URBAN DIMENSIONS OF SUSTAINABLE DEVELOPMENT

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Summary

The urban front of sustainable development is particularly significant, since cities are the only places where citizens, capital, and resources concentrate at a point beyond which dynamic synergetic effects become more important than the merely accumulative ones. Cross-sectoral policy integration and balance are crucial and have to be supported by local democracy and citizenship.

Efforts towards resourceful eco-efficient cities expand, but most cities still have ecological footprints that are too large. Energy production and consumption patterns can serve as a yardstick for the sustainable city. A more sustainable urban mobility is necessary for cities that strive to halt dependence on private cars and give priority to pedestrians, cyclists, and public transport. Last but not least, sustainable regeneration can be decisive for realizing vital local potential.

Social justice is essential for urban sustainability. Integrating employment, income distribution, and social cohesion objectives is a must for the renaissance of urban areas. Housing is the second factor of social integration (second to meaningful employment) and noble public places can increase cultural added value and foster social interaction.

The complexity of sustainable development asks for clear and effective institutional architectures to promote quantum leaps and accountability. Strategic planning for sustainable development has to optimize urban land use and transport patterns, improve performance, and enhance quality of spaces and life. Best practices and indicators can serve as a compass for progress.

This article invites an Odyssey to sustainable cities of the future. It insists on innovation as a *sin equa non* condition for advancing towards sustainable development and offers examples of urban innovations from EU (European Union) and OECD (Organization for Economic Cooperation and Development) cities, which also provide lessons and models for cities of the developing world. The report draws on texts that the author prepared for the EU and the OECD and overviews, compendiums and best practices presented in international conferences.

1. Introduction: the Local Front of Sustainable Development

It is at the local level, the level closer to each citizen, that the results of sustainable development policies, reconciling economic efficiency, social equity, and ecological objectives, are ultimately felt and judged. This is where national strategies confront local priorities and competitive pressures meet social needs. This is the level at which environmental problems affect human health and quality of life.

Localities are not uniform and interchangeable places. Each country is a mosaic and kaleidoscope of unique places, shaped by nature and human genius. They are economically diverse, socially heterogeneous, and environmentally and culturally diversified. Their capacity for sustainability and their contribution to national sustainable development depend on their identity and their development trajectory.

Local places are not just the concrete visible spaces. Built assets and fixed investments are just a part of their long life-cycle assets. The density and quality of interactions among local actors is also fundamental, at a time when performance increasingly depends on networks and relationships. Both tangible and intangible assets create a "milieu," which may be a strong factor in attracting people and productive investments.

Cities are very special localities. They are the only places where people, capital, and resources concentrate at a point beyond which the dynamic synergetic effects become

more important than the merely accumulative ones. Each city creates very unique synergies. Its essence can be approached through its genetic code, highlighting complexity and diversity. The Greek city-planner Doxiades provided an interesting metaphor for villages, towns, and cities.

He characterized a typical small village as 250 red dots and one blue dot. The blue dot served to identify the one notably distinctive person differentiated from the rest of the human individuals, represented by the red dots. As the size of the settlement increases to that of a small town, four or five blue dots appear.

In a still larger town, two blue dots may actually meet for the first time. As the scale grows, blue dots start to come together, to aggregate in communities and some of the surrounding red dots start to change shade themselves. In a crucial sense, a city is a matter of critical mass, which, once reached, has a dynamic, self-fulfilling, and self-engendering quality.

The importance of cities for achieving global sustainability is increasingly being recognized by governments, city networks, and international organizations. A great number of conferences try to paint possible scenarios for the sustainable city, made out of relationships and conflicts, convergences and divergences. Even if each city has unique systemic effects, all OECD (Organization for Economic Cooperation and Development) cities present some common opportunities and share common problems. It seems that there is an increasing concern for the environment and that social exclusion is a preoccupying fact for most cities that strive not to become dual cities. Unemployment, environmental improvements, transport, housing, and safety represent the policy fields receiving more attention by public authorities, in partnerships with the private and voluntary sector and the civil society.

"Business as usual" scenarios demonstrate that a future leading to sustainable development cannot come as a linear continuation of the past. If environmental degradation is a crucial problem, many cities try to innovate in order to enter a cycle of investment and prosperity. Irrelevant actions and lack of integration and balance have led many urban policies to fail. Governments have to explore the endless frontiers of technology and innovation, in order that better policies are designed, integrated, and balanced.

Today, however, may be seen as the birth of a new era and innovation, or "*creative destruction,*" is the key to progress. Innovation is not just the invention of new concepts and methods; it is a process that includes all coalitions that have to be created in order that a co-agreed transformation takes place. Innovation is not necessarily expensive and is often the result of unique alliances that widen the horizon of new opportunities. Cities can act as a resource for this innovation.

Cities are huge, untapped reservoirs of ideas, enthusiasm, commitment, and labor. Intelligence, the world's main asset, concentrates in cities, where people congregate and socio-economic chains interact. Ecological innovations also mainly originate in cities, since problems concentrate there, and there is no other source of innovation than human beings.

Figure 1. Perceptions of sustainable development: opportunities to be grasped

2. World Cities in the Era of Sustainable Development

The twentieth century has been marked by the growth and multiplication of giant urban agglomerations. New York was the only mega-city of the world in 1950, accounting 1.6% of the global urban population. In 1995, the number of mega-cities increased to 15 and their contribution to the world's urban population increased to 7.6%. More than 10% of the world's urban population is expected to live in mega-cities in 2020.

As expected, more and more giant cities from the developing world will join the list of the world's largest agglomerations. The 1995 list of the 15 largest agglomerations included six OECD cities (Tokyo, New York, Mexico City, Los Angeles, Seoul, and Osaka) and nine cities of the less developed regions. India was the only country with three urban agglomerations in this list (Bombay, Calcutta, and Delhi). By 2020, it is expected that nine out of ten mega-cities will be located in the less developed world and mainly in Asia. In contrast, European cities gradually disappeared from the list of the top 15. Cities and regions of the developed world now have stabilizing and aging populations. Most OECD cities are now on the third or the fourth phase of their urban transition. They experience declining centers and suburbs or new waves of population reinforcing again the heart of the city.

Since the lat years of the twentieth century, urban growth occurred almost exclusively in developing countries. This results in the urbanization of both poverty and environmental degradation to a greater extent than ever before. Among the defining measures for dividing cities into "developed" and "developing" are the human and financial resources, the adequacy of infrastructures to provide water supply and sewage collection, disposal, and treatment. In most mega-cities of the developing world, the

supply of basic infrastructure falls far short of demand and health problems, mainly linked to water contamination, affect large parts of the burgeoning population. The "willingness to pay" for quality water is very high relative to income, and there is a clear potential to make progress in this area with the proper institutional and financing mechanisms. While for some European cities the challenges related to health can be encapsulated in the slogan "smoke-free cities", in the third world, many cities are still confronted with the challenge of securing the status of "malaria-free" cities.

2.1. Meeting the Challenges of Sustainability, Globalization and Cohesion

Sustainability, globalization, and social cohesion are changing the landscape of cities. Although change is inevitable, the question for cities is how best to manage this change. These changes, furthermore, create new multifold challenges for cities. Deficiencies in infrastructures, the heavy cost of inappropriate policies, and the financial and technical weaknesses of local institutions are important constraints, whose cumulative and synergetic effects drain the potential for progress.

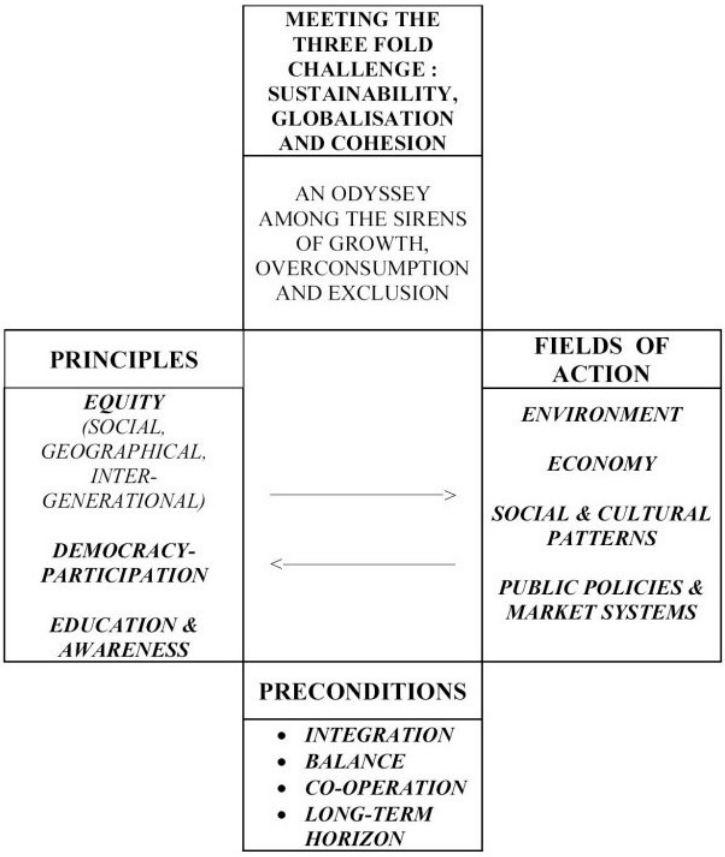

Figure 2. Principles, preconditions and fields of action for meeting the three-fold challenge of sustainability, globalization and cohesion

Globalization and geopolitical configurations highlight the emergence of new networks and a new division of labor, affecting cities and territories as organic parts of global trading systems. In the last 25 years, direct investment has grown four times as much as the growth of world GDP (Gross Domestic Product). Fifty percent of the stocks of FDI

(Foreign Direct Investment) in Japan, the United States, Germany and United Kingdom concerns specific tertiary sectors and thus brings those cities with concentrations of these sectors to the forefront of the world economic scene. A global economy offers many cities the opportunity of becoming global players, but the future world conglomeration may have strong central quarters and weak peripheral ones.

Globalization does not simply integrate economies; it affects societies, culture, and politics. It may trigger processes of change, which cannot be influenced by urban communities. Urban sustainability policies, however, can reinforce cities as new democratic spaces between the world macro-dynamics and the micro-regulations of the local communities. The integration of environmental concerns in territorial socio-economic policies offers governments the opportunity to create innovative bridges between the macro-level of sustainable development and the micro-level of local behavior.

Cities are important, not only because of their demographic and economic weight, but also of their capacity to promote democracy and disseminate models. After the Rio Earth Summit in 1992, many governments and local authorities made sustainable development a priority in policy-making. *Agenda 21*, the United Nations Program of Action, describes sustainability as a creative, balance-seeking process extending into all areas of local decision-making. The United Nations (UN) HABITAT II Summit (Istanbul, 3-14 June 1996), preceded by the first World Assembly of Cities, reconfirmed the will of governments to promote sustainable development, based on equality, eradication of poverty, livability and diversity, civic engagement and government responsibility, partnerships, solidarity and international concerted action. All of these principles are inextricably linked to key urban concerns.

2.2. Maximizing Human Welfare and Enhancing Urban Capital

Sustainable development aims at maximizing human welfare within an inter-temporal framework. It asks for the maintenance and enhancement of human, social, natural, environmental, and man-made capital. Human, social, built, and environmental capital has important local dimensions. Capital, markets, technology become global, but people, societies, institutions, lifestyles, monuments and landscapes are substantially local, even if they are highly mobile or of world importance.

Territories may be seen as composite forms of capital, comprising human, social, natural, and environmental resource capital and man-made capital. Human and social capital includes all skills, lifestyles, cultural patterns, and ethical values. Natural capital constitutes the territorial land resources, assets that typically are transacted in markets, while environmental resource capital comprises the life support systems, "offering their services for free." Man-made capital includes the endowment, which humans have created over time and added to the stock of assets that underpins socio-economic life. These forms of capital may depreciate over time and must be renewed.

Cities and regions are in permanent co-evolution and interaction with each other, as organic parts of a systemic whole. Each one of them has been shaped by different historic events and has inherited diverse opportunities and problems. Sustainability at

each level depends simultaneously on the internal viability of each system and its effects on the other territorial levels. Government policies should strengthen the resilience of each level and reinforce the capacity of the whole to resist unforeseen fluctuations.

National sustainability may be approached through the evaluation of the aggregate capital stock. The geographical distribution of people and economic activities are crucial, since the scale and diversity of territories create the need for different weighing factors. Territories are seldom uniform and isotropic, and human settlements have usually been built on strategic places. National priorities may change the significance of places, and government policies can transform the architecture of territories. Fiscal policies may increase the attractiveness of some places at the expense of others, and regional policies may create new economic poles and redirect flows of development. Transport and communication infrastructures may shrink the national space and create new interactions. For instance high-speed trains changed the European geometry, by bringing many regions closer together.

2.3. Policy Integration and Balance, Local Democracy and Citizenship

Sustainability implies thinking and acting differently. This entails "thinking globally, acting locally." The integration and balance of economic, social, and environmental objectives, and of qualitative and quantitative concerns, have to be established at all levels of policy-making. Territorial policies include panoplies of instruments enabling cities to improve their performances. Well-coordinated national and local regulation and enforcement may be powerful drivers and economic instruments may be most effective in improving local consumption patterns.

Quality of development is inextricably linked to local quality of life; it depends on income creation and distribution, working and living conditions, education and culture, public health and safety, quality of the environment, social peace, and services. This does not necessarily mean that cities that enhance quality of life will suffer in competition with other cities. Some of the most dynamic cities, such as Paris and Seattle, are also well known for their quality of life and their efforts to achieve sustainable development.

Harmonious integration of quantitative and qualitative objectives has to be based on active local democracy and citizenship. Citizenship means participation. A non-participatory society is inherently unsustainable. Citizens are increasingly invited to act as partners rather than protesters. Innovative communication and co-operation schemes try to bring together traditionally opposed local groups, on "neutral" grounds and in "equal" terms, in order to build consensus on a vision for the future. Enhancing national and local transparency and accountability is critical if a qualitative leap forward is to be achieved.

National policies conducive to unsustainable patterns may undermine urban efforts to advance towards sustainable development. Inadequate national regulatory frameworks, for instance, invalidate local action for improving environmental performance. Sectoral and territorial policies have to be organically linked at various spatial levels to respond

to the complex multidimensional challenge of sustainable development. Consequently, partnerships should unite and enrich the efforts of all concerned actors at each level and between the various levels.

3. Urban Ecological Challenges and Responses

3.1. Local Agendas 21: A World Momentum for Sustainable Development

Two-thirds of the actions proposed by Agenda 21 require the active involvement of local authorities. Chapter 28 specifically addresses local government and calls for consensual approaches to Local Agendas 21. Government action is essential for local communities to move towards a better environment, while seeking to achieve social justice and economic growth, through processes of democratic participation. Each territory has to find its own path towards better value-driven long-term "economy – society – environment" interactions. Integrating the principles of Agenda 21, however, in urban policies reinforces places and forges a common foundation for progress.

The movement of Local Agendas 21 created a world momentum for understanding, analyzing and enhancing urban environmental capital. However, under the title "Local Agenda 21" a myriad of different programs, plans, agendas, and charters are taking place. Many of these programs generated innovative ideas, but many fail to introduce new policy formulae. The field is still in a state of flux and it is difficult to provide a well-defined paradigm of hybrid methodologies. The process advances usually with an analysis of resources and opportunities, a diagnosis of problems, and a prognosis of trends. It concludes with the formulation of an amalgam of visions and the search of a consensus on a vision for the future, leading to collective action.

From Davies, California, to Sydney, Australia, many Local Agendas 21, charters, and plans try to promote a new environmental and communication culture. They often introduce an ecosystem approach to urban management. Options are being examined for improving production and consumption patterns and trends, with changes to materials, design, and lifestyles, particularly anchored to local culture and quality of life. Even in pioneer agglomerations, however, local agendas have most often been prepared by environmental services and have difficulty in promoting sustainable development as a process of synergetic integration and co-evolution among the sub-systems that make up localities. Skeptics question whether these documents represent more than sanctimonious promises—whether their implementation will correspond to any degree with the desired goals.

National governments have often played a pioneering role in promoting a framework for enabling authorities to advance with the preparation of Local Agendas (LA) 21 in the time horizon fixed in Rio. In Sweden, all 288 local authorities had developed Local Agendas 21 by the year 1996, while, around the globe, only 1800 cities and towns had already been engaged in such an effort. Urban initiatives may also make precious contributions to national efforts. The Italian LA 21 coordinating network, created by 58 municipalities, has been recognized by the government as a consultative voice, opening a new channel for the development of the national plan on sustainable development and the preparation of the law on eco-budgeting.

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Biographical Sketch

Voula Mega graduated as an engineer from the National Technical University of Athens, and completed her DEA Diploma at the National Geographical Institute in Paris. She continued with a DEA at the French Institute of City Planning, where she was also conferred with a PhD. Her post-Doctorate studies include research on Regional Policy in Oxford Brooks University and Environmental Economics in Harvard University.
She started her career as Special Adviser to the Greek Government and the European Union. She has been Research Manager at the European Foundation for the Improvement of Living and Working Conditions, in Dublin, and worked on issues of Sustainable Development, at the Organisation of Economic Co-operation and Development, in Paris.

She has written, co-written and edited more than 30 EU publications, and published more than 100 articles in international magazines. Her main subjects include innovation and sustainable development, urban dynamics, regional capital, enterprise and the environment, city and spatial policy, innovation and cultural value-added.