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Utilisation of Wood Waste in Moratuwa Wood Working Industry

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Abstract

Moratuwa is traditionally famous for the carpentry and furniture manufacturing. There are several types of wood working industries in the cluster. Among them carpentry shops, sawmills and integrated sawmills were identified as the wood waste generating industries. Main objective of the study is to identify the current wood waste utilisation patterns and optimising the wood waste flow. Questionnaire surveys were conducted and field measurements were taken to gather reliable data. Stratified sampling method was followed. The prominent species use in the wood working industry is Teak (38.7%) followed by species are Mahogany (28.8%) and Albizia (3.1%). Machinery usage varies among different industries. Integrated sawmilling industry has the highest diversity of the machinery usage. Circular saw (44.6%) is the most abundant type of machinery used by integrated sawmilling industry. In carpentry industry planer saw (41.0%) is the most frequently using mechanical tool. Sawmilling industry uses different types of saws but the prominent type of sawing equipment is the circular saw (73.0%). 6,489.879 MT of total wood waste is generated within a month by entire population of wood working industries in Moratuwa. Out of them, sawmills produce 4,279.750 MT/month of wood waste, 2,003,467 MT/month of waste by the integrated sawmills and carpentry shops produce 206,662 kg/month. Among the total wood waste generation saw dust contributes 76.5%, 16.5% of wanes and 6.9% of offcuts. It was found that 63.4% carpentry shops, 100.0% of sawmills and 91.0% of integrated saw mills already utilise their wood waste. Quantity of current overall wood waste utilisation within the area of 20 km radius is calculated as 2,903,625 kg/month which has a possible increment up to 4,198,319 kg only by improving the current wood waste transportation. Wood waste generation and utilisation flow diagram and shortest path among the utilisers and waste collection points were illustrated. By adopting this waste utilisation methods, several business opportunities can be created and waste can be utilised in environmental friendly manner.

Keywords: Sawdust, Wood waste, Utilisation