

DOWNSCALING DAILY FINE PARTICULATE MATTER (PM_{2.5}) CONCENTRATION MAPS FOR HO CHI MINH CITY

Environmental Modeling & Assessment

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1. List of figures

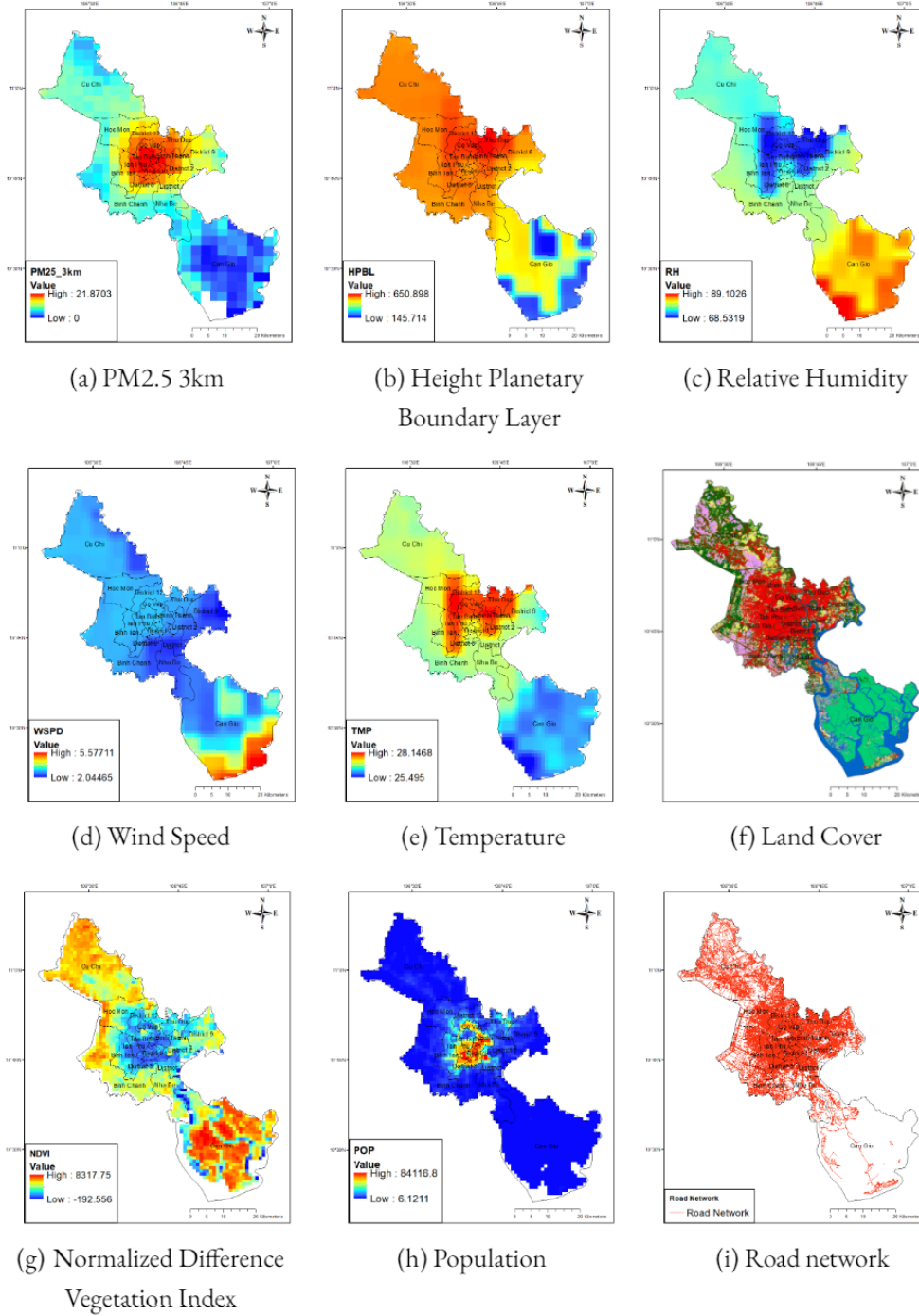


Fig. S1 Illustration of input data (a) PM_{2.5} 3km (2018-2021 average); (b) Height Planetary Boundary Layer (HPBL) (2018-2021 average); (c) Relative Humidity (RH) (2018-2021 average); (d) Wind Speed (WSPD) (2018-2021 average); (e) Temperature (TMP) (2018-2021 average); (f) Land Cover(2021); (g) Normalized Difference Vegetation Index (NDVI) (2021); (h) Population (2021); (i) Road Network (2021)

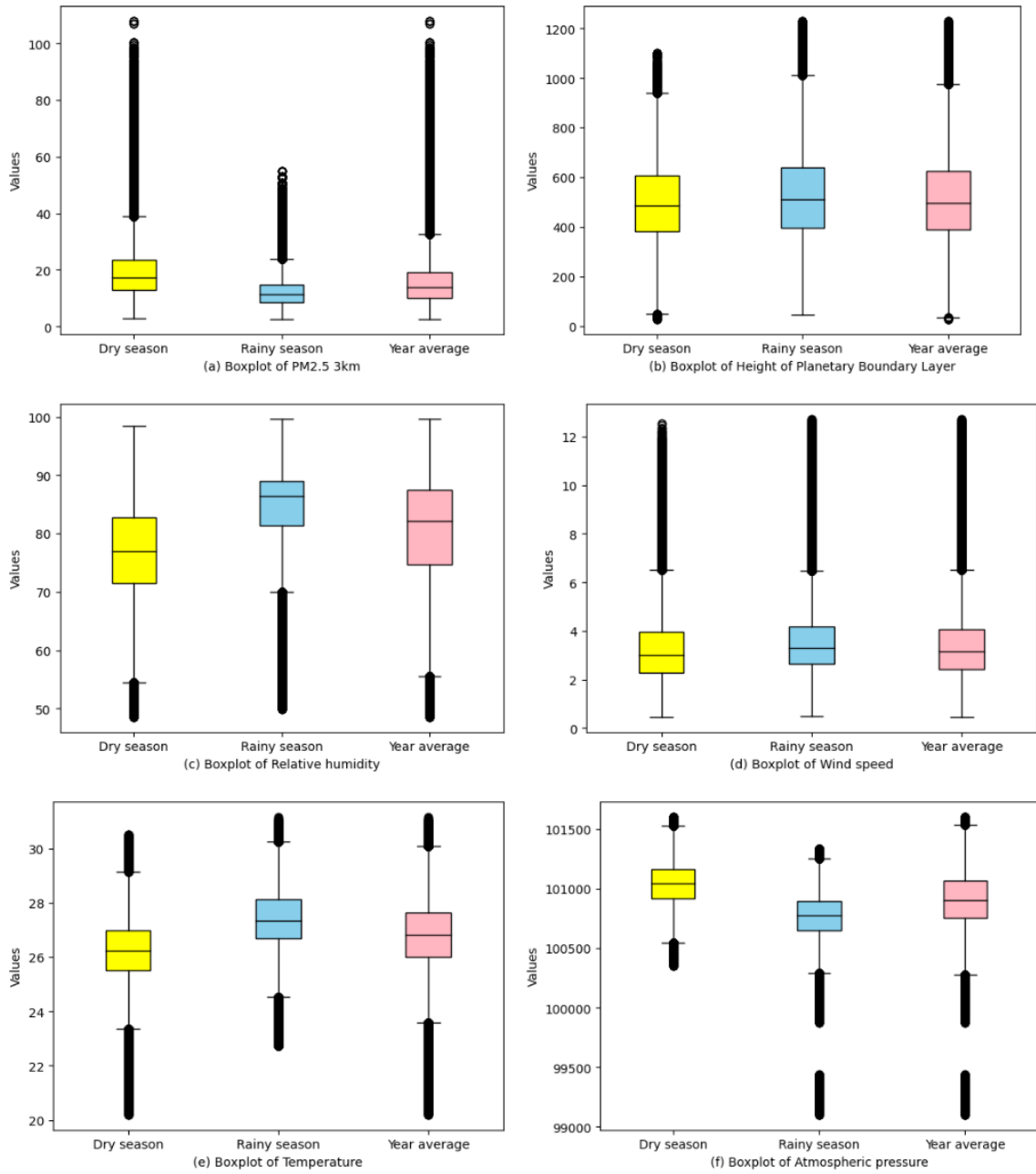


Fig. S2 Boxplot by season of temporally variable data.

(a) PM_{2.5} 3km; (b) Height of Planetary Boundary Layer (HBPL); (c) Relative Humidity; (d) Wind Speed; (e) Temperature and (f) Atmospheric Pressure (PRES2M)

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Table S1. Information about monitoring stations

Name	Period	Data samples
US Embassy Ho Chi Minh	2018 - 2021	1412
VNUHCM - University Of Science	2018 - March 2019	253
National University Urban Area	2021	173
Next to Binh Tan District Department of Education and Training	2021	249
MobiFone broadcasting station within Tan Binh Industrial Park	2021	226
Cu Chinh Lan Middle School	2021	260
Thanh Nien Newspaper Headquarters	2021	105
MobiFone Thanh Thai	2021	213

Table S2. Descriptive statistics of input data

Feature	Min	Max	Median	STD	Mean
PM_{2.5} 3km					
PM25_3km (µg/m ³)	2.63	107.93	13.86	1.60	15.88
Meteorological variables					
PRES2M (Pa)	99100.91	101601.90	100932.19	22.57	100901.94
WSPD (m/s)	0.46	12.73	2.99	0.45	3.43
HPBL (m)	27.55	1229.97	519.59	44.80	501.44
RH (%)	48.54	99.65	80.61	2.22	80.68
TMP (°C)	20.18	31.17	26.94	0.31	26.81
Land cover and land use variables					
BARELAND	0.00	976.00	0.00	59.33	17.17
BUILTUP	0.00	3517.00	0.00	712.89	279.15
CROPLAND	0.00	3222.00	0.00	349.18	115.67
GRASSLAND	0.00	2493.00	0.00	276.04	118.00
TREECOVER	0.00	3221.00	0.00	553.68	248.23
WATER	0.00	3529.00	0.00	543.16	179.56
SHRUB	0.00	129.00	0.00	3.71	0.44
WETLAND	0.00	468.00	0.00	9.88	1.05
MANGROVES	0.00	3529.00	0.00	716.86	207.10
POP	5.99	82298.98	916.25	11469.79	5089.11
ROAD_DEN_1km	0.01	45.63	8.1	8.93	10.87
ROAD_LEN_1km (m)	20.43	67447.59	11747.63	13684.29	16363.61
PRIM_ROAD_LEN_1km (m)	121.48	13781.61	2507.11	2157.25	3041.25
NEARDIST (m)	0.01	6833.91	86.95	1168.39	624.78
NDVI	-192.56	8317.75	4950.99	1749.84	4785.33