

CHAPTER 1 - TOWARDS A HARMONIOUS CITY WITH SUSTAINABLE COMMUNITIES¹

1. ENVISIONING A SUSTAINABLE CITY

Developing a vision and a plan for what you want your city to become is the essential first step for pursuing new pathways towards transformation.

The year 2010 marked the start of numerous 20+ year urban sustainability or green economic planning processes. Some of the outcomes include a series of roadmap documents, master plans and updates from regions and cities such as South Korea with the *2030 Smart Grid Roadmap*; Sydney, Australia with *Sustainable Sydney 2030*; New York City with the *PlaNYC update*; and Nairobi with the *Nairobi Metro 2030*, among others.

The purpose of the visioning process is to create a fertile environment for developing new ideas that work. The process can be as simple as visualizing the ideal community and documenting this vision with individuals in a visioning group and then within a larger multi-stakeholder group. Stakeholder groups should consist of government officials, business representatives, citizen group representatives, individual citizens, and, if possible, academic and subject matter experts. These civic leaders should gather as much information as possible from prior community meetings and vision sessions. If a city has not had a public visioning session, leaders should organize one. It is important to do whatever it takes to create a broad and specific vision of what citizens want their city to look and feel like five, ten, twenty and thirty years into the future.

How the vision will become reality is not important during the visioning stage. The important part is developing and maintaining a cohesive vision that includes all major views of stakeholders. Of course, some interest groups might initially have conflicting visions. Participants should focus on the overarching points of general agreement as the basis for a long-term vision for urban sustainability.

Communication with peers in other cities that have implemented similar projects can be informative. Direct contact should be sought with participants from other city sustainability efforts whenever possible. Communicating with the people directly involved will often lead to more candid responses and a more realistic and current view of the challenges that programme or

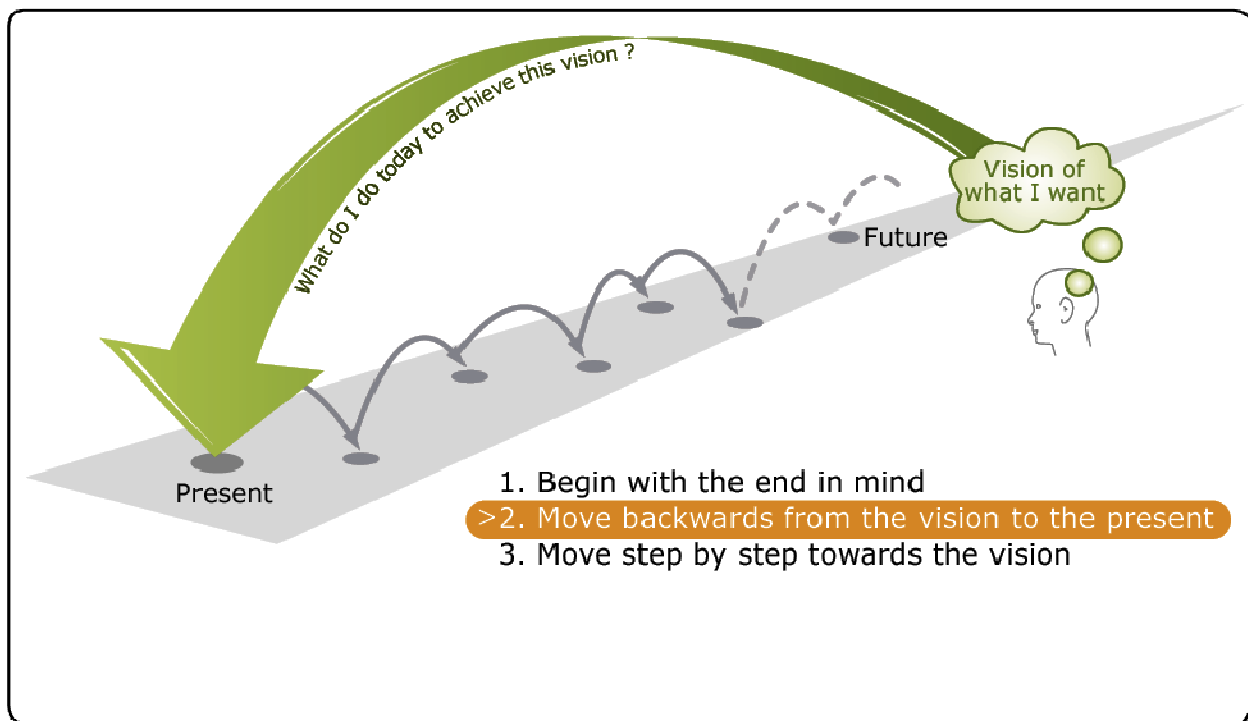
¹ This chapter was authored by Warren Karlenzig and Mohan Peck, with valuable input and contributions from Wu Jianzhong and Federica Busa.

project implementations faced. This involves asking simple questions such as: “Does that project or programme work well? Why or why not?”

The circumstances faced by each community might be different enough so that what can be challenging to implement in one can still work well in another. Projects and documents from the international non-governmental organization ICLEI - Local Governments for Sustainability, for example, provide a rich resource for studying and learning from successful projects. More than 700 cities, towns, counties, and their associations from around the world are members of ICLEI.²

You may therefore wish to begin by answering the question: “What is the vision for your city?”

Figure 1.1 The process of backcasting.



Source: <http://www.naturalstep.org/backcasting>

² “Cities to Last”, Mary Dengler, Carlos Rodriguez Cascal, Eds., Club of Rome, March, 2009, p. 45: http://www.clubofrome.at/archive/cities_to_last.pdf

1.1 BACKCASTING TO ACHIEVE THE VISION

Methodologies and frameworks exist that help urban leaders in the process of establishing an over-arching vision towards sustainability. This process starts with getting a better understanding of what the community wants, and ends with a consensus of an overall vision. Once the vision is established, a process known as “backcasting” can be utilized.

Forecasting is the process of predicting the future based on analysis of current trends.

Backcasting approaches the challenge of discussing the future from the opposite direction.

Rather than trying to predict what happens in the future, we decide upfront what we want our future to be. Then we can make decisions and take steps to turn that future into a reality. It is a process of starting from a vision of success, then looking back to today to identify the most strategic steps to achieve success. After envisioning a successful result in the future, you ask, “What can we do today to reach that result?”. Policy pathways are then developed to determine different ways in which these “visioned” futures can be achieved. A backcasting approach can avoid dependency on any single path and increase flexibility and innovation in decision-making for policy makers.

Backcasting will help to ensure that your actions and strategy are taking you in the direction you want to head. It is a planning methodology that is particularly helpful when problems at hand are complex and when present trends are part of the problems. In order to find flexible strategies for the transition, it is important not to try to view the future situation in detail, but rather to find guiding principles, which can act as a frame for many possible futures. See Table 1.1 below which describes the goals and backcasting developed by the city of Portland, Oregon in the US.

Table 1.1 Sustainability Plan Goals for Portland, Oregon

Activity/service	Sustainability Principle	End point goal	10-year goal	5-year goal
Electricity use	Reduce greenhouse gas emissions; reduce consumption of fossil fuels	100% green power by 2020; 50% reduction in electricity use compared to 2007	75% green power; 35% reduction in electricity use	40% green power; 20% reduction in electricity use
Water use	Reduce depletion of aquifer reserves; Reduce sewer overflows	Water use equals amount of water that falls on city annually by 2020	65% reduction in water use	45% reduction in water use
Paper use	Reduce use of natural resources	Less than 5000 sheets of 100% recycled paper used per department per year by 2015	Same as end goal	6000 sheets used per department per year

Both the visioning exercise and the backcasting exercise require multistakeholder involvement to be meaningful and useful.

1.2 IMPORTANCE OF COMMUNITY ENGAGEMENT

Urban planning efforts need to ensure input from citizens and local institutions in order to effectively spur sustainable economic development, enhance social cohesion, preserve culture and build an educated public. Because the decisions of the visioning process potentially impact many people over generations, sustainability implementation requires an especially strong foundation.

Planners in the 21st century can no longer rely solely on top-down management processes that are organized and carried out exclusively by professionals. Public participation, representing the diverse interests of communities and businesses, leads to better planning and public policy development.

Urban governments need established mechanisms that enable communities and businesses to make suggestions and receive responses. These include opportunities to participate in public debates on the future planning of their cities and their regions. The ability for government, business and civil society leaders to listen and continually learn from each other is increasingly important if cities are to be successful.

Visioning processes need to be as inclusive as possible. In this regard, urban leaders should encourage and support the active involvement of civil society organizations representing relevant groups in order to increase the effectiveness of policies aimed at improving the lives of urban dwellers, particularly the poor or those living in slums. Local organizations of the urban poor and non-governmental organizations have proven that their collective efforts can improve housing, infrastructure and services, greatly alleviating and reducing urban poverty.³

Participation from broad spectrums of citizen groups can also benefit budgeting processes for city services. The Asian Development Bank, for instance, is using a “participatory budgeting” approach by which a community planning strategy includes community group and citizen representatives, along with local governments agents, that collectively share in setting priorities for planning public expenditure budgeting formulation. These formulations include funding for such services as roads, drainage and other public works.⁴

1.3 ESTABLISHING GOALS AND MEASURING PROGRESS

Successful urban sustainability planning and management requires the establishment of goals and tangible measures across a number of sectors and activities, in order to assess performance. Cities actively and regularly monitor sustainability management in a wide number of areas, including:

- water quality and water supply;
- access to fresh food and farmers’ or producers’ markets;
- solid waste diversion including recycling and composting rates;
- access to parks and open space;
- air quality;
- access to education,
- health and family services;
- energy supply including the amount and types of renewable energy provided as part of utility electric power “grid”;
- growth of green economy, including products, jobs and services;
- housing affordability;

³ “World population monitoring, focusing on population distribution, urbanization, internal migration and development,” United Nations Economic and Social Council, January, 2008, p. 29

⁴ “Managing Asian Cities: Sustainable and Inclusive Urban Solutions”, Asian Development Bank, 2008, p. 83

- sprawl;
- urban land footprint;
- urban eco-footprint; and
- access to public transit.

For instance, with the onset of global climate change, many cities are also beginning to actively measure greenhouse gas emissions as part of carbon reduction programmes and as a precursor to more strategically integrated climate action or low-carbon plans. The basic measurement goals of climate action plans consist of:

- establishing baseline emission and inventory forecasts;
- adopting emission reduction targets;
- implementing policies and measures; and
- measuring and verifying results.⁵

1.4 IMPORTANCE OF AN INTEGRATED APPROACH ACROSS ALL DEPARTMENTS OF LOCAL GOVERNMENT

Scalable sustainable urban development uses integrated strategy and management techniques that span traditional departmental “silos,” creating cross-discipline collaboration and efficiencies.

Departments that must be included in this integrated approach include:

- land use and transportation planning;
- energy and water utilities;
- building and infrastructure;
- public space greening and maintenance;
- waste, air and water resource management; brownfield management;
- food systems; and
- open space management, including parks.

Integrated planning and management systems are examined in more detail in Chapter 8, *Using Information and Communication Technologies for Smart and Connected Cities*. On the management level and across operational systems, information and communications technologies

⁵ “Cities to Last”, Mary Dengler, Carlos Rodriguez Cascal, Eds., Club of Rome, March, 2009, p. 130:
http://www.clubofrome.at/archive/cities_to_last.pdf

are being deployed to monitor and control the use of resources across cities in land uses, natural systems, buildings, transportation systems and infrastructure. The uses of information and communications technologies as applied to urban sustainability management are also examined in Chapter 2, *Delivering Effective Urban Management*.

Community engagement should become an integral part of the culture and practices of the institutional framework. With a new appreciation of critical inter-dependencies, city agencies, departments and utilities require greater alignment across municipalities with associated planning, budgeting and financing. Such strategic integration will ultimately benefit city and metropolitan government operations, as well as businesses and citizens, enabling cities to maintain and improve global competitiveness.

Furthermore, the complexity of the challenges faced by large cities requires the use of integrated strategies within city functions and departments. For instance, waste management strategies need to be developed in conjunction with waste-reduction programmes, including recycling, composting and business and resident education about consumption and waste minimization (see Chapter 5 - *Municipal Waste Management: Turning Waste into Resources*).

In the domain of planning urban transportation, the effective regional coordination of land use is necessary as the movement of people and goods and the impact of traffic are not confined within the boundaries of the city. Planning for new highways and roads needs to be coordinated with options for access to the public transportation system, including rail and bus rapid transit systems, as well as non-motorized transport options, such as walking and bicycling (see Chapter 4 – Sustainable Urban Transport).

2. CASE STUDIES



A view of downtown Sydney and its harbour.

2.1 SYDNEY, AUSTRALIA -- SUSTAINABILITY PLAN VISIONING PROCESS

Sydney, Australia's "Sustainable Sydney 2030" offers an integrated urban sustainability plan based on input from thousands of the city's residents, workers, students, planners and other experts. Sydney's inclusive approach and its resulting sustainability plan represent an example of a small, relatively wealthy city. However, its efforts can be viewed more universally for the purpose of visioning exercises in all cities, including large cities in developing countries. In 2009 Sydney had a population of 177,000, with a metro area of more than four million inhabitants.⁶

⁶ <http://www.cityofsydney.nsw.gov.au/AboutSydney/CityResearch/AtAGlance.asp>

In terms of developing and communicating a vision for sustainability, the Sustainable Sydney 2030 plan is prefaced by describing some of the wishes for the city that were expressed during its stakeholder meetings. “Sydney people want a city....”

- “where people walk”
- “that tells its history”
- “with well-planned public transport”
- “which lifts the spirits”
- “that provides public access to the harbour’s edge”
- “with self-contained communities”
- “which is a place for people of all walks of life”
- “that is respectful of diversity—cultural, religious, age, gender, sexuality and family structure”

These wishes are followed by a preface about the importance of acknowledging the Aboriginal community which lived in and around the Sydney area “for many thousands of years.” This community was also consulted in relation to the development of the Sustainability Plan and its vision.

The actual vision statement of Sustainable Sydney 2030 includes three sections: “Green,” “Global” and “Connected.”

The *Green* part of the vision states that: “Sydney will be internationally recognized as an environmental leader with outstanding environmental performance and new ‘green’ industries driving economic growth.” The Green vision also states the goals of reducing greenhouse gas emissions, reducing the region’s urban footprint and protecting native ecologies.

The *Global* part of the Sydney vision begins with: “Sydney will remain Australia’s most significant Global City and international gateway with world-class tourism attractions and sustained investment in cultural infrastructure, icons and amenities.” This section then describes

the need to accommodate business activities connected to high quality jobs while supporting the quality of life needed to attract and maintain innovation.

The final vision section, *Connected*, adds: “Sydney will be easy to get around with a local network for walking and cycling, and transit routes for connecting the City’s villages, City Centre and the rest of Inner Sydney.” The Connected section of the Sustainable Sydney 2030 vision affirms that the City’s neighborhoods shall be strong focal points, and that the city will be diverse and inclusive, celebrating and supporting its indigenous people. The section concludes with a description of how the city will commit to partnerships and cooperation between government, the private sector and the community, as well with other Australian and international cities for cultural, trade and other exchanges.⁷

The vision portion of Sustainable Sydney 2030 is followed by four major sections: “Ten Targets,” “Five Big Moves,” “Ten Strategic Directions” and “Ten Project Ideas.”

The Ten Targets present measureable or quantifiable goals. These targets, which are intended to be reached by the year 2030, include:

1. reduce greenhouse gas emissions;
2. meet local electricity and water demand;
3. develop additional housing;
4. develop affordable housing;
5. create 97,000 additional jobs;
6. have 80 per cent of commuting by public transport;
7. have 10 per cent of trips by cycling and 50 percent of trips by walking;
8. every resident should be 10-minutes in walking from a main street;
9. every resident within a three-minute walk within a “green link;”

⁷ “Sustainable Sydney 2030”, “The Vision Snapshot”, 2010, pp. 2-8
<http://www.cityofsydney.nsw.gov.au/2030/theplan/>

10. 45 per cent of people believing “most people can be trusted.”

Goals presented for 2030 provide an opportunity for backcasting, or determining what strategic directions and corresponding steps need to be taken in order to make such goals a reality by the target date.

Next, “Ten Strategic Directions” provide the Sustainable Sydney 2030 plan an ideological framework for action, while reflecting the Vision statement’s more general aspirations for the city:

1. A globally competitive and innovative city
2. A leading environmental performer
3. Integrated transport for a connected city
4. A city for pedestrians and cyclists
5. A lively and engaging city center
6. Vibrant local communities and economies
7. A cultural and creative city
8. Housing for a diverse population
9. Sustainable development, renewal and design
10. Implementation through effective partnerships

Each of the Ten Strategic Directions includes an “action/ project idea.” For example, the strategic direction of “a cultural and creative city” includes the idea of an “Eora Journey” (the indigenous people of inner Sydney were the Cadigal people of the Eora languages group). The Eora Journey advocates the development of a shared and participative cultural walk. The walk, which extends from the Sydney Harbour to the Redfern area, celebrates indigenous culture and includes an indigenous cultural center proposed along the route. The plan involved polling citizens about the

importance of cultural diversity (84 per cent said they believed that a diverse mix of people and cultures in the city is important).

Lessons Learned

The Sustainable Sydney 2030 plan represents an integrated planning process led and initiated by research and a public process that combined multi-stakeholder visioning (a wide variety of citizens including indigenous group representatives, other experts, government, and business) with action-oriented aspirations. Sustainable Sydney 2030 created the foundations of a process that developed tangible goals for 2030 grounded in current available information, including data on social attitudes and beliefs. Out of these well-managed processes, Sustainable Sydney also produced quantifiable plans for potential projects and strategic aims that collectively reflect or further develop the plan's visions, aspirations and goals.

2.2 NAIROBI METRO 2030



A view of Nairobi, Kenya.

Strategy Development Process

Like many other cities, Nairobi undertook a visioning process for its future development that looks out to 2030. The process began in 2003 and concluded in 2008. In many developing countries, the capital city is central to the economic development of the country and therefore may have a national level ministry responsible for planning its growth and development. This is the case for Nairobi. The greater metropolitan area accounts for 60 per cent of the national economy and 60 per cent of the country's urban population.

In developing the Nairobi Metro 2030 plan, consultations with stakeholders were organized to leverage broad participation and to build a sense of community ownership. Dialogue was achieved through structured meetings, solicitations through the media, and circulation of briefs on different topics. Information, views, comments, suggestions and recommendations were widely circulated. Structured meetings were organized with all levels of government, community

associations, the private sector, civil society and faith-based organizations. Experts were also sent to Singapore, China, Australia and New Zealand to capture global best practices.

Vision and Mission

The Vision of Nairobi is to be a world class African metropolis by 2030. It will strive to create a world class working environment with a wide range of jobs, transport options and communication infrastructure. It is a vision of a world class living environment with modern housing, healthcare, cultural amenities and recreational facilities. It wants to provide high quality office, production and storage space supported by a full range of ancillary services and information infrastructure. This vision should be supported by innovative and reliable local government institutions that are service oriented.

The Mission for Nairobi is to be the best managed metropolis in Africa. To do so, it must:

1. build a robust, internationally competitive, inclusive economy;
2. build infrastructure to support development; and
3. strengthen national, regional and global linkages.

Advantages and Challenges

Nairobi has many competitive advantages. It has a strategic geographic location that is a gateway to East and Central Africa. It enjoys good weather all year round. It is host to many international corporations, international development organizations and United Nations organizations. It has invested heavily in institutions of higher education. It is home to research organizations with a global reputation. It has multi-ethnic diversity and culture. It is surrounded by national parks and nature sanctuaries that are global tourist destinations.

Yet the city also has many urgent challenges that it hoped to address in its vision and strategy. It has a non-competitive metropolitan economy with old and decaying legacy industries. There is significant poverty with low human development indices, such as lack of access to housing and services, and high unemployment resulting in poor quality of life. Persistent resource scarcity, especially water and land, impede provision of economic and social infrastructure and services for housing, transport and energy. An unfavorable investment climate hamstrings the private sector. The city management is hampered by ineffective operational and financial performance, poor coordination of development planning, and inadequate budget. Poor land use planning and management often leads to conflicts and construction delays. Access to and connectivity of urban transport mobility are inadequate. Modern technologies suffer from a low adoption rate, while many neighborhoods and river systems are highly polluted. High levels of crime have led to insecure communities and business losses.

Action Plan

The city of Nairobi intends to achieve its vision through a range of integrated initiatives that address the challenges that currently restrain urban development. The plan calls for building an internationally competitive economy to ensure the metropolitan region's prosperity. Key to this will be the creation of regional and global service hubs for business, trade and finance. The plan also foresees providing better support to the Diplomatic District with improved services. Another element would be fostering tourism through investments in hotel facilities, transport and crime prevention. Related to that would be expanding the Jomo Kenyatta International Airport to increase its passenger handling capacity from 2.5 million to 9 million. Finally, the plan will develop industrial and technology parks to spur manufacturing and technology uptake.

Another key element of the plan is to invest and build modern infrastructure and utilities for the metropolitan region. This will include investing in water supply and sanitation infrastructure and services, improving storm water drainage and flood mitigation, and storing excess rain water to address scarcity issues. Inadequate energy hampers economic growth; therefore, the plan will increase access to modern energy services and enhance energy security through investing in diverse energy sources such as hydro, thermal, and biomass (municipal solid waste). Improved solid waste management will strengthen efforts to collect, re-use and recycle waste streams and to employ only sanitary landfills. Lastly, to address the digital divide, the city will develop information and communication technology networks that support business, government, education and citizenry.

Optimizing mobility and accessibility through effective transportation is another important initiative of the plan. This will be accomplished through a number of steps including a land use plan and a transport master plan. Emphasis will be given to new road construction as well as improvement of the existing road network, and special attention will be given to radial routes to outlying areas. Strategies for urban mass transit will focus on investments in high occupancy buses and modernizing the existing commuter rail network. Rail transport changes will increase penetration to the city center and allow passengers to avoid road congestion. Traffic management will increase transport system functionality, largely through flow control measures, junction improvements, a traveler information system and modern traffic management centers. The central business district will encourage pedestrianism and discourage private vehicles by reducing parking and creating access charges. Freight delivery to the central business district will be restricted to off peak hours. The city will also adopt a "zero crash" programme designed to produce significant reductions in traffic fatalities.

Great strides will be made to enhance the quality of life in the city. The Nairobi Metro 2030 plan calls for a housing programme to eliminate slums that will fast track construction of new housing with secure land tenure. An environmental management strategy calls for measures to be taken to mitigate heavily polluted water courses and mismanaged dumping sites, which both have

negative impacts on human health. The main health issues in Nairobi are all linked to the environment and include HIV/AIDS, tuberculosis and diarrhea. A medical service mapping exercise will lead to a comprehensive access to medical services strategy. A coordinated strategy is being put in place to improve access to education, including enhancing the level of literacy. Measures to improve food safety and security will improve crop and livestock processing, improvements of markets (refrigeration), adoption of certification schemes, and improved packaging.

The 2030 plan seeks to create a new image and identity for the city through effective place branding and promotion. The branding will build on the strengths of Nairobi as the gateway to Africa and the world. It needs to ensure that the social amenities that go with the branding strategy cater to the needs and aspirations of all age groups and cultures. A heritage and culture strategy will add value to creative sector strategies for the arts, museums, sports, libraries, film and media, historical heritage and tourism. Finally the plan will implement an identity-building urban design and landscaping strategy. This strategy will seek to develop urban spaces that are walkable and distinctive, are linked to the natural environment, and are safe and secure environments which can support a variety of activities and uses.

To support this vision for 2030, Nairobi will strengthen its urban management systems. It will foster new public – private partnerships to enhance services and reduce costs. Public sector investments will be targeted at leveraging private sector participation in the planning and delivery of economic and social services. It will develop a comprehensive, metropolitan geographical information system to support effective and efficient provision of city services. It will build effective metropolitan emergency services for improved safety, including new programmes for policing, fire and emergency healthcare response. Currently the city lacks a comprehensive street addressing system. A multidisciplinary team will be tasked with mapping, introducing signage, and bestowing numbers and addresses for all property in the city. Finally, efforts will be made to set clear and rigorous targets for all result areas of the 2030 plan. This will include monitoring of a set of forty indicators that cover all the key building blocks of the plan.

Lessons learned

Mayors of rapidly growing cities in developing countries face greater challenges on multiple fronts than their counterparts in developed countries. Grinding poverty and the inability to provide adequate housing, energy, water and food force mayors to address development issues before quality of life issues. But that does not preclude them from envisioning a brighter future for their city. In fact, a vision of what a city wants to achieve may only energize its citizens to strive for that goal. Mayors of such cities, in truth, may not be able to afford the expensive infrastructure solutions that have been followed in cities like London, New York or Shanghai. They have to seek more innovative, creative and lower cost solutions. Yet large cities in

developing countries can receive significantly more support from national governments and international development cooperation agencies, as such cities are often recognized to be the engines of the national economy.

3. BETTER CITY, BETTER LIFE: BEST PRACTICES FOR ENVISIONING A SUSTAINABLE CITY

Strategy: Envisioning a Sustainable City
Best Practice 1: Organize public visioning sessions or collect inputs online through a dedicated website for that purpose.
Best Practice 2: Establish a vision for the city through an inclusive visioning process that includes citizens from all local communities (rich and poor), community organizations, businesses, non-governmental organizations, government representatives, academia and youth.
Best Practice 3: Backcast to identify the steps needed to be taken today and in the future to realize the city's vision.
Best Practice 4: Establish a peer review process to learn from other cities that are undertaking similar projects to achieve their visions.
Best Practice 5: Establish goals and metrics in order to assess progress in reaching the city's vision.
Best Practice 6: Employ integrated planning, strategies and management efforts across all city departments to make the most effective use of resources and to realize synergies through coordination.

4. LINKS FOR FURTHER INFORMATION

<http://en.expo2010.cn/> Shanghai World Expo official site

<http://www.adb.org/Documents/Studies/Managing-Asian-Cities/part02-07.pdf>

“Managing Asian Cities: Sustainable and Inclusive Urban Solutions, Asian Development Bank”, 2008

http://www.clubofrome.at/archive/cities_to_last.pdf

“Green Growth and alternatives to GDP: Cities to Last”, Mary Dengler, Carlos Rodriguez Cascal, Eds., Club of Rome, March, 2009

<http://www.un.org/popin/wdtrends.htm>

United Nations Population Trends site, UN Department of Economic and Social Affairs. Includes 2008 report “World population monitoring, focusing on population distribution, urbanization, internal migration and development”

http://www.mckinseyquarterly.com/Economic_Studies/Country_Reports/Comparing_urbanization_in_China_and_India_2641 *McKinsey Quarterly*, July 2010

<http://www.iclei.org/> Local Governments for Sustainability (ICLEI)

<http://www.cityofsydney.nsw.gov.au/2030/>

<http://www.cityofsydney.nsw.gov.au/2030/documents/2030Vision/2030VisionSnapshot.pdf>
City of Sydney, Australia. “Sustainable Sydney Vision 2030”, Vision Snapshot, 2010.

Nairobi Metro 2030, Government of the Republic of Kenya, Ministry of Nairobi Metropolitan Development, 2008,

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