

Table S1. Land use and land cover (LULC) classification

Major type		Sub-type		
No.	Major type	No.	Sub-type	description
1	Cropland	-	-	Existing and newly developed arable land covered with crops all year round.
2	Forest	-	-	The areas with natural or artificial forest, including arbor, shrub and bamboo forest etc.
-	-	21	High density forest	The forest canopy > 30%, consisting of timber forest, economic forest and forest for shelter.
-	-	22	shrub	The areas with shrub height below 2 meters and canopy >40%.
-	-	23	Open forest	The areas with forest canopy between 10% and 30%.
-	-	24	Other forest	The newly planted forest and orchard.
3	Grassland	-	-	Grassland of vegetation coverage more than 5% and the grassland under the open forest that the canopy is lower than 10%.
-	-	31	High coverage grassland	The natural grassland of vegetation coverage > 50%.
-	-	32	Medium coverage grassland	The natural and improved grassland of vegetation coverage between 20% and 50%.
-	-	33	Low coverage grassland	The natural sparse grassland with the lower coverage between 5% and 20%.
4	Wetland	-	-	The areas with marsh, fen or water, whether natural or artificial, permanent or temporary, including river, lake, reservoir, marsh and paddy.
5	Built-up land	-	-	The areas used for residence, industry, commerce and transportation.
6	Bare land	-	-	The unused areas including sandy and rocky land and areas with no or sparse vegetation.