

Impacts of Increased Energy Demands on Forests

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Rome, November 20, 2007

Sua Esselencia,

**Señor Pedro Verona Rodrigues Pires (Hodrigues Pires),
Presidente de la Republica de Cabo Verde,**

**Your Excellencies Henri Djombo, Minister for Forestry of the
Republic of Congo and Martins Roze, Minister for Agriculture
of the Republic of Latvia**

Mr Director General,

Excellencies,

Distinguished delegates,

Ladies and gentlemen!

Overview

- **Definitions**
- **Background**
- **Wood fuel production and consumption**
- **Opportunities and Challenges**
- **Conclusions**

Today I wish to briefly address the nexus of forests and energy. I will start by providing some background on the issue and will then cover the production and consumption of fuel wood. The core of the presentation will cover opportunities and challenges. The issue of food security and energy is of course extremely important, but being a separate area, I will not go into that topic now.

DEFINITIONS

Biofuels

**Agro, Wood,
Municipal Waste**

Woodfuels

- **Fuelwood**
- **Charcoal**
- **Black Liquor**
- **Others**

Let me start with some definitions:

Bio-fuels are fuels produced from biomass . They comprise agricultural bio-fuels, wood-fuels and municipal waste.

The most common agricultural fuels are straw, cotton stalks and, among the liquid bio-fuels ethanol, methanol, diesel. Biogas is an increasingly important agricultural bio-fuel.

Wood-fuels include, as you can see from the slide, fuel-wood, charcoal and also black liquor generated in large quantities as a by-product by the forest industries.

Municipal waste is either solid waste, sewage sludge or landfill gas.

Background

- **Wood oldest fuel**
- **In many countries still most important**
- **Energy carrier**
- **Often unsustainable, inefficient , unhealthy**

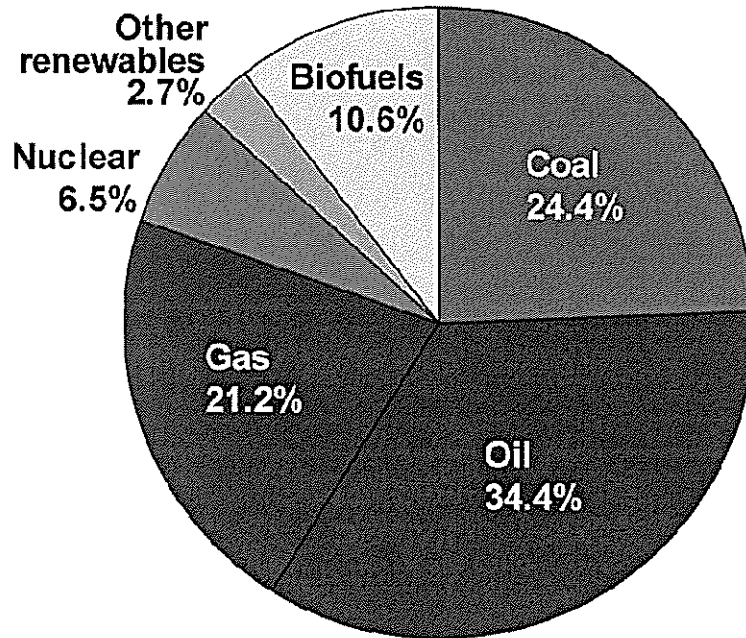


Wood is one of the oldest fuels. Man has used it for cooking, heating, pottery and glass production, salt making, melting of metals, fuelling cars, and for electricity generation.

Globally, wood is the most widely used bio-fuel. Half of the wood harvested worldwide is used as fuel-wood, that is about 1.5 billion cubic meters annually. In some countries and regions wood fuels provide over 80 % of the energy consumed. Thus wood remains important for every-day life.

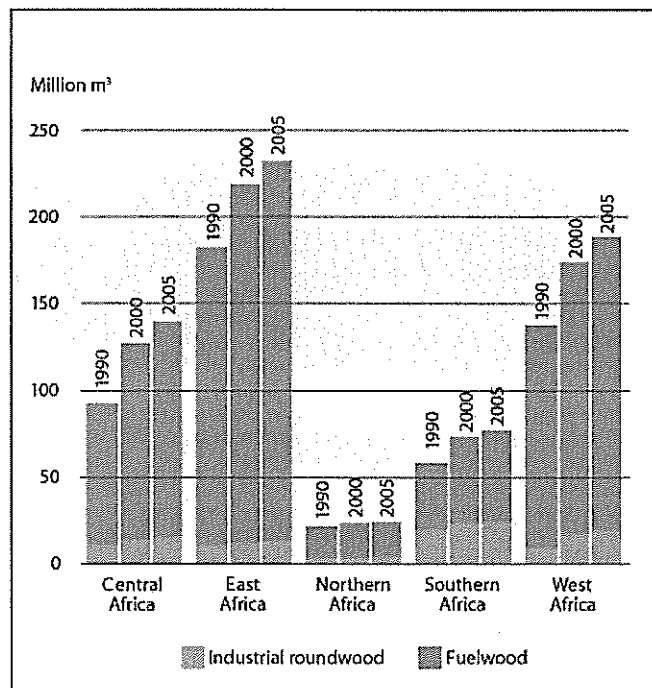
However, we also have to acknowledge that it is often used in an unsustainable and unhealthy way.

Fuel share in world total primary energy supply



According to the International Energy Agency, about 10 % of the present energy supply originate from bio-fuels and the tendency is rising. Other renewables represent 2,7 %, and they are also growing.

Wood Removals Africa



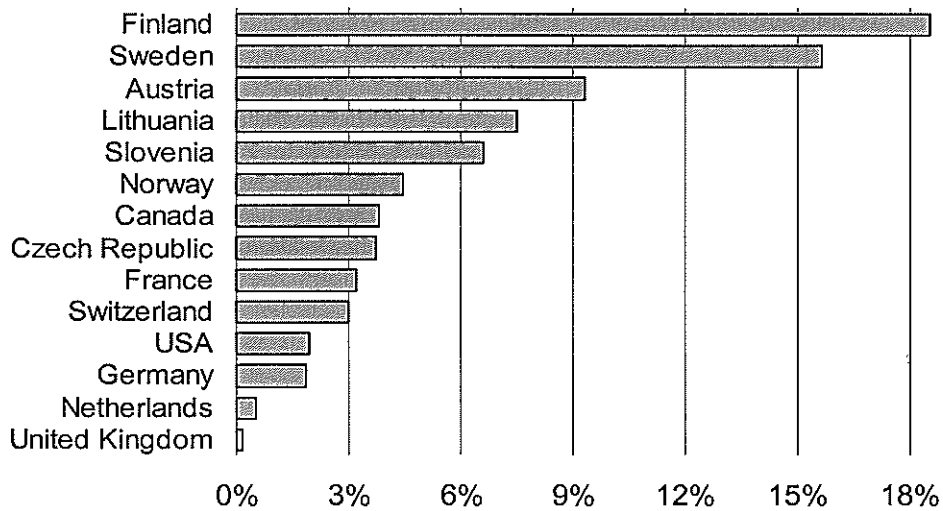
Let us look at the example of end uses of wood harvested in Africa. Data for 1990, 2000 and 2005 are compared, based on FAO's regular Forest Resources Assessments. Blue indicates wood for purposes such as construction and furniture, red wood for fuel.

From left to right, you see Central, East, Northern, Southern and West Africa.

The data show that in Africa, over 80 % of the wood removals are used as fuel, and the tendency is rising.

African countries' consumption of fuel wood represents over 40 % of the global use of wood as fuel. Other major consumers of fuel-wood, measured in total volumes, are China and India, followed by the United States of America, Brazil and Russia.

Role of wood energy in Total Primary Energy Supply



However, the role of wood energy in the supply of primary energy has also become increasingly important in industrialized countries. This is partly due to the energy generated by the forest industries, mainly by using black liquor. However, also an increasing amount of wood is used as pellets, chips and in other forms for heating purposes, and for generating electricity.

What is new?

- **Climate change**
- **Rising fossil fuel prices**
- **Energy security**

- **Increased demand for wood as fuel**
- **Increased demand for liquid biofuels**

So we can ask: what is new? Climate change, rising fossil fuel prices and concerns about energy security have triggered increased interest in bio-energy. As we have seen, wood is still by far the most important bio-fuel, and we are all aware of the sharply increasing demand for liquid bio-fuels.

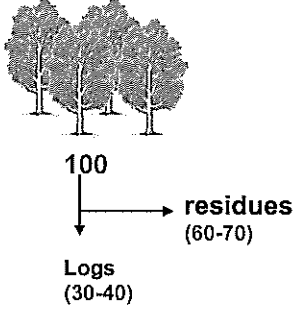
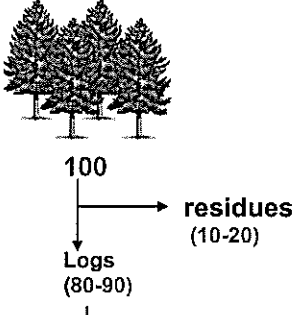
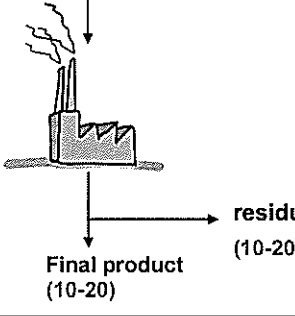
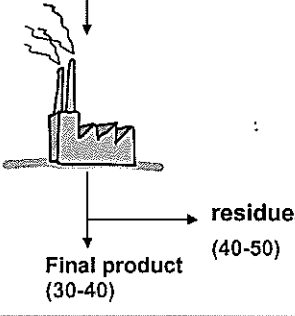
Opportunities

- **Additional value for forests & trees**
- **Forest and wood processing residues can be better tapped**
- **Additional income for smallholders**
- **Rural development**
- **Fossil fuel substitution reduces ghg accumulation in atmosphere**

The new situation has also created new opportunities for the forestry sector.

The increased use of wood for energy will certainly add to the value of forests and trees, in particular, if we start to make better and more use of forest residues.

The increasing use of wood for energy purposes, if sustainably managed, will generate additional income for forest owners, in particular smallholders, and as a consequence rural development will be fostered,. And certainly, the substitution of fossil fuels through renewable bio-fuels has a positive effect on the carbon balance.

OPERATION	NATURAL FOREST	PLANTATIONS
Harvesting	 <p>100 ↓ residues (60-70) ↓ Logs (30-40)</p>	 <p>100 ↓ residues (10-20) ↓ Logs (80-90)</p>
Primary and secondary processing	 <p>↓ residues (10-20) ↓ Final product (10-20)</p>	 <p>↓ residues (40-50) ↓ Final product (30-40)</p>
Wood residues	80-90%	60-70%

More wood could be used as bio-fuel than we do today.

Studies in Brazil have shown that both forest harvesting and timber processing still offer a great potential for the use of residues for energy, as this slide shows. We see that in forest plantations, 10-20 % of residues remain in the forest, in natural forests this rises to over 50 %. Together with the processing residues, between 60 and 90 % of the original tree are unutilized.

Studies from boreal and temperate regions also reveal a lot of unused potential.

Challenges

- **Inefficient, unhealthy and unsustainable use**
- **Forest degradation**
- **Deforestation and forest conversion**
- **Competition with forest products industry**

Particularly in many developing countries, wood fuels are still harvested, processed and used in an unsustainable, inefficient and unhealthy way.

Increased use can result in forest degradation and even deforestation, if not sustainably managed.

The introduction of crops for the production of liquid bio-fuels into forests implies further deforestation.

In some countries in Europe the increase in demand for wood fuels has led to a competition for raw materials with the traditional forest industries.

Key Issues

- **Most important biofuel**
- **More use of wastewood**
- **Sustainability of resource**
- **Efficiency, safety of use**
- **Lack of information**
- **Competition for land**

Ladies and gentlemen,

Wood remains the most important biofuel, but we could further enhance the use of it, above all by increasing the use of waste wood, or wood residues. However, the sustainability of the resource has to be monitored carefully.

At the same time, technology should be further improved in order to enhance energy efficiency and safety, both in the household as well as in industrial use of wood. In many cases improvements could be achieved just by improving the access to and dissemination of existing information.

We can already see increased land use competition emerging in some countries, the main choices being between producing food or various energy crops. Therefore, an integrated approach has to be applied when we seek solutions.

Key Issues

- **Economically interesting**
- **Fossil fuel substitute**
- **More post-consumer wood**
- **Short rotation plantations**
- **Competition with forest industries**
- **Integrated approach**

In concluding, let me summarize that

the use of wood for energy purposes is economically very interesting at all levels. Wood can substitute fossil fuels on a large scale, and we can immediately increase volumes by taking more of the post-consumer wood for energy purposes.

There is a new role for plantations, especially those with a short rotation. Simultaneously we are facing a new situation of competition between wood as a raw material for the forest industries and for the energy sector. Again, I would like to stress the need for an integrated approach in order to be able to obtain optimal solutions.

Finally, ladies and gentlemen, we are presently preparing a more substantive document on the nexus of forests and energy. It will soon undergo peer review. You will find it on the Forestry Department Forests and Energy website, and you will find hardcopies outside this room. We would be grateful for comments and suggestions before the end of the year.

**THANK YOU
GRACIAS
DANKE
KIITOS
MERCİ
TACK**

There is an abundance of substantive documents on this topic in our library. A more efficient use of wood energy has been on the agenda for a long time. Here I have a book from 1784, which describes the construction of energy efficient stoves. "Nothing new under the sun", as the saying goes.

I thank you for your attention.