

Supplementary Table 1. Average Rates of N-cycling Activities and Extractable Inorganic N (\pm SE) in Different Seasons and Hydrological Zones.

Location	Zone	Season	Depth (cm)	Exchangeable NO ₃ -N (mg/kg)	Exchangeable NH ₄ -N (mg/kg)	DEA (μ g N/g*h)	Net Mineralization (mg/kg*day)	Nitrification (mg/kg*d)
SIB 1	1.	Wet	0-30	0.8(0.4)	2.0(1.2)	2.8(1.6)	0.0(0.0)	5.0(1.0)
SIB 1	1.	Wet	30-60	0.3(0.2)	0.8(0.1)	1.6(1.8)	0.0(0.0)	4.3(0.4)
SIB 1	1.	Wet	60-90	0.4(0.2)	1.4(0.2)	0.2(0.2)	0.0(0.0)	3.2(0.7)
SIB 1	2	Wet	0-30	0.8(0.3)	2.1(1.2)	0.2(0.1)	0.0(0.0)	4.0(1.2)
SIB 1	2	Wet	30-60	0.5(0.4)	1.3(0.3)	0.1(0.0)	0.0(0.0)	2.6(1/0)
SIB 1	2	Wet	60-90	1.1(0.9)	1.3(1.0)	0.1(0.1)	0.0(0.0)	1.0(0.4)
SIB 1	3	Wet	0-30	0.5(0.5)	1.6(0.2)	0.5(0.2)	0.0(0.0)	3.1(0.6)
SIB 1	3	Wet	30-60	0.3(0.1)	1.0(0.4)	0.1(0.1)	0.0(0.0)	1.1(0.5)
SIB 1	3	Wet	60-90	0.1(0.4)	1.0(0.5)	0.0(0.0)	0.0(0.0)	0.1(0.2)
SIB 1	1	Dry	0-30	0.7(0.0)	7.4(0.4)	3.2(1.6)	0.1(0.1)	0.2(0.2)
SIB 1	1	Dry	30-60	0.7(0.1)	7.1(0.4)	0.1(0.2)	0.1(0.0)	0.1(0.1)
SIB 1	1	Dry	60-90	0.8(0.2)	9.5(2.5)	0.4(0.3)	0.1(0.0)	0.1(0.0)
SIB 1	2	Dry	0-30	0.7(0.1)	8.1(2.8)	0.7(1.0)	0.2(0.0)	0.2(0.1)

Location	Zone	Season	Depth (cm)	Exchangeable NO ₃ -N (mg/kg)	Exchangeable NH ₄ -N (mg/kg)	DEA (μ g N/g*h)	Net Mineralization (mg/kg*day)	Nitrification (mg/kg*d)
SIB 1	2	Dry	30-60	0.7(0.1)	8.0(0.9)	0.4(0.5)	0.1(0.1)	0.1(0.1)

SIB 1	2	Dry	60-90	0.8(0.4)	7.2(1.4)	0.2(0.3)	0.0(0.0)	0.0(0.1)
SIB 1	3	Dry	0-30	0.5(0.0)	9.6(1.8)	0.8(0.5)	0.2(0.1)	0.1(0.1)
SIB 1	3	Dry	30-60	0.5(0.0)	7,8(1.2)	0.1(0.1)	0.1(0.1)	0.0(0.0)
SIB 1	3	Dry	60-90	0.7(0.3)	8.0(0.1)	0.4(0.4)	0.1(0.0)	0.0(0.0)
SIB 2	1	Wet	0-30	1.1(0.7)	6.3(4.0)	30.0(45.0)	1.0(0.3)	21.0(8.5)
SIB 2	1	Wet	30-60	0.3(0.1)	1.9(0.4)	2.7(2.4)	0.2(0.3)	10.9(6.7)
SIB 2	2	Wet	0-30	0.4(0.1)	10.0(3.7)	0.2(0.1)	0.3(0.5)	8.7(8.8)
SIB 2	2	Wet	30-60	0.7(0.3)	4.5(0.0)	0.0(0.0)	0.0(0.0)	0.4(0.4)
SIB 2	3	Wet	0-30	0.5(0.1)	5.1(1.5)	0.3(0.3)	0.2(0.1)	6.9(3.8)
SIB 2	3	Wet	30-60	0.5(0.3)	5.1(1.7)	0.1(0.0)	0.0(0.0)	0.5(0.3)
SIB 2	1	Dry	0-30	12.4(11.8)	14.7(2.3)	2.3(0.8)	0.3(0.2)	0.6(0.2)
SIB 2	1	Dry	30-60	3.6(3.6)	9.4(1.6)	0.6(0.4)	0.2(0.1)	0.1(0.2)
SIB 2	2	Dry	0-30	0.7(0.1)	8.9(0.6)	2.5(0.8)	0.8(0.1)	0.4(0.3)

Location	Zone	Season	Depth(cm)	Exchangeable NO ₃ -N (mg/kg)	Exchangeable NH ₄ -N (mg/kg)	DEA (µg N/g*h)	Net Mineralization (mg/kg*day)	Nitrification (mg/kg*d)
SIB 2	2	Dry	30-60	0.5(0.1)	8.8(1.0)	1.8(1.4)	0.4(0.1)	0.1(0.0)
SIB 2	3	Dry	0-30	1.0(0.2)	8.6(1.4)	1.7(1.4)	0.4(0.1)	0.1(0.0)
SIB 2	3	Dry	30-60	0.6(0.1)	6.3(4.01)	5.1(2.3)	0.5(0.4)	0.3(0.2)