Preface

Increasing concerns at the global, national and regional levels about the role of private forestry in enhancing forest sustainability are converging to provide new opportunities for refocusing forest policy debates. In both developed and developing countries, forests are no longer seen solely as economic development engines, but also as important protectors of ecosystems, watersheds, endangered and threatened species, and homes for endangered cultures and rural communities. As a result, much more attention needs to be placed on developing polices governing private forestry, and the impacts they might have on economic, social and environmental goals.

This book addresses key issues currently shaping the future of private forestry and is presented in four parts. The first part begins by outlining how society's perceptions of appropriate roles for forests and forestry are changing, fostering the emergence of a new paradigm for public involvement in private forestry. In his keynote address, Clark S. Binkley describes forestry's transition from a primarily gathering activity to a highly technical production activity driven by increasing demands for wood-based products and the increasing costs of exploiting the remaining forests on the extensive land-use margin. Incentives now favour intensive forestry relative to the high costs of removing timber from remote areas. In addition to the more attractive financial returns associated with plantation forestry, Binkley argues that the spread of plantation forestry will lessen pressures on the remaining natural/wilderness areas in the future, thus ensuring a positive global environment benefit. The argument that plantation forests will help to contribute to environmental health is a controversial one, and emphasizes the need to conduct rigorous analysis into the relationship of intense industrial activity and forest sustainability (Lucier, 1997).

The relationship between economic health and environmental quality comes at a particularly critical time according to Jag Maini. Dr Maini's keynote address outlines the expectations of the international community for international cooperation on key forest management issues that are linked to global environmental quality and quality of life concerns. These concerns are deemed so encompassing that international policies on the use of forests are needed, and crafting appropriate policies amenable to all sovereign participants is a goal of the United Nations Forum on Forests. As John Schelhas describes in this section, the changing expectations of citizens regarding their role in determining how natural resources are utilized has acted as a catalyst for policy makers. He explains how disparate claims to forest benefits are being incorporated in forest management decision making and reviews how some of these changes are being reflected in people–forest relationships from Costa Rica to the USA. In this regard, Moffat, Cubbage, Holmes and O'Sullivan reveal how the structure of existing forest policy networks often impedes consensus building on issues of forest sustainability, suggesting that broad policy actions on sustainable forestry issues are unlikely in the short term.

However, with the recognition that very different policy networks exist concerning private and public forestland management in the USA and elsewhere, attention has turned to the different roles that private forestlands and private forest companies play in sustainability. Some argue that public and industrial forest

land management will make the most significant accommodations for sustainable forestry, while non-industrial private forest, given the disparate ownership and property rights concerns, will make the fewest direct accommodations. Likewise, developing and developed countries appear to have fundamentally different concerns and ideas about forest sustainability – divisions so intense that they largely explain the failure of efforts at the Rio Earth Summit to develop a binding global forest convention (Humphreys, 1996). Barin Ganguli addresses these differences by presenting a model of private sector participation in forest management for developing countries that recognizes their limited financial capability to develop forest resources. His suggestions for developing market-based instruments to encourage the private sector to invest in this development are intended to improve the efficiency of forestry activities in these countries, resulting in larger contributions to the economy and less degradation of public forests than currently. Finally, in this section, Spencer, Ryan, Tickle and Howell bring us back to a fundamental underpinning of policies promoting sustainable forestry – the need for a current accounting of the condition of the forest and information on the prospects for change through alternative scenarios of growth and harvest. Developing policies to generate comprehensive inventories of forests can be controversial, pitting development interests against protectionist groups, and state governments against national governments (especially regarding who should pay). We learn that, in Australia, developing a cooperative approach just to implementing a national forest inventory policy is fraught with significant institutional and structural hurdles.

Just what might be the most effective tools for implementing policies promoting sustainable private forestry is addressed in Part 2, in which three broad sets of policy instruments available to policy makers charged with promoting forest sustainability are identified: (i) educational programmes that encourage forest owners and managers to act in ways consistent with the goals of the policy, (ii) regulatory programmes that restrict the actions of owners and managers, and (iii) market-oriented approaches that encourage particular management actions that support the policy. Combinations of all three of these approaches are used in most developed economies, but when it comes to encouraging private forestry interests to support new policy goals, George Weyerhaeuser, Jr argues that appropriately designed financial mechanisms can be expected to perform most effectively. In his keynote address, Weyerhaeuser documents how the responses of a 150-year-old family business were often the result of changing incentive structures that came with significant changes in national and regional forest policies. From the early years, where the incentive was inexpensive access to timber in exchange for clearing western lands for development, to later periods when the company accepted responsibility for implementing a sustained yield policy in exchange for government-supported fire-control programmes and tax treatment that allowed replanting and forest management to be profitable, governmental policies had a significant impact on forest company operations and forest sustainability. Carrying on this theme, David Ostermeier and Denise Keele explore in detail the impact of the United States Endangered Species Act on forestland management choices. They argue that the provision of the act to permit more flexible Habitat Conservation Plans (HCPs), where companies make certain commitments, has emerged as an important conservation tool with which to balance private forestland owners' property rights with public conservation interests. Ostermeier and Keele present the results of 11 case studies and conclude that plans vary widely in terms of how data are assembled and shared and how the decision-making process is conducted. Compliance monitoring is an important tool for assessing the effectiveness of forest practice laws or guidelines and can be used by governments to credibly report the extent to which public policies are being achieved in the forestry sector. In a similar vein, Kilgore, Ellefson and Phillips use a case study of a state's efforts to design and implement a compliance monitoring programme to raise some of the issues they believe are necessary to ensure that the programme is effective and efficient. Like Ostermeier and Keele, they argue that voluntary conservation agreements are emerging as another viable policy implementation tool specifically designed to acknowledge the private property rights of landowners. Cassingham, Sills, Pattanayak and Mansfield describe an assessment of the effectiveness of a particular form of these agreements found in the National Heritage Programme. They conclude that voluntary programmes can play an important role in raising awareness regarding the significance of ecologically sensitive habitats and the potential for individuals to contribute to the protection of those areas.

Likewise, Taylor, Nittler and Kraljevic make similar conclusions about policy development in developing countries, raising the idea that globalization might be contributing to a policy instrument convergence between developed and developing countries. Taylor and colleagues trace the sweeping reforms of the forestry sector in Bolivia in the 1990s, finding that market incentives permitted sustainable forestry concerns to be addressed in ways that traditional regulatory 'command and compliance' approaches were unable to do. Foreshadowing Part 4, Taylor and colleagues argue that much of that change was driven by the prospect of economic opportunities associated with forest certification (ecolabelling) initiatives in which market access or price premiums may modify behaviour. They cite Friedman (2000) who argues, 'the best way to win adherence to laws and norms is by trying to channel economic self-interest – the very metabolism of the globalization system – in a way that makes it restorative rather than destructive'. Private sector incentives also frame Jacek Siry's overview of the situation in Central and Eastern Europe, where transformations of the previous communist governments have resulted in significantly larger roles for private forestry in addressing economic efficiency and environmental concerns. One of the major challenges in these former communist countries is to develop strategies for implementing forest policies that are effective and efficient. Maksym Polyakov and Lawrence Teeter thus offer a modification of a policy tool developed in the Ukraine before private forestry interests were important. The modification addresses the flexibility that they argue private economic actors need to efficiently manage forest resources. Their chapter also addresses the importance of identifying the appropriate scale for implementing particular forest policies, so that other goals for the sector and the general economy are taken into account.

The third section of the book highlights the economic challenges to implementing and promoting sustainable forestry. Birger Solberg's keynote address outlines recent European policy developments that affect demand, supply and international trade. He suggests that some of the significant challenges facing forestry in Europe relate to forest certification, environmental issues and international agreements on climate change and preserving biodiversity. Careful economic analysis of new policy developments and their implications for forestry are warranted to ensure a viable forest sector in Europe. Solberg calls on forest economists to assume a more prominent role in forest policy analysis. Alig, Adams, Mills, Butler and Moulton take up this call to arms, analysing the private forestry investment climate in the US South and use their economic skills to forecast significant increases in softwood plantations and softwood production. Supporting Binkley's argument, they project that increases in productivity on intensively managed plantations will reduce pressure to harvest from natural forests, explicitly linking the role of private forest land management to opportunities on public land. Over the years, a number of analysts have speculated that short rotation woody crops might eventually play a similar role by competing with timber in pulpwood markets, thereby reducing the pressure to harvest from natural forests. Ince and Moiseyev explore the future of short-rotation woody crops and their effects on markets for hardwood pulpwood and timber supply. Under assumptions consistent with current production experiences, these technologies will become only marginally efficient within the next few decades and will only impact markets for hardwood pulpwood in a limited way. However, improvements in the productivity of these operations, reduced hardwood timber supply from natural forests or increases in demand for fibre relative to base case assumptions, could significantly affect the future role of short-rotation woody crops.

Grace Wong, Janaki Alavalapati and Robert Moulton turn their attention to the important but complex roles that forests play in carbon sequestration and climate change rates. Focusing on the US forest sector, Wong *et al.* explore the economic implications of implementing a carbon subsidy policy. Using a computable general equilibrium model, they assess likely effects of extending subsidies for planting on timber supply, markets for timber products, and changes in land use. The interrelationships among the economic and ecological factors involved in such policy proposals are myriad, raising the need for additional research in these key areas. Anne Stenger and Dominique Normandin address the paradoxical issue of society's interest in biodiversity and environmental services production generally and the lack of market incentives to encourage their production in sufficient quantities by private landowners. They explore the potential for implementing model contracts with owners that would aim to encourage production of biodiversity and other non-market environmental goods. Their economic analysis leads

them to conclude that the seriousness and importance of this issue means that it is critical that significant work should be done to identify the joint production possibilities for market (wood) and non-market goods and the appropriate production period (contract length). Kevin Zobrist and Bruce Lippke analyse the economic impacts of the Forest and Fish rules in the state of Washington. The rules were developed to meet the requirements of the Endangered Species Act and the Clean Water Act. The economic impacts of these rules for small private landowners were determined to be large (in certain cases negative bare-land values result from the restrictions), but offsetting Forest Riparian Easements are available to mitigate some of the impact. Because the rules substantially reduce the economic value of forestland for timber production, they predict future pressures to convert severely impacted properties to other land uses. Greene, Cushing, Bullard and Beauvais outline the impacts of the US federal estate tax on timberland ownership, land conversions and timber supply. Through their survey research they found that 29% of timberland sold to pay estate taxes is converted to another land use. In addition, the authors determined that over 1 million ha of timber are harvested each year to pay estate taxes. The authors suggest several modifications to current estate tax provisions that would serve to mitigate the economic inefficiencies of unplanned harvests, forest fragmentation and conversion of forestland brought about by the tax in its current form. The final chapter in this section outlines some of the US and global implications of freer trade policies such as NAFTA and GATT/WTO on forest products trade. Jianbang Gan and Sabyasachi Ganguli developed a computable general equilibrium model of world trade in forest products. They found that in most cases, trade restrictions and tariffs are quite low for forest products and, as a result, trade flows in forest products are not impacted as much by the new policies to reduce trade barriers as other sectors might be. Developed countries with strong forest products sectors are projected to remain dominant although opportunities for the forest products sectors of developing countries to expand are enhanced as a result of trade liberalization.

The increasing focus, by activists, government officials and the private sector, on market instruments as a method to achieve sustainable forestry, has led us to devote a complete section to the case of forest certification (ecolabelling), which is emerging as a new 'non-state, market-driven' (NSMD) governance system with which to address and promote forest sustainability. Eschewing traditional governmental policy processes, forest certification programmes recognize forest companies and forest landowners for practicing sustainable forestry according to predefined principles and criteria. Forest certification gained considerable attention and interest following the failure of the 1992 Rio Earth Summit to achieve a binding global forest convention. Environmental groups, retailers and some timber companies worked to create the internationally focused Forest Stewardship Council (FSC) in 1993 in Toronto, Canada (but currently headquartered in Oaxaca, Mexico). The FSC's global principles and criteria guide the national and regional working groups who must develop specific standards for their geographical areas. The FSC has sparked considerable attention in the broader forest policy community, with many forest industry and landowner associations concerned about the scope and structure of FSC rules. As a result, industry- and landowner-initiated forest certification programmes have emerged to compete with the FSC for rule making authority. The chapter by Erika Sasser offers a sophisticated framework to explore the effects of these trends on the case of the USA. She explains the way in which environmental groups have been able to harness global pressures to increase awareness of forest certification in the USA, and the way in which the American Forest and Paper Association's Sustainable Forestry Initiative (SFI) is attempting to divert retailer and forest company support to their programme. Auld, Cashore and Newsom also focus on the US case, where their research has indicated that the USA represents the most highly charged and polarized country over competing forest certification systems. Auld and colleagues undertook a survey of the large industrial forest companies in the USA, as well as the broader manufacturing sector, revealing two important trends: (i) industrial forest companies are almost completely behind the SFI, with very little support for the FSC; and (ii) most of the broader value added forest manufacturing sector has not heard of forest certification. The findings reveal the difficult environment in which prescriptive forest certification systems find themselves in the USA, which Sasser's chapter reveals, is often limited to qualified support from retailers, lumber dealers and homebuilders wishing to shield themselves from being targets of ENGO direct action campaigns. Similarly Newsom, Cashore, Auld and Granskog's chapter, and Vlosky and Granskog's chapter on non-industrial private forest land owners reveal that not only have most private

forest landowners not heard of forest certification, they are also unlikely to support FSC-style programmes without significant changes being made. As Newsom *et al.* point out, unlike the general public, forest landowners mistrust environmental groups the most, and will not generally participate in a programme that does not explicitly allow for their direct involvement in policy making decisions. Likewise the chapter by Lawson and Cashore reveals that even proactive companies who are predisposed to support the FSC, such as the JD Irving Company operating in the US Northeast and the Canadian Maritimes, must believe they are being adequately represented in the certification programme's policy making process. This chapter details that when Irving's role was explicitly limited in the Canadian Maritimes regional standards working groups process, and ensuing draft regional standards rules were much stricter than the FSC working group draft standards in the Northeast, the company removed its support from the FSC in Canada, but maintained its support for the FSC in the Northeast, where it had a much greater role in this region's standards development process. The chapter by Harris and Germain reveals the difficulty in implementing forest certification of any type where poorly developed wood procurement systems exist. They find that in such cases certification will have difficulty influencing NIPF behaviour, though it may impact negatively on the competitiveness of such landowners *vis-à-vis* those that are well integrated with industrial production.

All of this highlights the issue of using forest certification to increase sustainable forestry standards, without setting them so high as to limit participation to niche players. Recent developments on the part of the Worldwide Fund for Nature that recognize the important role the US forest sector has played in promoting sustainable forestry (Howard and Stead, 2001), have helped to build mutual respect among ENGOs and may represent a way out of the current polarized atmosphere in which forest certification in the USA (and in many other countries) finds itself.

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