

Forest Road Assessment in Ulu Muda Forest Reserve, Kedah, Malaysia

ABSTRACT

For the last few decades, forest road construction for forest harvesting in the tropical forest has been shown to cause considerable damage to the soil physical properties, forest environment and watershed areas. These effects can be minimized through implementation of proper harvesting procedure in the use of harvesting machines and forest road specification guideline. Forest road specification is important as technical guideline that must be comply by any loggers in order to construct forest roads. The road constructions that meet the outlined specification were potential to minimize the damage of forest roads and increase the efficiency in forest product output, while reducing harvesting cost. The purpose of the study is to evaluate the effectiveness of feeder road construction in compliance to the Forest Road Specifications 1999 as outlined by the Forest Department of Peninsular Malaysia. Systematic samplings were conducted along 14.5 km of feeder road where an observation and measurements has been taken at every 500 m points visited. A total of 30 samples were taken which incorporate dimensions of road specification elements for each point such as road cross section, vertical alignment, horizontal alignment, road failure and earth work. The comparison data was collected to determine whether the failure is due or not to the specification. Result presented that the total length of the road failure in the study area was 551.4 m or 3.8% out of 14.5 km. The types of the road failure were classified into five categories that were surface failure, surface run-off, wheel track, drainage failure and landslide. The major failure occurred on the feeder roads was surface failure, which represent about 38.2%. Reasons of non-compliance are ascertained and several recommendations were given to reduce the damage of feeder road.

Keyword: Forest engineering, Timber harvesting, Assessment, Road failure, Cost