

science. The more young women who push forwards assuming, as young men routinely assume, that it is possible to 'have it all', the sooner that will be possible for everyone. It would be a shame if, after reading this book, young women got the opposite message.

More disturbing is the implication that in the absence of motherhood, women in academic science would have untroubled careers. This is naive. Evidence shows that female scientists without children do not fare better than those with children who remain full-time in the workforce. Neither advance as steadily as their male counterparts, with or without children. Some explanation other than family must be the reason for the slow advancement of women.

Furthermore, countries with enviable support systems for parental leave and childcare — of the kind rightly advocated by Monosson — have astonishingly low participation of women in science. For example, in Denmark, only around 10% of full professors of science, and 2% of physics professors, are women. The numbers are higher in the United States, even with its less generous childcare policies. Neither does physiology and family explain why the fraction of scientists who are women varies widely from one country to another, even when social support systems are similar; the percentage of female scientists is much higher in France and Italy than in the United Kingdom or Germany, for example. Women's participation in science also varies widely from field to field: more than 50% of graduating MDs in US medical schools are women, whereas in physics and engineering, less than 20% of PhDs go to women.

Outside our universities, many women with young children have full-time jobs — 70% in the United States — and few of those jobs are as flexible or as well paid as jobs in academic science. There is no question that it is harder to raise a family as a supermarket employee than as a professor of physics, so why do academics seize on family as the explanation for the absence of women? The dominant obstacles to women in science — persistent, unexamined bias and lack of mentoring — are described clearly in *Beyond Bias and Barriers* (National Academies Press, 2007) and in *Academeology*, by the pseudonymous blogger Female Science Professor (LuLu, 2008; see *Nature* 456, 445; 2008). Young women trying to figure out the road to success in science might be better served reading those books rather than *Motherhood*. ■

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Each year, forests release 30% more carbon than is emitted by fossil-fuel burning.

G. LUDWIG/PANOS

Storing carbon in forests

Climate Change and Forests: Emerging Policy and Market Opportunities

Edited by Charlotte Streck, Robert O'Sullivan, Toby Janson-Smith and Richard G. Tarasofsky
Chatham House: 2008. 360 pp. £39.99

Planting, conserving and managing forests are key for attaining long-term mitigation of greenhouse gases, yet the land-use and forestry sector barely features in the Kyoto Protocol. In *Climate Change and Forests*, some 50 experts analyse the forestry-based discussions within climate-change negotiations, and offer technical and political reasons for why the Kyoto Protocol handles forestry in such a cumbersome way.

The authors argue that in the run-up to the 1997 Kyoto conference, the forestry sector's complexities were ignored in negotiations because knowledge about using forests as carbon sinks was limited at the time. This failure to resolve the contributions of forests has meant that rules formulated since then are not conducive to improving the ability of forests to sequester large amounts of additional carbon. The book provides an excellent historical background and describes the process and logic of negotiations, past and present. The multiple analyses of technical problems associated with carbon sequestration and forests make it valuable to both newcomers and veterans in the field.

Case studies demonstrate that the right incentives or policies to change land usage must vary between countries. In developing nations, for example, legal owners of land where carbon sinks could be enhanced are often absent or difficult to identify. Without knowing which people and actions are genuine candidates for carbon-incentive payments, the market-based instruments that help administer these incentives risk losing their efficiency. Experimentation is necessary and may involve many failures before success is achieved.

Although this collection includes many voices, most belong to a single camp that favours market-based instruments for encouraging changes in land use towards carbon storage. This fails to reflect the diversity of opinion in global discussions, and the book would have benefited

from the inclusion of some critics. Also missing is evidence for why market-based instruments are superior to other policy interventions. The authors mention the preconditions for markets to work — property rights, legal and regulatory frameworks — but give only vague arguments for how policies could be engineered to support the use of forests in storing more carbon on meaningful scales.

The greatest opportunities for forest-based mitigation of carbon emissions are in the developing world, and the most efficient window in which to stop deforestation is between now and 2030. However, the book fails to address how carbon markets in developing countries, such as the Democratic Republic of the Congo, could be made to operate on a large scale in an institutional vacuum. It is unclear which sources will generate the tens of billions of dollars per year that are needed, for example, to reduce deforestation by half in the coming decades. The funding issue is exacerbated by the current financial crisis that emerged after the book was written.

Climate Change and Forests emphasizes the difficulty of sequestering carbon in forests, given their vulnerability to disturbances that re-emit carbon, such as forest fires. But the book neglects issues of climate adaptation. Forests will take centuries to adapt to the disruptive processes that accompany climate change, making forest carbon stores vulnerable in the long term.

More carbon is locked in forests than in the atmosphere, and the yearly carbon flux attributed to natural disturbances is 30% higher than current emissions of fossil fuels. Under the United Nations Framework Convention on Climate Change, a multibillion-dollar fund to support climate-adaptation measures is being set up. I hope the authors are planning a new book to analyse how the mechanisms around this fund will interact with and strengthen forest-mitigation instruments in the post-Kyoto era. Like *Climate Change and Forests*, this second volume would be a crucial reference for academics, negotiators and policy-makers, and for the forest business community. ■

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