

Sustainability, Economics, and Natural Resources

# Institutions, Sustainability, and Natural Resources

Institutions for Sustainable Forest Management

*Edited by*  
Shashi Kant and  
R. Albert Berry



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## Institutions for Sustainable Forest Management

*Edited by*

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# INSTITUTIONS, SUSTAINABILITY, AND NATURAL RESOURCES

Dedicated to Hoshwati Yadav, Rachel Carson, and  
Maurizio Merlo

**Companion volume:**

*Economics, Sustainability, and Natural Resources: Economics of  
Sustainable Forest Management*

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## PREFACE AND ACKNOWLEDGMENTS

In the short-term human beliefs and values are heavily influenced by existing social, cultural, economic, and environmental conditions, while in the long-term these conditions are in turn influenced by human behavior. These continuous interactions underlie the dynamic nature of human beliefs and values, as well as the surrounding social, cultural, economic, and environmental conditions. The increasing support for and dedication to sustainable forest management (SFM) reflects an evolution in the human value system, which in turn reflects the social, cultural, economic, and environmental conditions of the late twentieth and early twenty-first century, conditions which are quite different from those of the nineteenth and early twentieth century. The economic principles, theory, and models of SFM need to reflect the realities of the twenty-first century.

The concept of SFM incorporates human preferences for timber and non-timber products, preferences for marketed as well as non-marketed products and services, the preferences of industrial as well non-industrial agents, including Aboriginal and other local people, and the preferences of future generations as well as the present one. It takes account of diversity of preferences across agents, communities, time, and generations, and incorporates preferences that are revealed through the market as well as through non-market mechanisms. Forests, in the context of SFM, are valuable for their contributions to ecosystem functioning as well as their physical outputs. However, the existing paradigm of forest economics, which is focused on sustained yield timber management and has its roots in the conventional neoclassical paradigm of economics, is based on the combination of utility maximizing rational agents and the 'invisible hand' leading to an efficient general equilibrium. In this framework, peoples' preferences are internally consistent, static and revealed through the market only; public inputs are selected on the basis of market signals; all systems, including ecosystems, can be commoditized, which converts them into functionally-disjointed and discrete units; and there are no commitments and moral judgments attached to the domains of forest values. It is evident that the basic premises of the existing paradigm of forest economics are in serious contradiction of the realities and expectations of SFM, and the economics of SFM will thus require an extension of the boundaries of forest economics.

Keeping the unique features of SFM and the need to extend the boundaries of forest economics in perspective, Shashi Kant published, "Extending the boundaries of forest economics" in Volume 5 (2003) of *Forest Policy and Economics*. Response to the publication of this article revealed that there were many other forest and resource economists who shared our vision of extending the boundaries of forest economics. We then planned an International Conference on the Economics of Sustainable Management, at the University of Toronto, on May 22-24, 2003, but due to the outbreak of Severe Acute Respiratory Syndrome (SARS) in Toronto, the conference had to be rescheduled to May 20-22, 2004. In fact, the SARS outbreak was a good example and a reminder to economists of natural uncertainties.

We are pleased to announce that this volume is the second of the new series "Sustainability, Economics and Natural Resources". The papers in this volume and its companion "Economics, Sustainability, and Natural Resources: Economics of

Sustainable Forest Management” were originally presented at the conference. (In addition, a special edition of Forest Policy and Economics, Volume 6, Issues 3-4, also includes papers from the conference.) The volume is not a mere re-printing of conference papers, however. The original selection of papers and the rewriting, and reworking of them after the conference have been designed to cover the institutional issues related to SFM in an integrated and reasonably comprehensive way. We are thankful to the authors for responding positively to our suggestions.

In this volume leading institutional economists discuss appropriate institutions for sustainable forest management, markets for environmental services, deforestation and specialization, and some country experiences related to institutions for carbon emissions and sequestration (Kyoto Protocol), international trade, biodiversity conservation, and sustainable forest management in general. The companion volume mentioned above focuses on selected key aspects of the economics of SFM, including complexity, ethical issues, consumer choice theory, intergenerational equity, non-convexities, and multiple equilibria.

The conference was organised by the Faculty of Forestry, University of Toronto in collaboration with the Groups 4.04.02 and 4.13.00 of the International Union of Forestry Research Organizations (IUFRO). We are thankful to the late Prof. Maurizio Merlo and to Prof. Hans A. Joebstl, Group Leaders of IUFRO Groups, for their support.

The conference was made possible through the financial and overall support of the Canadian Forest Service, Ford Foundation, Forest Products Association of Canada, International Paper, Living Legacy Trust, Ontario Ministry of Natural Resources, Sustainable Forest Management Network, and Weyerhaeuser Canada. Along with our thanks to these organisations we would like to specifically recognize the contributions of – Gordon Miller, Jeffrey Campbell, Michael L. Willick, Paul K. Perkins, Sharon G. Haines, Karan Aquino, and Mark Hubert – who supported us throughout the period of about two years. We also express our thanks to Prof. Robert J. Birgeneau, Ex-President, University of Toronto, Prof. Rorke Bryan, Dean, Faculty of Forestry, University of Toronto, and Brian Emmett, Assistant Deputy Minister, Canadian Forest Service for their support and participation in the conference.

Special thanks are due to Amalia Veneziano and Sushil Kumar who were instrumental in the organization of the conference, with the assistance of other students and staff members of the faculty.

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Shashi Kant  
R. Albert Berry

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# CHAPTER 1

## SUSTAINABILITY, INSTITUTIONS, AND FOREST MANAGEMENT

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**Abstract.** This chapter provides an overview of the contents of this volume. To put the contents in perspective, first the developments related to the concept of sustainable development and sustainable forest management (SFM), institutions, institutional economics, and their importance to SFM are discussed. Next, the relevance of markets and other institutions to sustainable forest management is discussed. Finally, an overview of each chapter included in the five parts of this volume is provided.

### 1. INTRODUCTION

The word “sustainable” is not new to the forestry profession, including forest economists, but the dynamics of societal values, specifically those related to forest resources and environment, have added new dimensions to thinking about sustainability of forest resources and forest management. The recent concerns about sustainability, signaled by the publication of ‘The Limits to Growth’ by Meadows et al. (1972) and ‘Our Common Future’ by WECD (1987), are not limited to a specific product or resource but include all natural systems and human life. The roots of the concept of sustainable forest management (SFM) can be found in these two publications, but it derived impetus from several global events, including the 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, the Intergovernmental Panel on Forests (1995-97), the Intergovernmental Forum on Forests (1997-2000), the United Nations Forum on Forests that came into existence in 2001, and the Johannesburg Summit in 2002. In