Supporting Information

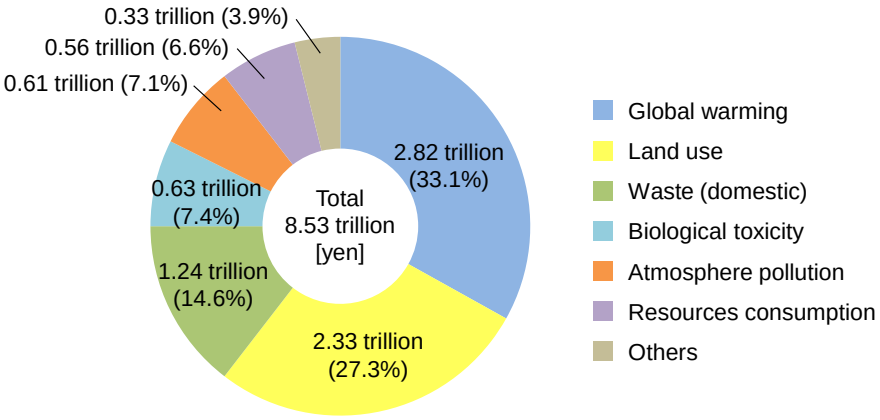

Figure SI 1. Total damage amounts for Japan by impact category (in Japanese yen)

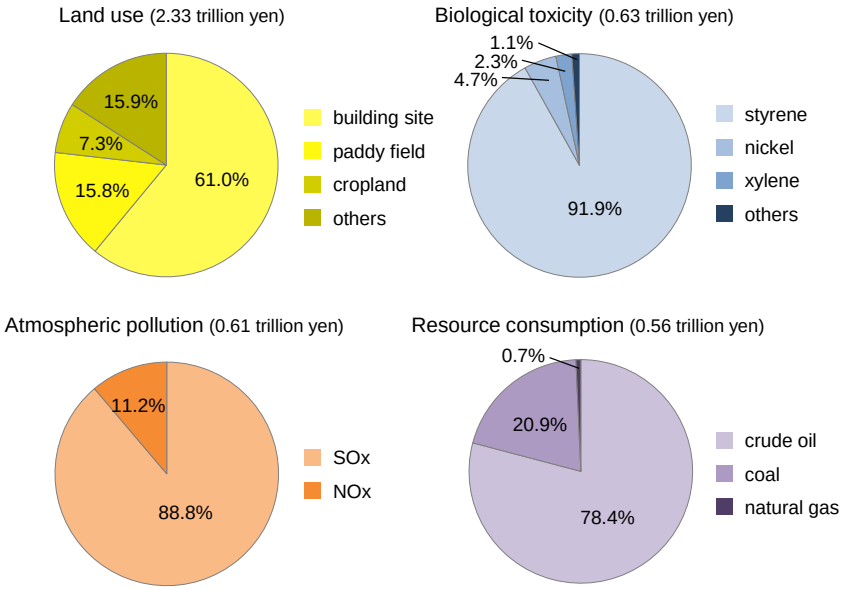

Figure SI 2. Breakdowns of inventory data for total damage amount by each impact category (in Japanese yen)

Table SI 1. Statistical value of damage amounts for municipalities (in Japanese yen)

Impact category	Damage amount per area for municipalities			Damage amount per capita for municipalities		
	Average [yen/km^2]	Standard deviation [yen/km^2]	Variation coefficient [-]	Average [yen/capita]	Standard deviation [yen/capita]	Variation coefficient [-]
Ozone layer destruction	1.41×10^{5}	3.92×10^{6}	27.91	9.24×10^{1}	2.29×10^{3}	24.78
Photochemical ozone	2.29×10^{5}	1.90×10^{6}	8.28	3.19×10^{2}	2.91×10^{3}	9.12
Human toxicity	4.29×10^{5}	4.68×10^{6}	10.91	2.90×10^{2}	2.52×10^{3}	8.70
Biological toxicity	6.75×10^{6}	4.01×10^{7}	5.94	6.08×10^{3}	5.72×10^{4}	9.41
Eutrophication	$1.51\times10\text{-}^{1}$	3.21×10^{0}	21.23	$2.19\times10\text{-}^{4}$	5.45×10^{-3}	24.81
Global warming	2.07×10^{7}	5.37×10^{7}	2.59	2.57×10^{4}	3.41×10^{4}	1.33
Land use	1.45×10^{7}	1.46×10^{7}	1.01	4.67×10^{4}	5.87×10^{4}	1.26
Resource consumption	3.91×10^{6}	1.12×10^{7}	2.86	4.11×10^{3}	1.12×10^{4}	2.72
Acidification	4.31×10^{5}	9.84×10^{5}	2.28	7.51×10^{2}	7.83×10^{2}	1.04
Atmospheric pollution	6.59×10^{6}	2.24×10^{7}	3.40	5.29×10^{3}	7.09×10^{3}	1.34
Domestic waste	7.82×10^{6}	1.54×10^{7}	1.97	9.61×10^{3}	3.50×10^{3}	0.36
Road traffic noise	1.19×10^{6}	1.71×10^{6}	1.44	3.90×10^{3}	4.29×10^{3}	1.10
Total	7.42×10^{7}	1.79×10^{8}	2.41	1.02×10^{5}	2.14×10^{5}	2.10

Number of samples: 1741

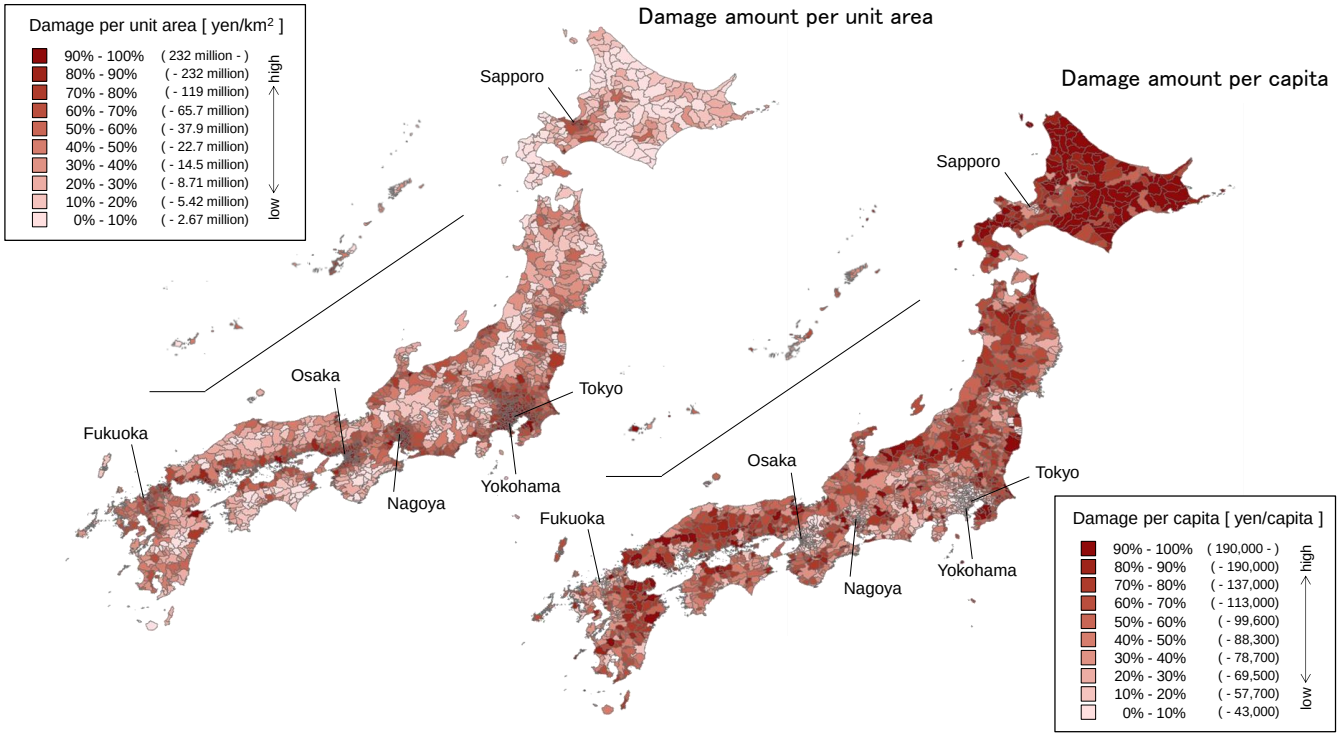

Figure SI 3. Assessment results for total damage amount by Japanese municipalities nationwide (in Japanese yen) (left map, damage amount per unit area; right map, damage amount per capita)

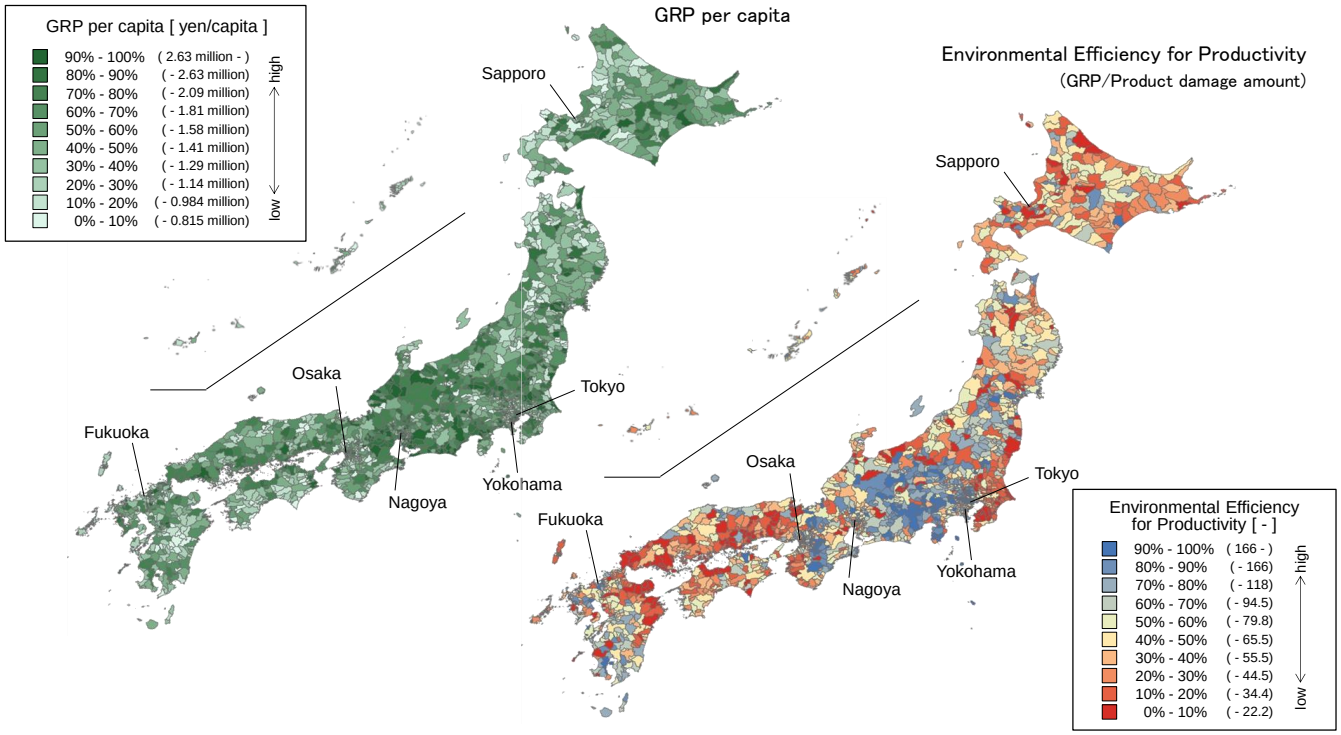

Figure SI 4. GRP per capita and environmental efficiency for productivity by Japanese municipalities nationwide (in Japanese yen) (left map, GRP per capita; right map, environmental efficiency for productivity)

Table SI 2. Statistical values of assessment results for 21 major municipalities in Japan (in Japanese yen)

Municipality	GRP per capita [yen/capita]		Production damage amount per capita [yen/capita]		Environmental Efficiency for Productivity [-]	
Sapporo	2.00×10^{6}	(78.8%)	2.98×10^{4}	(65.6%)	67.2	(53.1%)
Sendai	2.96×10^{6}	(94.8%)	2.07×10^{4}	(47.8%)	143.1	(89.1%)
Saitama	2.16×10^{6}	(83.8%)	6.60×10^{3}	(4.8%)	327.0	(99.3%)
Chiba	2.39×10^{6}	(89.1%)	5.83×10^{4}	(84.9%)	41.1	(27.4%)
Tokyo (special ward)	5.88×10^{6}	(99.1%)	1.65×10^{4}	(38.5%)	355.0	(99.6%)
Yokohama	2.14×10^{6}	(83.2%)	2.45×10^{4}	(56.9%)	87.3	(68.0%)
Kawasaki	1.89×10^{6}	(75.0%)	4.86×10^{4}	(80.5%)	38.9	(25.2%)
Sagamihara	1.52×10^{6}	(57.2%)	1.55×10^{4}	(34.3%)	98.0	(74.7%)
Niigata	2.07×10^{6}	(81.2%)	2.29×10^{4}	(53.3%)	90.5	(70.4%)
Shizuoka	2.49×10^{6}	(90.4%)	1.16×10^{4}	(21.9%)	214.8	(96.6%)
Hamamatsu	2.32×10^{6}	(87.4%)	1.27×10^{4}	(25.8%)	182.2	(94.1%)
Nagoya	3.58×10^{6}	(97.0%)	3.77×10^{4}	(73.5%)	95.0	(72.8%)
Kyoto	2.22×10^{6}	(85.5%)	2.95×10^{4}	(65.3%)	75.3	(59.0%)
Osaka	5.14×10^{6}	(98.7%)	5.63×10^{4}	(84.0%)	91.4	(71.0%)
Sakai	1.80×10^{6}	(71.4%)	2.99×10^{4}	(65.7%)	60.4	(45.5%)
Kobe	2.39×10^{6}	(89.1%)	2.17×10^{4}	(49.9%)	110.6	(80.7%)
Okayama	2.17×10^{6}	(83.9%)	3.38×10^{4}	(70.0%)	64.0	(49.3%)
Hiroshima	2.52×10^{6}	(90.9%)	3.48×10^{4}	(71.2%)	72.4	(57.0%)
Kitakyushu	2.03×10^{6}	(79.5%)	4.93×10^{4}	(80.9%)	41.1	(27.4%)
Fukuoka	2.99×10^{6}	(94.9%)	9.45×10^{3}	(12.8%)	316.9	(99.2%)
Kumamoto	1.75×10^{6}	(68.9%)	2.11×10^{4}	(48.6%)	82.9	(64.9%)

* Cumulative relative frequency based on all municipalities is shown in parentheses beside each value

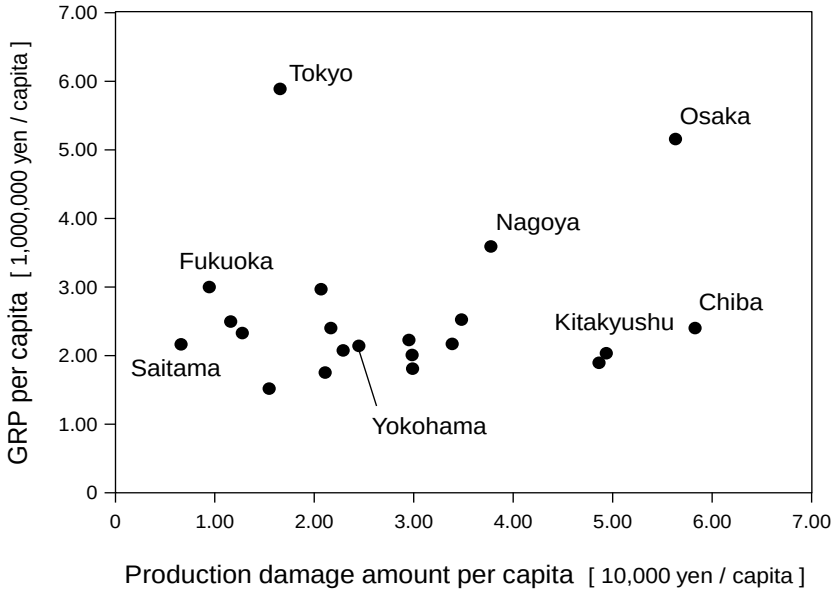

Figure SI 5. A graph showing assessment results for 21 major municipalities in Japan (in Japanese yen)