

### Supplementary data

**Table S1. Soil pH, total organic C, total N, texture and bulk density (0-20 cm) of the experimental sites**

<b>District</b>	<b>Field site (FS)</b>	<b>pH</b>	<b>Total organic carbon (g kg<sup>-1</sup>)</b>	<b>Total-N (g kg<sup>-1</sup>)</b>	<b>Texture Sand (%)</b>	<b>Silt (%)</b>	<b>Clay (%)</b>	<b>Bulk density (Mg m<sup>-3</sup>)</b>
<b>Malda</b>	<b>Site-1</b>	8.47	8.83	1.32	18	66	16	1.37
	<b>Site-2</b>	6.82	7.75	1.26	35	46	19	1.31
	<b>Site-3</b>	7.44	14.98	1.33	42	43	15	1.33
	<b>Site-4</b>	6.80	12.13	1.55	8	64	28	1.45
	<b>Mean</b>	7.02	11.62	1.38	28	51	20	1.36
<b>Coochbehar</b>	<b>Site-5</b>	6.42	9.88	1.01	29	58	13	1.05
	<b>Site-6</b>	5.91	8.85	0.93	28	62	10	1.11
	<b>Site-7</b>	5.56	10.58	0.74	28	60	12	1.17
	<b>Mean</b>	5.96	9.77	0.89	28	60	12	1.11

**Table S2. Interaction effects of cropping system, tillage and soil depths on total organic C (TOC) (g/kg) at different sites of Malda and Coochbehar districts**

Districts			Malda				Cooch Behar		
Location			Site-1	Site-2	Site-3	Site-4	Site-5	Site-6	Site-7
R-W	0 to 5		12.68	14.17	14.42	17.05	15.15	7.56	14.54
	5 to 10		11.35	10.72	9.44	14.91	13.99	6.61	12.53
	10 to 20		6.69	9.31	8.07	11.65	9.76	5.73	10.14
R-M	0 to 5		12.23	15.43	16.36	20.44	15.97	9.17	14.07
	5 to 10		8.90	12.73	12.49	16.52	14.49	9.29	12.34
	10 to 20		7.60	11.22	10.52	14.42	10.33	8.68	11.13
(p value<0.05)			0.000	0.635	0.338	0.201	0.849	0.000	0.053
0 to 5	ZT		13.49	16.42	15.86	18.97	16.06	10.39	16.14
	CT		11.42	13.18	14.93	18.52	15.07	6.34	12.48
5 to 10	ZT		11.08	12.17	10.74	16.49	14.38	8.68	13.46
	CT		9.16	11.28	11.19	14.95	14.10	7.21	11.41
10 to 20	ZT		7.43	9.70	7.28	11.73	9.29	7.15	10.87
	CT		6.86	10.84	11.31	14.34	10.80	7.26	10.40
(p value<0.05)			0.025	0.000	0.000	0.001	0.001	0.000	0.000
R-W	0 to 5	ZT	14.66	15.31	14.14	17.21	15.65	8.75	16.09
		CT	10.69	13.03	14.70	16.88	14.65	6.37	12.99
	5 to 10	ZT	11.66	11.02	8.47	16.38	13.99	7.20	14.03
		CT	11.04	10.41	10.41	13.44	13.98	6.01	11.02
	10 to 20	ZT	7.69	8.80	6.29	11.37	7.63	5.46	10.76
		CT	5.69	9.83	9.85	11.93	11.88	5.99	9.52
R-M	0 to 5	ZT	12.31	17.53	17.57	20.72	16.46	12.03	16.18
		CT	12.14	13.32	15.15	20.15	15.48	6.31	11.96
	5 to 10	ZT	10.50	13.32	13.01	16.59	14.76	10.17	12.89
		CT	7.29	12.14	11.97	16.45	14.21	8.40	11.79
	10 to 20	ZT	7.17	10.59	8.26	12.09	10.96	8.84	10.98
		CT	8.03	11.85	12.78	16.75	9.71	8.52	11.28
(p value<0.05)			0.000	0.458	0.018	0.094	0.000	0.000	0.037

**Table S3. Interaction effects of cropping system, tillage and soil depths on total nitrogen (TN) (g/kg) at different sites of Malda and Coochbehar districts**

Districts			Malda				Cooch Behar		
Location			Site-1	Site-2	Site-3	Site-4	Site-5	Site-6	Site-7
R-W	0 to 5		1.20	1.20	1.45	1.94	1.59	1.09	1.53
	5 to 10		1.06	1.10	1.10	1.38	1.20	1.08	1.47
	10 to 20		0.76	0.82	0.91	1.12	1.14	0.70	1.14
R-M	0 to 5		1.32	1.44	1.49	1.84	1.67	1.23	1.53
	5 to 10		1.31	1.21	1.55	1.51	1.55	1.00	1.44
	10 to 20		0.97	0.99	1.05	1.51	1.14	0.86	1.29
(p value<0.05)			0.145	0.212	0.009	0.005	0.003	0.103	0.237
0 to 5	ZT		1.32	1.49	1.54	1.84	1.64	1.22	1.63
	CT		1.20	1.15	1.40	1.93	1.62	1.11	1.43
5 to 10	ZT		1.12	1.30	1.42	1.51	1.33	1.13	1.49
	CT		1.26	1.00	1.23	1.38	1.42	0.94	1.42
10 to 20	ZT		0.80	0.95	0.92	1.17	1.08	0.80	1.14
	CT		0.93	0.86	1.03	1.45	1.20	0.76	1.28
(p value<0.05)			0.000	0.004	0.064	0.021	0.377	0.476	0.017
R-W	0 to 5	ZT	1.25	1.44	1.57	1.98	1.56	1.13	1.58
		CT	1.15	0.96	1.34	1.89	1.62	1.06	1.48
	5 to 10	ZT	0.95	1.35	1.15	1.64	1.12	1.08	1.59
		CT	1.17	0.84	1.04	1.12	1.27	1.07	1.35
	10 to 20	ZT	0.80	0.87	0.84	1.01	1.04	0.73	1.13
		CT	0.72	0.77	0.98	1.22	1.23	0.66	1.14
R-M	0 to 5	ZT	1.39	1.55	1.52	1.70	1.71	1.31	1.67
		CT	1.25	1.33	1.46	1.97	1.62	1.15	1.38
	5 to 10	ZT	1.28	1.25	1.68	1.38	1.54	1.18	1.40
		CT	1.35	1.16	1.42	1.63	1.56	0.81	1.48
	10 to 20	ZT	0.80	1.04	1.01	1.33	1.11	0.86	1.15
		CT	1.14	0.95	1.08	1.68	1.16	0.85	1.42
(p value<0.05)			0.001	0.022	0.449	0.081	0.985	0.212	0.058

**Table S4. Interaction effects of cropping system, tillage and soil depths on active carbon (AC) (g/kg) at different sites of Malda and Coochbehar districts**

Districts			Malda				Cooch Behar		
Location			Site-1	Site-2	Site-3	Site-4	Site-5	Site-6	Site-7
R-W	0 to 5		0.56	0.51	0.62	0.65	0.57	0.36	0.42
	5 to 10		0.34	0.37	0.32	0.49	0.49	0.26	0.27
	10 to 20		0.22	0.34	0.36	0.38	0.31	0.28	0.26
R-M	0 to 5		0.50	0.58	0.82	0.90	0.55	0.29	0.38
	5 to 10		0.26	0.40	0.57	0.70	0.49	0.30	0.29
	10 to 20		0.22	0.34	0.47	0.61	0.37	0.32	0.30
(p value<0.05)			0.014	0.020	0.008	0.336	0.164	0.000	0.006
0 to 5	ZT		0.57	0.64	0.77	0.79	0.61	0.38	0.51
	CT		0.50	0.45	0.67	0.76	0.51	0.27	0.30
5 to 10	ZT		0.31	0.42	0.42	0.62	0.52	0.24	0.31
	CT		0.28	0.35	0.46	0.58	0.46	0.31	0.25
10 to 20	ZT		0.23	0.35	0.27	0.42	0.36	0.29	0.30
	CT		0.22	0.33	0.56	0.58	0.32	0.31	0.26
(p value<0.05)			0.026	0.000	0.000	0.000	0.243	0.000	0.000
R-W	0 to 5	ZT	0.57	0.60	0.63	0.71	0.57	0.38	0.54
		CT	0.55	0.41	0.60	0.59	0.57	0.34	0.31
	5 to 10	ZT	0.35	0.41	0.31	0.53	0.52	0.23	0.28
		CT	0.33	0.32	0.32	0.46	0.46	0.28	0.25
	10 to 20	ZT	0.25	0.37	0.24	0.36	0.33	0.29	0.29
		CT	0.20	0.32	0.47	0.41	0.30	0.28	0.23
R-M	0 to 5	ZT	0.57	0.67	0.90	0.87	0.65	0.37	0.48
		CT	0.44	0.49	0.74	0.92	0.46	0.21	0.28
	5 to 10	ZT	0.28	0.42	0.53	0.71	0.51	0.25	0.34
		CT	0.24	0.37	0.61	0.70	0.46	0.35	0.25
	10 to 20	ZT	0.20	0.33	0.30	0.48	0.38	0.30	0.32
		CT	0.24	0.35	0.64	0.74	0.35	0.34	0.28
(p value<0.05)			0.002	0.600	0.019	0.007	0.024	0.002	0.119

**Table S5. Interaction effects of cropping system, tillage and soil depths on passive carbon (PC) (g/kg) at different sites of Malda and Coochbehar districts**

Districts			Malda				Cooch Behar		
Location			Site-1	Site-2	Site-3	Site-4	Site-5	Site-6	Site-7
R-W	0 to 5		12.11	13.66	13.80	16.39	14.58	7.20	14.12
	5 to 10		11.01	10.35	9.13	14.42	13.49	6.35	12.26
	10 to 20		6.47	8.97	7.71	11.27	9.44	5.44	9.88
R-M	0 to 5		11.72	14.84	15.54	19.54	15.42	8.88	13.69
	5 to 10		8.63	12.34	11.92	15.82	14.00	8.99	12.05
	10 to 20		7.38	10.88	10.05	13.81	9.97	8.36	10.83
(p value<0.05)			0.000	0.574	0.359	0.210	0.811	0.000	0.059
0 to 5	ZT		12.91	15.78	15.09	18.17	15.45	10.01	15.63
	CT		10.92	12.72	14.25	17.76	14.55	6.07	12.18
5 to 10	ZT		10.77	11.76	10.32	15.87	13.86	8.44	13.15
	CT		8.88	10.93	10.73	14.37	13.64	6.89	11.16
10 to 20	ZT		7.21	9.35	7.01	11.31	8.94	6.86	10.57
	CT		6.65	10.51	10.76	13.77	10.47	6.95	10.14
(p value<0.05)			0.034	0.000	0.000	0.001	0.001	0.000	0.000
R-W	0 to 5	ZT	14.09	14.71	13.51	16.50	15.08	8.37	15.55
		CT	10.14	12.62	14.10	16.29	14.08	6.03	12.68
	5 to 10	ZT	11.31	10.61	8.16	15.85	13.47	6.96	13.75
		CT	10.71	10.09	10.09	12.98	13.52	5.73	10.77
	10 to 20	ZT	7.44	8.43	6.05	11.01	7.30	5.17	10.48
		CT	5.50	9.51	9.38	11.53	11.58	5.71	9.29
R-M	0 to 5	ZT	11.74	16.86	16.67	19.85	15.81	11.66	15.70
		CT	11.70	12.83	14.41	19.23	15.02	6.11	11.68
	5 to 10	ZT	10.22	12.90	12.48	15.88	14.25	9.92	12.55
		CT	7.05	11.77	11.37	15.75	13.75	8.05	11.54
	10 to 20	ZT	6.97	10.27	7.96	11.61	10.57	8.54	10.66
		CT	7.79	11.50	12.14	16.01	9.36	8.19	11.00
(p value<0.05)			0.000	0.459	0.021	0.093	0.000	0.000	0.028