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FAO FORESTRY PAPER

Forests and energy

Key issues

Soaring energy consumption and fossil fuel prices, increasing greenhouse gas emissions and concerns over energy import dependence are driving the search for alternatives to fossil fuels for energy production. Biofuels currently constitute the largest source of renewable energy produced on earth. As biomass, wood offers some of the highest levels of energy and carbon efficiency. This publication explores the relationship between forests and energy. It considers the present and future contribution of wood in the production of bioenergy as well as the effects of liquid biofuel crop development on forests. The paper begins with an overview of global energy supply and demand with projections to the year 2030. The contribution of wood energy is then considered in the context of a general discussion of a variety of bioenergy crops and their use in the production of first- and second-generation biofuels. The analysis evaluates the payoffs in developing different sources of bioenergy and the risks of land conversion. It also discusses market forces and ongoing technological innovations for wood energy production. Policy options and recommendations for bioenergy development are given, stressing the importance of integrated planning and monitoring of land use, and the transfer of advanced wood energy technologies to developing countries. This publication will be useful to both specialized and general audiences interested in learning more about the role of forests in energy production.

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