Just Cities

The World's Problems Need Urban Solutions

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■ Cities are central to the process of economic and social growth and innovation. But it is the type of urbanisation rather than the city per se that will provide decisive sustainable development.

■ However, the term »sustainable urban development« is not clearly defined. Hence, the most obvious distinction concerning sustainable city development is the green transformation of existing (mega)cities in comparison to new eco-city projects – with effects on its social and environmental development, especially in emerging countries.

■ Despite the uncertainties surrounding these global urban challenges, the chances for progress that urbanisation brings with it are numerous: if the future generation of city planners are able to manage the upcoming mass migration in a socially and politically acceptable way, this change has the potential to be the motor of a new cultural and economic boom.

Dialogueon
Globalization

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FES Countdown Rio+20 – in Search of New Development Models

In June 2012, the Rio+20 summit will take place – twenty years after 1992's Earth summit in Rio de Janeiro. The latter was long considered a milestone: for the first time, environmental and development questions were discussed jointly within a broader international framework and the term »sustainable development« was established, taking into account the three dimensions of the environment, the economy and social sustainability. Two decades later, disenchantment has spread: rapid economic growth based on finite and carbon intensive resources has led to rising energy prices, the depletion of resources and heavy damage to the environment and climate. Furthermore, the environmental crisis has converged with an international financial and economic crisis as well as a structural crisis with regard to justice and, in some regions, a running-down of the prevailing (export-oriented) growth model.

Consequently, in recent months, a debate on sustainable economic and social models appears to have got under way across a broad spectrum. The Friedrich-Ebert-Stiftung (FES) is supporting the search for new development models in the run-up to Rio+20 with a conference and publication series on sustainable models for development, backed by its Working Group on Global Issues. Founded in 2008, it involves all the FES country offices at sites which play a key role in the analysis of global issues. In addition to the liaison offices attached to EU and UN institutions in Brussels, Geneva and New York, the group also includes the FES offices in Brazil, China, Egypt, India, Indonesia, Mexico, Russia, South Africa, South Korea and the USA. The Working Group has based its approach on the assumption that global challenges can be solved only within the framework of an intensified dialogue between industrialised and newly emerging countries and provides a structure with which to work on global challenges under changing constellations over the medium and long terms. In 2011 and 2012, the Working Group will support the Rio+20 process with a series of international conferences and publications on growth and development models. The aim is to deepen the exchange between emerging and industrial countries on key aspects of development models and to identify common approaches for appropriate governance structures in the area of sustainable development.

1. Problem and Solution in One – The Fate of Modern Cities

We are living in an urban age: in this century alone, the world's urban population has grown from 220 million to almost three billion. Another three billion will likely have been added by 2050 – continuing a trend that has been accelerating since the late 1980s. UN forecasts show that in 2050, more than 70 per cent of the world's population will be living in cities.[1] Today, one out of two humans already live in an urban environment. The rapid population growth has been accompanied by an increase in the number and size of cities and has created the phenomenon of »megacities«: urban areas with a population of 10 million or more. There are currently 19 megacities in the world – most of the new ones are in developing countries.[2] The number is expected to rise to 26 in 2025 and developing countries in Asia will host 12 of them.[3] Hence, over half of all urban growth will take place in China and India, which are emerging as centres of economic growth – as the mainspring of urbanisation is certainly economic.

According to the World Bank, 75 per cent of global economic production takes place in cities; in developing countries, the corresponding share is rapidly increasing. In many developing countries, the urban GDP-share has already surpassed 60 per cent. Therefore, the urban economic competitiveness is a critical factor in attracting further foreign investments and human capital, which again is necessary to push the improvement of social and physical infrastructure. Against the backdrop of this economic dimension, successful cities also face a temporal dimension: they must continue to evolve constantly in order to remain relevant and globally competitive. In countries like China and India, this evolvement takes place almost naturally due to massive construction work, for instance roads, harbours, and real estate. It is projected that the total built-up urban surface area in developing countries will triple between 2000 and 2030: from 200,000 to 600,000 square kilometres. This means that the additional 400,000 square kilometres being constructed during the 30-year period will equal the total urban surface area worldwide as of the year 2000.[4]

Thus, the overall urban scenario leads to unprecedented challenges, most important of which are: dealing with (informal) population growth; providing access to resources such as clean water and electricity, as well as housing, social infrastructure, and sanitation; enforcing stricter urban pollution control; and introducing new, less oil-intensive mobility concepts.

Nevertheless, cities all over the world are central to the process of economic and social growth and innovation. In their function as laboratories for observing political and economic dynamics at work and for testing new technical solutions and public policies in a dense and interconnected environment, cities become important change agents. It is therefore the type of urbanisation rather than the city per se that will determine the course of sustainable development.[5] But what actually defines a functional, »sustainable« city?

2. Sustainable City Development: Choice or Necessity?

The term »sustainability« is one of the most (mis-)used words of this century. Originally mentioned in the forestry discipline, the Club of Rome's study »Limits of Growth« (1972) was a prelude to the use of the word internationally. For the first time, the report considered cities in their global interconnectedness as comprehensive ecotopes, whose living conditions have vast impact on future generations. In a city context, the most widely known definition was stated by the Brundtland Commission (1987), which added a social and economic dimension to the original human-ecological understanding of sustainability. Later on, the Aarlborg Charta (1994) and the UN Habitat II Conference in Istanbul (1996) allotted municipalities a special responsibility on the path to sustainable urban development.[6] However, despite many other subsequent international standards and guidelines, including the Agenda 21 (Rio Declaration, 1992), the concept of urban sustainability remains quite nebulous.[7] Therefore, maybe the most obvious distinction concerning sustainable city development is the green transformation of existing (mega)cities, as case studies of New Mexico, Mumbai, or Stockholm show, in com-

1. United Nations Population Division, 2006.
2. World Bank Report, 2009.
3. UN Habitat, 2008.
4. World Bank, 2005.

5. TERI, 2009.
6. Oekom, Post Oil City, 2011.
7. TERI, 2009.

parison to new eco-city projects such as Ras Al Khaimah Eco City RAK (United Arab Emirates) or Dhonhgang (near Shanghai).[8] But will the latter vision – the planning of new cities from scratch – have the potential to be replicable and therefore serve as a realistic model for future city development?

Let us take an example from the desert: the ambitious Masdar City Project in Abu Dhabi. Co-engineered by German company Transsolar, Stuttgart, and designed by Foster & Partners, Masdar is supposed to be the first energy-autarkic and CO_2-emission-free city ever. Its policies include the banning of all pollutive factors, an 80 per cent reduction in the city's energy consumption, and a goal of 100 per cent renewable electricity generation. In addition, the 6-square-kilometre city is following the 10-point guideline compiled in the WWF One World Planet Living Sustainability Standards, which include, for example, environmentally friendly transport and the aim to be waste-free through consequent recycling of all used materials. Masdar City wants to offer 50,000 citizens a home after its inauguration in 2020. However, one may ask if the idea of building a city in an inhospitable desert state for an international clientele itself is not deeply unsustainable. In 2008, financial problems during the global crisis led to a halt of construction work – the project costing 22 billion US dollars was about to collapse. But even if Masdar City will become a new urban role model for sustainability, it would have only limited relevance to a world in which most people live from hand to mouth. For those people, sustainability has simply no immediate relevance; the struggle of surviving holds obvious priority.

But this social dimension – which includes poverty and deprivation, gender inequality, and social exclusion – is central to sustainable urban development at all levels and in human settlements of all sizes. Often it is the poor who suffer from the lack of infrastructure development during rapid urbanisation in developing cities. Currently, one in three city dwellers lives in urban slums with almost no water and sanitation, inadequate hygiene, and frequent lack of state protection. That is why more and more states are trying to reduce rural migration to the cities – 72 per cent of economically developing countries had set up similar programmes in 2009, compared to 44 per cent in 1976. Hence, it seems that the innova-

tive transformation of existing as well as rapidly growing cities is the key to sustainable urbanisation. Rapidly developing cities simply cannot replicate the urban growth model of the industrialised world, which is based on low energy prices and the distribution of resources from the hinterland.

This point leads to the global dimension of the discussion: it is the effects that urbanisation processes in cities like Mumbai, New Mexico, or Beijing have on the climate and on natural resources that deeply concern industrialised countries, too. The tremendous demands of emerging cities will impact global fuel, food, and steel prices and affect global CO_2 mitigation targets as well as international trade. For example, 1 per cent growth in urbanisation is estimated to lead to a 2.2 per cent increase in energy consumption. Considering the projected growth rate of 150 per cent between 1990 and 2025 – which, as discussed, will mainly take place in Asia – it should thus quadruple overall energy consumption. The resulting CO_2 emissions will be responsible for half of the changes affecting the planet's climate.[9]

According to the Stern Review on the Economics of Climate Change, the »business as usual« scenario could lead to a 5-10 per cent loss in global GDP; poor countries would experience a loss of more than 10 per cent in GDP. In total, this could lead to a reduction of between 5 and 20 per cent in per capita consumption.[10] On the other hand, the argument that emerging countries should slow down their economic development because of global emissions is unlikely to deter them. Actually, it will be the opposite: emerging countries have to grow rapidly for a number of years to reduce poverty and generate the resources needed to provide social and physical infrastructure for education, health service, clean water, sanitation, transport, and energy. Hence, developing new and adaptive solutions in an emerging urban context is absolutely necessary for sustaining the global »green deal«. At the same time, the success of implementation, for example through strict policies and municipal financing schemes, has to be a conscious choice advocated by all local urban stakeholders in order to create long-term impact. All this leaves decision-makers with huge challenges. But for countries like India and China, for example, the urban scenario

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8. Albert Speer & Partner, 2009.

9. S. Salat, 2009.

10. Stern, 2007.

also offers the unique opportunity for them to become pioneers: even though their cities are at the heart of the problem, they also contain the mechanisms to solve it. The revised question in the global urbanisation scenario could be: Can emerging cities set new sustainability standards?

Countries such as China and India are facing four major challenges at the same time: (1) immense population (growth), (2) vast industrialisation, (3) scarcity of resources, and (4) a bureaucracy that cannot follow the speed of transformation, especially when pushed by factors (1) and (2). This overall scenario puts pressure on citizens, politicians, and bureaucrats as well as businesses. On the other hand, the countries' growth scenarios create a set of new opportunities, because their speed of transformation enables innovation in a measurable timeframe. The result is that emerging countries function as laboratories for adaptations: in the private sector through entrepreneurship; in the public sector through new and innovate policy guidelines and implementation strategies. To ensure that these adaptations are successful, emerging countries have to join forces. The good news is that they do not have to start from scratch, as there are already good models out there. Let us start with a case study from the largest democracy in the world: India.

3. Sustainable City Development: The Reality Check

India is witnessing an urban transformation of an entirely novel scale and speed. The Ministry of Urban Development estimates the country's urban population to increase from 286 million in 2001 to 320 million in 2011 and 530 million in 2021. The urban centres are already under strain. Populations of new megacities such as Bangalore (currently 5.5 million) or Chennai (currently 4.7 million) will increase, and existing megacities such as Mumbai (19 million) and New Delhi (16.7 million) will triple in size by 2050. Furthermore, the urban economy has bypassed most of the country's 600,000 villages. Uncertainties in rural life compel the population to migrate to cities in search of a better livelihood. According to the National Sample Survey Organisation (2007), about 50 per cent of the farmers have thought about leaving agriculture if they were to find an alternate livelihood. Megacities of India can expect an in-

flow of climate refugees not only from the rural areas of India, but also from the neighbouring countries like Bangladesh, where the impacts of climate change will be more severe. According to the World Bank, 30 rural migrants will arrive in an Indian city every minute over the next 20 years. To tackle this challenge, India has to build 500 new cities. For Joan Cloas, Executive Director of UN HABITAT, it is clear that migration into cities is the most serious current political and economic development. At the same time, the consequences of urban pollution, stressed resources, and its effects on millions of dwellers is likely to become a significant negative factor of India's economic development. Thus, the second most populous country in the world will increase its CO_2 emissions to 7.3 billion tonnes annually by 2031, about five times the current emission rate of 1.5 billion tonnes (per capita).

So far, India still has a lower energy intensity than China or the United States. This is the result of the low-carbon character of the country's economy, which is weighted towards services and a relative low level of income, especially in the informal sector (it is estimated that only 9 per cent of workers in India hold official jobs and that 15 per cent of urban Indians live in informal slum settlements). But this scenario is about to change and the elements are already there: although less than a third of India is urbanised, its urban population is already larger than that of the United States.[11] India's urban areas already account for about 60 per cent of the overall energy consumption, but at the same time, the productivity of the urban sector contributes 60 per cent to India's GDP. The central government has advised the states to minimise subsidies and to place urban development plans and projects in a commercial format and to collect additional taxes to minimise the differences in cost of operation and income. Municipalities are focussing on tax-free bonds to provide money for infrastructure development. The government is also seeking private sector participation in providing reliable water supplies. Currently, the decision-makers are in the process of amending existing laws for increased transparency and accountability regarding the utilisation of public funds for the development of urban areas. The national climate change policy, released in 2008, does not provide strong implementation guidelines for the implementation of adaptation strategies for India's cities.

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11. TERI, 2009.

Therefore, international support is needed to tackle the challenges of a sustainable urban transformation. With regard to technology transfer, one of the forerunners is Japan. For instance, the Japan International Cooperation Agency is involved in drafting the Delhi Water Plan 2021, which is intended to improve the city's water supply system. But this is not the only cooperation: additionally, in November 2010, India and Japan unveiled a plan to launch 24 green cities along the Delhi-Mumbai Industrial Corridor. These green cities will have optimised energy supplies, a 24-hour potable water supply, bicycle and walking paths, and water and waste recycling systems. Preparatory work has begun on pilot projects in seven cities. Companies like Hitachi, Mitsubishi, and Toshiba are participating in the design and construction of eco-friendly towns. The reason is that Japan has a lot of experience in developing and implementing sustainable urban practices. Let us have a look at another case study: the city of Yokohama.

With almost 4 million citizens, Yokohama is the second largest city in Japan and became a global role model for sustainable waste management, also known as the G30 plan. The plan was initiated in 2003 and aimed at a reduction of 30 per cent in waste generation by the end of the fiscal year 2010. What stood out in the planning process was the strong involvement of all stakeholders in clearly identifying the different responsibilities of households, businesses, and the public sector. For example, in order to recycle reusable resources and reduce waste emissions as much as possible, the number of categories for separating of household waste has been increased from 5 to 10, and the number of items have increased from 7 to 15. In 2005, this system was in place across the entire city. Additionally, environmental education and various promotional activities related to waste-reduction have been undertaken to enhance awareness. The results were stunning: The city of Yokohama reduced waste-generation by 38.7 per cent,[12] from about 1.6 million tonnes in 2001 to 1.0 million tonnes in 2007, all while the city's population rose by around 166,000 during the same period.[13] This significant development allowed Yokohama to close two incinerators, which saved the city the more than 1.1 billion US dollars (capital cost) that would have been required for their renovation.[14]

Other calculations show that waste reduction in the same period resulted in a decline of about 840,000 tonnes of CO_2 emissions, which is equivalent to the amount that 60 million Japanese cedar trees can absorb annually. The government of Yokohama calculated that approximately 600 square kilometres (an area 14 times as large as the city) would be needed to plant 60 million cedar trees.[15]

Cities have been known to be places of progress, emancipation, free spirits, and social change. Cities have resources such as knowledge, technical and cultural innovation, and creativity. Additionally, their political power makes them catalysts of modern lifestyles, and in these days a modern lifestyle is one of sustainability and awareness. Hence, modern cities have to use their vast knowledge and avoid mistakes in the existing city planning. Modern cities have to focus more on the implementation of pragmatic solutions. Necessary to reach that end is the sharing of experiences and best practice projects through international platforms. A good example is the »Urban Age Project«,[16] organised by the London School of Economics in cooperation with the Alfred Herrhausen Society, which is the international forum of Deutsche Bank. The project is an international investigation of the spatial and social dynamics of cities centred on an annual conference, research initiatives, and publications. Powered by another German icon, Siemens, »The Sustainable City Collective«[17] has become an interactive platform that collects case studies and best practices from all over the world.

More companies understand that they have to adapt their products to the needs of megacities. Global players such as Siemens, General Electric, ABB, IBM, and Cisco are already preparing for the opportunities with the development of smart grids, driverless electrical vehicles, intelligent housing technologies, and instruments for the intelligent usage of water and energy (for example, Siemens recently launched its new business field »infrastructure and cities«). This development offers a new interesting perspective, as private companies and the public sector both have to adapt to each others' practices in order to create significant impacts. This new approach has the potential to change the usual busi-

12. World Bank, 2009.

13. City of Yokohama, 2008.

14. World Bank, 2009, and City of Yokohama, 2008.

15. City of Yokohama, 2009.

16. See also http://urban-age.net, 2011.

17. See also http://www.sustainablecitiescollective.com, 2011.

ness patterns, and hence could result in a significant rise of public-private partnerships, especially in emerging countries. The future path has to focus on innovative, systemic, and economic solutions for better cities. Only when all urban stakeholders understand that sustainable urbanisation is impossible if it is based on standard practices will, the new, green urban area have the potential to begin.

4. Conclusion

Despite the uncertainties surrounding these global urban challenges, the chances for progress that urbanisation brings with it are numerous: if the future generation of city planners are able to manage the upcoming mass migration in a socially and politically acceptable way, this change has the potential to be the motor of a new cultural and economic boom. At the same time, the risks are high. If this »experiment« does not work, (mega)cities all over the world will disappear in waste, traffic, and poverty. In the end, a lack of perspective and frustration can discharge in a never before existing dimension. A recent study by the consulting firm Booz & Company points out that cities all over the world have to invest 351 billion US dollars in the next 30 years to modernise and improve their social and physical infrastructures. But the research also shows that the total sum can be reduced to 296 billion US dollars if urban decision-makers focus on an immediate transformation towards energy-efficient public transport systems and the usage of renewable energy. Hence, the necessity for a sustainable urban development cannot be neglected anymore – and the urgency of action is greater than ever before.

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Imprint

Global Policy and Development

The Department for Global Policy and Development at the Friedrich Ebert Stiftung promotes the dialogue between North and South and communicates the debates over international issues to the German and European public and policy-makers. It offers a platform for discussion and debate with the aim of strengthening awareness of global factors, developing scenarios and formulating recommendations for political action. This paper is being published within the framework of the work line »International Energy and Climate Policy«; in charge: Nina Netzer, Nina.Netzer@fes.de.

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