

Prospect of woody biomass utilization from plantation resources in Vietnam

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Abstract

Forestation projects

There were 4 big forestation programs in the past. Scattered tree planting program established 1 or 2 million ha from 1955 to 1985. World Food Program planted 2 million ha during 1975 to 2000. Greening the barren hills program (Program 327) planted 0.4 million during 1993 to 1997. And 5 million hectare reforestation program (Program 661) plans to make 3 million ha for production forest and 2 million ha for protection and special use forest from 1998 to 2010.

Utilization of plantation Acacia resources

Acacia is major plantation species in Vietnam now, but the area of *Acacia* plantation is only 12,700 ha according to Global Forest Resources Assessment 2000, FAO. In the case of an *Acacia* hybrid plantation enterprise in Hoabinh, mean harvesting volume is 75-80 m³ per ha in 7 years rotation. The volume is much smaller than expected. *Acacia* resources mainly go to sawn timber, wood chip, material of panels. Production of chip and particles has been increasing from 1,403,000m³ in 1999 to 1,683,000 m³ in 2004 (FAOSTAT). The potential of wood chip production is rather big especially in the Central Vietnam. Raw material of chip is mainly plantation resources, and exported to Japan and China for pulp and paper. Value-added products such as furniture and boards are of important for domestic wood industries. Export of furniture including plantation *Acacia* products has increased from 200 million US\$ in 2000 to 1500 million US\$ in 2005. Plantation species such as *Acacia mangium*, *A. auriculiformis* and hybrid *Acacia* are considered to be an environment friendly material especially for European customers. Production of wood based panels is still very small compared with the other ASEAN countries. The production, however, would increase with the maturation of plantation resources by the completion of Program 661.

Current use of wood residues

Wood fuel production was 26,547,000m³ according to Global Forest Resources Assessment 2005, FAO. This figure may contain logging residues such as blanches and small logs of top end in forest plantations. Logging residues seem to be used intensively for fuel in local market. Industrial residues can estimate to be 2,500,000m³ calculated by 40% of recovery rate from 4,222,000m³ of log to timber, which are mainly used for energy if dry wood is necessary.

Prospect of plantation as biomass resources

Major primary wood production in Vietnam are sawn timber (2,950,000m³) and wood chip/particles (1,683,000m³). Most of chip from plantations goes to overseas, which may result in shortage of raw materials for domestic use. Program 661 establishes 3 million ha of production forest in 2010 and enhanced plantation resources will help wood industries in terms of raw material security. Small logs produced from fast growing species may reduce the recovery rate during wood processing, and generate huge amount of industrial residues. Cost effective technology to utilize these residues is an essential issue for wood industry in Vietnam.