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Africa's Urbanization Challenge: An Opportunity for Green Growth

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Africa is urbanizing fast. Having remained the last region to urbanize, the African region is now catching up with the rest of the world. UN-Habitat predicts that by 2020 half of the African population will live in urban areas, and that this share will reach 60 percent by 2050 (UN-Habitat 2010). By then, the population in African cities will triple to 1.2 billion. Much of this urban growth will probably be concentrated in large cities so that by 2050, 20 of the world's 100 largest cities will be in Africa. Along with Cairo and Lagos, already megacities, we can expect Kinshasa, Addis Ababa, Luanda, and others to reach the size of Mexico City and Tokyo in less than half a century.

This is both exciting and challenging news. On the one hand, this urban growth is predictable. Africa's economy has been growing at a steady 5 percent a year since 2001, and despite the slowdown provoked by the European and the U.S. recession, the outlook for the current decade is solid (IMF 2011). Economic growth and urbanization do go together and it is well accepted that efficient cities are key ingredients for economic prosperity (figure 1). Cities

Figure 1. Africa: Urbanization and GDP, 2011

Source: Author's calculations using data from World Bank Indicators.

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are places of density, where agglomeration economies occur, leading to higher productivity and greater levels of efficiency. Cities are also more efficient in providing basic services. In Africa, for a doubling in urban density, the average cost of a basic package of infrastructure services declines 33 percent (World Bank 2010). Cities are also good for poverty alleviation. Throughout East Asia and Latin America, cities have offered the possibility of lowering levels of absolute poverty.

Thus it would seem that doubling and tripling urban residents over the next 40 years will be a blessing for Africa. It will bring millions of poor households out of poverty traps, enlarge labor markets, and promote more inclusive societies.

On the other hand, the predicted pace of the urban transformation may be too fast and too demanding. Unlikely earlier urbanizers in other continents, Africa is urbanizing too fast and at lower levels of income. This means that there will be less time for African cities to plan ahead, fewer resources to accommodate the newcomers, and greater challenges to provide basic services. Therefore, in African countries, we may expect negative externalities (such as pollution and congestion) to offset the benefits of density much earlier (in terms of city size) than in Latin American or China.

The case of land, the basic ingredient of efficient urbanization, is illustrative. While the situation varies a great deal across countries, in most of Sub-Saharan Africa one finds incipient formal markets, emerging from hybrid situations where traditional and modern land titling coexist and land disputes are difficult to settle. Planning is often short term, ignoring the need to have an integrated vision for the city development and to secure the rights of way for infrastructure so as to avoid sprawl and patchy development. Insufficient supply of serviced land has pushed new urban settlers to the periphery of the cities, where informal markets have been effective in providing shelter at affordable prices. Sprawling has become the rule, which makes the provision of trunk infrastructure and connectivity more expensive and more polluting.

On infrastructure, African countries lag behind their peers in developing countries (WB 2010). The differences are particularly large for paved roads, telephone main lines, power generation, and access to potable water and sanitation. Access to electricity is limited to 16 percent of the African citizens, compared with 41 percent in other developing countries. Average power consumption is 124 kilowatt hours per capita, or 10 percent of the rest of the developing world (WB 2010). African firms report losing 5 percent of their sales because of frequent power outages; this figure jumps to 20 percent for informal firms. While private firms are eager to explore the potential of Africa's rapid growing markets, the lack of infrastructure and red tape are obstacles to private investment.

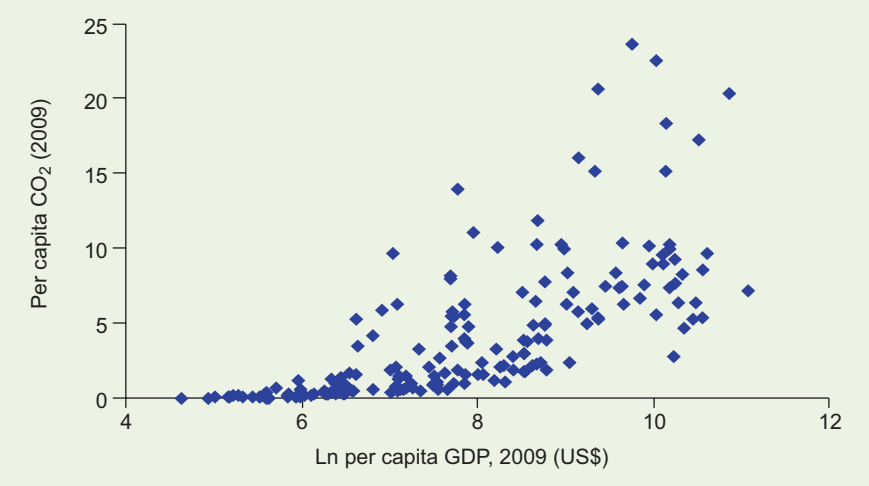
But Africa is already changing. To support continued growth and FDI flows, African cities need to be efficient, pleasant, clean, and inclusive. The export sector and nontraditional partners are pressing for improved services, better accommodations, and improved connectivity. From Johannesburg, to Lagos, to Cairo, there are genuine efforts to design participatory strategies that will help African cities harness their potential for sustainable growth. These strategies will be essential to attract the human and physical capital that will push growth to a new production frontier.

The massive need for infrastructure investment may be an opportunity for African cities to adopt greener technologies, promote density, invest in connectivity, and avoid investments that will be difficult to reverse in the future. It is well established that in the absence of smart policies, economic growth will lead to increased carbon emissions, at least until the point where public pressure leads to abatement policies. Figure 2 shows the typical relation between per capita CO_2 and the log of per capita GDP for 120 countries.[1] Figure 3 shows that in France and Sweden, average per capita CO_2 has been declining after reaching an all-time high in the 1970s. This is in contrast with China, which has rapidly accelerated its carbon emissions at a much lower level of per capita income; this trend will continue in the absence of greener growth policies.

Until recently, African emissions have been very low at about 0.8 tons per capita—that is, about 10 percent of the average of the OECD countries and 5 percent of the United States. As African countries grow and cities expand, however, per capita emissions

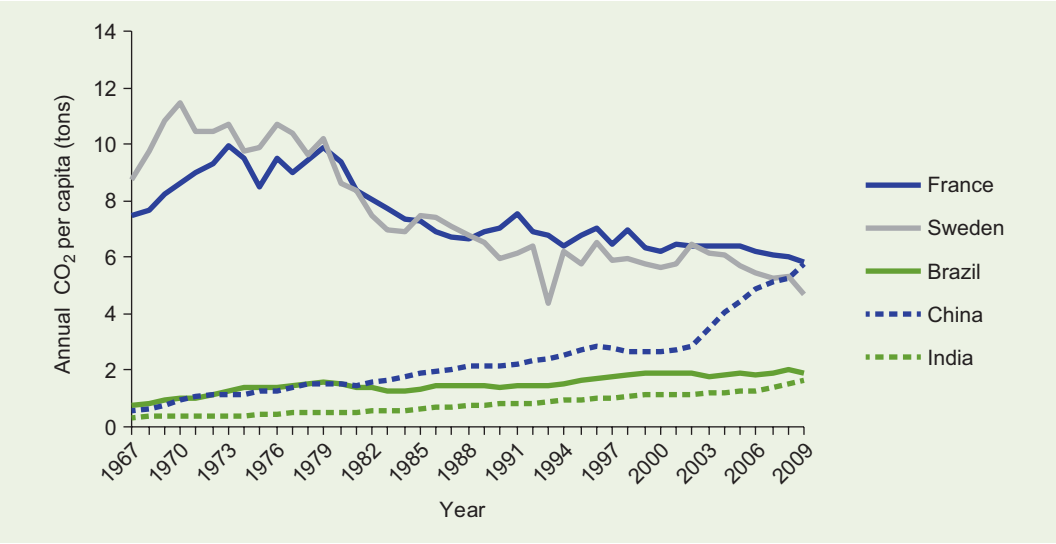
1. It confirms the positive slope with high variation at high levels of income, denoting the differences in carbon-abating policies across the OECD countries.

Figure 2. Carbon Emissions Go Up with Income



Source: Author's calculations using data from World Bank Indicators, Tom Boden, and Bob Andres.

Figure 3. Per Capita Carbon Emissions, 1967–2009



Source: Author's calculations using data from World Bank Indicators, Tom Boden, and Bob Andres.

will naturally increase. The question is whether Africa can continue to develop and increase standards of living while maintaining carbon emissions at a level compatible with long-term, sustainable growth. This is the essence of the green growth agenda: how to take advantage of the urgent need to invest in infrastructure and promote growth while improving resource efficiency, reducing waste, and promoting social inclusion and resilience. The agenda will include land policies to promote density, energy policies to promote efficiency and use of renewable sources at both residential and commercial buildings, price policies to discourage waste in consumption of water and energy, and integrated policies that will address the need to contain congestion and reduce the use of privately owned cars in the rapidly growing cities of Africa.

While such an agenda may seem daunting for Africa, many cities have been successful without major leaps in technology. The case of Yokohama city is illustrative. By educating the population to reduce and recycle waste, the city saved US$1 billion in capital costs and US$120 million in maintenance, including avoiding the costs of constructing two additional incinerators. Bogota invested in the Transmillenio bus rapid transit system to solve congestion problems and ended up with substantial improvements in connectivity, public health, and overall air quality. Curitiba established the first integrated transport-oriented land plan and was able to accommodate a population growth from 360,000 to 1.8 million in 40 years. The plan ensured a massive use of public transport and maintained efficient densities along the main transport axis.

Curitiba has been the best example of sustainable cities in decades (Suzuki et al. 2010; Yusuf 2013).

The relatively late development in Africa could be an opportunity for green growth in several ways. Infrastructure can be made more efficient and the urban landscape more sustainable and inclusive and a new African development model may be less taxing on cities. Recent economic growth in Africa has been based on the extraction and exports of primary commodities in response to the demand of nontraditional partners in emerging markets. The manufacturing sector has remained small in the production structure of African cities.

The impact of economic growth on urban growth in the absence of manufacturing development has been the subject of recent research by Henderson, Thomas, and Storeygard (2012) and Gollin, Jedwab, and Vollrath (2012). Both argue that differences between international prices and local production costs imply that natural resource exports have generated considerable surplus for African countries and that this surplus has been mainly spent on nontradable urban goods and services. This process has driven urbanization through the rise of consumption cities (Gollin, Jedwab, and Vollrath 2012). Because greater opportunities in the urban sector attract people to cities, the Henderson model is in line with the labor pull hypothesis, except it considers the trade and the resource sector as the main drivers of this transformation. As wealth is created in the rural cash crop sector or mining sector, it is spent in the urban nontradable sector (housing, connectivity, services), and demand for these goods drives urbanization. These consumption cities differ from the production cities in Asia, where wealth derived from manufacturing.

The combination of this type of urbanization (based on consumption cities and nontradable goods) with the emergence of information and communication technology (ICT) activity (or virtualization) may bring about a different urban growth model for Africa. The typical growth pattern of dirty-growth industries preceding manufacturing for export does not have to be repeated in Africa, at least at the scale of Latin America and East Asia peers. Zenghelis (2011) and Weiss (2005) argue that globalization and virtualization will work against the factory or manufacturing as the center of city competitiveness in relation to economic growth. The development paradigm based on dirty growth as an intermediate step to export-led manufacturing is no longer acceptable.[2]

Africa is poised to benefit from the ongoing technology change and universal access to virtual business. As the rapid expansion of ICT and the virtual economy allow for production to take

2. Many Chinese that previously adopted such a strategy are rapidly adapting development plans to transform themselves into centers of low-carbon growth. This is consistent with China's 2006 Five Year Plan to reduce the energy intensity of GDP by 20 percent and achieve an additional targeted 25 percent cut by 2020.

place at dispersed sites, agglomeration and density will become more dependent on the willingness and desire of the skilled workers to come to a city, rather than the necessity of concentration for economic manufacturing. This process will take time, but a threshold will be reached that will trigger a jump in virtualization. In this context it will pay for African cities at all levels of development to invest early in ICT infrastructure to avoid being left behind.

As Africa urbanizes, cities have the opportunity to plan ahead and ensure that investments and policies are well suited for sustainable development. A key ingredient for successful cities (in a post-manufacturing world) is their capacity to attract talent, educated, and creative people who will bring economic growth to the city. Making urban areas green, inclusive, and resilient is part of the agenda for cities to be successful in the short and medium term.

What Is Needed?

A vision. The management of cities is largely an exercise in futurology. Current demand should be balanced with the inexorable trends that city growth entails. The question is one of unplanned versus planned expansion. Clear signs should be provided to the private sector and to credit markets about what constitutes green growth policies at the city level. These signs help align public policies and attract private firms to invest in smart programs. Successful urbanizing cities—such as Curitiba in Brazil and Portland, Oregon in the United States—have made environmental concerns a centrepiece of their metropolitan economic development strategies and have recognized the importance of being able to compete in the global marketplace. In Africa, Cairo, Casablanca, and Lagos have developed participatory medium-term plans that have attracted the attention of the community and the engagement of the private sector. Amenities, quality of urban environment, connectivity and a sense of place, inclusion, and resilience are concepts around which communities join efforts. African cities are rapidly catching up in the collection of data and production of meaningful indicators and alternative and innovative financing ways are being explored.

Coordination between city and national policies. It helps enormously to achieve a national consensus on the path to be followed. National governments need to define the broad policy framework of sustainable economic growth, including sensible carbon pricing and product standards. However, it is cities that need the political flexibility (and funding) to experiment with new technologies, finance new transit solutions, or encourage building retrofits. Since these activities require the involvement of the private sector, the earlier that regulations and policy clarity can be established the better. This flexibility partly underlies the success of

Stockholm, Chicago, London; they have created a blueprint for making cities less congested, more productive, and at the same time greener.

Planning and integration of policies. The political and social pressure to attend to the needs of millions of new urban residents will naturally take precedence over longer-term issues. Nevertheless, a clear vision of the optimal sequence in urban investments can help city managers meet urgent demands for expansion of basic services, especially energy, water, and transportation. Housing is often an unregulated sector, which allows the flexibility to offer affordable solutions for urban migrants. Investing in a city today without considering the impact of these investments (or the lack of them) will lead to inefficient city shapes, sprawl and pollution, and costly transport solutions. The secret of successful and dynamic cities is the clever combination of effective short-term policies with viable medium- and long-term policy frameworks.

Learning from others. Especially for early urbanizers that still retain flexibility, the experiences of Latin America and East Asia are particularly useful. Latin America tried to resist urbanization for at least three decades. Rather than embracing the inevitable urban expansion, cities tried to discourage city growth by neglecting newcomers. The result was the development of rings of impoverished settlements that bred violence and segregation and hurt sustainable urban growth. The lessons from Asia have been quite different. China, the Republic of Korea, and Vietnam have shown the importance of planning ahead, while harnessing the economic potential of expanding cities. One essential component of urban planning is well-operating land markets. Regulations should not stifle the proper use of urban land and transit and density patterns should be jointly addressed. These factors taken together are fundamental for shaping the efficient city of tomorrow.

A final thought. Many have written that this is Africa's moment. Undoubtedly this is a good time to address many of the challenges facing the continent. As the AfDB's development strategy for 2013–2022 highlights: "The green agenda reinforces the continent's development path and the efforts of individual countries" (AfDB 2013: 8). Part of the challenge of the coming decade is how to manage urbanization well by capturing long-term benefits without incurring unnecessary long-term costs. Pursuing a sensible green growth strategy is part of the solution.

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