"Making the Case for Cities and STI"

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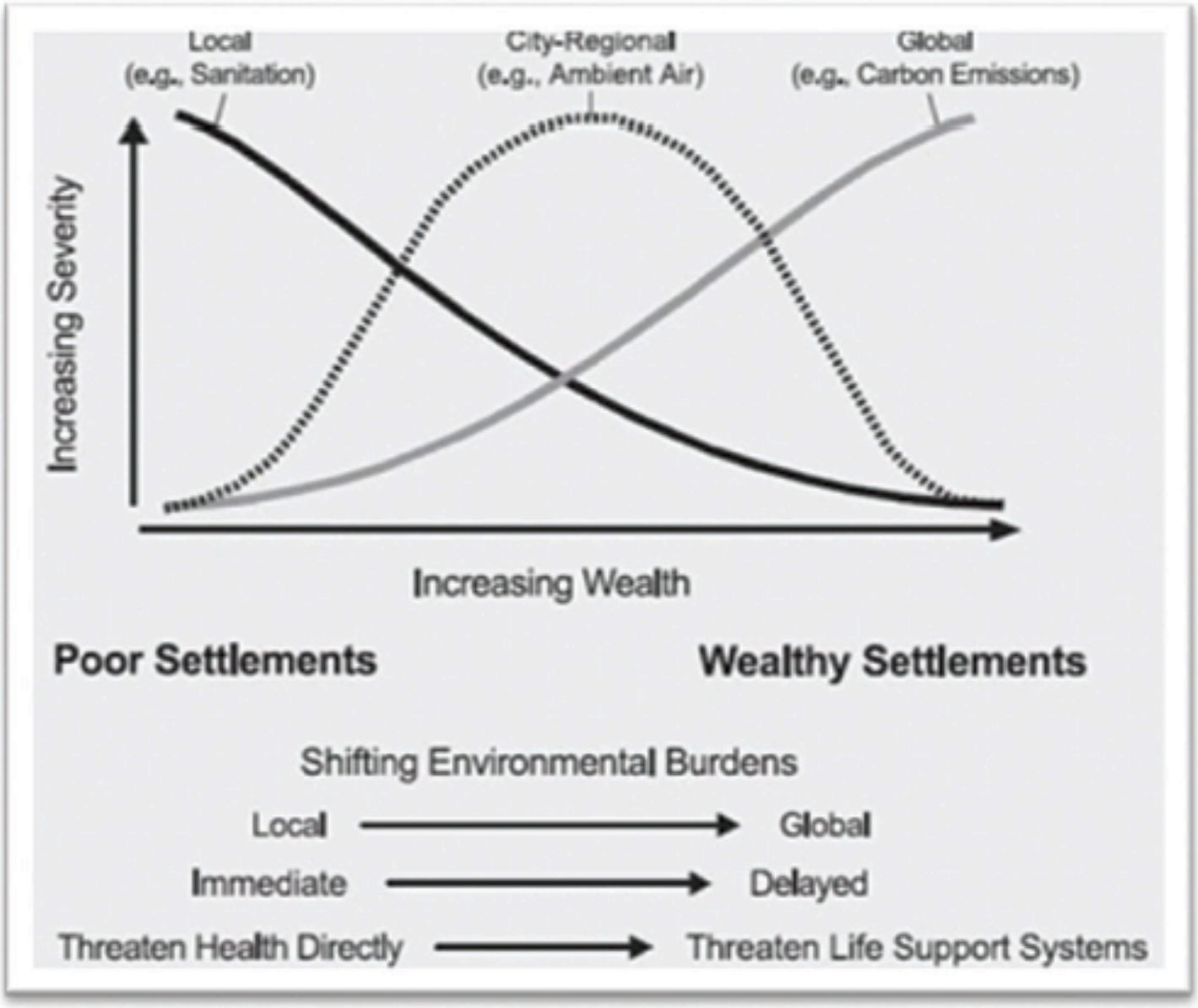

Source: McGranahan et al. 2005, Box 27.3, p. 807

Table 2: Urban-Ecological Problems at Three Spatial Scales

	Local scale	Regional scale	Global scale
Main problem	Unhealthy/unpleasant conditions	Deterioration of adjoining ecosystems	Excessive environmental footprints
Locus of problem	Low-income neighborhoods, districts, and cities	Large cities, often industrial and mid-income	Affluent cities, industrial cities
Indicators of problem	Unsafe water, poor sanitation, dirty fuels, insufficient land for housing	High air pollution, groundwater degradation, river pollution, resource plundering, land use pressure	Greenhouse gas emissions, importation of resource and waste-intensive goods
Drivers of problem	Rapid population growth, poverty & inequality, development that ignores ecology of disease	Industrialization, motorization, development that ignores regional ecosystems	Affluence, high waste generation, development that ignores global ecosystems
Negative effects	Infectious diseases, low human welfare/dignity	Loss of ecosystem services, chronic diseases, declining agro-ecosystem productivity	Global effects: climate change, biodiversity loss, depletion of scarce natural resources
Example of historic responses	Sanitation reform movement	Air and water pollution controls	Sustainable cities movement?

Source: adapted from McGranahan et al. 2005, Table 27.9, p. 806.

I. Background

II. Making the Case for Cities and STI

   A. STI in the city

   B. Design

   C. Intersectorality

   D. The innovation machine

   E. Never-ending urbanization

   F. Intercity learning

Urban transport mode	Energy consumed (kJ per passenger-km)	Relative energy use (energy used relative to bicycling)
SUV with 1 passenger*	5,950	99.2 (times bicycling)
Mid-sized car with 1 passenger**	4,200	70
Compact car with 1 passenger***	3,150	52.5
Compact car with 3 passengers***	1,100	18.3
Diesel bus (50% capacity)	800	13.3
Electric subway (40% capacity)	280	4.7
Walking	150	2.5
Bicycling	60	--

Source: adapted from Gagnon 2006, Table 3, p. 6.
* At 17 liters gasoline per 100 km traveled. ** At 12 liters gasoline per 100 km traveled.
*** At 9 liters gasoline per 100 km traveled.

Source: "The Living Skyscraper," by Blake Kurasek. http://urbantimes.co/2012/03/interview-with-the-father-of-vertical-farming-%E2%80%93-dr-dickson-despommier/

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