

## Trees, Energy and People

# Introduction and Overview

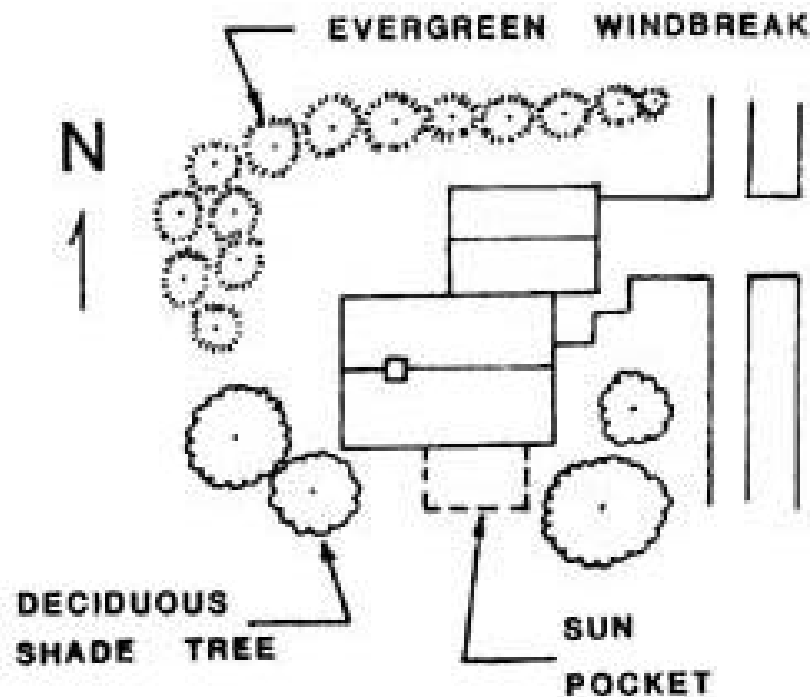


The world urgently needs foresters who look beyond the edges of the forests, thinking about

- the benefits that provide even singular **trees** in cities and rural areas
- the problem of global warming mainly resulting from the consumption of fossil **energy**
- how to cooperate with the **people**, how to help them solving their local and global problems by using trees.

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# Urban Forestry for Saving Energy



„Carefully positioned trees can save up to 25% of a households energy consumption for heating and cooling. Computer models devised by the U.S. Department of Energy predict that the proper placement of only three trees will save an average household between \$100 and \$250 in energy costs annually. On average, a well-designed landscape provides enough energy savings to return your initial investment in less than 8 years.“

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# Agroforestry: C-Storage and Energy Savings

## Estimated CO<sub>2</sub>-mitigation effects of agroforestry systems

(in Mg C·ha<sup>-1</sup> agroforestry land)

### *Accumulation and Conservation of Carbon Stores*

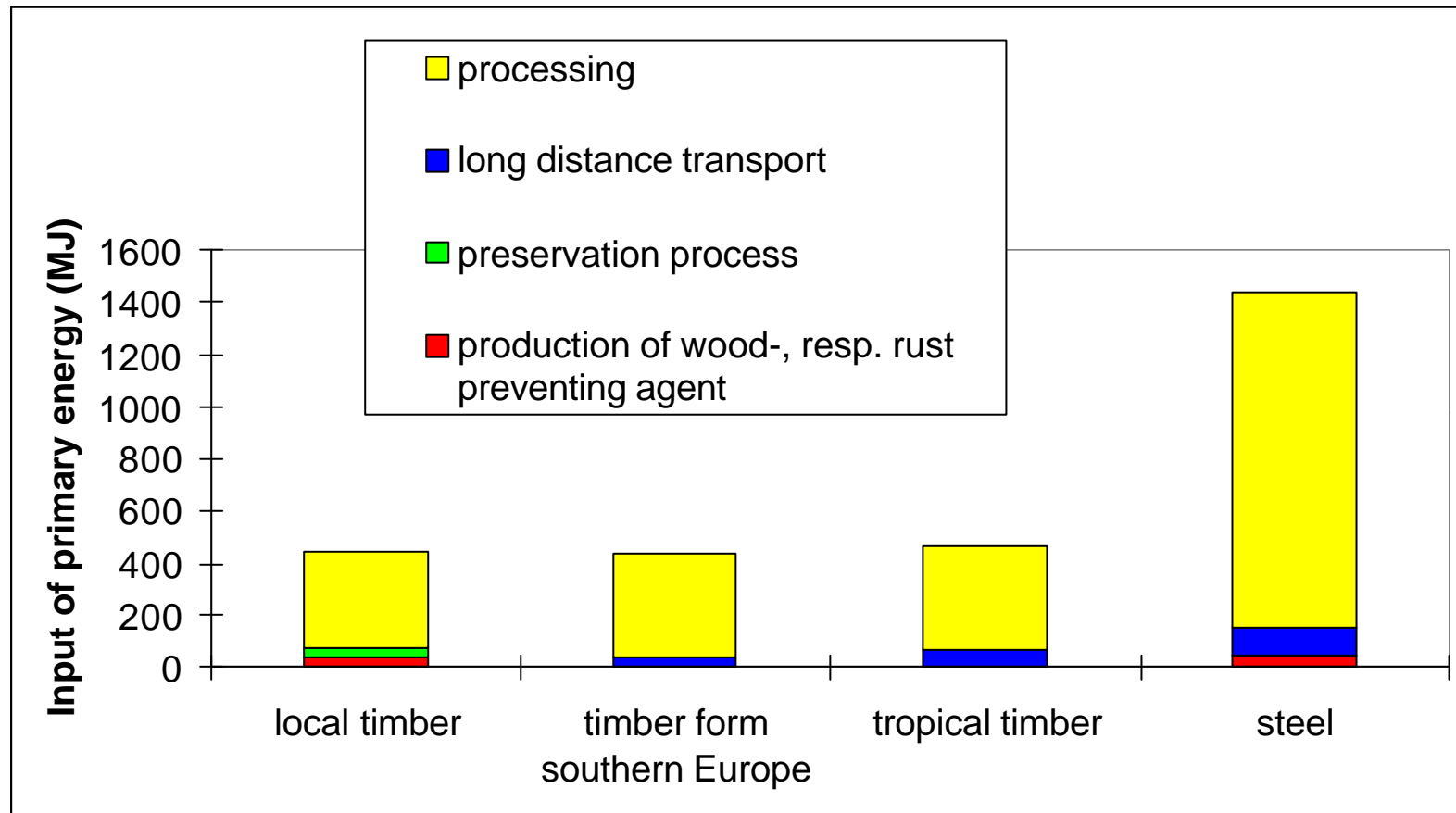
- Trees in Agroforestry Systems 3... 60
- Wooden Products 1... 100
- Soil Organic Matter 10... 50
- Protection of Existing Forests 0...1000

### *Reduction of CO<sub>2</sub>-Emissions within 50 Yrs*

- Energy-Substitution 5... 360
- Material-Substitution 0... 100
- Reduction of Fertilizer-Input 1... 5
  
- **Sum 20...1675**

# A Pillar Made of Wood Needs much less Primary Energy than one Made of Steel

(carrying capacity: 20 kN)



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# Much Money from the People to Plant Trees

„Shell Renewables is one of five core businesses of the Shell Group, established to develop commercial opportunities in solar, biomass, forestry and wind energy. Renewable energy sources are expected to meet an increasing percentage of the world's energy demand and Shell plans to be a significant player in this sustainable energy market.“

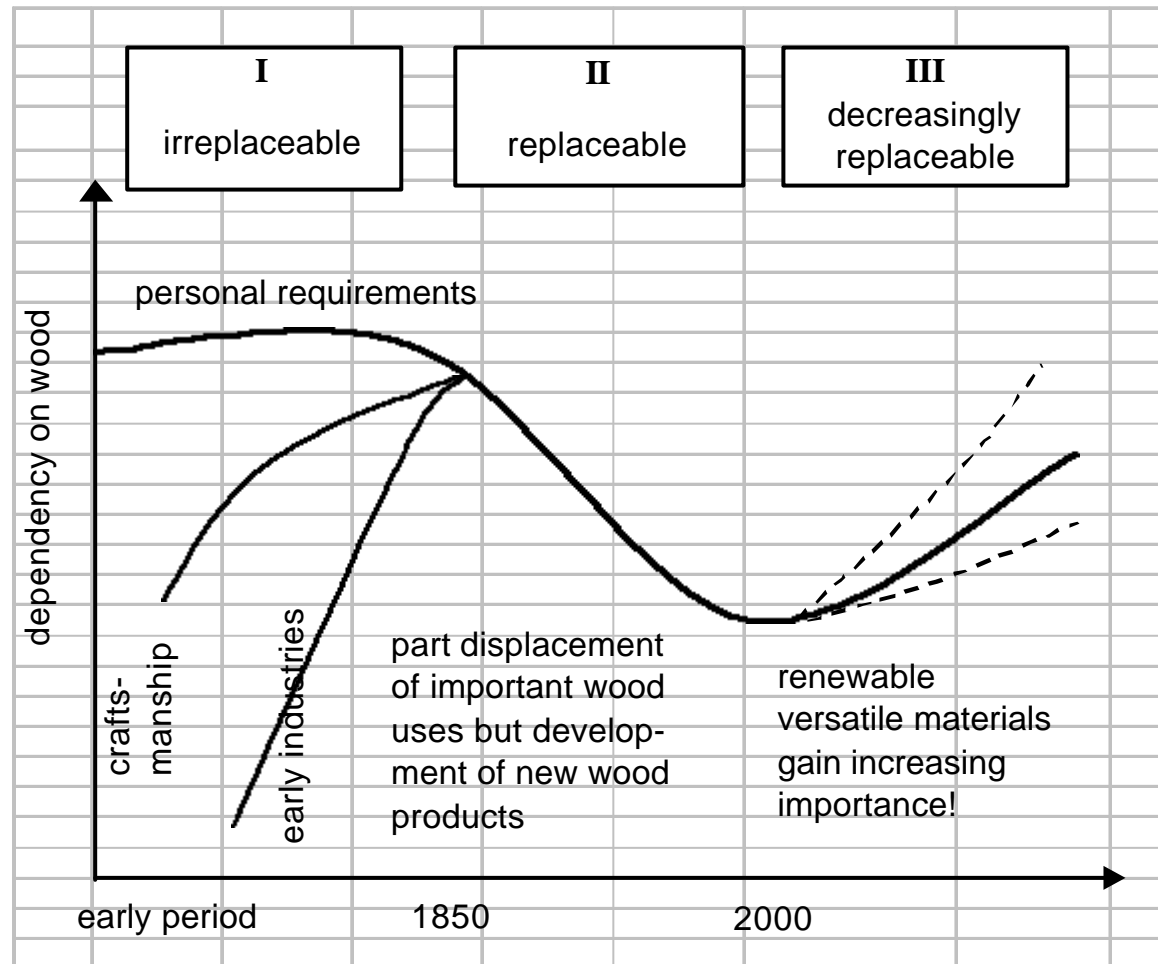


„Specialized timber investment management organizations (TIMOs) identified potential funding of between US\$ 1 and US\$ 2 billion per year, providing there was the capacity to produce a flow of attractive investments.“



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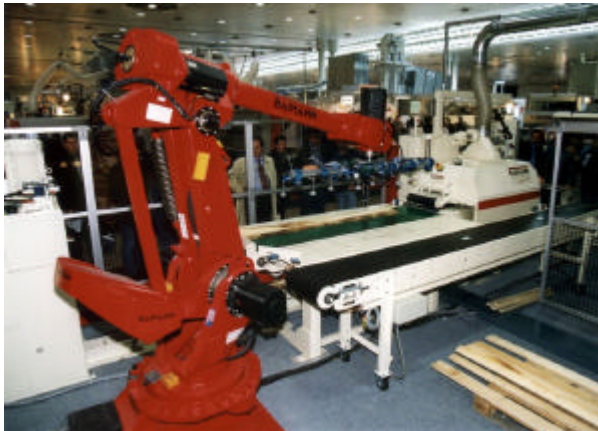
# History of Wood Use - Three-Phase-Theory



Dr. Ernst Kürsten, Source: SCHULZ, H. 19??

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# Let Us Educate Foresters to Use Their Tremendous Chances!



- There several hundreds of hectare land in the tropics that need afforestation or agroforestry land-use systems. Growing cities need more trees.
- There is money from environmentally funds and private investors available. CO2-mitigation is an actual political topic.
- New technical developments in the woodworking industry create new possibilities for the use of wood as raw material in a future economy based on solar energy.