Supplementary materials

Assessment of emergy, environmental and economic sustainability of the mango orchard production system in Hainan, China

Table S1. On-Farm emissions related to manure and chemical fertilizer consumption in the agricultural production system.

Emission	Cause	Unit	Coefficient	Transformation of emissions	Under the influence environment
1. N_2O	Pure nitrogen in total chemical fertilizers and manure	kg N_2O	0.01	44/28	Air
2. NH_3	Pure nitrogen in manure	kg NH_3	0.2	17/14	Air
3. NH_3	Pure nitrogen in chemical fertilizers	kg NH_3	0.1	17/14	Air
4. N_2O	Atmospheric deposition of nitrogen in chemical fertilizers	kg N_2O	0.001	44/28	Air
5. N_2O	Atmospheric deposition of nitrogen in manure	kg N_2O	0.002	44/28	Air
6. NO_3^-	Pure nitrogen in total chemical fertilizers and manure	kg NO_3^-	0.1	62/14	Water
7. Phosphate	Pure phosphate in total chemical fertilizers and manure	kg phosphate	0.05	62/142	Water
8. NOx	N_2O in fertilizers and soil	kg NOx	0.21		Air

Table S2. Emergy flow structure of two mango planting systems (emergy unit: sej·ha^{-1}).

	TM	**EM**
Renewable environmental inputs (R)	1.28E+15	1.44E+15
Non-renewable environmental inputs (N_0)	4.15E+14	4.74E+14
Purchased renewable inputs (F_R)	3.42E+14	4.25E+14
Purchased non-renewable inputs (F_N)	1.11E+16	1.14E+16
Purchased inputs ($P=F_R+F_N$)	1.15E+16	1.18E+16
Renewable emergy flows ($RR=R+F_R$)	1.63E+15	1.86E+15
Non-renewable emergy flows $FP=N_0+F_N$)	1.15E+16	1.18E+16
Total emergy inputs ($U=R+N_0+F_R+F_N$)	1.32E+16	1.37E+16

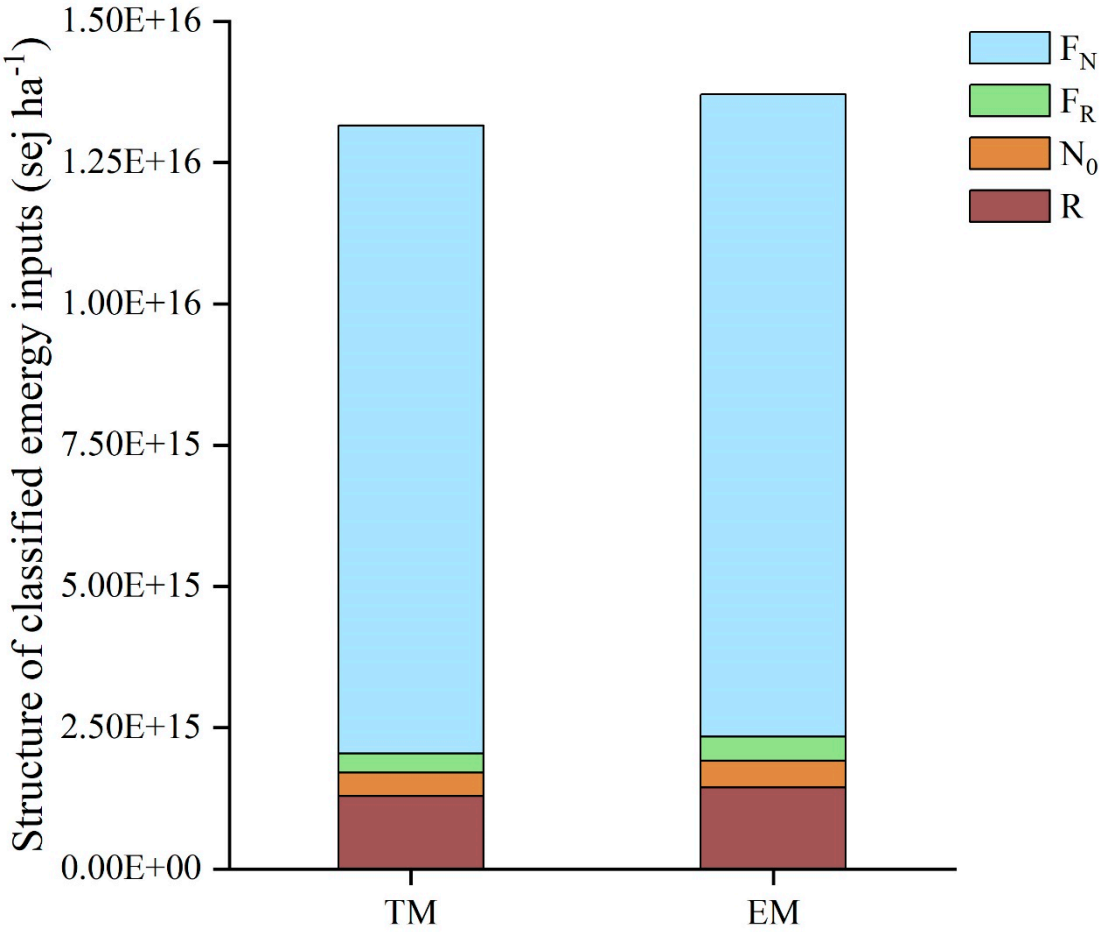


Figure S1. Total emergy input of mango orchard production system in different systems.

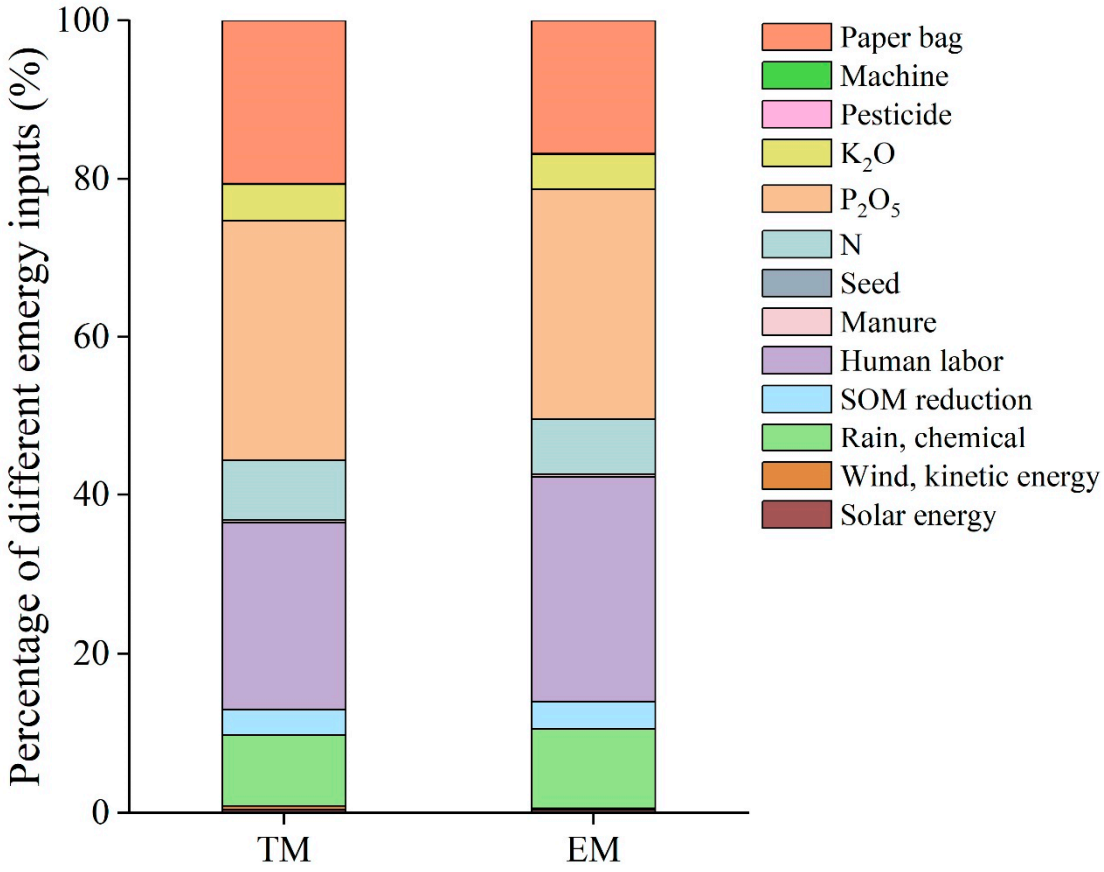


Figure S2. Emergy input structure of mango orchard production system in different system

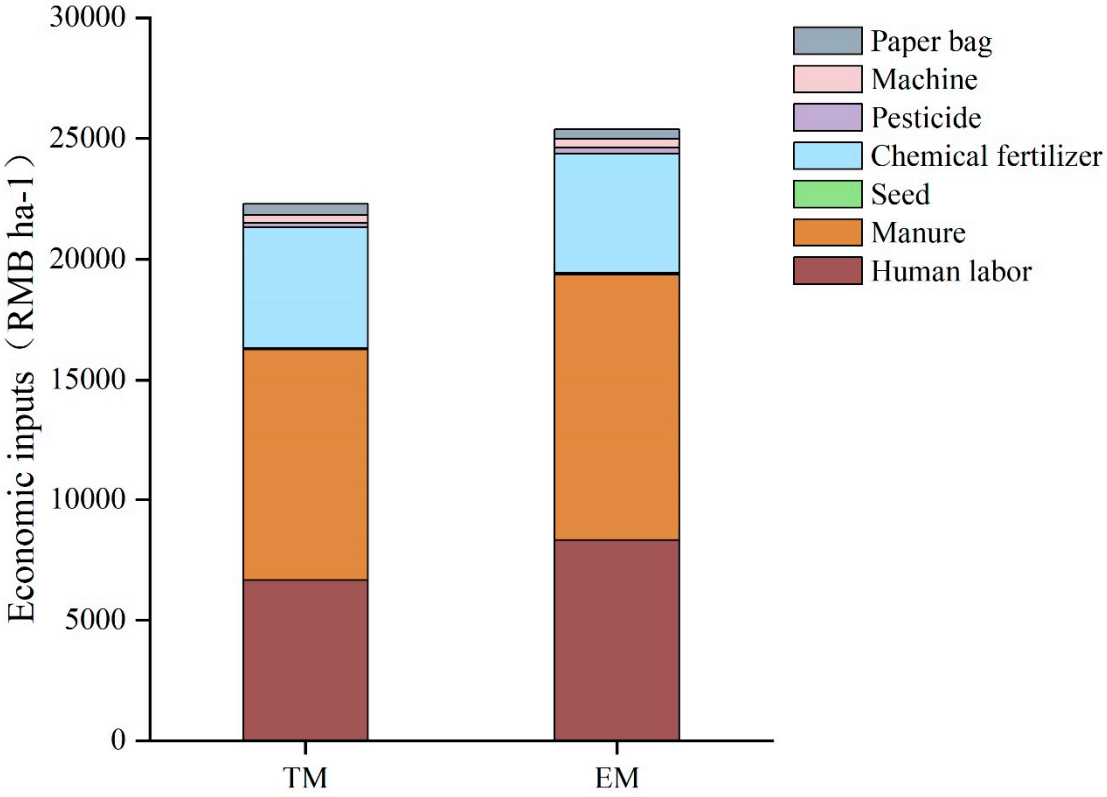


Figure S3. Total economic input structure of mango orchard production system in different systems.