

Table S1 Calculation bases of greenhouse gas emissions

	Reference
Grassland soil	
NECB (Net ecosystem carbon balance)	[4]
CH ₄ emission	[5]
N ₂ O emission	[5]
Cattle waste management	
CO ₂ emission	[13, 14]
CH ₄ emission	[1, 13, 16]
N ₂ O emission	[1, 13, 16]
Synthetic fertilizer manufacture	
CO ₂ emission	[16], SimaPro 7.1
CH ₄ emission	[16], SimaPro 7.1
N ₂ O emissions	[16], SimaPro 7.1
Grassland management	
CO ₂ emission	[14, 15]