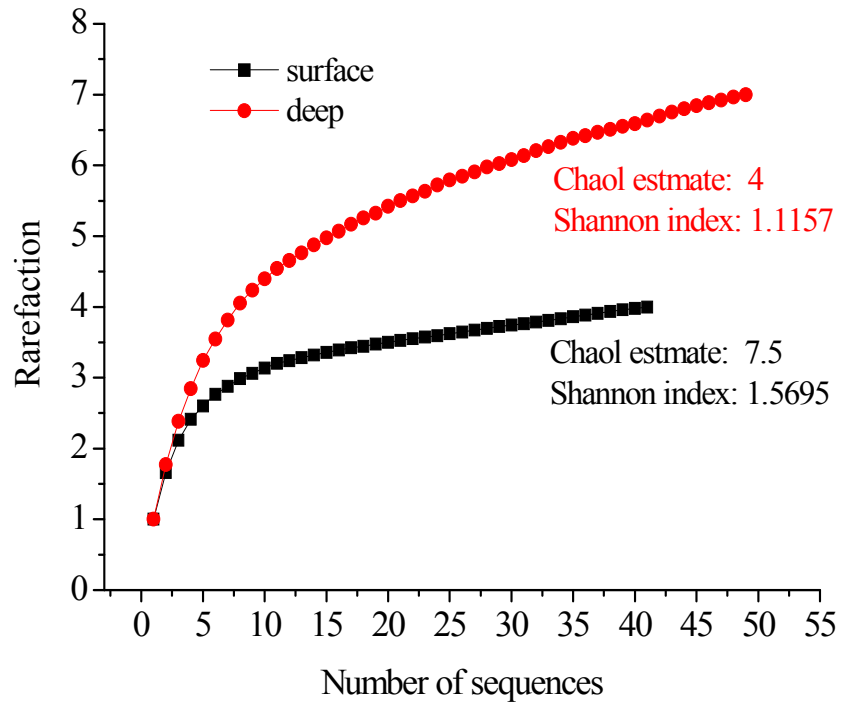


1 Supplement

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5 **Fig. S1.** Rarefaction analysis of anammox bacterial communities at the surface and deep of paddy
6 soil. DOTUR program was used with 3% sequence variation as OTU determination

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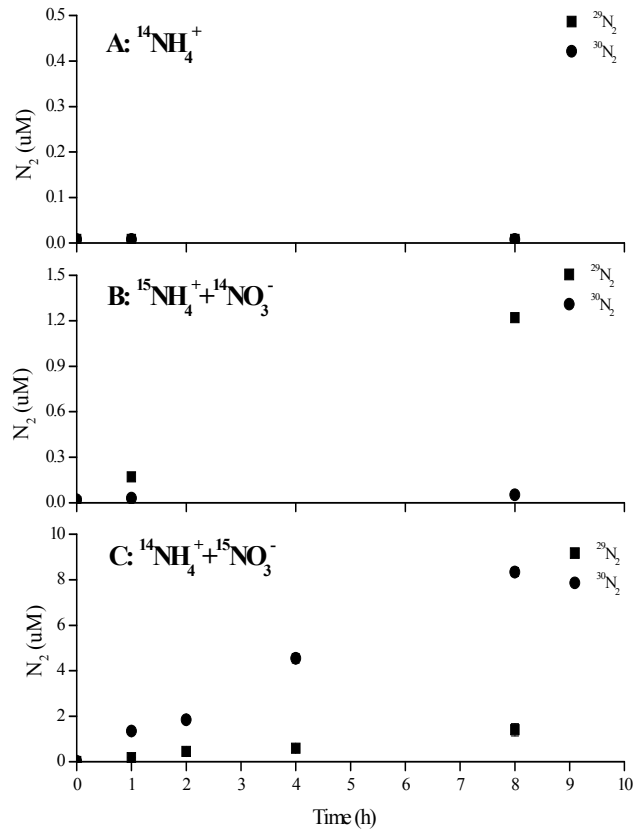
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Fig. S2 Examples of concentrations of ²⁹N₂ and ³⁰N₂ in samples amended with ¹⁵N labeled on ammonium and nitrate separately

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Table S1 The characteristics of slurry manure slurry manure for fertilizing the paddy soil

	pH	COD	Salinity (‰)	NH ₄ ⁺	NO _x ⁻	PO ₄ ³⁻	total nitrogen	total phosphorus
Sample 1	7.6	2245	0.17	782	49	6.5	1282	332
Sample 2	7.4	2318	0.22	748	55	6.7	1519	365

Units are mg/L except the pH value.

Table S2 The layout of OUT number and related anammox sequences accession numbers in the tree

OTU	Sequence number	Sequence ID		Accession number(s)
		Surface	Deep	
1#	17		JP16-9, JP16-95, JP16-2, JP16-20, JP16-5, JP16-53, JP16-64, JP8-9, JP16-10, JP16-33, JP16-65, JP16-82, JP16-30, JP16-78, JP16-35, JP16-4, JP16-45	GU083876, GU083880, GU083882, GU083883, GU083884, GU083885, GU083887, GU083888, GU083889, GU083890, GU083893, GU083894, GU083897, GU083898, GU083899, GU083900, GU083901
2#	11		JP8-3, JP16-23, JP8-4, JP16-57, JP16-61, JP16-3, JP16-41, JP8-51, JP16-42, JP8-6, JP8-8	GU083872, GU083873, GU083874, GU083875, GU083879, GU083881, GU083891, GU083892, GU083895, GU083896, GU083928
3#	1		JP16-11	GU083886
4#	5		JP8-57, JP8-11, JP8-31, JP8-1, JP8-13	GU083902, GU083903, GU083927, GU083933, GU083937
5#	2		JP8-19, JP8-17	GU083907, GU083935
6#	1		JP8-14	GU083936
7#	12		JP16-17, JP16-1, JP8-5, JP16-8, JP16-16, JP16-98, JP16-15, JP16-27, JP16-79, JP16-7, JP16-34, JP16-13	GU083904, GU083905, GU083906, GU083908, GU083923, GU083924, GU083925, GU083929, GU083930, GU083931, GU083932, GU083934
8#	14	JP10-87, JP10-88, JP2-42, JP2-19, JP2-24, JP2-35, JP2-36, JP2-12, JP2-11, JP2-22, JP10-11, JP2-17, JP2-10, JP2-43		GU083909, GU083910, GU083911, GU083912, GU083913, GU083914, GU083915, GU083916, GU083917, GU083919, GU083920, GU083921, GU083922, GU083944
9#	1	JP2-3		GU083918
10#	19	JP10-13, JP10-28, JP10-30, JP10-32, JP10-1, JP10-2, JP10-3, JP10-4, JP10-76, JP10-5, JP10-92, JP10-22, JP10-6, JP10-10, JP10-101, JP10-102, JP10-16, JP10-37, JP10-9		GU083945, GU083946, GU083947, GU083948, GU083949, GU083950, GU083951, GU083952, GU083863, GU083864, GU083865, GU083866, GU083867, GU083868, GU083869, GU083870, GU083871, GU083877, GU083878
11#	7	JP10-78, JP10-41, JP10-79, JP10-91, JP10-89, JP2-9, JP10-61		GU083926, GU083938, GU083939, GU083940, GU083941, GU083942, GU083943

