Supplementary file S1 – GAYA 2.0 variables

In Table S1 we list the forest variables used in GAYA 2.0. The variables can be differentiated by their type or scope. The core variables are the ones at the center of stand development, all other variables being dependent on or derived from them. Some variables are species specific meaning that they keep separate values for each of the three species. State variables characterize the forest at any point in time while treatment variables give information about the outcome of a certain treatment on the stand. For instance, in case of a thinning, the variables could be the number of trees harvested, their biometrics, and the price and costs generated by the treatment. When mortality is accounted for the variables in this scope describe the trees that were removed. Variables under carbon accounting show information about the carbon flow of the stand in a certain period.

Table S1. Variables in GAYA 2.0. With * we mark whether a variable belong to a type or is available for a certain scope. The scope abbreviations are C – core variables, ST – state variables, SP – species specific variables, TR – treatment variables, MO – mortality variables, CA – carbon accounting variables.

Variable	Unit	Type/scope					
		C	ST	SP	TR	MO	CA
Stand area	ha						
Main species							
Site index	m	*		*			
Age	yr	*	*	*		*	
Age at breast height	yr		*	*		*	
Mean height	m		*	*	*		
Dominant height	m	*	*	*		*	
Mean diameter	cm		*	*	*	*	
Number of trees	ha^{-1}	*	*	*	*	*	
Basal area	m^{2}ha^{-1}	*	*	*	*	*	
Volume (total)	m^3		*	*	*	*	
Volume (saw logs)	m^3			*	*		
Volume (pulpwood logs)	m^3			*	*		
Price	NOK m^{-3}				*		
Cost (forwarding)	NOK m^{-3}				*		
Cost (felling)	NOK m^{-3}				*		
Cost (regeneration)	NOK m^{-3}				*		
Biomass	Mg ha^{-1}		*	*			
Albedo			*				
Carbon stocks (biomass)	Mg ha^{-1}		*				*
Carbon stocks (litter)	Mg ha^{-1}		*				*
Carbon stocks (soil)	Mg ha^{-1}		*				*
Carbon stocks (sawlogs)	Mg ha^{-1}		*				*
Carbon stocks (pulpwood)	Mg ha^{-1}		*				*
Carbon stocks (energy)	Mg ha^{-1}		*				*
Carbon seq. (biomass)	Mg ha^{-1}						*
Carbon seq. (litter)	Mg ha^{-1}						*
Carbon transfer (to soil)	Mg ha^{-1}						*

Carbon transfer (to sawlogs)	Mg ha^{-1}		*
Carbon transfer (to pulpwood)	Mg ha^{-1}		*
Carbon transfer (to energy)	Mg ha^{-1}		*
Carbon emissions (from soil)	Mg ha^{-1}		*
Carbon emissions (from sawlogs)	Mg ha^{-1}		*
Carbon emissions (from pulpwood)	Mg ha^{-1}		*
Carbon emissions (from energy)	Mg ha^{-1}		*
Carbon substitution (by sawlogs)	Mg ha^{-1}		*
Carbon substitution (by pulpwood)	Mg ha^{-1}		*
Carbon substitution (by energy)	Mg ha^{-1}		*
Carbon balance (net)	Mg ha^{-1}		*
Carbon balance (discounted)	Mg ha^{-1}		*