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   Autore   Kangas Annika

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                        Kurttila, Teppo Hujala, Kyle Eyvindson, Jyrki Kangas

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   Descrizione fisica   1 online resource (310 p.)

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   Soggetti   Forestry management
                        Sustainable development
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                        Decision making
                        Forestry Management
                        Sustainable Development
                        Operations Research/Decision Theory

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   Livello bibliografico   Monografia

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   Nota di contenuto   1. Planning and Decision Support -- 2. Forest Management Planning --
                        3. Single-Criteria Problems -- 4. Multi-Criteria Decision Problems -- 5.
                        Uncertainty in Multi-Criteria Decision Making -- 6. Linear Programming
                        and its Extensions in Forest Planning -- 7. Heuristic Optimisation -- 8.
                        Uncertainty in Optimisation -- 9. Participatory Planning and Group
                        Decision Making -- 10. Voting Methods -- 11. Participatory Planning
                        Processes in Action -- 12. Behavioral Aspects -- 13. Final Remarks.

   Sommario/riassunto   This book offers a thorough review and explanation of decision support
                        methods and tools, and shows how these are best applied to a wide
                        range of situations in the practice of sustainable forest management.
                        The goal is to provide both students and working forest managers a
                        toolbox of methods covering most of the decision situations
                        encountered in practice. The first chapter introduces basic concepts of
                        planning, decision making and decision support. Chapter Two explores
                        forest management as a planning problem, including definitions of
                        sustainability, the development of approaches to optimisation;

approaches to multi-criteria decisions; and the need for participatory planning. The third chapter covers single-criteria problems, showing how to measure utility and value, how to assess risk, and how to estimate a value function. A chapter on multi-criteria problems delves deeply into decision modelling, utility functions including SMART and TOPSIS, Analytic Hierarchy Process and more. Chapter Five addresses uncertainty in multi-criteria decision making, introducing fuzzy set theory, outranking methods such as PROMETHEE and ELECTRE, and probabilistic uncertainty using Stochastic Multicriteria Acceptability Analysis (SMAA). Chapter Six discusses linear programming and its extensions in forest planning. Chapters Seven and Eight go deeper still, discussing heuristic optimisation and uncertainty in optimisation. Chapter Nine address group decision making and participatory planning, including the roles of decision makers, stakeholders and facilitators. Chapter Ten addresses voting as a group decision making tool. Chapter Eleven examines participatory planning processes in action, as applied to specific contexts in forest management planning. Chapter Twelve is devoted to behavioural aspects of planning, decision making and participation, including concepts as 'satisficing' or ´groupthink'. The concluding chapter offers the authors' insights on how all these concepts, tools and practices reflect the three worlds: material, personal and social. This updated and expanded second edition adds the most recent advances in participatory planning approaches and methods, giving special emphasis to decision support tools usable under uncertainty. The new edition places emphasis on the selection of criteria and creating alternatives in practical multi-criteria decision making problems.