

Contribution 70 in session "Forest operations: environmental concerns and natural hazards"

### **Environmental Factors Affecting Technical Efficiency in Norwegian Steep Terrain**

**Authors:** Ottaviani Aalmo Giovanna; Baardsen Sjur; ...

Norwegian Forest and Landscape Institute, Norway, [gio@skogoglandskap.no](mailto:gio@skogoglandskap.no)

**Keywords:** Steep terrain logging, Stochastic Frontier Analysis, Tower yarder productivity

This study presents the analysis of panel data on steep terrain logging productivity in Norway.

Given the specification of a Cobb Douglas stochastic frontier production function in which the technical inefficiency is a function of six different environmental factors, it was found that only one (terrain hindrance) decreased the efficiency significantly.

The estimated efficiencies for the sample crews ranged from 0.43 to 0.99. Because of the nature of the inefficiency factors one way to improve the efficiency could be to train the crews for working on steep slopes.

This would also improve the safety when exposing workers to these types of environmental hazards.