

## **Abstract**

Chain saws have been used to convert on-farm trees into timber over a long time in Kenya. Large saw path, especially due to the back and forth mode of operation remains a major contributor to low timber recovery and surface quality associated with this sawing method. A new method of sawing using chain saws with attachments has been introduced. The attachments fix the chain bar on a straight line, enabling the operator to saw a log to uniform pre-set timber sizes with precision, higher recovery and smoother surface than free hand sawing method. A study was conducted to determine the difference in timber recovery and other sawing parameters between free hand and chain saw with attachments. Results showed that chain sawing with frames gave mean timber recovery of about 56% against 41% with free hand. Fuel consumption was slightly higher than for free hand method but the difference was not significant. Chain sawing with attachment produced significantly less volume of sawn timber per unit time than free hand. However, the size uniformity, surface quality, and high recovery of the resultant timber would pay back more than free hand method. It was concluded that chain sawing with attachments is more efficient and higher in timber recovery than free hand. Although an operator may saw less timber in a day, all the timber is more likely to find ready market than timber processed using free hand due to uniformity of size along the piece and higher surface quality. It is recommended that, chain sawing with frames be adopted, modified and promoted to replace the free hand method to minimise wastes, improve timber surface quality, thus conserving the environment in the short term as development of more cost effective sawing technologies continue.