

Appendix A. Supplementary Material

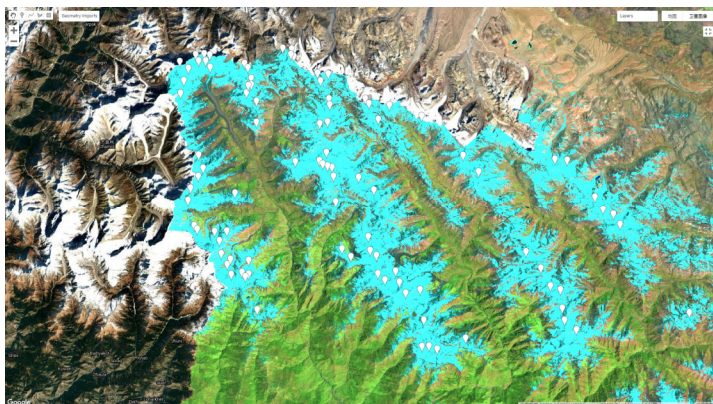
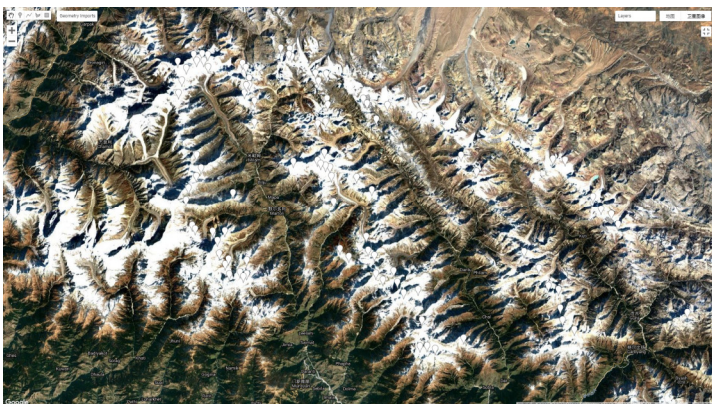
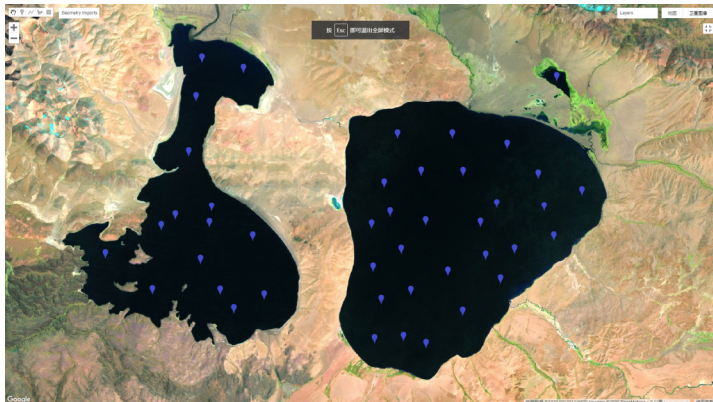
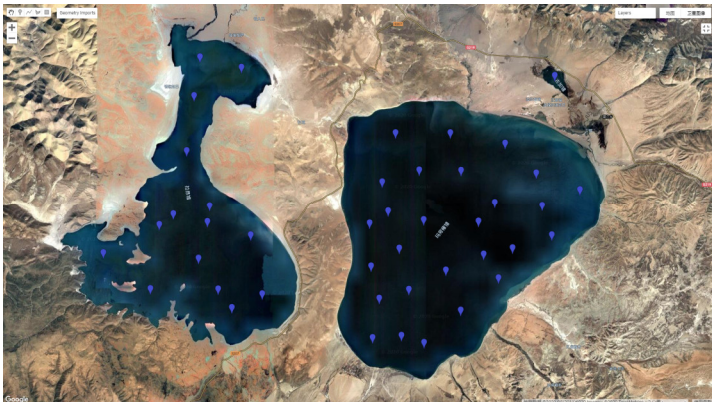
Qualifying Land Use and Land Cover Dynamics and their impacts on Ecosystem Service in Central Himalaya Transboundary Landscape Based on Google Earth Engine

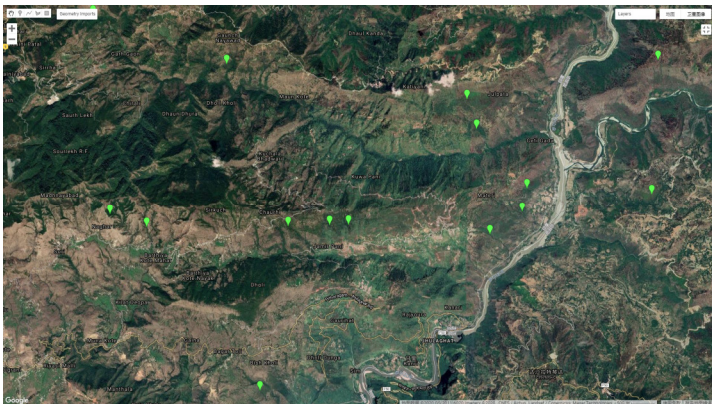
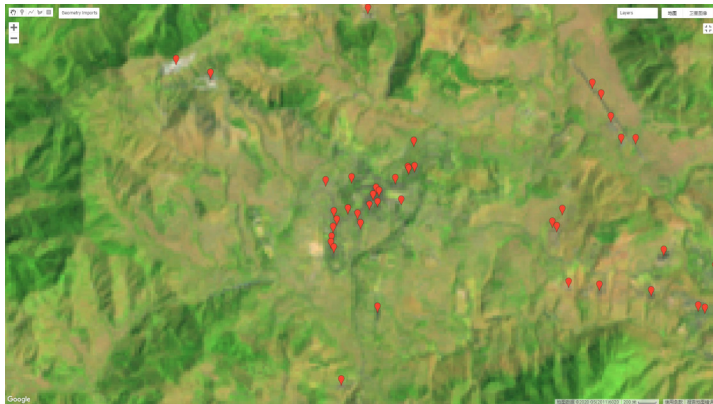
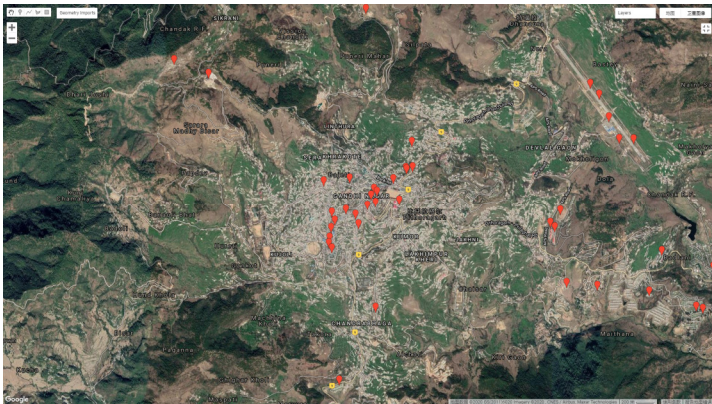
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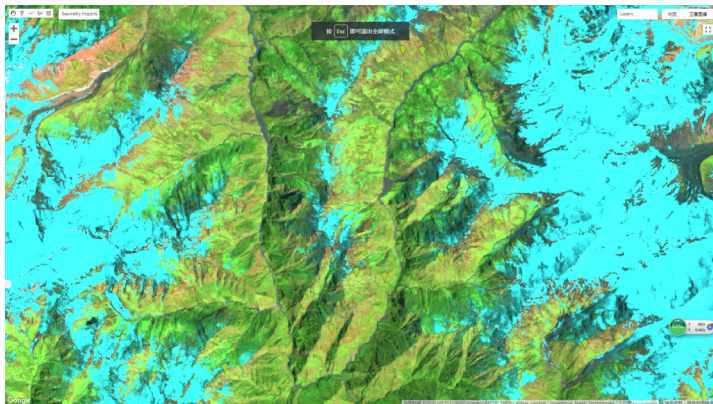
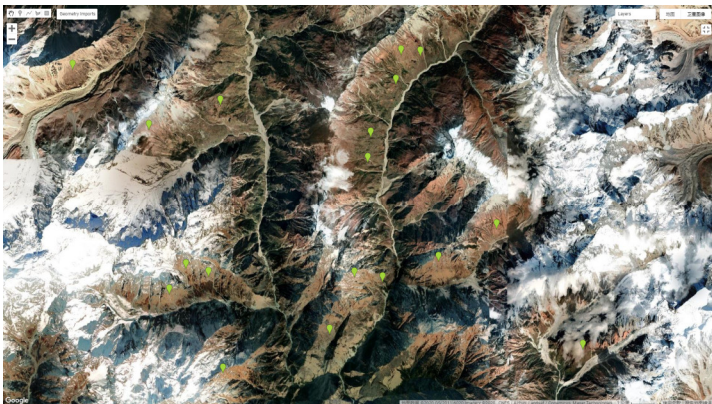
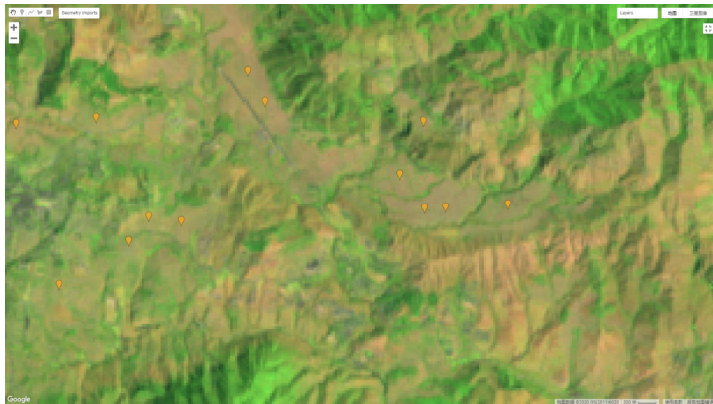
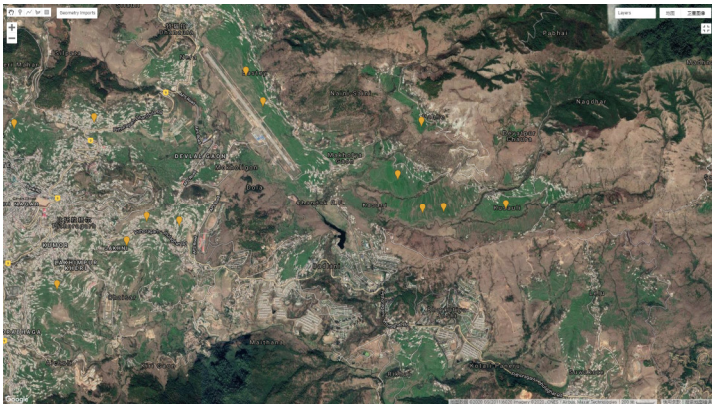
* Correspondence: liuls@igsnrr.ac.cn; zhangyl@igsnrr.ac.cn

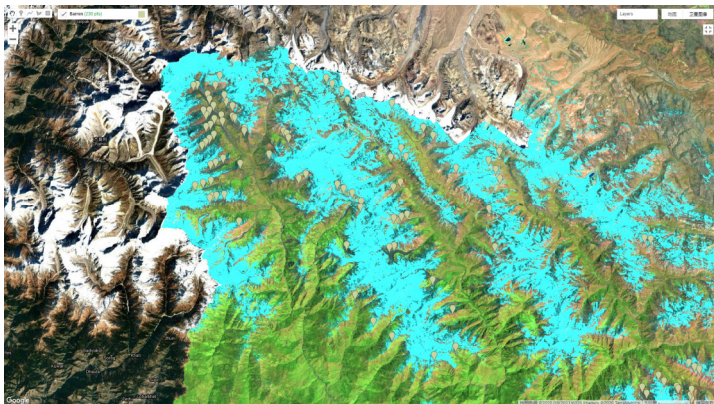
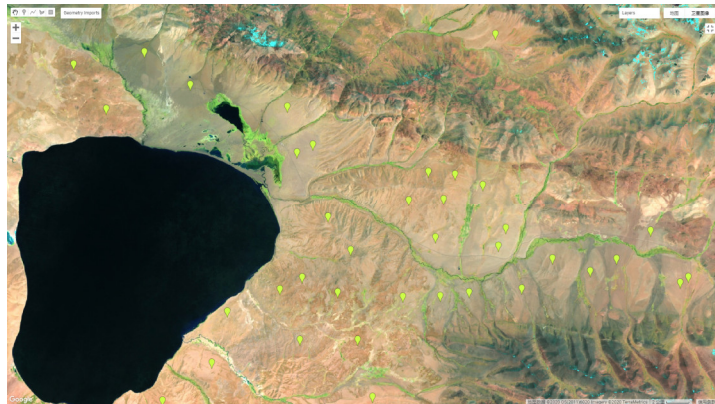
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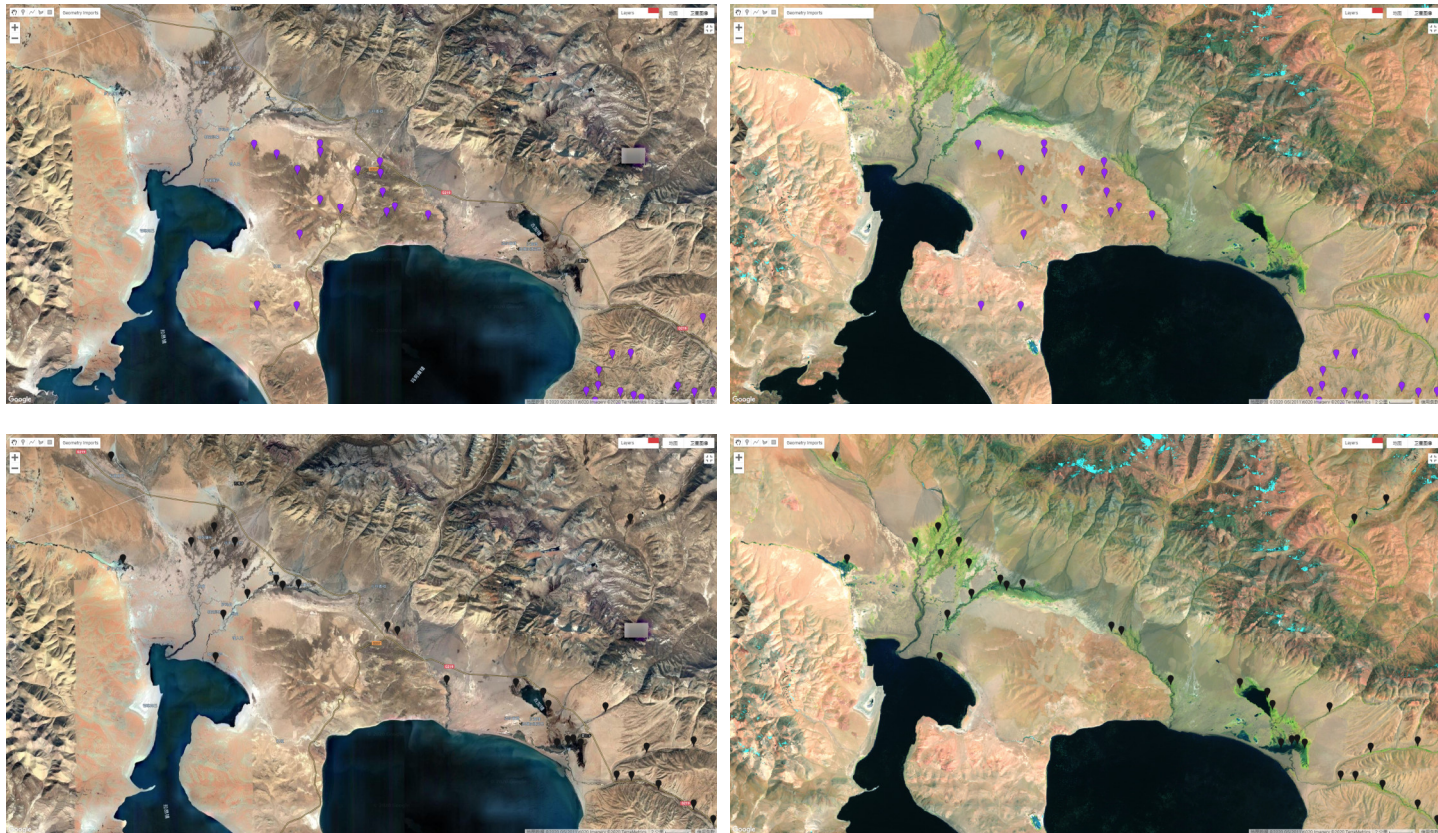


Figure S1. Training points in google earth high resolution image and Landsat5/7/8 false color composite image

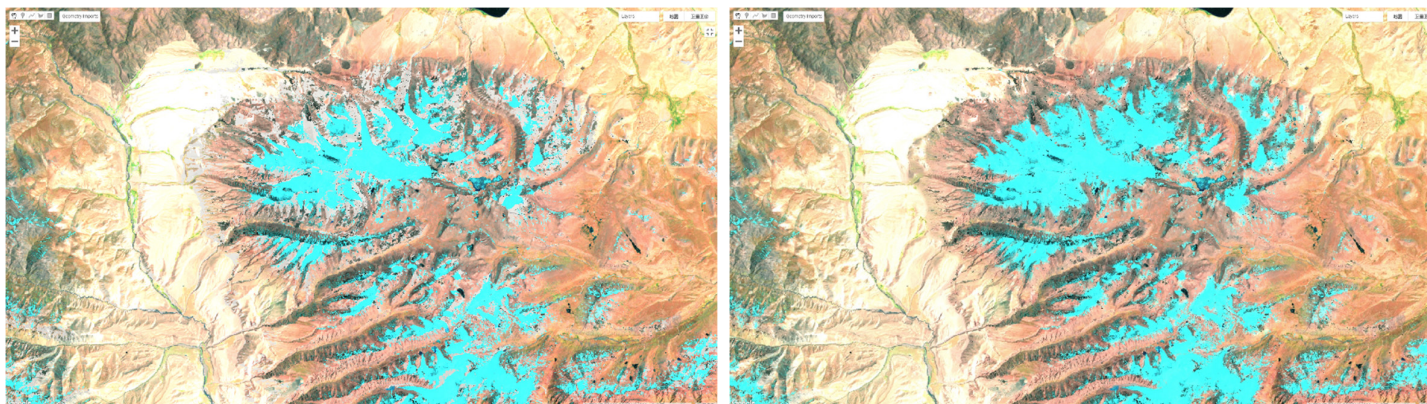


Figure S2. Image with empty pixels (left) and processed using focal_mean function (right)

Table S1. The confusion matrix in 2000

Land cover	Water bodies	Snow/glacier	Forest	Built-up area	Shrub land	Cropland	Grassland	Barren land	Wetland	Total	PA (%)
Water bodies	61	0	0	1	0	0	0	0	0	62	98.39
Snow/glacier	0	80	0	0	0	0	0	4	0	84	95.24
Forest	0	0	58	0	5	1	0	0	0	64	90.63
Built-up area	1	0	0	22	0	2	0	0	0	25	88.00
Shrub land	0	0	2	0	25	1	10	0	0	38	65.79
Cropland	0	0	0	0	0	48	4	0	0	52	92.31
Grassland	0	0	0	0	4	0	121	6	1	132	91.67
Barren land	1	4	0	0	0	0	11	67	0	83	80.72
Wetland	1	1	0	0	0	1	2	2	23	30	76.67
Total	64	85	60	23	34	53	148	79	24		
UA (%)	95.31	94.12	96.67	95.65	73.53	90.57	81.76	84.81	95.83		OA=88.60

Table S2. The confusion matrix in 2015

Land cover	Water bodies	Snow/glacier	Forest	Built-up area	Shrub land	Cropland	Grassland	Barren land	Wetland	Total	UA (%)
Water bodies	48	0	0	0	0	0	0	0	0	48	100.00
Snow/glacier	1	67	0	0	1	0	0	3	0	72	93.06
Forest	0	0	53	0	4	2	0	0	0	59	89.83
Built-up area	0	0	0	23	0	3	0	0	0	26	88.46
Shrub land	0	0	3	0	23	1	6	0	0	33	69.70
Cropland	0	0	0	1	1	53	2	0	0	57	92.98
Grassland	0	0	0	0	2	0	124	8	0	134	92.54
Barren land	0	2	1	0	0	0	15	68	0	86	79.07
Wetland	1	0	0	0	0	0	0	0	23	24	95.83
Total	50	69	57	24	31	59	147	79	23		
UA (%)	96.00	97.10	92.98	95.83	74.19	89.83	84.35	86.08	100.00		OA=89.42

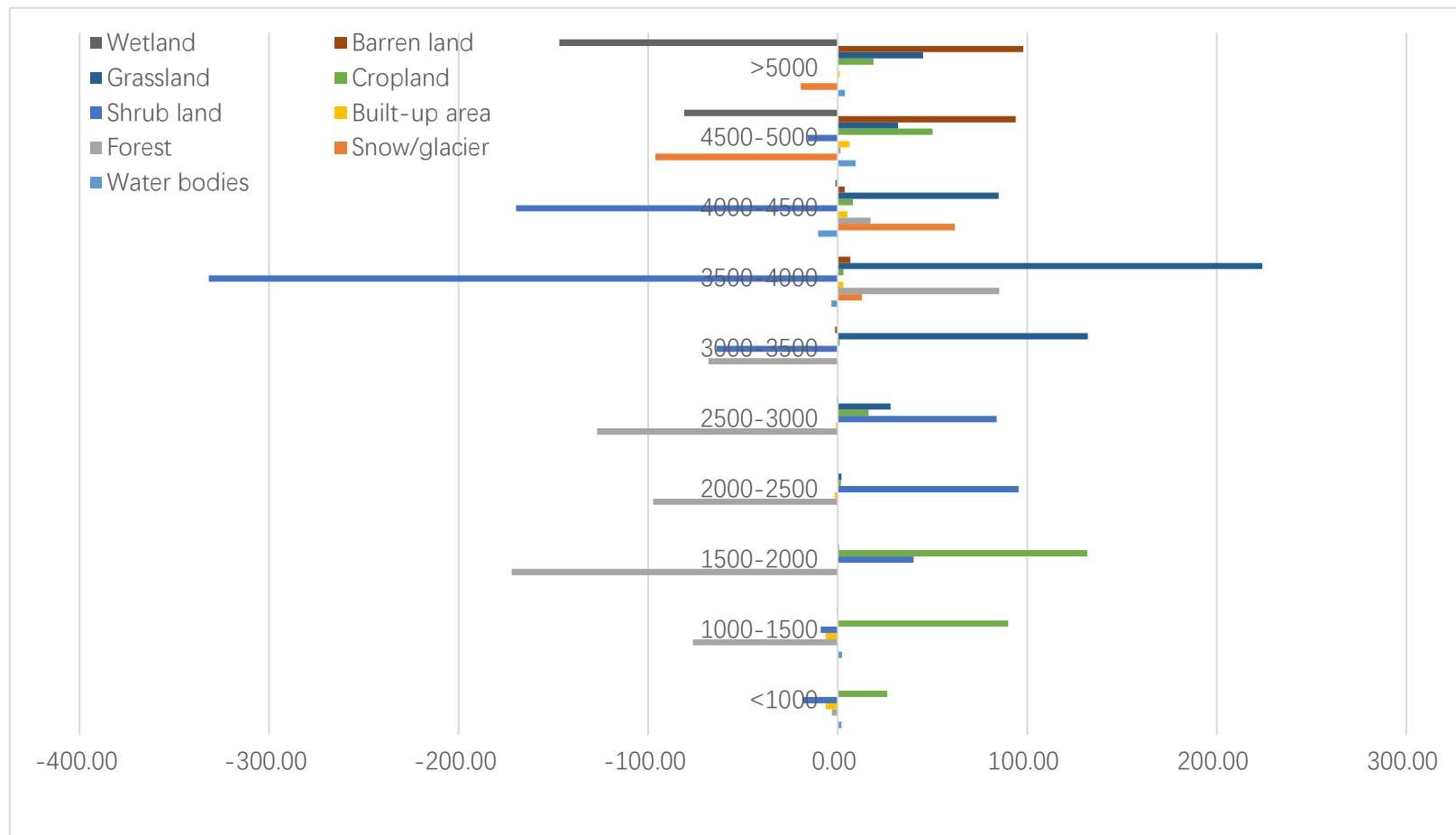


Figure S3. The LULC changes along the elevation in KSL from 2000 to 2015

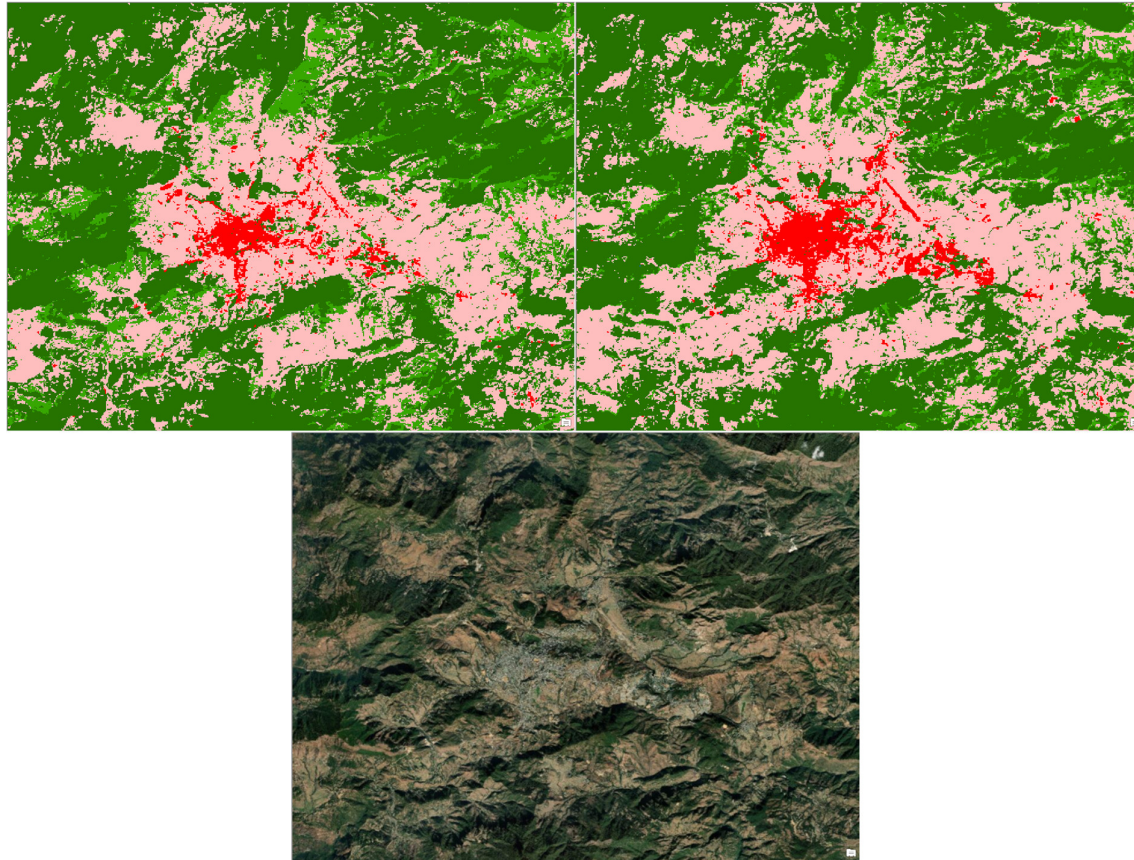


Figure S4. Built-up area of Pithoragarh in 2000 and 2015