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URBAN ENVIRONMENTAL PLANNING AND MANAGEMENT REVIEWED FROM A SUSTAINABILITY PERSPECTIVE: REFORM OR TRANSFORMATION?

Adriana Allen

Director Environmental Planning and Management Programme,
Development Planning Unit, University College London.
allen@ucl.ac.uk

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RESUMO - A necesidade de que o planejamento e a gestão ambiental urbana enfrente o desafio de sustentabilidade é altamente reconhecido. Isso é prioridade para assegurar que o ganho no desenvolvimento urbano feito até agora não resulte em uma cidade que poderá necessitar de radical reestruturação no futuro por causa das suas demandas insustentáveis e exposição de problemas ambientais. Esta razão generalizada é facilmente focada neste argumento, porém, quando visto em maior detalhe, torna-se evidente que a operacionalização de estratégias consistentes para encaminhar o desafio de sustentabilidade urbana demanda uma transformação radical das suposições convencionais e práticas do planejamento e gerenciamento ambiental urbano. A proposta desse artigo é analisar o conteúdo de tais transformações, examinando as possíveis contribuições para o planejamento e a gestão ambiental urbana.

Palavras-Chave – Planejamento e gestão ambiental urbana, sustentabilidade, governabilidade.

ABSTRACT - It is increasingly recognised that urban environmental planning and management (EPM) needs to address the challenge of sustainability. This is in order to

ensure that gains in urban development made now do not result in cities that will need radical restructuring in the future because of their unsustainable resource demands and externalisation of environmental problems. Whilst the general reasons for focusing attention on this argument are easily stated, when looked at in more detail, it is evident that the operationalisation of consistent strategies to address the challenge of urban sustainability demands a radical transformation of the conventional assumptions and practice of urban environmental planning and management. The purpose of this paper is to analyse the content of such transformation, examining possible approaches to urban EPM.

Keywords – Urban environmental planning and management, sustainability, governance.

RESUMEN - La necesidad de que la planificación y gestión ambiental urbana enfrente el desafío de la sustentabilidad es altamente reconocida. Dicho consenso sostiene que esta es una condición esencial para que los beneficios del desarrollo urbano no resulten en ciudades que demandarán una restructuración radical debido a su demanda de recursos naturales y externalización de problemas ambientales. La operacionalización de estrategias consistentes para enfrentar el desafio de la sustentabilidad urbana demanda una transformación radical en los presupuestos y prácticas de la planificación y gestión ambiental urbana. El propósito de este artículo es analizar el contenido de dicha transformación, examinando posibles enfoques en materia de gestión ambiental.

Palabras claves: Planificación y gestión ambiental urbana, sustentabilidad, gobernabilidad

INTRODUCTION

The last two decades have seen growing forces towards international cohesion in environmental affairs, the growing sophistication of environmental science, the emergence of corporate environmentalism, and the blossoming of Local Agenda 21 processes. In this context, the concept of sustainable development (SD) has rapidly developed as an envisioning strategy to save the earth for future generations. However, the unusually widespread popularity of the term has brought a heated debate about its hidden contradictions and competing meanings.

On the one hand, narrow definitions of SD frame the environmental problematic as a scientific matter, amenable to risk assessment and technological solutions. This approach underplays the essential role of economic and social choices in the creation and resolution of environmental problems, and the fact that they do not take place in a political vacuum but in a highly politicised environment. In this way, when the environmental problematic is portrayed as a 'universal crisis' subject to technocratic solutions, its context-specific meanings and implications for people facing different struggles and holding diverse values, perceptions and practices are disregarded. On the other hand, the concept of SD has also brought a new emphasis on the right and capacity of local communities to have an impact on environmental decision-making, and therefore on

their own environments. Notwithstanding the critiques to the 'new localism'[1] (Marvin & Guy, 1997) the emergence of the so-called 'Local Agenda 21' (LA21) movement shows that SD is most of all a social and political challenge.

Ideas about development and environmental policy and practice have continuously changed, both in response to the conditions from which they derive and on which they act upon. The multiple layers of sustainability – characterised by values such as resource efficiency, less waste generation, commitment to collective and cooperative management of the commons, and so on – has impacted upon conventional professional discourses and practices. Still, much more work has to be done to turn awareness into epistemological and practical change.

The struggle to implement an urban environmental planning and management (EPM) approach that contributes towards sustainable development is intimately bound up with the process of deciding what we mean by 'sustainable development' and what we will do about it. It is argued in this paper that such an objective is unavoidably normative and political. The purpose of this document is to provide an overview of different approaches to urban EPM, their assumptions and use of tools and techniques in the transition to sustainability. This is laid out in four sections. The first section is concerned with providing some historical background on the sustainability debate, necessary to understand the various

[1] This critique refers to the idealisation of the power of local communities and their governing institutions in the transition towards sustainability with little reference to the current processes of political, institutional and economic change at the national and international levels.

interpretations that dominate the debate. Section two goes on to examining the implications of this debate for the reappraisal of the role played by the urban environment in the process of development. Section three examines possible strategies for the transformation of urban EPM from a technical and sectoral approach concerned with the management of the urban environment into an integrated approach to urban development. This is followed by a series of concluding remarks on the meaning and implications of the sustainability challenge to urban EPM.

SUSTAINABILITY: THE EVOLVING DEBATE

In the last two decades, sustainability has become a new watchword by which international, national and local organisations, business and individuals are to assess their impact on the resource base and natural environment. The concept of SD redefines the traditional objectives of development, with specific attention to the environmental sustainability and social equity of the production and consumption patterns pursued. It also incorporates intergenerational and inter-regional concerns, meaning that any path of development has to be assessed by its implications across time and space.

The genesis of these concepts is not new. The term ‘sustainability’ originally referred to “a harvesting regime for specific reproducible natural resources that could be maintained over time” (Gallopin, 1986:124). However, the definition of the term has been broadened in the last four decades and the environment-

development debate has shifted from an early preoccupation with the limits to and externalities of economic growth to the current concerns with the increasing social inequality and environmental unsustainability that characterises global economic growth. **Table 1** presents a historical overview of the articulation of the environment into the development debate[2].

In the 1960s, under the modernisation theory, development thinking was characterised by an unlimited trust in technology. The main assumption was that environmental problems could be overcome with technological progress. The belief in technology was deeply challenged by the arguments stated by Meadows *et al*. (1972) in *The Limits to Growth*, which challenged the prevailing unlimited trust in technological solutions and brought to the international attention the impacts of industrialisation and population growth on the environment.

In the 1970s, 'economic growth' thinking was subjected to increasing criticisms. Although economic growth had been achieved by many countries, it failed to eliminate mass poverty in the south and environmental contamination and natural degradation in the North. As an answer to the globalisation of both causes and effects showed by *The Limits to Growth*, several documents such as the *Declaration of Cocoyoc* and the *Latin American World Model* (Herrera *et al*., 1976) highlighted the different interests and perspectives on the environ-

[2] For a more detail discussion of the articulation of environment concerns into the development debate and planning, see ALLEN (1998).

Table 1: The Incorporation of Environmental Concerns into the Development Debate

DEVELOPMENT PARADIGMS	ENVIRONMENTAL PARADIGMS	KEY DOCUMENTS & EVENTS	MAIN CHANGES AND CRITICISMS
1960s			
MODERNISATION	FRONTIER ECONOMICS Main concerns:	1962 - Carson, Silent Spring.	Environmental problems seen as an inevitable consequence of industrialisation and demographic growth
SCHOOL	Contamination. scarcity of natural resources, negative externalities	1968, - Ehrlich, Population Bomb.	
Main assumptions:	ENVIRONMENTAL PROTECTION	1968 - Hardin, The Tragedy of the Commons.	Shift from a concern with externalities of economic growth to the search for international consensus
Economic growth would "trickle down" into the whole society	End of the pipe solutions	1968 - Establishment of the Club of Rome	
Unlimited trust in technology	Command & control	1968 - UNESCO Intergovernmental Conf. for Rational Use and Conservation of Biosphere	
	State property rights	1969 – USA NEPA	
1970s			
NEO-LIBERALISM	RESOURCE MANAGEMENT	1971 - The Founex Report	Development of tools for economic appraisal of environmental depletion and degradation
Global Efficiency / Growth	Private property rights	Meadows et al, 1972, The Limits to	
Freer Trade, Private Rights, including Global Commons	Polluter Pay Principle	1972 - UN Conference on Human Environment	
	National green accounts	1972 - Establishment of UNEP, ENDA and other international	Link between poverty and environmental degradation
BASIC NEEDS	'Economised' Ecology	1973 - Chipko Movement	Shift to human-centred concerns
Re-focus the development problematic on the context of		1973 - Cocoyoc Declaration	Focus on the uneven distribution of problems and benefits
DEPENDENCY THEORY		1976 - Herrera et al, Catastrophe or New Society? A LA World Model.	Incorporation of political and social dimensions
Focus on North-South relations	ECO-DEVELOPMENT	1977 – Greenbelt Movement in	
	Changes in attitudes & lifestyles	… and many more!	
	Abandonment of the notion of progress		
	Respect for cultural & natural diversity		
	Long term use of natural resources		
	Collective needs defined within each society		
1980s / 1990s			
SUSTAINABLE DEVELOPMENT (SD)		IUCN, 1980, World Conservation Strategy	Worldwide recognition of the relation between environment and development
Achievement of the traditional development goals (providing basic needs and increasing the productivity of the economy) but supported by long term sustainable patterns of		Brandt Report, 1980, North-South Programme for Survival	Apparent consensus but coexistence of contradictory approaches
Environmental concerns are mainstreamed in development theory and practice BUT with different interpretations of what		WCED, 1987, Our Common Future	New proposals, commitments of resources and programs of action
International Agenda for SD		Latin American CED, 1990, Our Own Future	Reappraisal of the roles of cities in SD

Source: Based on ALLEN (1998).

mental problematic between the First and Third World, incorporating political, economic and social issues into the debate.

Since the 1980s, the concept of SD has appeared in the voice of most international agencies as a new paradigm aiming at integrating environmental and development concerns. Probably the most popular definition is that provided by the Brundtland Report, which states that SD means " to meet the needs of the present without compromising the ability of the future generations to meet their own needs" (WCED, 1987:8). Although its content was not new, the main merit of this report was to bring the issues of development and environment together to public and institutional attention.

However, the contradictory approaches that led the debate over the previous decades were not overcome but rather intensified under the SD debate. The UNCED Conference held in Rio in 1992 was a clear example of the political tensions that increasingly dominate the North-South debate (Guimaraes, 1994; Escobar, 1995). Since then, bottom up initiatives in implementing Local Agenda 21 have been rapidly spread, whilst the corporate sector has organised itself in numerous new institutions, lobbying to add 'sustained economic growth' as a leading principle to SD. Progress in assessing and implementing the principles of SD is hampered by disagreements about the basic terms of reference. Many discussions of sustainability invoke the idea of a 'three ring circus', in which sustainable development is about the intersection of social, environmental and

economic goals. Although this model represents a great advance from previous development perspectives, as argued by Roger Levett (1997:197), it does not go far enough, for two reasons:

"First, the environment is a precondition for the other two. Without the planet's basic environmental life support systems, there can be no economy or society. Second, the 'economy' is not and in itself or a force of nature. It is a social construct. It only works as it does because human societies have created the institutions, and inculcated the assumptions, expectations and behaviours which make it so. The only reason for keeping it thus and not otherwise is if we think it will be good at meeting our needs".

Levett goes on to suggest that SD should be represented by a 'Russian dolls' picture, in which environment, society and economy are seen as three concentric circles, environment outmost. In other words, sustainability is about ensuring that human society lives within the environment's limits and that the economy meets society's needs.

This more radical view implies that the environment cannot be treated as an added on dimension to conventional development perspectives, but requires a paradigm change. Such a paradigm poses new challenges to the way in which environmental management is approached and implemented, suggesting that the transition towards sustainability demands also the transition of environmental management systems from a technocratic perspective to an ecocentric one.

Technocratic approaches are exemplified in the fields of environmental economics and environmental management, which are concerned with improving the efficiency of resource use and the allocation and internalisation of the overflow of economic externalities to the social and environmental systems. Within the ecocentric approaches, the fields of ecological economics and political ecology question the foundations of economic rationality and the values and political system of modern and contemporary societies (O'CONNOR, 1990; LEFF, 1994; ALLEN, 1998).

CHANGING PERSPECTIVES ON THE CITY AND THE URBAN ENVIRONMENT

Economists have tended to look at cities as engines of national growth and as the site of demand and enterprises, whose concentration creates both positive and negative externalities but requires a costly infrastructure. Urban geographers have concentrated on the 'optimum' size of cities and the spatial location of urban activities, arguing against larger concentrations of population and mixture of activities. With less success, human ecologists have been advocating the study of cities as ecological systems, either parasitic or metabolic ones. From these approaches cities are proposed as systems that demand high levels of energy, material and human resources producing high impacts on the natural environment (Montenegro, 1982; Boyden et al, 1984). While the first group establishes an analogy between urban systems and 'parasitic systems' (or in

other words those systems with high levels of consumption and low levels of ecological productivity), the second group considers cities as artificial ecosystems with paradigmatic analogies and potential in relation to natural ecosystems. According to the last approach, cities have metabolic abilities for transforming waste into wealth that have historically been underused.

Although the function of cities in generating both, environmental impacts, and economic and social well-being, has been highlighted by urban economics and human ecology, the role of cities in the achievement of SD goals, has receive less attention. However, in the last decade, many authors have focused on understanding the linkages between sustainable development and urban systems, proposing, as usual within SD literature, a wide range of interpretations (SATTERTHWAITE, 1999). Terms such as 'green cities' and 'sustainable cities' are gaining fast consensus, while concepts such as self-sufficiency, self-reliance and carrying capacity are being revised from new perspectives.

From a green perspective, cities are called on to become islands of reform of the dominant styles of consumption and technology use. 'Green cities' based on principles of self-sufficiency are required to produce and process, within their limits, the essential inputs required for the life of their inhabitants. But, as Sachs has argued, while contemporary cities cannot be expected to become archipelagoes of self-sufficient communities, positive changes towards a new ethic of development can be led by the principle of self-reliance. This concept, mainly proposed and advocated by the ecodevelopment approach (GLAESER,

1984) emphasises the sustainable use of local human and natural resources for meeting locally defined needs (SACHS & SILK, 1990) at local level. The term 'sustainable cities' also requires clarification. It does not refer "to cities themselves but to specific production and consumption patterns within cities" (Hardoy *et al*, 2001).

Cities are thus increasingly recognised as the areas of greatest environmental transformation, where virtually all the effects of ecological modification derived from development come together. This means that from an environmental perspective, urban areas face up to two main challenges and the articulation between the two seems to be a key point in the design of strategic environmental planning and management that genuinely contributes towards sustainable development. The following paragraphs examine these two challenges.

THE NEED TO DISAGGREGATE: WHOSE ENVIRONMENTAL PROBLEMS?

The first group of challenges is related to the environmental conditions of urban systems as the support living and working environment of a large number of people both in developed and developing countries. This includes a specific concern for lower income communities, which are particularly vulnerable to the impacts and negative externalities of urban development. At the same time, environmental changes impact upon the livelihood strategies of these communities,

decreasing or increasing their access to different types of assets, including access to natural resources such as land, water, energy and so forth.

The relationship between low income groups, environmental and health problems is embedded in their conditions and places of living. Lack of access to environmental services, poor housing quality and the occupation of lower quality sites (and associated risks and environmental transformations) are conditions under which a great part of the population of 'Third World' cities live. The poorest in urban areas face great exposure to biological and physical threats and also more restrictions in their access to protective services and infrastructures. Health impacts are correlated to both the exposure to environmental hazards and risks and infrastructure deficiencies. Uncollected garbage, inadequate water supply and sanitation, overcrowded housing and air pollution are common problems affecting the poor in urban areas (Ibid.).

Impressive as statistics may be on the health burden of low-income groups, until recently the research on urban health problems has focused on the city as a whole (in an aggregated form). In this way, urbanisation has been perceived as a positive process in terms of health. Most studies on the inequality of ill health are descriptive and focused on the relationship between people's ill health and inequalities in the physical and sanitary environment at the neighbourhood or household level (Todd, 1996). However, the relationship between health problems and risk factors in the physical environment at the household and

neighbourhood level is mediated by people's agency in managing their environment - which in turn is affected by socio-economic factors. In other words, 'social capital' and the capacity to organise for collective action are important elements in mediating the exposure to risks and health outcomes.

Housing ownership and the level of community organisation can influence vulnerability to floods and to their associated health risks. JoAkes *et al.* (1994), studying a low-income community in Mexico City and the role of women in managing the household environment, show that gender relations place women in the front line of exposure to the pervasive sewage contaminated water. Overall, there is a clear indication that the transformations in the social, economic and natural environment related to the urban areas have a strong gender dimension. The changes in the roles performed by women and their vulnerable social status contribute to reinforce the risk of exposition to health hazards related to pollution, contamination and injury.

The above discussion implies that environmental problems and opportunities need to be analysed through their political sources, conditions and ramifications that derive from socio-economic, gender and ethnic inequalities and political processes. The differentiated social and economic impact of environmental change has not only implications in terms of who loses and who benefits from it, but it also has political implications altering the power of actors in relation to other actors. For example reducing the ability of some actors to control or resist

other actors, and upon the institutionalisation of responses to the environmental problematic.

LINKING GLOBAL AND LOCAL SUSTAINABILITY

The second set of challenges is linked to the sustainability of the drawing patterns of renewable and non-renewable resources and to the transfer of environmental costs from urban systems to wider regions. The appropriation and use of natural resources is subject to many competing interests without adequate institutions to strike balances that ameliorate poverty, protect the environment, maximise the productivity of human and natural resources, or draw synergy from urban and rural linkages. Therefore, the sustainability of both urban and rural areas can be dramatically affected by the dynamic and changing flows of commodities, natural resources, people and pollution from and towards urban systems.

As global trade has vastly expanded throughout the 20th century, cities have become less reliant upon their hinterland for sustenance and are increasingly importing, not only their consumer goods, but also food, energy, water and building materials from distant sources. At the same time, wastes produced in urban areas are increasingly being exported to distant regions. This can overstep the capacity of some areas to absorb or break down human wastes. The urban environment needs to be seen then as part of the wider relationship between urban areas and their hinterlands or 'bioregions'. At the same time it is necessary to be aware of the growing dependence of towns and cities on resources from

all round the world. This may be seen in terms of the 'urban ecological footprint', indicating the extent of this dependence at a particular point in time, as a means of addressing the problem of reducing dependence through the management of resource flows through towns and cities (REES, 1992). This concept can be understood as "the maximum rate of resource consumption and waste discharge that can be sustained indefinitely in a given region without progressively impairing the functional integrity and productivity of relevant ecosystems" (Ibid., 124). The key questions arising from this concept are: how far is human access to essential resources dependent upon the production of local and global ecosystems? how far does a city depend on other systems in producing or importing the energy, raw materials, water or food that their population and activities consume?

Urban systems import most of the raw materials required by their inhabitants' life and economic activities, relying on regional, national and international supplies. This means that very often the origin of food and energy and the destination of wastes is invisible to citizens. As Rees argues "all urban regions appropriate their carrying capacity from distant 'elsewheres', creating dependencies that may not be ecologically or geopolitically stable or secure" (Ibid., 121). In order to understand the inter-regional trade-offs on which a city depends, its 'appropriated carrying capacity' must be analysed as the equation between importing carrying capacity and exporting ecological degradation (Wackernagel, 1995). The limits imposed by the depletion of natural resources and global

degradation produced by a city, do not become evident until they are translated into local impacts (for example: higher prices produced by the scarcity of a resource, frequents floods caused as a consequence of climate change, or increment of environment-related diseases such as skin cancer).

The need to consider these two sets of challenges in an interconnected way has been stressed in the principles and goals laid out in the UNCED Agenda 21 and the Habitat Agenda. A distinction has been established in recent years between the 'green' and 'brown' agendas. On the one hand there is a growing recognition of the need to pay attention to the long term environmental problems resulting from development impacts, such as rainforest depletion, global warming and biodiversity loss, generally referred to as the 'green agenda'. On the other hand, international development agencies and local authorities have started to pay increasing attention to the so called 'brown agenda', associated with the deterioration of local environmental conditions, such as lack of sanitation, unsanitary disposal of solid waste, water and air pollution and similar urgent problems affecting the health and quality of life on increasing numbers of urban dwellers, particularly in the cities of the South. However, a problem remains in considering both agendas separately, that is focusing attention either on local environmental problems which have immediate and evident impacts on people's health and quality of life or in looking at sustainability issues exclusively from the perspective of the natural resource base.

Environmental planning and management (EPM) contributes to sustainable urban development by emphasising 'environmental sustainability'. This means the supply of resources to urban areas and the maintenance of their physical environment without expanding their ecological footprint. It also involves a specific concern for the lack of equality of environmental problems and benefits among different groups of urban dwellers. These two criteria demand a new understanding of the role of the urban environment in development.

URBAN EPM IN THE TRANSITION TO SUSTAINABILITY

Environmental Planning and Management (EPM) is a cross-cutting activity and an iterative process essential to guarantee that the development of a city leads to a healthy, pleasant and sustainable environment for all its inhabitants without transferring environmental impacts to other regions and/or generations. Therefore to be effective EPM needs to be integrated in the decision making process of a city at all levels and stages – policy, planning and implementation - with particular attention to the city's ecological footprint. The following paragraphs highlight some of the most important linkages and key strategies aimed at ensuring that any development meets the objectives of enhancing quality of life and promoting environmental sustainability.

FROM 'LINEAR' TO 'CIRCULAR' URBAN EPM

The linear approach to urban management imports goods (water, food, energy and so forth) into a community, uses them once and discharges them as far as

possible away from the community. This approach is based on the assumption that there are unlimited resources to be exploited for the benefit of the urban population. With increasing populations the so-called 'throwaway society' is no longer viable. This model has heavy environmental costs and these are increasingly reflected also in human and financial costs. By contrast, the circular system imports goods into the community, manages demand for a maximum efficiency (e.g. through using water and energy saving appliances), reuses and recycles water and other goods to reduce the volume of waste and to optimise environmental benefits.

RESOURCE PLANNING AND MANAGEMENT: URBAN-RURAL COOPERATION

The urban-rural dichotomy is a reflection of the arbitrary definitions applied by professionals and institutions. There is an increasing recognition of the fact that rural and urban features tend to coexist more and more within cities and beyond their limits. As discussed above, cities impose high environmental impacts on wider regions beyond their physical and jurisdictional limits, both by drawing from them the resources necessary to support their inhabitants and economic activities and by transferring pollution and wastes. Furthermore it is necessary to understand rural-urban interactions through flows of people, capital, goods, environmental resources and wastes. This calls for the collaboration with authorities and other decision-makers beyond the city boundaries to develop a mutually beneficial resource management strategy (ALLEN *et al.*, 2001).

FROM SUPPLY TO DEMAND-SIDE MANAGEMENT

Traditionally, efforts of governments and donor agencies to meet urban demands have focused on the supply of different types of infrastructure and services based on costly technologies and complex management techniques based on experience in northern cities. By contrast, demand-side management calls for interventions that are designed to reduce or redirect certain demands at source or to find an optimum trade-off point between opposing demands. For instance, the demand for new roads - and therefore major capital investments and potentially more air pollution - can be reduced by improving public transport and reducing the need to travel through more efficient land use planning.

BLENDING ECONOMIC AND REGULATORY INSTRUMENTS

Regulatory instruments, traditionally applied by the government to command and control the development of activities in urban areas, have been under increasing criticism in recent years with some calling for their replacement by economic instruments. This has coincided with a more general reassessment of the role of the public sector in urban planning and management and the calls for a more active involvement of the private sector in the provision of urban services and infrastructures in the framework of market liberalisation and privatisation policies.

However it is important to stress that rather than replacing regulatory instruments by economic instruments, it is necessary to combine both to confront the

reduced capacity of the public sector as a provider and the problems arising from the unregulated intervention of the private sector. For instance, well regulated privatisation of environmental services and infrastructures can result in more efficiently run systems and cost reductions, that can be redirected to cross-subsidise poorer areas. Regulatory controls in practice remain essential to guarantee that poor areas are not neglected by the enforcement of market rules and that appropriate standards of service provision and protection of the environment are met at the same time.

ARTICULATING 'HARDWARE' AND 'SOFTWARE' SOLUTIONS

Urban environmental problems have traditionally been addressed through investments in technological innovations and engineering works designed to mitigate or reduce the incidence of pollution, these being referred to as 'hardware' solutions. Whilst there is nothing inherently wrong with this approach, there has been a relatively high incidence of failure of such investments in the cities of the South. The technologies offered were usually too expensive or inappropriate to the local management capacities and physical conditions and insufficient attention was paid to the social, economic and cultural conditions and management capacities into which the technologies were being inserted. This calls for a better and closer consideration on the one hand of more appropriate technologies and on the other of the 'software' aspects of environmental management, that take into account local economic, social and cultural conditions, local ownership and commitment to the projects, etc.

LINKING URBAN EPM AND BROADER URBAN MANAGEMENT STRATEGIES

Urban environmental issues are not simply a subset of urban issues and cannot be separated from the wider challenges of economic, social and institutional problems that affect urban areas. It is therefore necessary to consider that environmental improvements need to be developed in close conjunction with the urban management context. Worldwide local authorities and their international associations are increasingly acknowledging this challenge and are working up policies and programmes for sustainable development at the local level. However, progress in implementing this principle has been hampered by the lack of strategic frameworks or adequate institutional commitment or capacity. It is necessary to emphasise that efforts to effectively plan and manage the urban environment need to be aware of the more general management conditions that can prevent or enhance the success of any intervention.

New interventions towards sustainable urban development do not operate in a vacuum but need to build upon existing environmental management systems. A useful starting point is to identify the range of environmental issues that are dealt with by local authorities. **Table 2** identifies three main perspectives. The three columns are in no way conclusive but they do help to distinguish between different levels of impacts and scales of concern. They also demonstrate how it is not just new issues that are taken on board but more usually the change in perspective is due to an expanding view of an existing issue.

Table 2: Local Authority perspectives on environmental concerns

Traditional environmental perspective	New/broad environmental perspective	Sustainable development perspective
▪ Health and safety	▪ Environmental risk assessment	▪ Environmental quality management
▪ Waste collection and disposal	▪ Waste management strategy – reduction and recycling	▪ Equity in access to environmental resources
▪ Pollution control - point source and single substance	▪ Energy conservation	▪ Closure of resource loops
	▪ Prevention of Pollution	
▪ Land use control	▪ Integration of land use planning and other policy goals	▪ Strategic environmental assessment (SEA)
▪ Heritage conservation	▪ Reduction of environmental impact (EIA)	▪ Unbreachable environmental constraints
▪ Achieving balance and quality through development planning		▪ Systems view of environment-economy-society relationship
▪ Nature conservation	▪ Habitat enhancement	▪ Contribution to global biodiversity
▪ Open space provision for amenity	▪ Consideration of total natural resource	▪ Natural resource constraints
▪ Landscape protection		▪ Intrinsic value of other species
▪ Single issue monitoring	▪ Multiple issue monitoring and review	▪ Monitoring, review and feedback within holistic environmental system
▪ Public participation	▪ Education, advocacy and awareness raising	▪ Community involvement
	▪ Access to information	▪ Access to agenda setting and decision making processes

Source: Adapted from BARTON and BRUDER (1996), Table 16.1, p. 126.

UNDERSTANDING URBAN EPM AS A MULTI-LAYERED PROCESS

In the past, urban EPM has been understood to be exclusively an activity undertaken by expert professionals and the public sector. By contrast, urban EPM can be thought of as a multi-layered process in which different types of 'environmental managers' (e.g. the state, business, grassroots actors, etc.) interact with the environment and with each other to pursue a livelihood (**Figure 1**). What is critical here is the understanding of how environmental managers seek to enhance predictability in their practices in a context of social, economic and environmental uncertainty.

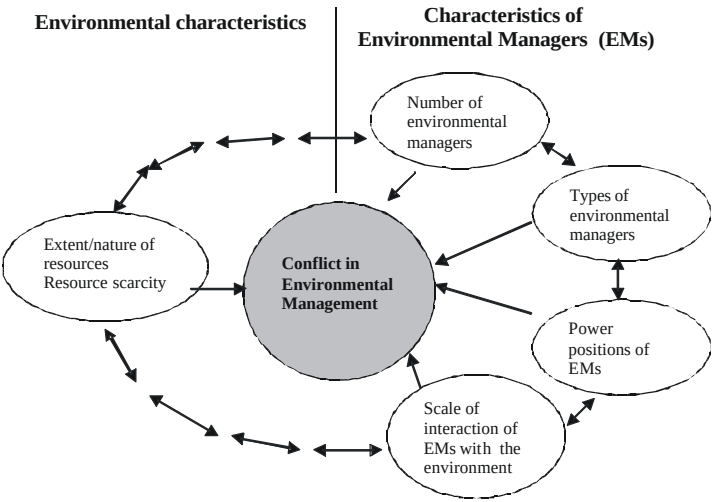

Figure 1. Conflict in Multi-layered EPM

This shows that when analysing environmental change there is a need to consider not only physical changes, but also the rate of their impact, the nature of human impact and the political response to them. Different actors contribute to, are affected by or seek to resolve environmental problems at different scales with different levels of power. This approach brings to light an appreciation that EPM is about interaction among different actors and that interaction is characterised by inequalities, alliances and struggles that can only be explained under the analysis of power relations (PADILLA & SAN MARTIN, 1996; SABATINI, 1997). This calls for an expansion of the kinds of actors engaged in development cooperation and for approaches that recognise the political complexity and factors promoting or preventing cooperation among different stakeholders.

THE URBAN EPM PROCESS AND TOOLS: LOCAL AGENDA 21

As discussed earlier, one of the key most salient characteristics of the UNCED process is the goal of bringing together key stakeholders for joint cooperative efforts towards SD. Agenda 21, signed by heads of state attending the UN Conference on Environment in Rio de Janeiro in 1992, highlights the need to redefine EPM as an inclusive and learning process. Chapter 28 of the Agenda stresses the key role of local authorities in acting as disseminators and facilitators to achieve a consensus and implement a 'Local Agenda 21' for the community. This suggests a new approach to EPM and a shift of emphasis from 'local government and the environment' to one of 'local governance and sustainability'.

It is increasingly clear that Local Agenda 21 involves more than environmental management and more than local authority initiatives. In fact, it provides a framework for integrating the approaches discussed above into a systematic process aiming to address context-specific circumstances (UNCHS/ UNEP, 1997).

Many tools are available to improve the EPM process and to direct strategic action within flexible and accountable systems following the above framework. **Figure 2** suggests that urban EPM requires the articulation of different tools which provide both political and technical links.

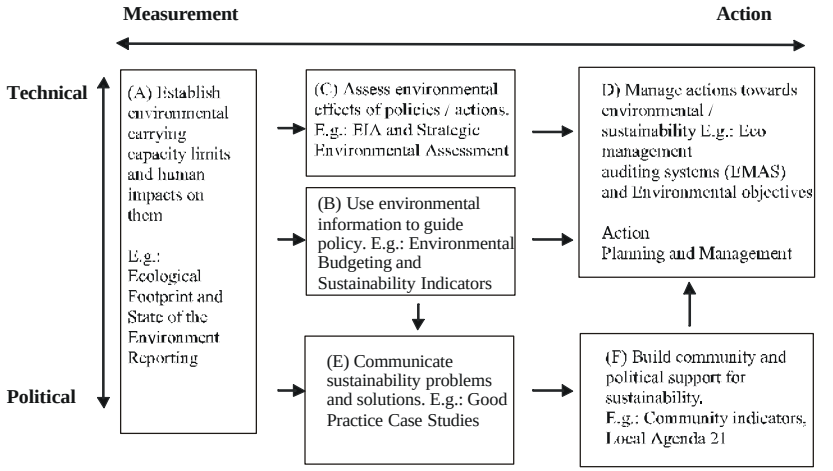

Figure 2. Relationship between tools

On the one hand, 'technical' links are necessary to provide, from measurement to action, valuable information for setting objectives and targets and criteria for appraising and implementing actions. On the other hand, 'political' links are also necessary to raise public awareness and political commitment and resources to support environmental policies and actions. One of the first tasks for EPM should therefore be to generate awareness in society.

Different tools can serve to direct society in the right direction, but they can never act as a substitute for a code of ethics held individually and collectively by society. These should be revealed directly through the political process. If they are not, it is unlikely that governments will respond to the needs of SD. This is why one of the first tasks in EPM for SD is to generate the awareness that all members of society need in order to make informed choices. This implies that the transition towards sustainability depends on the underlying assumptions of environmental management systems within which tools can perform different roles.

CONCLUDING REMARKS

Many of the strategies discussed above are being mainstreamed into urban EPM systems through the emergence of Local Agenda 21 (LA21) processes. The initiatives underway have been fertile to implement decentralisation policies, and to promote multisectorial partnerships and a cross-sectoral approach, reshaping the role of local authorities and fostering new local management abilities

(ALLEN and YOU, 2002). These three components are particularly relevant to the transformation of environmental planning and management.

Urban EPM demands a conceptual and methodological approach to move away from the physical definition of cities (understood as clearly delimited geographic and administrative entities) to a broader understanding of the articulation of complex patterns of settlement where the flow of natural resources, capital, goods, services and people do not know of jurisdictional boundaries. In this sense, beyond the improvement of urban environmental management, LA21 processes tend to restore urban EPM complexity beyond existing jurisdictional and political limits. This is because, from an institutional point of view, urban areas include several jurisdictions with weak links in areas such as transport, water, energy, solid and liquid waste management and land use planning. These links are even closer at the time of managing environmental resources and controlling contamination and degradation processes. No single municipality has the possibility of applying an isolated approach to supply the qualitative and quantitative water and energy flows required by its population and economic activities, or to manage the wastes and pollution generated within its jurisdictional limits.

Most municipalities undertaken LA21 all over the world are placing emphasis upon the creation of new institutional frameworks and participatory democracy. These are essential prerequisites to foster the creation of the institutional capacity and political accountability necessary to implement long-term planning and

management initiatives towards sustainable urban development. In this context, decentralisation does not end with the transference of responsibilities from national to municipal government levels. This is rather the starting point for a further process of decentralisation within urban areas. The organisation of neighbourhood committees entrusted with the capability of participating in their own development and environmental management plans has been in many cases an effective response to this demand.

What is missing in many of the initiatives underway is a more integrated approach between local and national authorities in the definition of policies driving countries, regions and cities towards sustainable development. Urban sustainability cannot be addressed without considering regional and national development policies and trends and the extend to which the management of natural resources and urban development is subordinated at these scales to the globalisation of the economy and the reinforcement of centre-periphery relations of dependency, not just between the north and the south but within countries and cities of the south.

Urban sustainability depends on economic, social and cultural factors that are interrelated, establishing relations of balance or imbalance between social groups, economic activities, urban techno-structures and the natural resources available and appropriated to sustain them. When a certain combination of natural and built resources is not enough to the population of a city with a given pattern of production and consumption, urban planners and managers face three

possibilities: territorial expansion, technological innovation or the restructuring of production and consumption patterns. So far, the first two alternatives have been the traditional answers adopted. These choices do not confront the urban sustainability challenge but displace its effects across time and space. The third answer, poses three challenges:

- The challenge of ecological sustainability, understood as a rational management of natural resources use, and of the pressures exerted by the wastes produced by each society, which demands an integrated view of local, regional, national and international development and environmental trends.
- The challenge of social sustainability defined as a set of actions and policies oriented to the improvement of social quality of life, but also to the fair access and distribution of rights over the use and appropriation of natural and built resources.
- The challenge of political sustainability, characterised at the micro level as the democratisation of the society and at the macro level as the democratisation of the State (FERNANDEZ, 1999).

The definition and understanding of these challenges is deeply dependant upon value biases towards nature, civic society, gender, equality, power, political accountability, economic reform and technical innovation. Ideas for development and environmental policy and practice have continuously changed both in response o the conditions from which they derive and on which they act. The multiple layer concept of SD - characterised by values such as more resource

efficiency, less waste generating, more committed to a collective and cooperative management of the commons, and so on - has impacted upon conventional professional discourses and practices but still much more work has to be done to turn this into epistemological awareness and professional change.

In a context characterised by continuous and accelerated change, the problem is how to learn and act within a paradigm which presents 'reality' as being non-linear, unpredictable, chaotic and in non-equilibrium. Furthermore, the challenge is to abandon attitudes of professional enlightenment and learn how to put people first in the definition of what a SD future might look like and in the actions and policies required in the transition towards sustainability. Working towards sustainability inevitably means that development and environmental policy-making need to be nurtured by participatory and social experimentation processes, which must involve people and localities in real change. The transition towards sustainability "will require the bringing together of the 'social' and the 'natural', the 'local' and the 'global', the 'personal' and the 'public', the 'legal' and the 'voluntary', the 'traditional' and the 'unconventional', and will inevitability lead to changes to institutional arrangements and relations to knowledge and power" (Buckingham-Hatfield & Percy, 1999:192).

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