


## Description of best practice

Best practice	
Title	Cable yarding simulation
Picture	
Domain	Sustainable management and planning
Source of wood	Stemwood
Location	Switzerland
Implementers	Berner Fachhochschule (BFH) and Rheinisch-Westfälischen Technischen Hochschule Aachen (RWTH Aachen)
Actual status	Simulation based on defined digital twin-structures and open access data. Simple working processes with limited efficiency are implemented in the simulation environment and as first simulation setup.
Approach	Simulation of cable yarding processes on real logging sites, implemented in a VEROSIM environment.
Main results	On a defined logging site, input data can be derived from open access data and made available as input parameters for the simulation environment. The results of the simulation were presented as 3D-animation of the simulation scenario together with related time-statistic sheets on a single-tree base.
Lessons learned	Especially on cable yarding terrain, the validity of traditionally applied productivity models gets easily exceeded with high frequencies of special situations. Simulation techniques help to overcome model limitations as they allow the extrapolation of the modeled environment. To compete with high quality harvesting and yarding productivity models on valid application scenarios, effort must still be taken to raise the simulation quality on an equal level. Other benefits of the simulation approach, like the assessment of working behavior, are already being used with great results.
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Link to website	<a href="https://youtu.be/SefCcGrMv_A">https://youtu.be/SefCcGrMv_A</a>
Code	BP_CH_17

## Best practice assessment

Region	Switzerland
Time scale	2021 - 2025
Mobilization Potential	> 50'000 m <sup>3</sup> /year in Switzerland
Kind of wood concerned	Stemwood
Sustainability Potential	Medium
Impact on environment & biodiversity	Positive
Ease of implementation	In the second part of the project data acquisition needs to be simplified.
Economic impact	Reduced harvesting cost due to optimization and decision support
Job effect	Positive
Income effect	Positive
Specific knowledge needed	Special knowledge required to set up the simulation
Costs of implementation	Low
Technical readiness level	Prototype is ready, final product is expected by 2025.
Key information for adoption	Data for landscape and tree distribution is required. Further simplification is needed.