	SM1 (TECO-CN)[a]	SM2 (CLM4.5)[b,c]	SM3 (O-CN)[d,e]
Downregulation of photosynthesis by N availability (DRP)	Based on the comparison between plant N demand and actual supply	Based on the available soil mineral N relative to the N demanded to allocate photosynthate to tissue	Based on foliage N concentration, which varies with N deficiency
Plant tissue stoichiometry (PS)	Flexible plant C : N ratio	Fixed plant C : N ratio	Flexible plant C : N ratio
Plant N uptake (PNU)	Based on fine root biomass, soil mineral N, and N demand of plant	Based on N required to allocate NPP to tissue	Combining active and passive uptake of mineral N based on fine root C, soil mineral N, plant transpiration flux; increases with increased plant N demand
	Plants choose the strategy between uptake from soil mineral N and fix N_2 by comparing C investment	Plants uptake N for free	
N competition between plants and microbes (PMC)	Microbes have first access to soil mineral N	Based on demand by both microbial immobilization and plant N uptake	Microbes have first access to soil mineral N; the competitive strength of plants increases under nutrient stress
Biological N fixation (BNF)	Based on the nitrogen demand of plants and maximum N fixing ratio considering nutrient concentration	f(NPP)	f(ET)
Deployment of retranslocated N (RtrN)	Fixed fraction of litter	Based on available N in the tissue and the previous year's annual sum of plant N demand	Fixed fraction of dying leaf and root tissue
Soil organic matter stoichiometry (SS)	Flexible soil C : N ratio	Fixed soil C : N ratio	Flexible soil C : N ratio
N leaching	Function of soil mineral N pool and runoff	Function of soil mineral N pool and runoff	Function of soil mineral N and runoff
[f] Gaseous N loss	Based on function of soil mineral N pool, soil temperature, and N deficit	Based on function of soil mineral N pool, soil temperature, and N deficit	Based on function of soil mineral N pool, soil temperature, and N deficit