Supplementary material

Table S1 Percentage composition of soil macroinvertebrate taxa by site and crop stage

Taxonomic group		Crop stages						Sites			Overall	
Phyla	Lower taxa	Com-You	Com-Har	Com-Fal	Shd-You	Shd-Har	Shd-Fal	Com	Shd	Uncul	Taxa	Phyla
Annelida	Oligochaeta	51.36	17.81	9.57	71.79	88.68	83.40	28.03	82.16	71.36	57.3	61.3
	Hirudinea	3.11	4.05	7.45	5.64	1.13	7.23	4.62	4.46	0.47	4.0	
Mollusca	Gastropoda	40.86	14.98	57.45	8.72	3.77	0.43	36.13	4.03	3.76	17.9	17.9
Arthropoda	Arachnida	-	0.81	2.66	1.03	0.38	-	1.01	0.43	1.88	0.9	20.8
	Isopoda	-	0.81	-	-	-	-	0.29	-	3.29	0.6	
	Decapoda	-	-	-	-	-	-	-	-	0.47	0.1	
	Hymenoptera	0.39	0.40	-	3.08	3.40	1.70	0.29	2.73	6.10	2.1	
	Coleoptera	1.95	49.80	18.09	3.59	0.75	5.53	23.41	3.17	6.57	12.4	
	Tabanidae	1.56	2.43	-	5.13	1.13	0.43	1.45	2.01	-	1.5	
	Dermaptera	-	2.02	-	-	0.38	-	0.72	0.14	1.88	0.6	
	Diplura	0.39	0.40	-	-	-	-	0.29	-	-	0.1	
	Chilopoda	-	-	-	-	-	-	-	-	0.94	0.1	
	Diplopoda	-	-	-	-	-	-	-	-	0.47	0.1	
	Ephemeroptera	-	-	0.53	-	-	-	0.14	-	-	0.1	
	Orthoptera	0.39	-	2.13	0.51	-	1.28	0.72	0.58	2.35	0.9	
	Blattodea	-	-	-	-	-	-	-	-	0.47	0.1	
	Odonata	-	0.40	0.53	-	0.38	-	0.29	0.14	-	0.2	
	Trichoptera	-	5.67	1.06	0.51	-	-	2.31	0.14	-	1.1	
	Stratiomyidae	-	0.40	0.53	-	-	-	0.29	-	-	0.1	

Sampling sites: Com (large-scale commercial paddies), Shd (smallholder paddies), Uncul (Natural wetland). Crop stages: You (young), Har (harvest/mature), Fal (fallow).

Table S2. Proportion of soil samples where macroinvertebrate taxa were encountered per site and crop stage.

Taxa	Crop stages						Sites			Overall
	Com-You	Com-Har	Com-Fal	Shd-You	Shd-Har	Shd-Fal	Com	Shd	Natural wetland	
Oligochaeta	83.3	83.3	50.0	100.0	91.7	100.0	72.2	97.2	100.0	86.9
Hirudinea	33.3	50.0	66.7	33.3	16.7	66.7	50.0	38.9	8.3	39.3
Gastropoda	83.3	50.0	83.3	58.3	33.3	8.3	72.2	33.3	25.0	48.8
Arachnida	-	8.3	25.0	16.7	8.3	-	11.1	8.3	16.7	10.7
Isopoda	-	8.3	-	-	-	-	2.8	-	8.3	2.4
Decapoda	-	-	-	-	-	-	-	-	8.3	1.2
Hymenoptera	8.3	8.3	-	16.7	16.7	8.3	5.6	13.9	25.0	11.9
Coleoptera	41.7	91.7	66.7	41.7	16.7	41.7	66.7	33.3	58.3	51.2
Tabanidae	16.7	25.0	-	33.3	25.0	8.3	13.9	22.2	-	15.5
Dermaptera	-	33.3	-	-	8.3	-	11.1	2.8	33.3	10.7
Diplura	8.3	8.3	-	-	-	-	5.6	-	-	2.4
Chilopoda	-	-	-	-	-	-	-	-	8.3	1.2
Diplopoda	-	-	-	-	-	-	-	-	8.3	1.2
Ephemeroptera	-	-	8.3	-	-	-	2.8	-	-	1.2
Orthoptera	8.3	-	16.7	8.3	-	16.7	8.3	8.3	25.0	10.7
Blattodea	-	-	-	-	-	-	-	-	8.3	1.2
Odonata	-	8.3	8.3	-	8.3	-	5.6	2.8	-	3.6
Trichoptera	-	25.0	16.7	8.3	-	-	13.9	2.8	-	7.1
Stratiomyidae	8.3	8.3	8.3	-	-	-	8.3	-	-	3.6

Sampling sites: Com (large-scale commercial paddies), Shd (smallholder paddies), Uncul (Natural wetland). Crop stages: You (young), Har (harvest/mature), Fal (fallow).

Table S3. Soil characteristics (Mean ±SE) per site and crop stage

Variable	Unit of measure	Crop stages						Sites			Overall
		Com-You	Com-Har	Com-Fal	Shd-You	Shd-Har	Shd-Fal	Com	Shd	Natural wetland	
pH		5.5±0.27	5.43±0.15	5.68±0.13	5.62±0.17	5.83±0.13	5.98±0.1	5.54±0.11	5.81±0.08	6.03±0.11	5.73±0.06
SOM	%	20.37±2.78	15.56±2.20	17.16±2.10	22.37±3.04	26.51±4.58	30.19±5.18	17.7±1.38	26.36±2.5	37.53±3.74	24.24±1.51
N	%	0.47±0.03	0.39±0.02	0.42±0.03	0.52±0.04	0.47±0.03	0.41±0.02	0.43±0.02	0.46±0.02	0.46±0.06	0.45±0.01
P	(ppm)	0.12±0.01	0.12±0.01	0.14±0.02	0.14±0.01	0.16±0.01	0.23±0.02	0.13±0.01	0.18±0.01	0.24±0.02	0.17±0.01
K	(cmol/kg)	0.9±0.33	0.66±0.28	0.82±0.28	1.79±1.12	1.66±0.86	0.88±0.3	0.8±0.17	1.44±0.47	0.47±0.09	1.03±0.22
Na	(cmol/kg)	1.36±0.42	1.27±0.44	1.59±0.63	1.96±1.1	2.1±1.24	1.66±0.66	1.41±0.28	1.9±0.58	0.44±0.06	1.48±0.28
Ca	(cmol/Kg)	7.79±2.34	8.05±2.73	8.68±2.62	13.93±6.44	27.86±9.64	50.1±8.02	8.17±1.44	30.63±5.21	51.64±11.48	24±3.28
Sand	%	33.83±1.91	32.50±3.28	35.33±2.89	41.83±5.01	42.08±4.21	38±2.66	33.89±1.56	40.64±2.31	44.25±1.56	38.26±1.28
Clay	%	39.3±3.01	42±2.77	42.83±2.47	35.83±3.77	29±1.99	32.83±2.85	41.39±1.57	32.56±1.73	24.50±3.42	35.19±1.27
Silt	%	26.83±2.37	25.5±2.18	21.83±1.42	22.33±2.10	28.92±3.04	29.17±2.08	24.72±1.19	26.8±1.47	31.25±3.17	26.55±0.95

Com (large-scale commercial paddies), Shd (smallholder paddies), Uncul (natural wetland). You (young), Har (harvest/mature), Fal (fallow) crop stages.