Figure R1. Comparisons of the reconstructed population density maps and the WorldPop dataset in 2000.

| | WorldPop2015 | ChinaPop2015 | Urban_areas(WorldPop vs ChinaPop) |

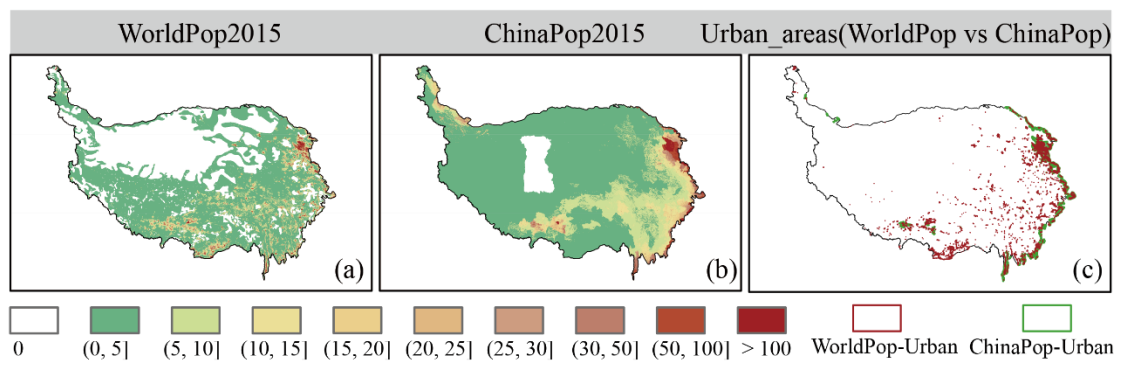| 0 | (0, 5] | (5, 10] | (10, 15] | (15, 20] | (20, 25] | (25, 30] | (30, 50] | (50, 100] | > 100 | WorldPop-Urban | ChinaPop-Urban |

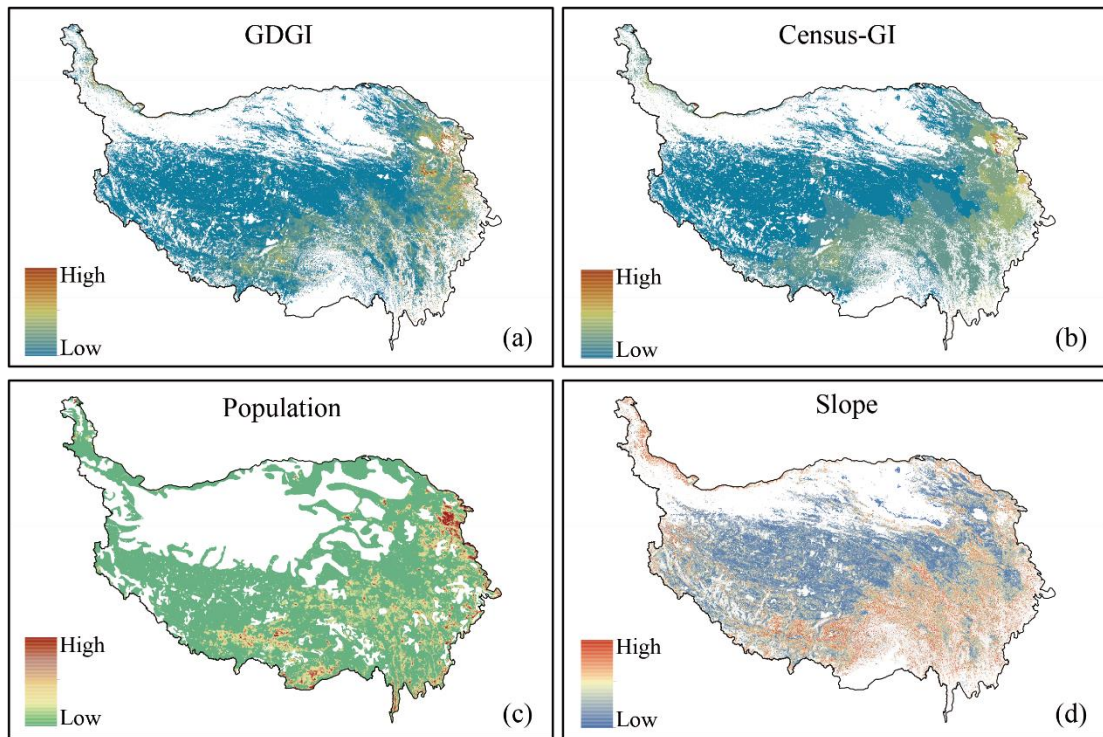Figure R2 Comparisons between the WorldPop and the ChinaPop dataset in 2015.

Figure R3. Comparisons for the distribution patterns of grazing intensity maps, environmental variables, and census livestock data.
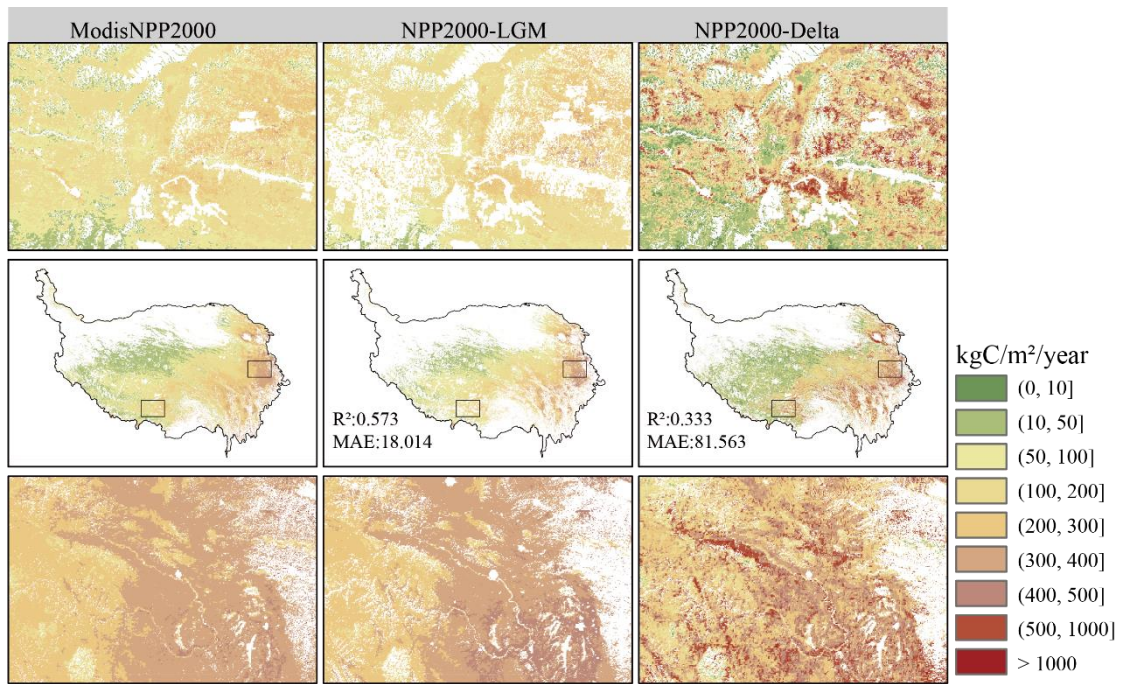
Figure R4. Comparisons of the accuracy by different downscaling methods in predicting NPP distribution.