

Table SI.1. Functional traits (carbon allocation and residence time for leaves, woody tissues and fine roots), their respective trade-offs and associated equations. The equations are described in Supporting Information SI.1 together with the model description. ABGW: aboveground woody tissues.

Functional trait	Trade-offs	Equation
Leaves allocation	Leaves carbon content	Eq. 29
	Total plant carbon stock	Eq. 30
	Leaf area index	Eq. 21
	Maintenance respiration	Eq. 27
	Growth respiration	Eq. 26
ABGW allocation	ABGW carbon content	Eq. 29
	Total plant carbon stock	Eq. 30
	Light capture	section SI.1.8
	Maintenance respiration	Eq. 27
	Growth respiration	Eq. 26
Fine roots allocation	Fine roots carbon content	Eq. 29
	Total plant carbon stock	Eq. 30
	Water stress	Eq. 38
	Maintenance respiration	Eq. 27
	Growth respiration	Eq. 26
Leaves residence time	Leaves carbon content	Eq. 29
	Total plant carbon stock	Eq. 30
	Leaf area index	Eq. 21
	Specific leaf area	Eq. 22
	Maintenance respiration	Eq. 27
ABGW residence time	Growth respiration	Eq. 26
	ABGW carbon content	Eq. 29
	Total plant carbon stock	Eq. 30
	Light capture	section SI.1.8
	Maintenance respiration	Eq. 27
Fine roots residence time	Growth respiration	Eq. 26
	Fine roots carbon content	Eq. 29
	Total plant carbon stock	Eq. 30
	Water stress	Eq. 38
	Maintenance respiration	Eq. 27
	Growth respiration	Eq. 26