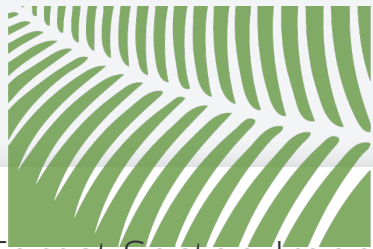


The forest sector: Important innovations



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The Forest Sector: Important Innovations

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Unlike other resources such as petroleum, coal, and copper, forests are renewable. Yet, in many respects forests historically have been treated as a nonrenewable resource in that forest stocks were depleted or "mined" and loggers moved on to exploit other "deposits." The lands were often put to other uses, typically agricultural, or allowed to regenerate naturally. This paper looks at technical change in forest extraction, i.e., logging under a number of different conditions. It finds that, on average, labor productivity has been increasing in recent decades. However, total factor productivity in the US has declined in recent years. In addition, the study examines the tree-growing potential of plantation forestry. It finds that there is underway a substantial shift away from the harvesting of old-growth forests and toward intensive forest plantations. Plantations allow for high productivity in tree growing and are being used to offset decreased wood availability due to the inaccessibility and high costs of many old- and second-growth forests. The decreased accessibility reflects not only the impacts of past logging but, perhaps more importantly, the increase in forests in protected area set asides. Additionally, natural forests face increasingly stringent regulations on logging and forest management activities. High-yield intensively managed forests, on well located, high productivity sites, offer the potential of obtaining high yields while using relatively small land areas by allowing the near full output potential of practices including species selection, fertilization and pest control. Finally, tree planting creates the opportunity to apply genetic improvements to the tree stock thereby further increasing growth productivity and allowing for control of tree characteristics.

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New innovations are called for to renew the European forest sector into bioeconomy. However, little research exists on how the industry innovativeness is publicly perceived. Using data collected with an online questionnaire in four European countries, we investigate perceptions related to forest sector innovations on 13 current and new bioeconomy-related products and services. In the next 15 years, they foresaw a decline in innovations related to biofuels and paper products. The European forest sector also has future potential in wood construction, which is likely related to international policy targets related to carbon mitigation and capture. The forest sector has only just begun to grasp the likely long-term impacts of ICT and to understand their potential magnitude. Views on the characteristics, number, and the timing of these impacts tend to differ significantly throughout the forest sector. Recommended catalogue entry: Information Technology and the Forest Sector. Report by the IUFRO Task Force on "Information Technology and the Forest Sector," jointly organized by the International Union of Forest Research Organizations (IUFRO), the International Institute for Applied Systems Analysis (IIASA), and the Finnish Forest Research Institute (Metla). This is quite simply because some of the major ICT innovations tend to be of recent origin themselves.