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SUSTAINABLE  
DEVELOPMENT  
INSIGHTS

# The Role of Cities in Sustainable Development

## David Satterthwaite

Cities do not enjoy good reputations for development or for ecological sustainability. There are many cities in Africa where residents have an average life expectancy of around 40 years, i.e. half what they are in healthy, well-governed cities. These are actually

is common for infant and child mortality rates to be 10 to 20 times what they are in well-governed cities.

Even many successful cities in Asia and Africa have a third of their population in such informal settlements. Most of

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little different from life expectancies in many industrial cities in Europe 160 years ago before key reforms to local governments and to water supplies, sanitation, health care, housing access, minimum wages and occupational health. In cities in low- and middle-income nations, it is common for a third to half the population to live in informal settlements lacking adequate provision for water, sanitation, health care, schools, the rule of law and often even the right to vote (as this requires a legal address that their homes in informal settlements lack). In such settlements, it

the investments that underpin the rapid expansion in the global economy over the last 60 years have been in cities — yet the number of people living there in poverty in informal settlements has grown rapidly. There are indicators that seem to show that urban poverty is falling in many nations, but this is usually because the poverty lines take no account of living conditions and are set too low in relation to the cost of non-food needs such as housing rent, transport, water and sanitation, health care and keeping children at school. Set a poverty line unrealistically low and

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poverty seems to disappear, as in the application of the dollar a day poverty line that suggests there is almost no urban poverty in China, the Middle East and North Africa.

Meanwhile, there are many wealthy cities with greenhouse gas emissions per person that are five to 10 times the “fair-share” level, the global average that needs to be

resource consumption that is much lower than the norm in most cities today. This is achieved not with an over-extended optimism on what new technologies can bring but through a wider application of what already has been shown to work by the more innovative and accountable city and municipal governments and their partnerships with civil society groups.

For instance, many development assistance agencies high-jacked the term to refer to the need to make their projects last — so the roads, bridges, power-stations and irrigation schemes they funded did not fall into disuse. When used in this way, it brings no consideration of environmental issues and has no direct connection with meeting needs.

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achieved to halt dangerous climate change. Wealthy cities also have levels of resource use that would be unsustainable if extended to a larger section of the world’s urban population. So cities seem to be contributing to growing failures in development and unsustainable levels of resource use and greenhouse gas emissions in a world with an ever increasing proportion of the population living and working in cities.

This brief will argue that with the right innovation and incentives in place, cities can allow high living standards to be combined with

### **What is Sustainable Development Meant to Sustain?**

Since the term “sustainable development” came into use in the 1970s, it has been used to mean many different things — as have terms such as sustainable cities and sustainable urbanization. Although the original use of the term sustainable development was intended to place a higher priority on directly meeting human needs while considering development’s environmental and ecological implications, this is not evident in how the term is often used.

But if we go back to the term’s original meaning, when applied to cities, it comes down to whether two goals can go together. Whether cities can be healthy, enjoyable, resilient places to live and work (“meeting the needs of the present...”) and ensure that the draw of their populations’ consumption and enterprises’ production on local, regional and global resources and sinks is not disproportionate. (“...without compromising the ability of future generations to meet their own needs”).

Of course, how the term “disproportionate” gets interpreted has long been debated. But at least for global warming, it means action now to stop and then rapidly reduce greenhouse gas emissions globally. Again, there is debate about how responsibility for this should be allocated. But however responsibilities are allocated, clearly how cities perform on the two above goals as places to live and as centres of production and consumption has great relevance. So the rest of this brief considers where cities are or could be centres of “good” development and environmental management and centres with low ecological footprints (which also means centres of low-carbon lifestyles).

Of course, these must be considered



together. Many cities in low-income nations have very small ecological footprints because there is little or no industry and consumption levels are so low (including a high proportion of the population that do not get enough to eat). Many cities in high-income nations are among the healthiest and safest places on the planet – but with ecological footprints that are vastly disproportionate. The issue is whether these attributes (a small ecological footprint and high quality of life) can be combined. This issue has even greater relevance in a world where the proportion of the population living and working in cities and towns is growing.

## Cities' Environmental and Developmental Advantages

High density is often seen as one of the problems in cities – but it depends on how it is

housing in suburban or rural areas. There are also examples of new high-density, low-rise developments that cut energy and water-use, carbon

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dioxide emissions and the carbon footprints of materials used for its construction – as in the Beddington Zero Energy Development in South London.

Cities concentrate people, enterprises, motor vehicles and their wastes. While this can make cities very dangerous places to live and work, this same concentration brings many potential advantages for ensuring universal provision of infrastructure and services, keeping down waste levels, re-using waste streams and de-linking a high quality

services. High densities and large population concentrations usually lower the costs per household and per enterprise for the provision of

infrastructure (all-weather roads and paths, piped water, sewers, drains, electricity) and services (including day care, all forms of schools and health care, emergency services and access to the rule of law and to government). The concentration of industries reduces the unit cost of making regular checks on plant and equipment safety, as well as on occupational health and safety, pollution control and the management of hazardous wastes.

There are also economies of scale or proximity for reducing risks of

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accommodated. Some of the world's most expensive and desirable housing is four to six storey terraces in European cities. These have high densities in terms of persons per hectare – higher than most informal settlements with one-storey buildings but with much more space per person. Energy use per dwelling can be much lower than in detached

of life from high levels of resource consumption (and greenhouse gas emissions). That cities have economies of scale, proximity and agglomeration that bring substantial benefits for most businesses is well known; indeed, that is why the world is urbanizing. But less discussed are the economies of scale and proximity for public goods and

disasters, and generally a greater capacity among city dwellers to pay for these, or at least to contribute towards the costs. Disasters are much less frequent in well-governed cities and when disasters occur in such cities, fatalities are usually much lower than in poorly governed and less wealthy cities. For instance, fatalities from cyclones are far higher



in low- and middle-income nations than in high-income nations, even as high-income nations such as Japan and the US have high exposure to cyclones and even as there are exceptions, such as Hurricane Katrina's devastating impact on New Orleans.

Cities also have many potential advantages for reducing resource use and waste. The close proximity of so many water consumers gives greater scope for recycling or directly re-using wastewaters. In regard to transport, cities have great potential for limiting the use of motor vehicles (and the associated use of fossil fuels and the generation of air pollution and of greenhouse gases). This might sound contradictory, as most large cities have problems with congestion and motor-vehicle-generated air pollution. But cities should enable many more journeys to be made by walking or bicycling, and they make a greater use of public transport and a high-quality service more feasible.

of high-quality public transport can significantly reduce private automobile ownership and use. The concentration of people in cities can increase their ability to be fully involved in electing governments at the local and city level, and to take an active part in decisions and actions within their own district or neighbourhood.

Cities also concentrate populations in ways that usually reduce the use of land. Valuable agricultural land might be lost to urban expansion, but in most nations the area taken up by cities and towns is less than one per cent of their total surface area and in and around many urban centres, there is a thriving urban agriculture. Cities are often portrayed as somehow being "bad" for rural areas but city dwellers' demand for agricultural produce is a large part of the underpinning for farmers' incomes. In addition, most farmers (and their families) depend on markets, goods and services

with the population and civil society groups within their boundaries — making and implementing appropriate choices. There are many examples of innovation and better practice from cities in low- and middle-income nations where the need for improved local governance is most evident. Many come from more competent and democratic urban governments in nations where decentralization programmes have given more power and resources to such governments — as in, for instance, Brazil and Colombia. Many others come from innovative local civil-society groups — usually a combination of grassroots organizations and local non-governmental organizations (NGOs) — and increasingly from partnerships that these groups form with local governments, which in turn contributes to more accountable and democratic local governments.

It is common to see urban problems in the Global South blamed on rapid city growth. But there are cities that have grown rapidly in the last 50 years that have avoided most of the problems noted above. For instance, Porto Alegre in Brazil has grown very rapidly in recent decades, from under half a million inhabitants in 1950 to over 3.5 million in its metropolitan area today. It has a high-quality living environment and innovative environmental policies. Its inhabitants enjoy an average life expectancy and indicators of environmental quality that are comparable to cities in Western Europe and North America — and also a city government that during the 1990s was well-known for its commitment to supporting citizen participation, greater government accountability and good public health and environmental

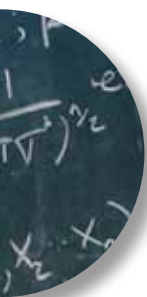
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Many prosperous European cities, with among the world's highest quality of life, have one-fifth of the gasoline use per person of the US's less compact, more car-dependent cities. Many European cities have high-density centres where walking and bicycling are preferred by much of the population, especially where good provision is made for pedestrians and bicyclists (including public transport that can accommodate bicycles). Integrated transport planning and the provision

provided by urban enterprises and institutions and many benefit from remittances from urban-based family members.

### **The Importance of Local Governance**

None of these potential advantages happen automatically. They depend on governance structures — local governments and their relations





management. Porto Alegre also integrated a wide-ranging environmental management policy into its participatory budgeting but rooted it in a comprehensive regional environmental analysis.

and housing loans direct to savings groups formed by low-income inhabitants in informal settlements. It is these savings groups who plan and carry out improvements to their housing or develop new housing,

actors and national agencies on city-wide upgrading programmes.

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Another innovation worth highlighting is sustained city programmes that tackle the backlog in infrastructure and services in the poorer and worst-served areas of cities and that support ways in which lower-income groups can get better-quality housing. This comes under many names, including “regeneration”, “upgrading” and “community development”. Many cities where the backlog was largest have had major upgrading programmes to improve provision for water, sanitation, drainage and garbage collection in inner-city tenement districts and informal settlements – often with programmes to improve schools and health care too. Initially, these were seen as one-off projects in “targeted” neighbourhoods; now there is a recognition that city and municipal governments need the capacity and competence to support continuous upgrading programmes throughout the city, working in partnership with their inhabitants.

This recognition can extend to central government as with the Community Organizations Development Institute (CODI) set up by the Thai government that channels infrastructure subsidies

sort out legal tenure and work with local governments or utilities to improve infrastructure and services. From 2003 to June 2009, within the *Baan Mankong* (secure housing) programme, CODI approved more than 700 projects in over 200 urban centres covering 80,200 households, and it plans a considerable expansion in the programme within the next few years. This has

It is also within cities that national organizations of slum and shack dwellers are forming and putting forward new ways to address urban poverty. There are national federations of slum/shack dwellers in more than 20 nations. They all have savings groups as their foundation and most savers and most savings managers are women. They liaise with each other and support each other through their own small umbrella organization, Slum/Shack Dwellers International. All these federations are actively engaged in addressing the needs of their members – for instance in upgrading, in providing or improving services or in negotiating for land on which they can build. Over 150,000 households received land or land tenure and several million low-income people were provided better



particular significance in three aspects: the scale; the extent of community-involvement; and the extent to which it seeks to institutionalize community-driven solutions within local governments. CODI also provides support to networks of community organizations formed by the urban poor, to allow them to work with municipal authorities, other local

access to services – including water and sanitation – through the efforts of these federations.

What is unusual about these federations is that they recognized that making demands on governments that governments could not fulfil did not get them very far. Many had tried the conventional



approaches of protest, strikes, barricades and marches but this did not work very well. They knew that they had to change their relations with politicians and civil servants. Perhaps most importantly, they needed to show politicians and civil servants that they were not “the problem” and could generate solutions. So these federations learned to take action themselves. Then they offer local governments partnerships — and where local governments work with them, the scale of what can be achieved increases greatly. These federations have also demonstrated a capacity to undertake the enumerations and mapping of informal settlements necessary for planning upgrading.

This reminds us that poverty reduction requires local change. Much of what the poor require — schools, healthcare, water and sanitation, land, social safety nets, rule of law, getting onto voter registers — must be obtained from local government agencies or local NGOs. Many barriers to poverty reduction are local: local power structures, land-owning patterns, and anti-poor politicians, bureaucracies and regulations within local governments.

### Cities’ Contribution to Global Warming

It is not cities (or small urban centres or rural areas) that are responsible for human-induced greenhouse gas emissions but particular activities by particular people, enterprises and institutions (a proportion of which are in cities). An inventory of these activities can allocate their emissions

between cities, other urban centres too small to be considered cities and rural areas but this is not a simple exercise.

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For instance, places with large coal-fired power stations would have very high greenhouse gas emissions but most of the electricity they generate may be used elsewhere. This is why greenhouse gas emission inventories generally assign cities the emissions generated in providing the electricity

greenhouse gas emissions), very large differentials become evident between the highest and the lowest consuming persons or households. The world’s

richest high-consumption individuals are likely to be contributing hundreds of thousands of times more to global warming than many of the poorest individuals (although in part this is because the poorest individual’s contribution can be close to zero). Perhaps as many as 1.2 billion rural



consumed within their boundaries, even when the electricity is produced elsewhere. This helps explain why some cities have surprisingly low per capita emissions — for instance cities supplied with electricity from hydropower.

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and urban dwellers worldwide have such low consumption levels that they contribute almost nothing to climate change. Their use of fossil fuels is very low (most use woodfuel, charcoal or dung for fuels) and they have no access to electricity. Most of these 1.2 billion “very low-carbon” people will use transport that produces no carbon dioxide emissions (walking, bicycling) or low emissions (buses, mini-buses and trains, mostly used to more than full capacity).

## Desirable Cities with Low Ecological Footprints

There are many low-consumption attributes of a high quality of life that are concentrated in cities — theatre, music, museums, libraries, the visual arts, dance, festivals, the enjoyment of historic buildings and districts, diverse choices for eating (especially for local produce) or simply the enjoyment of living in diverse and vibrant places and living close to friends. These all have importance if higher-income city dwellers are to achieve the very large cuts in their lifestyle’s contribution to greenhouse gas emissions that are needed to avoid dangerous climate change. Cities have long been places of social, economic and political innovation; indeed, in high-income nations, city politicians often demonstrate a greater commitment to greenhouse gas reduction than national politicians. Achieving the

In Latin America, Africa and Asia, many cities may have low greenhouse gas emissions per person but within their urban populations,

on that same competence, capacity and willingness of local governments to work with those most at risk in improving living conditions and



hundreds of millions of people are at risk from the increased frequency and/or intensity of floods, storms and heat waves and water supply constraints that climate change is bringing or likely to bring. It is generally low-income groups that are most at risk as they live in informal settlements on sites at risk

upgrading informal settlements. For instance, it will not happen if city governments still see all those living in informal settlements as the problem rather than as the result of the government’s own failures — especially the failure to ensure there is sufficient legal land on which housing can be developed. Or if the local government fails to see just how much the people and enterprises in informal settlements are central to the city’s success (although their contributions would be greatly enhanced if they got a better deal from local government). It will not happen if adaptation to climate change is seen as an environmental issue — rather than as central to local development and to local disaster risk reduction. And it will not happen if international aid agencies show little interest in urban areas (as is currently the case). It needs a sea-change in the preparedness and capacity of most aid agencies to work in urban areas with urban poor organizations and local authorities. They too need to see and understand the potential of cities to contribute to sustainable development. ●

*“Addressing these issues depends on that same competence, capacity and willingness of local governments to work with those most at risk in improving living conditions and upgrading informal settlements.”*

needed reduction in global emissions depends on seeing this potential of cities to combine a high quality of life with low greenhouse gas emissions — and acting on it.

Seeing cities as “the problem” also misses the extent to which well-planned and governed cities can delink high living standards from high greenhouse gas emissions. But how a city is planned, managed and governed also has important implications for how it will cope with the impacts of climate change.

of flooding or landslides, lacking the drains and other needed protective infrastructure. Discussions of climate change priorities often forget this. Such discussions also focus on the risks that climate change is likely to bring, forgetting the risks that so much of the urban population have long faced from the inadequacies in provision for infrastructure, services and safe land sites for new housing.

These risks are not easily addressed. Addressing these issues depends



## Further Reading

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For more details of the work of the slum/shack dweller federations see:

<http://www.sdinet.org/> and

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On density, poverty reduction and city development see:

the remarkable work of Arif Hasan and his colleagues at [www.urbandensity.org](http://www.urbandensity.org).

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All papers from *Environment and Urbanization* can be viewed and downloaded from <http://eau.sagepub.com/> All but the issues from the last two years are accessible at no charge. Both issues in 2006 (Vol 18) were on ecological urbanization.

## Sustainable Development Knowledge Partnership (SDKP)

brings together governments, individuals, institutions, and networks engaged in the production and dissemination of knowledge on sustainable development, including research institutions and sustainable development expert networks. Its aim is to organize knowledge on sustainable development and make it available to policy makers and practitioners. The Partnership is supported by the Division for Sustainable Development of the United Nations. *Sustainable Development Insights* is a contribution of The Frederick S. Pardee Center for the Study of the Longer-Range Future at Boston University to the SDKP.

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convenes and conducts interdisciplinary, policy-relevant, and future-oriented research that can contribute to long-term improvements in the human condition. Through its programs of research, publications and events, the Center seeks to identify, anticipate, and enhance the long-term potential for human progress, in all its various dimensions.

## Sustainable Development Insights

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