financial potential of forestry practices. For investment analysis, MULTIPLOY attempts to compare costs and returns at a common point in time. A major advance is that input instructions for even the most complex forestry management plan are expressed as simple conversational statements.


Mathematical formulas are given.


The approach, applied to young-growth Douglas fir, optimizes investment in timber production when the manager is faced with uncertainties both about future product markets and about the response of stands to management, and when the objective is to maximize total discounted expected net returns over an indefinite period.


A study of simulation as an aid to forest management planning and yield regulation, using a model forest of artificially regenerated Cryptomeria japonica and Chamaecyparis obtusa in central Honshu.
III APPLIED TO FOREST PRODUCTION


Responses to a questionnaire asking for a detailed breakdown of total forestry costs.


A model in which land allocation and management decisions are represented as three successive stages (ecological study, economic analysis, and political-administrative selection) is rejected because it does not account for what happens in practice. In any case, the model's first stage calls for ecological ranking, which is not possible.


Forest income is determined by output, which is valued in money. In forest management, it is difficult to decide whether to relate decisions to physical or to financial measurements. The latter are favored.
IV APPLIED TO MANUFACTURING


Data on the production and trade in forest products, by country, for the years 1962-73 and direction of trade in 1972 and 1973.


Wood renewability, competitive factors, new uses mean inevitable growth in markets, pressure for production.


Recent Michigan forest industry trends; timber removals for industrial roundwood in 1972; production and receipts in 1972 of pulpwood, sawlogs, veneer logs, and other roundwood products.


Lumber and plywood production and prices; employment in forest products industries; international trade in logs, pulpwood, chips, lumber and plywood; volume and average prices of stumpage sold by public agencies; and related items--for Alaska, Washington, Oregon, California, Montana, Idaho, and British Columbia.
IV APPLIED TO MANUFACTURING


Location quotients (which measure industrial specialization), excess employment (a measure of occupational specialization), and economic base multipliers (relating total employment to that in an industry) all verify north Idaho's heavy leaning toward forestry nurseries and services, logging, and sawmilling.


15-year rising trends in prices and costs in the timber and pulp-and-paper industries; projections of these trends. Problems of investment and profitability in the forest industry.


Annual cut of stemwood and industrial wood, the chief uses and end products.


Forest industry, watersheds, and forest types in Bolivia. Wood production by tree species and forest product. Marketing, especially export volume and value by month and destination.


An attempt to determine how a mill of known size can meet the impact of a changing economy without altering its level of capital investment.


The object of this linear-programming model is to indicate strategy for the development of the wood products sector of the UK economy which will maximize discounted net benefit.
IV APPLIED TO MANUFACTURING


Logging equipment is evaluated in light of Russian planning methods, economics, and labor.


Analysis of the process of planning harvesting operations, especially which persons directly or indirectly affect decisions, the existence of divergent opinions, their nature and the reasons for them, the preferences of various persons, and the possibility of combining preferences into a common harvesting policy for an area.


Textbook, dealing briefly with most aspects, including organizational aspects, of the use of machinery in a wide range of forestry activities.


Problem of reconciling the different optimum ages of felling derived from unit logging costs and sawmilling costs and the mean increment of large and medium-size timber.


Time consumption and costs for various methods of short- and long-length logging for owner-operated woodlands in Sweden.


Detailed cost breakdown is tabulated.


Guidelines developed specifically for the Adirondacks, but applicable over the entire state. If used, they should help safeguard forest lands against harmful side effects from careless logging.
IV APPLIED TO MANUFACTURING


Various aspects of harvesting that disturb the environment, such as poorly located and unwisely built roads and badly planned cutting that disrupts the patterns of water runoff and causes soil erosion and stream sedimentation.


Technique for deciding between barked or unbarked, long or short industrial assortments, produced by manual conversion or logging machine. Economic, social and labor, biological and ecological, and organization factors are rated on a scale of points.


Existing methods of truck transport; loading and unloading methods; means of controlling or reducing costs.


Data on wood utilization and end uses of sawn wood products; production and trade by type of product and by continent. Place of the sawmilling industry in social and economic development.


Scrag mills, chipper-canter mills, and round log gang systems are evaluated by simulation to determine the greatest investment return for small-log conversion.
IV APPLIED TO MANUFACTURING


Increasing scarcity of energy may affect investment decisions in sawmilling on three levels: general economic outlook, competition with other industries, kinds of equipment to be installed.


Forty black oak sawtimber trees were felled, bucked, and processed in a sawmill in western North Carolina. Regression equations to predict the weight of lumber, chippable residue, bark residue, and sawdust had coefficients of determination of from 0.89 to 0.96.


A stratified sample of 48 loblolly pine sawtimber trees in the piedmont of South Carolina was used to develop equations to predict merchantable-stem, lumber, and sawmill-residue weights.


Soviet pulp and paper production, presently ranked fifth and fourth, respectively, in the world, has greatly expanded over the past 15 years. While Soviet pulp and paper manufacturing is still mostly concentrated in central European Russia near major population centers, the current emphasis is on the establishment of large, self-contained, fully integrated, forest products complexes in the southern tier of central and eastern Siberia.


Soviet research and development in the pulp and paper industry. Industry and academic research in progress. Proposed program for Canadian-Soviet cooperation in pulp and paper research.
IV APPLIED TO MANUFACTURING


The financial effect on pulpmills of using full-tree chips is highly variable.


Carrying out a feasibility study and economic planning of a pulp and paper enterprise; the joint government and private role in financing such an enterprise.


Pulpwood production from roundwood in the 14 northeastern states by county and species group, and pulpwood chip production from plant residues.


Physical properties of charcoal; manufacture; worldwide supply and demand; end uses and byproducts; role in forestry economy and general economy; economic planning for product development of charcoal; data on the Uganda 5-year plan for charcoal research.


Producers of wood-base fiber and particle panels have become well established in the forest products industry. To maintain current market positions and encourage future growth, these industries must obtain adequate supplies of raw materials and maintain competitive prices.


Housing demand in 1975 will be relatively strong.


Minor forest products (such as turpentine, oils, spices, medicines) and their significance in the national economics of tropical countries.
V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT


Despite current softness of demand in the pulp and paper industry, the long-term trend will undoubtedly be upward.


An econometric study.


Estimated demand for pulpwood in relation to removals of industrial wood by country; coniferous growing stock and removals and estimated future utilization of residues from wood processing.


Main features of wood use in the world in quantitative terms; comparison of present consumption with long-term potential supply.


A national timber-planning system which starts with traditional consumption forecasts and develops concordant timber-production projections which take into account the comparative advantages of each region in timber growing and manufacture.


Classification and review of methods used in forecasting demand for forest products, including econometric methods.


Consumption trends of wood needed for railway ties, construction, fuelwood, etc.
V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT


Some of the papers included in this report are: Trends and prospects in the European market for forest products (T. J. Peck); Production and prices of poplar wood (O. Lange); Impact of the timber market development on the growing of poplar and on poplar research, and A future world wood shortage (both by H. A. Van der Meiden).


Prediction involves estimating (1) changes in land use, for which there are only a few models, and (2) changes in growing stock, for which there are many computer programs.


A report for the UK based on statistics and opinions obtained from representatives of trade organizations, research agencies, and other sources in the timber trade and TRADA, and published and other estimates of economic growth.


Analysis of timber consumption trends and the present and potential supply of roundwood from existing S. African plantations leads to a picture of future supply and demand.


How decision making concerning the selection of building materials for self-built detached houses takes place within a family, and how husband and wife obtain product information for their decisions in choosing building materials for their house.
V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT


The problem of raising utilization rates for tropical timber has been solved in part by vertical integration in marketing.


History of the sale of unprocessed wood in New Zealand since the 19th century.


The nature of competition in the industry within the framework of market structure analysis.


Opportunities for marketing tropical timber in Italy, which has the third largest building industry in Europe and imports around 2 million m³ of timber annually.


Reasonably accurate month-by-month predictions of new orders for southern pine lumber were obtained with a multiple linear regression model to help firms decide production and inventory.


Phasing and content of market studies for pulp and paper products.


Results of a study of changes in the price of timber of three major species in three areas of France during the period 1920-1973.


Theories of the economic nature of stumpage in the socio-economic system of the USSR. Changes and developments in the system of stumpage pricing in the USSR since 1930; deficiencies in the system.