

## Optimize your harvesting method

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### **Abstract:**

*Harvesting methods combine production with transport actions in natural stands and on natural soil. Due to individual site conditions and objectives different alternatives can be possible (only for flat terrain 50 alternatives!), so the forest manager has to decide which one is the best.*

*Optimization needs criteria, which should be arranged in operational and disjunctive groups. With economical, ecological, and social arguments there are three supercriteria, which decompose each into effectiveness and efficiency. So we have a completed system of 6 criteria.*

*The pronoun „your“ points to individual differences of every task. Vertically the level of management demands for specific grades of abstraction: The worker has to produce high productivity while minimizing the side effects and risks (operative level). The district forester has to merge the tools in the best way and forms a conclusive advise (tactical level). The chief needs to look for the best tools, good workers and flexible contractors. And the owner himself gives the advise, how all decision makers deal with alternatives. In a structure like this the pronoun „your“ becomes an operational criterion.*

*Using the example of a concrete decision situation on the tactical level this is shown in several steps (by a html-tool):*

- 1. Narrow the decision down depending on the tree species and tree size*
- 2. characterize the local site in terms of trafficability (technogram, t-variable)*
- 3. evaluate the soil functions under the focus of the forest owner (technogram, p-variable)*
- 4. pick up the locally found opening up pattern*
- 5. look for harvesting methods which can operate under these conditions*
- 6. assess these alternatives under ecological point of view (match the ecograms with the technogram)*
- 7. decide for one alternative and start to do the fine tuning (functiogram).*

**Keywords:** harvesting method, optimization, decision making, technogram, ecogram

**Remark:** Full paper has not been submitted.