STUDY ON POTENTIAL APPLICATION OF CABLE YARDING SYSTEM FOR PLANTATION EXTRACTION ON STEEP TERRAIN IN VIETNAM

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Summary

Cable yarding system is widely used in timber harvesting on the steep terrain in many developed countries because of its positive points in reducing the negative impacts from timber harvesting activities to soil surface and remaining trees. However, the extraction of logs on steep terrain in Vietnam is still being conducted by manpower method with rolling logs downhill, that causes negative impacts to soil surface such as soil disturbance and compaction and leads to soil erosion in consequence of reducing the growth and productivity of trees. This study assesses the ability of applying cable system to extract logs from plantation on steep terrain with the slope more than 35% in Vietnam. The study result shows that a gravity skyline system is suitable and can be widely applied in Vietnam in case the total of investment is less than 968 million VND. At this investment, the production cost using cable system is calculated to be 20% higher than the production cost of the current method using manpower to rolling logs downhill. This difference of the production costs can be acceptable at the beginning of applying mechanization to replace the traditional manpower method. The investment of 968 million VND is suitable for a cable system that is domestic manufactured and technology transferred. The findings have a meaning in selection of suitable timber extraction methods for plantation logging in Vietnam.

Keywords: Cable yarding system, log rolling on steep terrain, timber harvesting, log extraction.