Supplementary Materials

<div align="center">Table S1. Assumptions for spatially represented sectors in the four alternative scenarios.</div>

Scenarios			Environment			Services			Agriculture		Housing			Conditioned Land	Tourism	Industry
			UVa[1]	UVb[2]	UVg[3]	RR[4]	RL[5]	Other[6]	NAa[7]	PPI[8]	Kourtine NBHD	Garsllouz NBHD	Informal Buildings			
A		Land	100	100	100	100	100	100	100	100	31	81	100	40	Preserved	Preserved
	Weights	Margin	80	80	80	80	80	80	80	80	20	51	25			
		Distance (m)	15	50	100	15	10	5	50	25	200	200	20			
B		Land	100	100	100	100	100	100	100	100	31	81	100	20	Preserved	Preserved
	Weights	Margin	20	10	20	20	30	40	30	30	20	51	10			
		Distance (m)	15	50	100	15	10	5	50	50	200	200	20			
C		Land	100	100	100	100	100	100	100	100	31	81	100	40	Preserved	Preserved
	Weights	Margin	20	10	30	25	35	45	35	35	20	51	15			
		Distance (m)	15	50	100	15	10	5	50	50	200	200	20			
D		Land	100	100	100	100	100	100	100	100	31	81	100	60	Preserved	Preserved
	Weights	Margin	90	90	90	90	90	90	90	90	20	51	30			
		Distance (m)	15	50	100	15	10	5	50	25	200	200	20			

[1] Zones Vertres Amenagees; [2] Zones Vertes Equipees; [3] Zones de Golf; [4] Roads Category I; [5] Roads Category II; [6] Roads Category III; [7] Zones Agricoles; [8] Terres irriguées

Table S2. Calibration results showing the model performance compared to similar studies through: five coefficients and the validation measure (Lee-Sallee) [21,22,26,31–33].

Cities	Diffusion	Breed	Spread	Slope	Road Gravity	Lee-Sallee	Source
Lisbon	16	57	50	25	30	0.35	[31]
Porto	20	20	40	45	20	0.58	[31]
Houston	-	-	-	-	-	0.51	[32]
Jimei	25	68	86	24	23	0.48	[33]
Mashhad	7	98	97	1	90	0.36	[22]
Dongguan	96	99	99	1	99	0.48	[21]
Monastir	1	1	73	25	34	0.61	[26]

Table S3. Information on the WorldView-3 data used to derive the Digital Terrain Model.

Year	Satellite	Scene	Sensor	Horizontal Accuracy	Vertical Accuracy
2017	WorldView-3	17MAR05102832 and 17MAR05102842	Panchromatic (Stereo-Pair)	3.5 m (CE90)	2 m
2017	WorldView-3	17MAR05102743 and 17MAR05102753	Panchromatic (Stereo-Pair)	3.5 m (CE90)	2 m

Table S4. Information on the satellite data used for extracting the urban land cover.

Year	Satellite	Scene	Sensor
1975	Landsat 2	LM22050351975180AAA06	Landsat Thematic Mapper (TM)
1981	Landsat 3	LM32050351981157AAA03	Landsat Thematic Mapper (TM)
1984	Landsat 5	LM51910351984193AAA03	Landsat Thematic Mapper (TM)
1986	Landsat 5	LT05_L1TP_191035_19860207_20170218_01_T1	Landsat Thematic Mapper (TM)
1990	Landsat 5	LT05_L1TP_191035_19901117_20170129_01_T1	Landsat Thematic Mapper (TM)
1992	Landsat 4	LT04_L1TP_191035_19920522_20170124_01_T1	Landsat Thematic Mapper (TM)
1999	Landsat 7	LE07_L1TP_191035_19990814_20170217_01_T1	Enhanced Thematic Mapper Plus (ETM+)
2002	Landsat 7	LE07_L1TP_191035_20020907_20170128_01_T1	Enhanced Thematic Mapper Plus (ETM+)
2008	Landsat 7	LE07_L1TP_191035_20080315_20161230_01_T1	Enhanced Thematic Mapper Plus (ETM+)
2011	Landsat 5	LT51910352011171MPS00	Operational Land Imager (OLI)
2014	Landsat 8	LC08_L1TP_191035_20141205_20170416_01_T1	Operational Land Imager (OLI)
2017	Landsat 8	LC08_L1TP_191035_20130711_20170503_01_T1	Operational Land Imager (OLI)