Supplementary Section B

Summary of Time Series for Smart Cities and Other Districts

Table S1   Summary of Kendall's tau and Sen's Slope for Time Series Analysis of
Decadal LULC Changes for Smart Cities in the DMIC

Table S2   Summary of Kendall's tau and Sen's Slope for Time Series Analysis of
Decadal LULC Changes for Districts in the DMIC

Description of Kendall's tau and Sen's slope
Kendall's tau and Sen's slope are non-parametric statistical methods often used in
the context of time series analysis, especially in environmental studies where data
might not be normally distributed or where there might be outliers. When analyzing
time series data on LULC and/or climate change, if a significant trend using
Kendall's tau emerges, it suggests that land use or climate variables are not random
over the study period. Then, using Sen's slope, we can quantify the rate of this
change. Together, these tests provide a comprehensive insight into the nature and
magnitude of environmental data trends.

Kendall's tau is used to assess the strength and direction of the monotonic
relationship between two variables. In the context of LULC (Land Use and Land
Cover) and climate change, Kendall's tau can test if there's a consistent trend, such as
increasing temperature or decreasing forested area. A significant p-value (typically <
0.05) indicates a monotonic trend in data. The tau value suggests the trend's strength
and direction: a positive value indicates an increasing trend and a negative value
indicates a decreasing trend.

Sen's slope estimates the magnitude of Kendall's tau trend. For instance, it can help
quantify the rate of deforestation over time or the rate of temperature increase. The
value represents the median of all possible slopes between pairs of time points. It
provides a robust estimate of the rate of change over time. A significant p-value in
Kendall's tau suggests that Sen's slope value is a meaningful representation of the
trend.

Kendall's tau p-value and Associated Probabilities
In the Kendall's tau column, the following symbols apply:

Alpha (p-value)	Symbols used in Kendall's Tau Significance	Probability
0.10	p-value <= 0.1, symbol = "+"	90.0%
0.05	p-value <= 0.05, symbol = *	95.0%

Alpha (p-value)	Symbols used in Kendall's Tau Significance	Probability
0.01	p-value <= 0.01, symbol = **	99.0%
0.001	p-value <= 0.001, symbol = ***	99.90%

TABLE S1: Summary of Kendall's tau and Sen's Slope for Time Series Analysis of Decadal LULC Changes for Smart Cities in the DMIC

The following table shows the impact on LULC classes from 2001 to 2021 at each of the 24 smart cities in the DMIC ZoI. A value in Kendall's tau column is followed by a blank (non-significant) or with symbols corresponding to various p-values, as shown in the table above. The Sen's slope value indicates the increase (positive sign) or decrease (negative sign) in the LULC class trend in sq. km per year.

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
1	Agra	West Uttar Pradesh	Forest	0.710***	0.083
			Shrubland	-0.220	0.000
			Savanna	-0.590***	-2.429
			Waterbody	0.784***	0.083
			Agriculture	0.476**	2.090
			Urban	0.816***	0.217
			Bareland	0.000***	0.000
2	Ahmadabad	Gujarat Region	Forest	0.168	0.076
			Shrubland	-0.667***	-35.432
			Savanna	-0.810***	-96.906
			Waterbody	0.759***	2.311
			Agriculture	0.924***	139.604
			Urban	0.973***	0.862
			Bareland	-0.597***	-3.542
3	Ajmer	East Rajasthan	Forest	0.190	0.000
			Shrubland	-0.676***	-8.266
			Savanna	-0.861***	-25.429
			Waterbody	0.136	0.000
			Agriculture	0.781***	30.300
			Urban	0.892***	0.433
			Bareland	0.295+	0.100

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
4	Aligarh	West Uttar Pradesh	Forest	-0.451**	-0.030
			Shrubland	0.000***	0.000
			Savanna	0.417**	0.375
			Waterbody	0.000***	0.000
			Agriculture	-0.239	-0.279
			Urban	0.921***	0.100
			Bareland	-0.525**	-0.199
5	Bareilly	West Uttar Pradesh	Forest	0.234	0.508
			Shrubland	0.000***	0.000
			Savanna	0.086	0.264
			Waterbody	0.000***	0.000
			Agriculture	-0.172	-1.000
			Urban	0.859***	0.055
			Bareland	0.000***	0.000
6	Dehradun	Uttarakhand	Forest	0.524***	3.119
			Shrubland	0.000***	0.000
			Savanna	-0.158	-2.043
			Waterbody	0.000***	0.000
			Agriculture	-0.143	-1.392
			Urban	0.778***	0.081
			Bareland	0.000***	0.000
7	Diu	Daman & Diu	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.247	-0.083
			Waterbody	0.757***	0.226
			Agriculture	0.005	0.000
			Urban	0.000***	0.000
			Bareland	-0.725***	-0.154
8	Dohad	Gujarat Region	Forest	0.702***	1.323
			Shrubland	-0.717***	-0.017
			Savanna	-0.695***	-4.138
			Waterbody	0.174	0.000
			Agriculture	0.610***	3.104
			Urban	0.309	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Bareland	-0.256	-0.020
9	Faridabad	Chandigarh, Haryana, and Delhi	Forest	-0.298	0.000
			Shrubland	-0.636***	0.000
			Savanna	-0.473**	-2.369
			Waterbody	0.000***	0.000
			Agriculture	0.295+	1.684
			Urban	0.969***	0.707
			Bareland	0.000***	0.000
10	Gandhinagar	Gujarat Region	Forest	0.545**	0.045
			Shrubland	-0.883***	-4.975
			Savanna	-0.670***	-0.500
			Waterbody	0.000***	0.000
			Agriculture	0.878***	5.513
			Urban	0.808***	0.025
			Bareland	0.000***	0.000
11	Jaipur	East Rajasthan	Forest	0.131	0.000
			Shrubland	-0.667***	-16.498
			Savanna	-0.819***	-12.978
			Waterbody	0.300	0.000
			Agriculture	0.721***	29.083
			Urban	0.854***	0.553
			Bareland	-0.442**	-0.590
12	Karnal	Chandigarh, Haryana, and Delhi	Forest	-0.638***	-0.577
			Shrubland	0.000***	0.000
			Savanna	0.580***	0.875
			Waterbody	0.000***	0.000
			Agriculture	-0.158	-0.317
			Urban	0.918***	0.200
			Bareland	0.000***	0.000
13	Kota	East Rajasthan	Forest	-0.138	-0.028
			Shrubland	-0.788***	-1.490

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Savanna	-0.453**	-6.574
			Waterbody	0.000***	0.000
			Agriculture	0.467**	8.071
			Urban	0.928***	0.375
			Bareland	-0.668***	-0.036
14	Moradabad	West Uttar Pradesh	Forest	-0.110	-0.227
			Shrubland	0.000***	0.000
			Savanna	0.433**	0.861
			Waterbody	0.000***	0.000
			Agriculture	-0.057	-0.292
			Urban	0.840***	0.125
			Bareland	0.000***	0.000
15	Nashik	Madhya Maharashtra	Forest	0.000	0.000
			Shrubland	-0.539***	-0.336
			Savanna	-0.505**	-16.688
			Waterbody	0.345*	0.858
			Agriculture	0.467**	17.602
			Urban	0.934***	0.214
			Bareland	-0.581***	-2.482
16	New Delhi	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.000***	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.000***	0.000
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
17	Pune	Madhya Maharashtra	Forest	0.600***	28.460
			Shrubland	-0.211	-0.831
			Savanna	-0.133	-48.797
			Waterbody	0.467**	2.557
			Agriculture	0.072	15.332
			Urban	0.993***	1.914
			Bareland	-0.663***	-2.826

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
18	Rajkot	Saurashtra & Kachh	Forest	-0.006	0.000
			Shrubland	0.033	1.007
			Savanna	-0.819***	-51.150
			Waterbody	0.594***	0.250
			Agriculture	0.743***	50.260
			Urban	0.961***	0.452
			Bareland	-0.708***	-0.537
19	Saharanpur	West Uttar Pradesh	Forest	-0.133	-9.256
			Shrubland	0.000***	0.000
			Savanna	0.215	2.716
			Waterbody	0.000***	0.000
			Agriculture	0.067	5.423
			Urban	0.790***	0.155
			Bareland	-0.102	0.000
20	Silvassa	Dadra & Nagar Haveli	Forest	0.066	0.000
			Shrubland	0.000***	0.000
			Savanna	0.804***	0.500
			Waterbody	0.157	0.000
			Agriculture	-0.807***	-0.827
			Urban	0.959***	0.307
			Bareland	0.000***	0.000
21	Surat	Gujarat Region	Forest	0.752***	12.625
			Shrubland	-0.181	0.000
			Savanna	-0.019	-0.614
			Waterbody	0.510**	0.516
			Agriculture	-0.229	-11.523
			Urban	0.993***	1.164
			Bareland	0.297+	0.250
22	Thane	Konkan & Goa	Forest	0.562***	15.601
			Shrubland	-0.201	0.000
			Savanna	0.721***	20.799
			Waterbody	0.473**	2.406

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	-0.800***	-36.074
			Urban	0.995***	2.109
			Bareland	-0.523**	-0.601
23	Udaipur	East Rajasthan	Forest	0.638***	8.566
			Shrubland	-0.735***	-0.112
			Savanna	-0.053	-0.233
			Waterbody	0.798***	1.854
			Agriculture	-0.410*	-8.117
			Urban	0.743***	0.059
			Bareland	-0.499**	-0.234
24	Vadodara	Gujarat Region	Forest	-0.369*	-1.732
			Shrubland	-0.801***	-1.259
			Savanna	-0.867***	-49.875
			Waterbody	0.702***	0.575
			Agriculture	0.857***	51.452
			Urban	0.928***	0.114
			Bareland	-0.030	0.000

The provided data table shows a comprehensive analysis of different land use and land cover (LULC) classes in the 24 smart cities in the DMIC. These are the summarized takeaways based on the data: Kendall's tau Significance is indicated by the triple asterisks (***), double asterisks (**), and a single plus (+), indicating significance levels. A higher significance (e.g., ***) means the trend is strongly supported statistically.

1. Urban growth: Urban areas in many districts, such as Agra, Ahmadabad, Ajmer, Aligarh, Bareilly, Dehradun, Gandhinagar, Jaipur, Karnal, Moradabad, Muzaffarnagar, Nashik, and Pune, are showing a positive trend, indicated by positive Kendall's tau values and Sen's slopes.

2. Shrubland decline: A decrease in shrubland is observed in multiple districts, such as Ahmadabad, Ajmer, Aurangabad, Faridabad, Gandhinagar, Jaipur, Kota, and Nashik, as indicated by negative Kendall's tau and Sen's slope values.

3. Agriculture trends: Agricultural areas seem to be increasing in some districts like Agra, Ahmadabad, Ajmer, Aurangabad, Gandhinagar, Jaipur, and Nashik but decreasing or staying stable in others like Aligarh, Bareilly, and Dehradun.

4. Waterbody fluctuations: Significant positive trends in waterbody areas are observed in districts like Ahmadabad, Diu, and Pune. In many other districts, the waterbody area remains unchanged.

5. Stability in some classes: In several districts, certain land cover classes, such as bareland and shrubland, remain unchanged over time, indicated by Kendall's tau values of less than 0.000.

A Spatio-Temporal Examination of Land Use and Land Cover Changes in the Delhi-Mumbai Industrial Corridor (Kanchan et al, 2024)

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TABLE S2: Summary of Kendall's tau and Sen's Slope for Time Series Analysis of Decadal LULC Changes for Other Districts in the DMIC

The following table shows the impact on LULC classes from 2001 to 2021 at each of the 121 "other districts" in the DMIC ZoI. A value in Kendall's tau column is followed by a blank (non-significant) or with symbols corresponding to various p-values, as shown in the table above. The Sen's slope value indicates the increase (positive sign) or decrease (negative sign) in the LULC class trend in sq. km per year.

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
1	Ahmadnagar	Madhya Maharashtra	Forest	0.067	2.899
			Shrubland	-0.387*	-2.277
			Savanna	-0.314*	-85.696
			Waterbody	0.096	0.063
			Agriculture	0.295+	84.563
			Urban	0.834***	0.044
			Bareland	-0.772***	-0.648
2	Alirajpur	West Madhya Pradesh	Forest	0.473**	0.764
			Shrubland	-0.859***	-0.063
			Savanna	-0.419**	-6.225
			Waterbody	0.744***	0.173
			Agriculture	0.381*	5.018
			Urban	0.000***	0.000
			Bareland	0.437**	0.196
3	Almora	Uttarakhand	Forest	0.820***	1.083
			Shrubland	0.000***	0.000
			Savanna	0.864***	2.198
			Waterbody	0.000***	0.000
			Agriculture	-0.914***	-3.286
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
4	Alwar	East Rajasthan	Forest	0.280	0.019
			Shrubland	0.015	0.000
			Savanna	-0.331*	-1.250

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Waterbody	0.000***	0.000
			Agriculture	0.196	1.075
			Urban	0.905***	0.164
			Bareland	0.000***	0.000
5	Ambala	Chandigarh, Haryana, and Delhi	Forest	-0.396*	-0.167
			Shrubland	0.000***	0.000
			Savanna	0.690***	0.063
			Waterbody	0.000***	0.000
			Agriculture	0.196	0.056
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
6	Amreli	Saurashtra & Kachh	Forest	0.266	0.007
			Shrubland	0.188	0.030
			Savanna	-0.800***	-24.896
			Waterbody	0.900***	0.308
			Agriculture	0.800***	24.688
			Urban	0.000***	0.000
			Bareland	-0.298+	-0.250
7	Anand	Gujarat Region	Forest	-0.587***	-3.924
			Shrubland	0.144	0.224
			Savanna	-0.874***	-8.192
			Waterbody	0.759***	2.351
			Agriculture	0.952***	10.636
			Urban	0.936***	0.125
			Bareland	-0.552***	-3.508
8	Baghpat	West Uttar Pradesh	Forest	-0.600***	-3.451
			Shrubland	0.000***	0.000
			Savanna	0.163	0.302
			Waterbody	0.000***	0.000
			Agriculture	0.440**	3.899
			Urban	0.425*	0.000
			Bareland	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
9	Banas Kantha	Gujarat Region	Forest	-0.483**	-0.296
			Shrubland	-0.600***	-57.203
			Savanna	-0.314*	-5.848
			Waterbody	0.554***	0.500
			Agriculture	0.552***	66.394
			Urban	0.000***	0.000
			Bareland	0.364*	0.273
10	Banswara	East Rajasthan	Forest	0.000***	0.000
			Shrubland	-0.282	0.000
			Savanna	-0.453**	-1.563
			Waterbody	0.673***	0.865
			Agriculture	0.345*	1.460
			Urban	0.865***	0.050
			Bareland	-0.019	-0.007
11	Baran	East Rajasthan	Forest	0.000***	0.000
			Shrubland	-0.817***	-0.094
			Savanna	-0.444*	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.861***	0.134
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
12	Barmer	West Rajasthan	Forest	-0.286+	-0.331
			Shrubland	-0.343*	-143.165
			Savanna	0.000	0.031
			Waterbody	0.000***	0.000
			Agriculture	0.343*	142.380
			Urban	0.867***	0.076
			Bareland	-0.571***	-2.781
13	Barwani	West Madhya Pradesh	Forest	0.309	0.000
			Shrubland	-0.769***	-0.194
			Savanna	-0.635***	-6.247
			Waterbody	0.484**	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	0.683***	6.794
			Urban	0.000***	0.000
			Bareland	-0.336*	-0.238
14	Bharatpur	East Rajasthan	Forest	0.381*	0.000
			Shrubland	-0.772***	-0.035
			Savanna	-0.610***	-6.358
			Waterbody	0.000***	0.000
			Agriculture	0.606***	6.496
			Urban	0.000***	0.000
			Bareland	-0.162	0.000
15	Bharuch	Gujarat Region	Forest	-0.683***	-0.532
			Shrubland	-0.063	-0.039
			Savanna	-0.933***	-44.958
			Waterbody	0.657***	1.426
			Agriculture	0.886***	45.188
			Urban	0.837***	0.058
			Bareland	0.377*	0.727
16	Bhavnagar	Saurashtra & Kachh	Forest	0.306+	0.000
			Shrubland	0.324*	2.090
			Savanna	-0.857***	-30.842
			Waterbody	0.943***	4.805
			Agriculture	0.800***	26.721
			Urban	0.834***	0.030
			Bareland	-0.625***	-3.188
17	Bhilwara	East Rajasthan	Forest	-0.622***	0.000
			Shrubland	-0.612***	-6.642
			Savanna	-0.771***	-25.716
			Waterbody	0.000***	0.000
			Agriculture	0.749***	30.331
			Urban	0.946***	0.303
			Bareland	0.385*	0.031
18	Bhiwani	Chandigarh, Haryana, and Delhi	Forest	0.410*	1.898

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Shrubland	-0.781***	-18.177
			Savanna	-0.845***	-24.921
			Waterbody	0.000***	0.000
			Agriculture	0.971***	44.653
			Urban	0.784***	0.050
			Bareland	0.000***	0.000
19	Bid	Marathwada	Forest	-0.309	0.000
			Shrubland	0.481**	0.000
			Savanna	-0.320*	-0.153
			Waterbody	-0.048	0.000
			Agriculture	0.333*	0.136
			Urban	0.000***	0.000
			Bareland	-0.431*	0.000
20	Bijnor	West Uttar Pradesh	Forest	0.067	0.734
			Shrubland	0.000***	0.000
			Savanna	0.186	1.903
			Waterbody	0.085	0.000
			Agriculture	-0.095	-2.861
			Urban	0.740***	0.032
			Bareland	-0.598***	-0.144
21	Bikaner	West Rajasthan	Forest	-0.029	-0.073
			Shrubland	-0.429**	-109.353
			Savanna	-0.133	-14.203
			Waterbody	0.000***	0.000
			Agriculture	0.810***	152.695
			Urban	0.640***	0.000
			Bareland	-0.641***	-37.633
22	Budaun	West Uttar Pradesh	Forest	-0.157	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.019	-0.094
			Waterbody	0.000***	0.000
			Agriculture	0.440**	0.905
			Urban	0.425*	0.000
			Bareland	-0.792***	-0.816

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
23	Bulandshahr	West Uttar Pradesh	Forest	0.116	0.125
			Shrubland	0.000***	0.000
			Savanna	0.539***	1.469
			Waterbody	0.357+	0.000
			Agriculture	-0.371*	-1.250
			Urban	0.939***	0.125
			Bareland	-0.510**	-0.193
24	Bundi	East Rajasthan	Forest	-0.393*	-0.119
			Shrubland	-0.921***	-13.961
			Savanna	-0.676***	-26.702
			Waterbody	0.260	0.000
			Agriculture	0.762***	41.633
			Urban	0.590**	0.000
			Bareland	0.010	0.000
25	Central Delhi	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.000***	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.000***	0.000
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
26	Chittaurgarh	East Rajasthan	Forest	-0.286+	-0.685
			Shrubland	-0.670***	-0.913
			Savanna	0.038	1.313
			Waterbody	0.415**	0.868
			Agriculture	0.019	0.363
			Urban	0.837***	0.063
			Bareland	-0.135	-0.080
27	Churu	West Rajasthan	Forest	-0.219	-14.255
			Shrubland	-0.390*	-321.845
			Savanna	-0.267+	-69.087
			Waterbody	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	0.600***	437.737
			Urban	0.944***	0.188
			Bareland	-0.466*	0.000
28	Daman	Daman & Diu	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.923***	0.609
			Waterbody	0.179	0.000
			Agriculture	-0.879***	-0.680
			Urban	0.697***	0.000
			Bareland	0.185	0.000
29	Dausa	East Rajasthan	Forest	0.000***	0.000
			Shrubland	-0.680***	-2.539
			Savanna	-0.848***	-0.250
			Waterbody	0.000***	0.000
			Agriculture	0.680***	2.850
			Urban	0.727***	0.015
			Bareland	-0.309	0.000
30	Dhar	East Madhya Pradesh	Forest	-0.409*	0.000
			Shrubland	-0.273	0.000
			Savanna	-0.871***	-4.500
			Waterbody	0.761***	0.292
			Agriculture	0.874***	4.688
			Urban	0.309	0.000
			Bareland	-0.488**	-0.451
31	Dhaulpur	East Rajasthan	Forest	0.309	0.000
			Shrubland	-0.134	-0.040
			Savanna	-0.543***	-15.483
			Waterbody	-0.309	0.000
			Agriculture	0.533***	15.972
			Urban	0.000***	0.000
			Bareland	-0.834***	-0.264
32	Dhule	Madhya Maharashtra	Forest	-0.143	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Shrubland	-0.329*	-0.577
			Savanna	-0.543***	-15.881
			Waterbody	0.703***	0.050
			Agriculture	0.533***	15.620
			Urban	0.753***	0.017
			Bareland	-0.078	-0.024
33	Dungarpur	East Rajasthan	Forest	0.205	0.000
			Shrubland	-0.743***	-0.125
			Savanna	-0.635***	-1.117
			Waterbody	0.689***	0.448
			Agriculture	0.708***	0.961
			Urban	0.842***	0.045
			Bareland	-0.212	-0.233
34	East Delhi	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.000***	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.000***	0.000
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
35	Etah	West Uttar Pradesh	Forest	-0.610***	-0.024
			Shrubland	-0.309	0.000
			Savanna	-0.043	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.096	0.000
			Urban	0.704***	0.000
			Bareland	0.000***	0.000
36	Etawah	West Uttar Pradesh	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.000***	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.000***	0.000
			Urban	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Bareland	0.000***	0.000
37	Farrukhabad	East Uttar Pradesh	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.624***	-0.250
			Waterbody	0.000***	0.000
			Agriculture	0.677***	0.288
			Urban	0.000***	0.000
			Bareland	-0.691***	-0.063
38	Fatehabad	Chandigarh, Haryana, and Delhi	Forest	0.144	0.000
			Shrubland	-0.584***	-0.260
			Savanna	0.217	0.052
			Waterbody	0.000***	0.000
			Agriculture	0.207	0.375
			Urban	0.704***	0.000
			Bareland	0.000***	0.000
39	Firozabad	West Uttar Pradesh	Forest	0.336+	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.647***	-0.250
			Waterbody	0.000***	0.000
			Agriculture	0.547***	0.250
			Urban	0.720***	0.016
			Bareland	0.000***	0.000
40	Garhwal	Uttarakhand	Forest	0.838***	16.737
			Shrubland	0.000***	0.000
			Savanna	-0.415**	-5.042
			Waterbody	0.269+	0.742
			Agriculture	-0.962***	-12.199
			Urban	0.516**	0.000
			Bareland	-0.533**	-0.022
41	Gautam Buddha Nagar	West Uttar Pradesh	Forest	-0.022	0.000
			Shrubland	0.000***	0.000
			Savanna	0.517**	1.638
			Waterbody	0.381*	0.036

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	-0.724***	-6.292
			Urban	0.993***	4.354
			Bareland	-0.507**	0.000
42	Ghaziabad	West Uttar Pradesh	Forest	-0.049	-0.056
			Shrubland	0.000***	0.000
			Savanna	0.014	0.176
			Waterbody	0.000***	0.000
			Agriculture	-0.038	-0.228
			Urban	0.842***	0.358
			Bareland	0.000***	0.000
43	Gurgaon	Chandigarh, Haryana, and Delhi	Forest	0.105	0.000
			Shrubland	0.274	0.000
			Savanna	0.124	0.567
			Waterbody	0.000***	0.000
			Agriculture	-0.429**	-3.389
			Urban	0.990***	2.384
			Bareland	0.000***	0.000
44	Hanumangarh	West Rajasthan	Forest	0.651***	3.875
			Shrubland	-0.533***	-109.170
			Savanna	0.438**	19.414
			Waterbody	0.000***	0.000
			Agriculture	0.667***	83.336
			Urban	0.521**	0.000
			Bareland	-0.683***	0.000
45	Hardwar	Uttarakhand	Forest	0.124	4.346
			Shrubland	0.000***	0.000
			Savanna	0.381*	5.288
			Waterbody	-0.309	0.000
			Agriculture	-0.143	-10.292
			Urban	0.936***	0.315
			Bareland	0.102	0.069
46	Hisar	Chandigarh, Haryana, and Delhi	Forest	0.596***	0.888

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Shrubland	-0.638***	-8.048
			Savanna	-0.371*	-2.500
			Waterbody	0.000***	0.000
			Agriculture	0.657***	10.132
			Urban	0.944***	0.169
			Bareland	0.000***	0.000
47	Jaisalmer	West Rajasthan	Forest	0.000***	0.000
			Shrubland	0.224	1.318
			Savanna	-0.100	-0.158
			Waterbody	0.000***	0.000
			Agriculture	0.465**	0.854
			Urban	0.000***	0.000
			Bareland	-0.207	-0.146
48	Jalgaon	Madhya Maharashtra	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.467**	-0.056
			Waterbody	0.000***	0.000
			Agriculture	0.467**	0.056
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
49	Jalor	East Rajasthan	Forest	-0.545**	0.000
			Shrubland	-0.610***	-197.946
			Savanna	-0.590***	-15.789
			Waterbody	0.000***	0.000
			Agriculture	0.581***	221.327
			Urban	0.569**	0.000
			Bareland	-0.053	-0.089
50	Jamnagar	Saurashtra & Kachh	Forest	0.000***	0.000
			Shrubland	0.234	0.725
			Savanna	-0.574***	-4.153
			Waterbody	0.717***	0.489
			Agriculture	0.377*	3.025
			Urban	0.000***	0.000
			Bareland	-0.487**	-0.270

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
51	Jhabua	West Madhya Pradesh	Forest	-0.309	0.000
			Shrubland	-0.480*	0.000
			Savanna	-0.702***	-5.531
			Waterbody	0.000***	0.000
			Agriculture	0.695***	5.508
			Urban	0.000***	0.000
			Bareland	0.632***	0.014
52	Jhajjar	Chandigarh, Haryana, and Delhi	Forest	-0.431*	0.000
			Shrubland	0.406*	0.750
			Savanna	0.168	0.222
			Waterbody	0.671***	0.026
			Agriculture	-0.423**	-1.125
			Urban	0.921***	0.250
			Bareland	0.259	0.000
53	Jhunjhunun	East Rajasthan	Forest	0.189	0.000
			Shrubland	-0.429**	-8.420
			Savanna	-0.663***	-12.007
			Waterbody	0.000***	0.000
			Agriculture	0.457**	19.478
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
54	Jind	Chandigarh, Haryana, and Delhi	Forest	-0.121	0.000
			Shrubland	0.707***	0.045
			Savanna	0.728***	0.266
			Waterbody	0.000***	0.000
			Agriculture	-0.525**	-0.333
			Urban	0.683***	0.000
			Bareland	0.000***	0.000
55	Jodhpur	West Rajasthan	Forest	-0.387*	-1.792
			Shrubland	-0.419**	-243.213

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Savanna	-0.352*	-32.081
			Waterbody	0.000***	0.000
			Agriculture	0.524***	403.423
			Urban	0.959***	0.407
			Bareland	-0.543***	-96.967
56	Junagadh	Saurashtra & Kachh	Forest	0.162	0.024
			Shrubland	-0.083	0.000
			Savanna	-0.714***	-6.366
			Waterbody	0.661***	0.083
			Agriculture	0.695***	6.063
			Urban	0.000***	0.000
			Bareland	-0.539**	-0.104
57	Jyotiba Phule Nagar	West Uttar Pradesh	Forest	0.190	1.407
			Shrubland	0.000***	0.000
			Savanna	0.584***	1.656
			Waterbody	0.000***	0.000
			Agriculture	-0.301+	-3.646
			Urban	0.808***	0.045
			Bareland	-0.496**	-0.305
58	Kachchh	Saurashtra & Kachh	Forest	0.371*	8.723
			Shrubland	-0.305+	-40.866
			Savanna	0.238	24.833
			Waterbody	0.501**	15.317
			Agriculture	0.371*	37.081
			Urban	0.000***	0.000
			Bareland	-0.562***	-44.096
59	Kaithal	Chandigarh, Haryana, and Delhi	Forest	-0.139	-0.250
			Shrubland	0.000***	0.000
			Savanna	0.402*	0.710
			Waterbody	0.000***	0.000
			Agriculture	-0.082	-0.167
			Urban	0.516**	0.000
			Bareland	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
60	Kansiram Nagar	West Uttar Pradesh	Forest	-0.131	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.373*	-1.288
			Waterbody	0.000***	0.000
			Agriculture	0.673***	2.450
			Urban	0.425*	0.000
			Bareland	-0.849***	-1.000
61	Karauli	East Rajasthan	Forest	0.821***	0.094
			Shrubland	-0.607***	-1.154
			Savanna	-0.752***	-64.023
			Waterbody	0.000***	0.000
			Agriculture	0.752***	66.068
			Urban	0.000***	0.000
			Bareland	-0.100	-0.011
62	Kheda	Gujarat Region	Forest	-0.385*	-0.508
			Shrubland	-0.926***	-3.500
			Savanna	-0.875***	-2.652
			Waterbody	-0.502**	0.000
			Agriculture	0.921***	6.532
			Urban	0.954***	0.194
			Bareland	0.000***	0.000
63	Kurukshetra	Chandigarh, Haryana, and Delhi	Forest	-0.333*	-0.375
			Shrubland	0.000***	0.000
			Savanna	0.801***	0.750
			Waterbody	0.000***	0.000
			Agriculture	-0.474**	-0.452
			Urban	0.870***	0.167
			Bareland	0.000***	0.000
64	Mahamaya Nagar	West Uttar Pradesh	Forest	-0.428*	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.697***	-0.125
			Waterbody	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	0.713***	0.125
			Urban	0.309	0.000
			Bareland	0.000***	0.000
65	Mahendragarh	Chandigarh, Haryana, and Delhi	Forest	-0.022	0.000
			Shrubland	-0.709***	-0.459
			Savanna	-0.823***	-5.180
			Waterbody	0.000***	0.000
			Agriculture	0.804***	5.609
			Urban	0.425*	0.000
			Bareland	0.000***	0.000
66	Mahesana	Gujarat Region	Forest	0.761***	0.136
			Shrubland	-0.838***	-8.525
			Savanna	-0.838***	-7.881
			Waterbody	0.795***	0.111
			Agriculture	0.924***	18.000
			Urban	0.687***	0.000
			Bareland	-0.826***	-0.103
67	Mainpuri	West Uttar Pradesh	Forest	-0.053	0.000
			Shrubland	-0.309	0.000
			Savanna	0.626***	0.063
			Waterbody	0.000***	0.000
			Agriculture	-0.639***	-0.063
			Urban	0.507**	0.000
			Bareland	0.000***	0.000
68	Mandsaur	West Madhya Pradesh	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.336+	0.000
			Waterbody	0.000***	0.000
			Agriculture	-0.309	0.000
			Urban	0.000***	0.000
			Bareland	0.488*	0.000
69	Mansa	Punjab	Forest	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Shrubland	-0.782***	-0.028
			Savanna	0.000***	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.782***	0.028
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
70	Mathura	West Uttar Pradesh	Forest	-0.287	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.092	-0.104
			Waterbody	0.000***	0.000
			Agriculture	0.034	0.059
			Urban	0.617**	0.000
			Bareland	0.000***	0.000
71	Meerut	West Uttar Pradesh	Forest	-0.200	-2.296
			Shrubland	0.000***	0.000
			Savanna	0.190	1.313
			Waterbody	-0.309	0.000
			Agriculture	0.048	1.016
			Urban	0.873***	0.091
			Bareland	-0.447**	-0.036
72	Mewat	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000
			Shrubland	-0.521**	0.000
			Savanna	-0.673***	-0.771
			Waterbody	0.000***	0.000
			Agriculture	0.673***	0.771
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
73	Morena	West Madhya Pradesh	Forest	0.000***	0.000
			Shrubland	-0.565**	0.000
			Savanna	-0.400*	-4.375
			Waterbody	-0.309	0.000
			Agriculture	0.434**	4.656

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Urban	0.000***	0.000
			Bareland	-0.877***	-0.250
74	Mumbai	Konkan & Goa	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.595***	-0.031
			Waterbody	0.718***	0.031
			Agriculture	-0.309	0.000
			Urban	0.655***	0.000
			Bareland	-0.480**	0.000
75	Mumbai Suburban	Konkan & Goa	Forest	0.686***	0.650
			Shrubland	0.000***	0.000
			Savanna	0.082	0.048
			Waterbody	0.693***	0.398
			Agriculture	-0.854***	-1.071
			Urban	0.000***	0.000
			Bareland	-0.704***	-0.036
76	Nagaur	West Rajasthan	Forest	-0.476**	-30.323
			Shrubland	-0.495**	-159.884
			Savanna	-0.714***	-122.558
			Waterbody	0.309	0.000
			Agriculture	0.619***	315.848
			Urban	0.884***	0.071
			Bareland	-0.329*	-0.614
77	Nainital	Uttarakhand	Forest	0.552***	3.785
			Shrubland	0.000***	0.000
			Savanna	0.076	1.188
			Waterbody	-0.309	0.000
			Agriculture	-0.552***	-4.842
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
78	Nandurbar	Madhya Maharashtra	Forest	0.447**	0.144
			Shrubland	-0.347*	-0.163
			Savanna	-0.740***	-6.958
			Waterbody	0.841***	0.525

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	0.702***	6.000
			Urban	0.673***	0.000
			Bareland	0.150	0.083
79	Narmada	Gujarat Region	Forest	-0.186	-0.508
			Shrubland	-0.309	0.000
			Savanna	-0.800***	-21.604
			Waterbody	0.740***	1.500
			Agriculture	0.714***	21.479
			Urban	0.000***	0.000
			Bareland	-0.831***	-0.588
80	Navsari	Gujarat Region	Forest	0.829***	7.676
			Shrubland	0.160	0.000
			Savanna	0.133	0.602
			Waterbody	0.596***	0.438
			Agriculture	-0.644***	-9.000
			Urban	0.859***	0.083
			Bareland	0.062	0.125
81	Neemuch	West Madhya Pradesh	Forest	-0.301+	-1.471
			Shrubland	-0.738***	-0.054
			Savanna	0.190	9.491
			Waterbody	0.553**	0.000
			Agriculture	-0.171	-6.862
			Urban	0.796***	0.071
			Bareland	0.483**	0.106
82	North Delhi	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.362*	0.024
			Waterbody	0.000***	0.000
			Agriculture	-0.403*	-0.038
			Urban	0.724***	0.014
			Bareland	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
83	North East Delhi	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.283	0.020
			Waterbody	0.000***	0.000
			Agriculture	-0.283	-0.020
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
84	North West Delhi	Chandigarh, Haryana, and Delhi	Forest	-0.309	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.043	-0.099
			Waterbody	0.000***	0.000
			Agriculture	-0.387*	-1.000
			Urban	0.973***	1.065
			Bareland	0.000***	0.000
85	Pali	West Rajasthan	Forest	-0.079	-0.009
			Shrubland	-0.514**	-36.159
			Savanna	-0.629***	-28.672
			Waterbody	0.416*	0.050
			Agriculture	0.543***	57.037
			Urban	0.921***	0.188
			Bareland	0.469**	0.096
86	Palwal	Chandigarh, Haryana, and Delhi	Forest	-0.221	0.000
			Shrubland	0.000***	0.000
			Savanna	0.381*	0.055
			Waterbody	0.425*	0.000
			Agriculture	-0.501**	-0.067
			Urban	0.746***	0.018
			Bareland	0.278	0.000
87	Panch Mahals	Gujarat Region	Forest	0.116	0.000
			Shrubland	-0.735***	-0.175

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Savanna	-0.638***	-4.396
			Waterbody	0.705***	2.715
			Agriculture	0.434**	2.639
			Urban	0.765***	0.083
			Bareland	-0.198	-0.467
88	Panipat	Chandigarh, Haryana, and Delhi	Forest	-0.509**	-0.173
			Shrubland	0.000***	0.000
			Savanna	0.346*	0.500
			Waterbody	0.000***	0.000
			Agriculture	-0.329*	-0.694
			Urban	0.986***	0.601
			Bareland	0.000***	0.000
89	Patan	Gujarat Region	Forest	-0.494**	-0.783
			Shrubland	-0.600***	-62.643
			Savanna	0.105	5.434
			Waterbody	0.293	0.000
			Agriculture	0.781***	68.068
			Urban	0.775***	0.020
			Bareland	-0.053	-0.250
90	Patiala	Punjab	Forest	0.492**	0.000
			Shrubland	0.000***	0.000
			Savanna	0.469**	0.024
			Waterbody	0.000***	0.000
			Agriculture	-0.496**	-0.054
			Urban	0.309	0.000
			Bareland	0.000***	0.000
91	Pratapgarh	East Rajasthan	Forest	0.702***	1.271
			Shrubland	0.387*	0.042
			Savanna	-0.158	-0.426
			Waterbody	0.884***	0.077
			Agriculture	-0.352*	-1.417
			Urban	0.000***	0.000
			Bareland	0.185	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
92	Raigarh	Konkan & Goa	Forest	0.790***	21.250
			Shrubland	-0.130	0.000
			Savanna	0.857***	45.797
			Waterbody	0.536***	1.131
			Agriculture	-0.876***	-69.325
			Urban	0.986***	0.938
			Bareland	-0.065	0.000
93	Rajsamand	East Rajasthan	Forest	0.425*	0.125
			Shrubland	0.038	0.250
			Savanna	-0.848***	-2.391
			Waterbody	0.791***	0.138
			Agriculture	0.383*	0.954
			Urban	0.772***	0.047
			Bareland	0.186	0.000
94	Rampur	West Uttar Pradesh	Forest	0.229	1.696
			Shrubland	0.000***	0.000
			Savanna	0.177	0.429
			Waterbody	0.000***	0.000
			Agriculture	-0.310+	-1.477
			Urban	0.931***	0.190
			Bareland	0.000***	0.000
95	Ratlam	West Madhya Pradesh	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.732***	-0.266
			Waterbody	0.000***	0.000
			Agriculture	0.732***	0.266
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
96	Ratnagiri	Konkan & Goa	Forest	0.752***	18.966
			Shrubland	-0.131	-0.063
			Savanna	0.558***	19.381
			Waterbody	0.558***	0.683

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	-0.857***	-44.578
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
97	Rewari	Chandigarh, Haryana, and Delhi	Forest	0.056	0.000
			Shrubland	-0.292	0.000
			Savanna	0.038	0.024
			Waterbody	0.000***	0.000
			Agriculture	-0.068	-0.054
			Urban	0.825***	0.090
			Bareland	0.000***	0.000
98	Rohtak	Chandigarh, Haryana, and Delhi	Forest	-0.409*	0.000
			Shrubland	-0.517**	-0.018
			Savanna	0.068	0.032
			Waterbody	0.000***	0.000
			Agriculture	-0.149	-0.155
			Urban	0.854***	0.133
			Bareland	0.000***	0.000
99	Sabar Kantha	Gujarat Region	Forest	0.797***	2.540
			Shrubland	-0.819***	-3.333
			Savanna	0.224	0.648
			Waterbody	0.490**	1.315
			Agriculture	0.014	0.223
			Urban	0.969***	0.250
			Bareland	-0.398*	-0.116
100	Sangli	Madhya Maharashtra	Forest	0.748***	0.231
			Shrubland	0.000***	0.000
			Savanna	-0.748***	-0.231
			Waterbody	0.000***	0.000
			Agriculture	0.000***	0.000
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
101	Sangrur	Punjab	Forest	-0.455*	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Shrubland	0.000***	0.000
			Savanna	0.425*	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.268	0.000
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
102	Satara	Madhya Maharashtra	Forest	0.781***	12.281
			Shrubland	-0.716***	-1.021
			Savanna	-0.371*	-46.786
			Waterbody	0.587***	1.722
			Agriculture	0.257	29.984
			Urban	0.000***	0.000
			Bareland	-0.648***	-1.085
103	Sawai Madhopur	East Rajasthan	Forest	-0.154	0.000
			Shrubland	-0.581***	-13.203
			Savanna	-0.785***	-27.263
			Waterbody	0.000***	0.000
			Agriculture	0.790***	42.313
			Urban	0.632***	0.000
			Bareland	-0.763***	-0.500
104	Shahjahanpur	West Uttar Pradesh	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.573**	0.000
			Waterbody	0.000***	0.000
			Agriculture	0.573**	0.000
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
105	Sheopur	West Madhya Pradesh	Forest	0.771***	1.375
			Shrubland	-0.638***	-1.815
			Savanna	-0.943***	-14.714
			Waterbody	0.000***	0.000
			Agriculture	0.952***	16.258
			Urban	0.309	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Bareland	-0.568**	-0.065
106	Sikar	East Rajasthan	Forest	-0.474**	-0.953
			Shrubland	-0.571***	-26.989
			Savanna	-0.619***	-34.321
			Waterbody	0.000***	0.000
			Agriculture	0.610***	64.269
			Urban	0.873***	0.125
			Bareland	-0.579***	-0.125
107	Sirohi	East Rajasthan	Forest	0.508**	0.158
			Shrubland	-0.638***	-9.600
			Savanna	-0.679***	-1.825
			Waterbody	0.000***	0.000
			Agriculture	0.648***	11.320
			Urban	0.717***	0.019
			Bareland	-0.450*	-0.019
108	Sirsa	Chandigarh, Haryana, and Delhi	Forest	0.341+	0.000
			Shrubland	-0.727***	-7.272
			Savanna	-0.450**	-0.145
			Waterbody	0.000***	0.000
			Agriculture	0.727***	7.171
			Urban	0.881***	0.091
			Bareland	0.000***	0.000
109	Sonipat	Chandigarh, Haryana, and Delhi	Forest	-0.709***	-0.423
			Shrubland	0.000***	0.000
			Savanna	0.038	0.066
			Waterbody	0.000***	0.000
			Agriculture	0.081	0.196
			Urban	0.923***	0.375
			Bareland	0.000***	0.000
110	South Delhi	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Shrubland	0.000***	0.000
			Savanna	-0.450**	-1.750
			Waterbody	0.437*	0.050
			Agriculture	0.402*	1.701
			Urban	0.704***	0.000
			Bareland	0.000***	0.000
111	South West Delhi	Chandigarh, Haryana, and Delhi	Forest	-0.309	0.000
			Shrubland	0.000***	0.000
			Savanna	-0.647***	-1.130
			Waterbody	0.000***	0.000
			Agriculture	0.258	0.304
			Urban	0.993***	0.803
			Bareland	0.000***	0.000
112	Surendranagar	Saurashtra & Kachh	Forest	0.234	1.000
			Shrubland	-0.819***	-78.887
			Savanna	-0.914***	-121.292
			Waterbody	0.588***	0.833
			Agriculture	0.876***	213.347
			Urban	0.507**	0.000
			Bareland	-0.246	-0.571
113	Tapi	Gujarat Region	Forest	0.686***	9.854
			Shrubland	-0.521**	0.000
			Savanna	-0.676***	-16.281
			Waterbody	0.478**	1.484
			Agriculture	0.390*	6.242
			Urban	0.000***	0.000
			Bareland	-0.619***	-0.533
114	Tehri Garhwal	Uttarakhand	Forest	-0.057	-0.119
			Shrubland	0.000***	0.000
			Savanna	0.133	0.417
			Waterbody	0.000***	0.000
			Agriculture	-0.871***	-0.224
			Urban	0.000***	0.000
			Bareland	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
115	The Dangs	Gujarat Region	Forest	0.320*	6.992
			Shrubland	0.000***	0.000
			Savanna	-0.229	-5.744
			Waterbody	0.000***	0.000
			Agriculture	-0.038	-0.772
			Urban	0.000***	0.000
			Bareland	0.000***	0.000
116	Tonk	East Rajasthan	Forest	-0.169	0.000
			Shrubland	-0.654***	-9.302
			Savanna	-0.759***	-7.093
			Waterbody	0.387*	2.100
			Agriculture	0.533***	15.652
			Urban	0.727***	0.015
			Bareland	-0.087	-0.073
117	Udham Singh Nagar	Uttarakhand	Forest	0.057	0.517
			Shrubland	0.000***	0.000
			Savanna	0.539***	2.768
			Waterbody	0.203	0.155
			Agriculture	-0.545***	-4.731
			Urban	0.973***	1.213
			Bareland	-0.427*	-0.033
119	Valsad	Gujarat Region	Forest	0.695***	2.067
			Shrubland	0.000***	0.000
			Savanna	0.752***	9.257
			Waterbody	0.436**	0.133
			Agriculture	-0.752***	-12.000
			Urban	0.856***	0.100
			Bareland	-0.124	-0.028
120	West Delhi	Chandigarh, Haryana, and Delhi	Forest	0.000***	0.000
			Shrubland	0.000***	0.000
			Savanna	0.077	0.029
			Waterbody	0.000***	0.000

No.	District	IMD Sub-Division	LULC Class	Kendall's tau (Significance)	Sen's slope (sq. km. per year)
			Agriculture	-0.406*	-0.297
			Urban	0.905***	0.250
			Bareland	0.000***	0.000
121	Yamunanagar	Chandigarh, Haryana, and Delhi	Forest	-0.024	-0.095
			Shrubland	0.000***	0.000
			Savanna	0.267+	0.922
			Waterbody	0.000***	0.000
			Agriculture	-0.191	-1.098
			Urban	0.908***	0.133
			Bareland	-0.309	0.000