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COMMITTEE ON FORESTRY

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FORESTS AND ENERGY: NEW CHALLENGES IN SUSTAINABLE FOREST MANAGEMENT

INTRODUCTION

1. More than half the volume of total wood removals from forests and trees outside forests is used to generate energy, mainly for household cooking and heating. In some countries, for example in sub-saharan Africa, households rely almost completely on woodfuel to meet their energy needs. It is widely recognized that clean, safe and affordable energy services are essential for achieving the Millennium Development Goals, and that bioenergy can play a substantial role. The environmental impacts of unsustainable production of woodfuels, gender issues and health problems are also well known.
2. The sharp rise in oil prices in recent years, coupled with the need to address climate change, has drawn renewed attention to bioenergy in general and biofuels in particular. In many developed countries, attempts are being made to increase the share of bioenergy in the overall energy supply. Wood from forests and trees outside forests is considered a major potential source of energy.
3. Nonetheless, particularly in some developing tropical countries, concerns have been expressed that increased production of biofuels will lead to increased competition for land between the forest, food and energy sectors, with potential negative impacts on food security, the environment and biodiversity, and the social implications for rural communities.
4. This century could see a significant increase in bioenergy use with agriculture and forestry both serving as important sources of biomass for biofuels such as fuelwood, charcoal, black liquor, wood pellets, bioethanol, biodiesel and biogas. Increasing the use of biomass, a carbon-neutral source of energy when sustainably produced, can contribute to climate change mitigation by substituting for fossil fuels. By attracting business investment and creating income and employment opportunities, bioenergy development could foster economic development and contribute to poverty alleviation, in particular in rural areas.

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5. A discussion of these complex issues from the perspective of forestry is needed. It is also useful to note that the 15th Session of the United Nations Commission on Sustainable Development (CSD) in May 2007 will continue to address energy for sustainable development and climate change, among other issues.

POLICIES AND INSTITUTIONS

6. In many countries, wood energy has been given insufficient attention in national forest programmes and in energy policies. Government support and incentives for the private sector to promote and invest in wood energy are often lacking. People are often inadequately trained to monitor and analyze the complex relationship between energy and forests at national and sub-national levels. Communication and collaboration among key government bodies involved with agriculture, forestry, land use and energy have been weak, partly because their respective mandates and roles are unclear. It is, therefore, necessary to:

- integrate relevant energy issues into national forest programmes;
- integrate bioenergy into national energy policies;
- build capacity at institutional and staff level;
- encourage an environment for private sector investment in wood energy; and
- set up cross-sectoral collaborative arrangements for government bodies concerned.

TECHNICAL ISSUES

7. Decision-makers require information and data on bio/woodfuels for planning purposes. However, in most countries data on woodfuel production and consumption are sketchy. Understanding of the technical, economic and environmental aspects of bio/wood energy production systems and of their potential and limitations is insufficiently developed. Depending on the wood source and the technology that is used, the energy required to convert biomass into biofuels can reach or even exceed the level of bioenergy produced. Production, processing and transport over long distances of biofuels have negative impacts on net energy balance and biofuels' contribution to climate change mitigation. Methodologies for determining Clean Development Mechanism (CDM) eligibility are not always clear.

8. Government subsidies for bioenergy have advantages and disadvantages. Caution should be exercised when planning and implementing large-scale bio/woodfuel projects to avoid negative environmental and social impacts. Forest industry has made good progress in improving energy efficiency by introducing improved technologies and using residues for energy, but there is still room for improvement. In some countries large volumes of logging waste are left unutilized in forests and wood processing mills are inefficient in residue utilization. There is a need to:

- improve collection methods and the range, quality and analysis of data and information on woodfuel production and consumption;
- assess the net energy balance in producing and transporting various types of woodfuel including fuelwood, charcoal, wood chips and wood pellets;
- assess the social, economic and environmental impacts of increased production and use of woodfuel;
- utilize the untapped wood wastes and residues at logging sites and processing mills, especially in the tropics;
- continue the efforts of the forest products industry to achieve energy efficiency and carbon emission reduction;
- clarify the linkages between increased production and use of woodfuels with climate change mitigation;
- augment research in advanced technologies; and
- transfer know-how to developing countries.

DEVELOPMENT ISSUES

9. Hundreds of millions of people are exposed to health risks through the inefficient use of woodfuels for daily cooking and heating. Charcoal-making is one of the few means of income generation for poor farmers to cater for the demand in urban areas but it often raises the issue of illegal harvesting. There are few success stories of fuelwood plantations, even in countries where woodfuels are the most economic source of energy. In many countries, fossil fuels are preferred over woodfuels. The sustainable production and clean and safe use of bio/woodfuels can be considered as a competitive alternative to fossil fuels only if they are more readily available and/or cost less.

10. Can the CDM foster such a development? How can the competing demands for raw materials of the energy and forest products sectors be balanced? How should the competition for land between the energy, agriculture and forest sectors be dealt with?

There is a need to:

- promote the use of improved stoves and improved charcoal-making technologies;
- consider establishment of tree plantations for energy, after careful consideration of technical, economic, social and institutional aspects;
- simplify manuals for energy plantation (reforestation and afforestation) and CDM;
- assess impacts of incentives and subsidies on the entire economy; and
- address land use in an integrated way.

11. FAO has collaborated with other international organizations, as well as with the private sector, for example through the “International Seminar on Energy and the Forest Products Industry” jointly organized in October 2006 by FAO, the International Energy Agency (IEA) and the International Council of Forest and Paper Associations (ICFPA). Joint preparation of guidelines for sustainable woodfuels production with the IEA is under way.

GUIDANCE REQUESTED FROM THE COMMITTEE ON FORESTRY

12. COFO is encouraged to discuss the issues raised above and give guidance regarding FAO’s role in dealing with the forest and energy nexus. With its cross-sectoral work on bioenergy, as reflected in the Interdepartmental Working Group on Bioenergy and the Bioenergy Platform, FAO may be well placed to provide technical assistance to countries on bioenergy issues.

13. Furthermore, given the increased emphasis on bioenergy issues in many international organizations, cooperation among the members of the Collaborative Partnership on Forests (CPF) and other partners could be strengthened in this area.