

Harvesting costs depend on how forest operations are conducted. Efficiency can be quite variable. Forest work remains largely a human output, where mistakes are made, or where workers' attitude is not always focussed on efficiency and proper implementation. Improving the efficiency of forestry operations is a key to further improve the business case and one of the tools is the continuous monitoring of forest operations.



Select a limited number of key performance indicators that are continuously monitored. This allows for the timely observation of extreme high costs or losses, and provides the opportunity to take action before costs accrue dramatically. Such key performance indicators can be:

- Hours per equipment / machinery used for operation and hours that equipment / machinery wasn't used;
- Fuel use, either per m³ or per hour; excessive use might be the result of theft, e.g. with trucks – but this might also be caused by other issues such as rough terrain etc.;
- Transport of log volumes, to check whether the trucks are used efficiently;
- Volume per day per chainsaw operator, to investigate their individual performance;
- Number of trees per day for prospection / inventory, to investigate the performance of teams or individual workers.

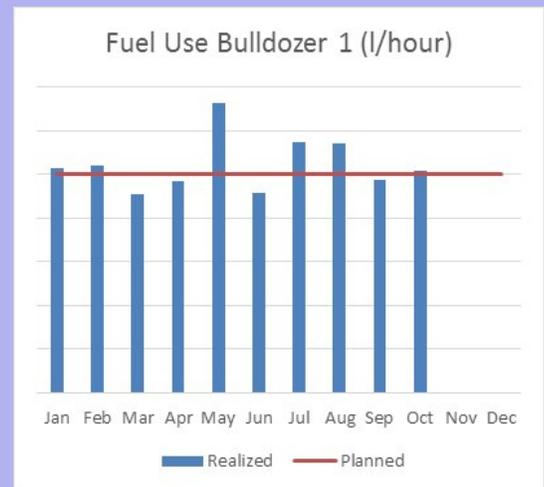
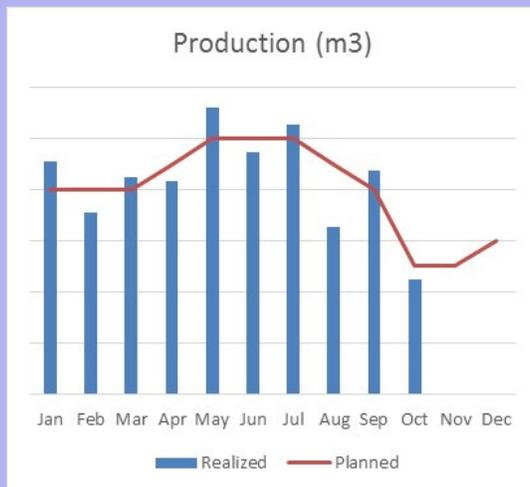
Tracking efficiency

Company K monitors its harvesting efficiency on a monthly basis. They realized a productivity increase due to a very detailed cost-accounting which helps to identify every single factor impacting forest operation costs and thus drives their improvements. Next, they have a detailed quality control system which provides feed-back to production managers to take action where needed.

RIL and conventional logging compared

In a comparative study which results were presented in 2012, Medjibe and Putz compared ten studies on the costs and benefits of both Reduced Impact Logging (RIL) techniques and Conventional Logging techniques. These studies were conducted throughout the tropics. Seven out of ten studies showed RIL to be more profitable on a volume harvested basis. However, only three studies showed less costs for RIL (one study reported almost identical costs). This shows that in many but not all cases, RIL cost more, but also resulted in higher profitability.

Over time, target levels are developed, to which actual figures are compared. If costs heavily exceed these levels, the situation is assessed. There could be many reasons for high levels of costs or low levels of production, such as inefficient working, working in rough terrain, theft, broken equipment, personal issues or else. Appropriate measures are taken if needed, such as training and adjusted procedures.



In these examples the production figures of Augustus would be further assessed (why was there a low production?) and eventually the production of May could be assessed for lessons learnt (what factor increased the production and can these be integrated in further harvesting?).

Next, the fuel use of Bulldozer 1 in the month May should have been assessed: was there a technical problem? Rough terrain? Or was fuel stolen? Such questions could eventually also be checked for the July and Augustus results.

These assessments should be conducted immediately once they become available, to reduce further losses.

