

Table S1: Simulated solar irradiance (MJ m^{-2}) for four cardinal directions (north (N), east (E), south (S) and west (W)) with respect to distance (m) to the zero line (Dist). The values represent the yearly average.

Dist	N	O	S	W
1	4.275847	8.614448	12.12811	8.48841
2	4.32758	8.614448	12.12811	8.48841
5	4.902513	9.120202	12.28683	8.80116
10	7.582688	9.972238	12.43752	9.905457
15	9.48932	10.764754	12.49927	10.840678
20	10.547881	11.291703	12.51039	11.254828
25	11.204406	11.624798	12.51051	11.676262
30	11.532212	11.784629	12.51051	11.864095
40	12.020602	12.092876	12.51051	12.111732
50	12.234982	12.278148	12.51051	12.348998
60	12.339966	12.354432	12.51051	12.41922
70	12.451055	12.416679	12.51051	12.454403
80	12.510513	12.45896	12.51051	12.472602
90	12.510513	12.469427	12.51051	12.489248
100	12.510513	12.482158	12.51051	12.505252

Table S2. Simulated maize and wheat yields (kg ha^{-1}) as well as soil moisture [$\text{m}^3 \text{m}^{-3}$] for four cardinal directions (*Dir*; north (N), east (E), south (S) and west (W)) with respect to distance [m] to the zero line (*Dist*). The values represent an average for 30 years (Wheat $n = 29$, Maize $n = 30$). *Dry* and *Moist* are the means of the three driest and moistest years in the climate time series.

Dist	Dir	Maize				Wheat			
		Yield	Dry	Moist	SoilMoist	Yield	Dry	Moist	SoilMoist
1	E	1760.7	1942.2	1878.0	0.199	5809.9	5849.1	6603.9	0.179
1	N	1182.1	1329.7	1310.4	0.202	4004.2	4082.5	4242.9	0.191
1	S	2376.8	2739.4	2557.2	0.196	6151.8	5450.2	8116.7	0.173
1	W	1730.1	1900.4	1869.6	0.199	5704.6	5743.9	6491.1	0.179
2	E	1760.7	1942.2	1878.0	0.199	5809.9	5849.1	6603.9	0.179
2	N	1182.0	1329.7	1310.4	0.202	4012.7	4089.1	4257.9	0.190
2	S	2376.8	2739.4	2557.2	0.196	6151.8	5450.2	8116.7	0.173
2	W	1730.1	1900.4	1869.6	0.199	5704.6	5743.9	6491.1	0.179
5	E	1968.0	2191.4	2205.4	0.198	6158.3	6182.9	7068.7	0.178
5	N	1302.9	1482.9	1428.9	0.201	4400.6	4505.8	4661.0	0.188
5	S	2462.9	2843.1	2641.5	0.196	6266.3	5567.8	8358.9	0.173
5	W	1766.5	1922.0	1894.8	0.199	5788.6	5802.6	6668.9	0.179
10	E	2112.5	2346.5	2343.2	0.197	6320.5	6041.4	7542.7	0.176
10	N	2099.7	2451.8	2442.9	0.197	6406.9	6741.6	6864.2	0.178
10	S	2509.8	2895.8	2696.0	0.195	6280.3	5503.7	8484.4	0.172
10	W	1982.0	2197.5	2237.5	0.198	6029.2	5707.8	7201.5	0.176
15	E	2165.5	2505.5	2397.8	0.197	6313.5	5891.3	7728.8	0.175
15	N	2320.1	2671.0	2546.8	0.196	6399.0	6298.4	7633.2	0.174
15	S	2557.7	3111.1	2725.5	0.195	6305.1	5527.6	8552.3	0.172
15	W	2134.6	2468.7	2386.4	0.197	6222.8	5697.1	7689.2	0.175
20	E	2281.2	2631.8	2528.0	0.197	6432.2	5777.9	8138.9	0.174
20	N	2491.4	2864.9	2681.7	0.195	6364.6	6047.3	7860.7	0.173
20	S	2564.1	3121.1	2731.4	0.195	6313.9	5536.9	8573.9	0.172

20	W	2240.9	2585.2	2514.3	0.197	6387.2	5709.0	8078.7	0.174
25	E	2350.4	2721.2	2598.6	0.196	6387.4	5660.2	8219.3	0.174
25	N	2555.9	3121.5	2725.0	0.195	6372.5	5880.0	8031.5	0.173
25	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
25	W	2311.8	2665.2	2575.2	0.196	6282.0	5529.9	8058.5	0.174
30	E	2403.6	2774.2	2580.6	0.196	6446.2	5803.4	8378.4	0.173
30	N	2559.1	3121.4	2730.2	0.195	6392.6	5871.5	8118.9	0.172
30	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
30	W	2395.4	2754.3	2654.9	0.196	6381.8	5714.1	8340.1	0.173
40	E	2470.4	2860.1	2660.3	0.196	6389.7	5654.6	8511.9	0.173
40	N	2561.3	3121.3	2731.0	0.195	6379.6	5665.1	8381.4	0.172
40	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
40	W	2450.3	2823.5	2637.5	0.196	6316.7	5587.5	8403.5	0.173
50	E	2498.1	2894.9	2685.0	0.196	6352.4	5614.2	8544.1	0.173
50	N	2562.2	3121.3	2731.5	0.195	6367.8	5662.3	8437.6	0.172
50	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
50	W	2503.0	2892.4	2692.4	0.195	6329.4	5571.3	8530.2	0.173
60	E	2527.3	2934.8	2718.5	0.195	6370.1	5605.7	8602.8	0.173
60	N	2563.3	3121.3	2731.4	0.195	6356.1	5615.3	8499.9	0.172
60	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
60	W	2529.6	2927.6	2720.5	0.195	6340.0	5580.4	8588.5	0.172
70	E	2535.5	2931.7	2722.4	0.195	6346.0	5588.5	8599.7	0.172
70	N	2563.8	3121.3	2731.4	0.195	6325.1	5560.9	8563.7	0.172
70	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
70	W	2539.7	2936.1	2726.0	0.195	6332.4	5569.8	8600.8	0.172
80	E	2557.2	3112.4	2725.9	0.195	6324.1	5560.2	8584.2	0.172
80	N	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
80	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
80	W	2559.9	3115.2	2728.0	0.195	6321.3	5556.3	8582.9	0.172
90	E	2558.9	3115.0	2727.5	0.195	6317.5	5551.5	8580.7	0.172
90	N	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
90	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
90	W	2561.9	3117.8	2729.3	0.195	6318.0	5542.5	8576.9	0.172
100	E	2561.2	3117.6	2729.4	0.195	6314.3	5550.2	8580.2	0.172
100	N	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
100	S	2564.1	3121.3	2731.4	0.195	6314.0	5536.9	8574.0	0.172
100	W	2563.7	3120.9	2731.0	0.195	6316.2	5538.7	8575.2	0.172
