European Environment Agency

Towards

Sustainable Development for Local Authorities

Approaches, Experiences and Sources

Cover design: Malini Mehra, IMSA Amsterdam, The Netherlands

Note

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Printed on recycled and chlorine-free bleached paper

Printed in XXXXXXXX

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Sustainable Development for Local Authorities

Approaches, Experiences and Sources

Prepared for the European Environment Agency

by

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February 1997

Foreword

Towards Sustainable Development for Local Authorities — Approaches, Experiences and Sources

According to the regulation, the European Environment Agency (EEA) has got the mandate 'to provide the Community and the Member States with objective, reliable and comparable information at the European level'. Among the different goals, the EEA shall provide information for environmental policy development and implementation and ensure broad dissemination and accessibility. Important principles in this context are: pooling, structuring and networking of existing information and know how. Local authorities and organizations are important clients for EEA products and services.

Local authorities have a key role to play in the transition to more sustainable ways of living. This report introduces the history, interpretations and development of the sustainability debate and describes the efforts of local authorities operationalising the sustainable development concept. The report addresses the reader who is trying to locate her or his community's efforts in the wider European and global perspective. Because of the dynamic development within this field, the report can only be a snapshot of current developments, focusing on the EU countries. Hopefully, an updated version of the book will cover more examples and initiatives in Southern European Countries, Central and Eastern Europe.

Also, the report can be seen as a contribution from the EEA to the Sustainable Cities and Towns project co-ordinated and supported by the European Commission. This project is a follow-up of the Commission's Green Paper on Urban Environment. Participants of the project are EU Member States, a range of international organizations listed in the information source directory and the Commission directorates. Important components in the project are the Campaign, the Good Practice Database and the Sustainable Cities Policy Report. Other highlights in the field of urban sustainability are the European Conference on Sustainable Cities & Towns, Aalborg 1994 (adoption of the Aalborg Charter), and the Second European Conference on Sustainable Cities & Towns, Lisbon, 1996 (adoption of the Lisbon Action Plan).

The development and finalization of this publication has involved many contributors other than the author involved. The report has been reviewed by the National Focal Points and the Scientific Committee of the EEA, for which the EEA is grateful.

The EEA hopes that this publication will prove useful to its readers in increasing their access to approaches, experiences and information sources within the area of sustainable development.

Mr Domingo Jiménez-Beltrán
Executive Director
European Environment Agency

Acknowledgements

A number of people have helped with this publication at various stages. They include Roger Levett who provided a rigorous review of the draft and many insights and suggestions. Wouter van Dieren, David Gee, and Eric den Hamer who offered valuable commentary. Jan Juffermans who was a mine of information and always generous with his advice. Ingvar Andersson at the European Environment Agency who provided encouragement at all the right moments. Several colleagues, past and present, at IMSA helped to get the project on the rails and keep it on track. They include Henk Vissé, David Rosenberg and Sarah Blau. In particular, grateful thanks go to Eva Klok for her assistance with the layout and word processing; to Joke Jongejan for help in researching and gathering material for Part II; and to Tammo Oegema for providing reliable feedback and support. Finally many thanks go to all those who have provided information for Part II and other segments of the report.

Malini Mehra
Amsterdam, February 1997

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Introduction

Purpose of the report

This book is intended as a guide to the newly evolving paradigm of sustainable development in the context of the European Union. It seeks to provide a background to the local and global debates on sustainability for those who are new to this subject area. It is primarily addressed to:

- local authority officials — who do not necessarily work in environmental departments, but are keen to learn about sustainable development and its relevance to their work; and
- local authorities' social partners and interested community groups.

Sustainable development is perceived by many to be an impossible concept — impossible to define and impossible to put into practice. Where it has entered into municipal discourses and institutional consciousness it is primarily associated with environmental management. As this report seeks to demonstrate, the concept is far more than that. Sustainability is about more than just planting trees, curbside recycling and rescuing wildlife (vital though these are). It is more than greening 'business as usual'. It is about transforming *politics* and *community development*. Politics, in the original sense of the word meaning city management. Community development, as in developing communities sustainably: ensuring quality of life for current generations without depriving future generations, and peoples elsewhere, of their right to a clean and healthy planet.

Sustainable development as a concept and a paradigm is indicative of a historic shift that is occurring in all of our societies— albeit at varying rates, levels of commitment, and visibility. The sustainability movement is described by some as the counter-culture movement of the 1990s. At its broadest, it brings together hitherto disparate aspirations for democracy, community, peace, diversity, human rights, gender equality, social and economic justice. It stands prevailing orthodoxies of economic growth, anthropocentric worldviews and materialist values on their head and calls for a new social contract. Over time it implies nothing less than a restructuring of our relationship to the planet and to all living beings. This agenda is challenging and will be difficult, but it is also compelling, necessary, and possible.

Local authorities have a significant — some argue crucial — role to play in the transition to more sustainable ways of living. This report introduces the history and development of the sustainability debate. It explains the changing macro policy context of relevance to municipality action and describes the efforts of local authorities themselves to provide leadership in reorienting policy and practice towards sustainability.

What the report is not ..

There is already much good practice on the ground in the area of local sustainability. Several recent 'good practice' guides have demonstrated this and provided a great service to those looking for concrete examples and information. There are also many excellent publications on the management and planning challenges of designing sustainable human settlements. Such resources, and many more, are referred to in Part II.

What the report is...

This report does not seek to duplicate such efforts. It is intended as a *companion* to such works. Its starting point is that many recent publications, in their concern with the concrete and the policy-relevant, gloss over the wider conceptual, political, and behavioural difficulties presented by the new sustainability paradigm. This report is a modest contribution to filling this gap. It provides a macro view of sustainability — history, concepts, conflicts, policy interpretations and actions — related to the local-level concerns of local authorities and their communities. It addresses the reader who is trying to locate her or his community's efforts in the wider European and global perspective. It profiles some of the innovations and campaigns that are providing a framework for pan-European action on local sustainability. Finally, it is a networking guide, offering a resources section to facilitate communication and information exchange.

Caveats

As with any work of this nature some caveats are in order.

The report makes no pretence to be comprehensive in its overview of developments: in the sense of being both up-to-date and all-encompassing. While it has tried to be current, it provides at best a snapshot of recent developments. There is a high rate of obsolescence in this field, with new initiatives coming 'on stream' faster than can be kept up with.

Secondly, the report focuses on the countries of the European Union and, where relevant, refers to experiences in other countries and regions. Here, however (in common with other publications of this type), the report suffers from an unevenness in the coverage of EU countries: Northern European examples predominate, and Mediterranean countries remain comparatively underexposed. It is hoped that this situation will change before long in view of the rise of recent initiatives in Southern European countries, and with improved communications and information exchange.[1] Additionally, although Central and Eastern Europe countries being outside the EU do not feature in this report, it is hoped that future editions of this or similar guides might extend their focus to this important region.

Finally, although efforts have been made to add publications in European languages to the *Selected Literature* section in Part II, the report has relied primarily on English-language publications. The inevitable limitations of this are acknowledged.

Recommended reading companions

As mentioned above, this report should be read in tandem with other relevant publications. The EEA itself has published several specialist and popular interest: on Environmental Management Systems and tools and the landmark *Dobris Assessment* (Urban Environment section). In addition, the following three publications are particularly noteworthy as companions to this Guide:

- *European Sustainable Cities* report (1996), and the Good Practice Guide[2] (forthcoming). Both are publications of the European Commission's Sustainable Cities project;
- *Sustainable Lifestyles: Strengthening the Global Dimensions to Local Agenda 21. A Guide to Good Practice*, Towns and Development, 1995;
- *Town and Country Planning*, UK.
- *The Gaia Atlas of Cities: New Directions for Urban Living*. Gaia Books Ltd. 1996.

The Sustainable European Cities and Towns Campaign is another recommended source of information on current developments.

Structure and organization of material

This report is structured in two roughly proportionate parts. Part I comprises four chapters and introduces the background to thinking, policy and practice on sustainable development. Part II is a three-part resources section guiding the reader to

information sources mentioned in the text and others of relevance to local authorities and their social partners.

Part I

Chapter 1 of Part I sets the discussion of sustainability in ecological perspective. It demonstrates the ecological and social need for change in patterns of human development, production and consumption. The chapter also outlines the development of the notion of sustainable development. It demonstrates how this new paradigm is a hotly contested one, and flags some of the controversies and flashpoints. *Chapter 2* steps to the macro policy level and discusses the development of international and European Union policies on sustainable development *vis-à-vis* their relevance for local-authority action. *Chapter 3* introduces the sustainable cities / sustainable communities movements. It looks at the factors behind the development of the new sustainability agenda for local authorities and reviews the European landscape for local authorities identifying some of the opportunities and obstacles. The chapter profiles some initiatives by local authorities, NGOs (Non-Governmental Organizations), and others. *Chapter 4* discusses three areas touched on in the previous chapter in greater depth. The first calls for a 'new professionalism'. It argues that if local authorities are to be successful mobilisers of their communities then changes in administrative culture and professional attitudes will also be in order. The other two areas concern tools and options with (largely) untapped potential for advancing sustainability goals. These tools — urban farming and the ecological footprint — are gaining in popularity with local authorities and community groups. They epitomise the principle of elegance: simple yet offering significant positive multiplier effects.

Part II

The three-part resources section contains a selected literature section, a listing of useful internet addresses, and a detailed chart of organizations, networks, programmes and European Commission funding sources concerned with promoting sustainable development. This section is intended to be an illustrative — not *comprehensive* — listing of literature or organizations active in the area of sustainable development. A reference section is included to guide the reader to more specific sources of information.

PART I

Local Authorities Moving Towards Sustainable Development

A journey of a thousand miles begins with one step...

1

Humanity must live within the carrying capacity of the Earth. There is no other rational option in the longer term... . Because of the way we live today, our civilisations are at risk.

Caring for the World. A Strategy for Sustainable Living. 1991:3

Making sense of sustainable development

Sustainability is the buzzword of the 1990s. Everyone from European policy-makers, to urban planners and retail executives seem to have adopted the term. It is the in-vogue prefix for anything from corporate environmental reports to travel agents' package-tour promotions. To paraphrase economist Milton Friedman, we are all committed to sustainable development now.

But what may be an advertiser's dream can be a local authority's nightmare. Is the concern with sustainability just a passing fad? Or does it signify an emergent cultural revolution? Do we all mean the same thing by sustainability or sustainable development? Do we all share the same premises and have the same goals? Or will different interpretations and different agendas result in conflicting policy interpretations, priorities and practices? Given the welter of confusion surrounding the concept, many local authorities might be forgiven for dismissing the validity or utility of the concept as an unnecessary complication for their work.

This chapter unpacks the concept of sustainability. Writ large, the concept alludes not only to the ecological crises at hand but to wider social, political, and cultural challenges which will require the development of new methods, skills, and attitudes. This chapter argues that clarity on the subject, and the values, premises and agendas that lie tucked behind it, is essential to the accomplishment of sustainability goals. To a large degree this area of critical analysis has been left neglected in the stampede to jump aboard the sustainable development bandwagon. Critics argue that for sustainable development to be regarded merely as the *summum bonum* of human existence is to render it meaningless. The trade-offs and choices implicit in the 'search for sustainability' must be made transparent to generate widespread popular support for the need for transformation. There will no doubt be winners and losers in the process and this must be communicated honestly to prevent future conflicts. These and other themes are touched on in this chapter and recur in the rest of the text.

This chapter concerns itself with the questions: What are the issues driving the sustainability movement? What are the controversies? And what do they mean? It paves the way for a consideration in the next chapter of the different traditions behind, and the approaches adopted by, the *sustainable cities* and *sustainable communities* movements.

Taking the long view: sustainability in evolutionary and ecological perspective

In evolutionary terms there is no such thing as sustainability — at least as far as our species is concerned. Of the different forms of life that have inhabited the Earth in its four thousand million year history, 99.9% are now extinct. Against this backdrop, the human enterprise with its roughly 300,000-year history barely merits attention. As Mark Twain, the American novelist once remarked, if our planet's history were to be compared to the Eiffel Tower, human history would be a mere smear on the very tip of the tower.

Human ecological impact

But while modern humans (*homo sapiens sapiens*) might be insignificant in evolutionary terms, we are by no means insignificant in terms of our recent planetary impact. A 1986 study estimated that 40% of the product of terrestrial plant photosynthesis — the basis of the food chain for most animal and bird life — was being appropriated by humans for their use.[3] More recent studies estimate that 25% of photosynthesis on continental shelves (coastal areas) is being used to satisfy human demand.[4] Human appropriation of such natural resources is having a profound impact upon the millions of other species which are also dependant upon them. Ecologist, William Catton has estimated that current rates of human resource extraction are 10,000 times the rates of natural resource regeneration; these are showing no signs of abating.

More worrying still is the fact that human impact appears to be placing the planet itself into reverse gear. One of the basic tenets of evolution is that the generation of new forms of life outstrips the extinction of older species by a wide margin thus ensuring strong biological diversity. Scientists believe, however, that for the first observable time in evolutionary history, another species — *homo sapiens sapiens* — has upset this balance to the degree that the rate of species extinction is now estimated at 10,000 times the rate of species renewal.[5] Human beings, just one species among millions, are literally crowding out the other species we share the planet with.

Evidence of human interference with the natural world is visible in practically every ecosystem from the presence of CFCs in the stratosphere to the artificially changed courses of the majority of river systems on the planet. It is argued that ever since they abandoned nomadic, gatherer-hunter[6] ways of life for settled societies some 10,000 years ago, humans have continually manipulated their natural world to meet their needs. While this observation is a correct one, the rate, the scale and the nature of human-induced global change — particularly in the post-industrial period — is unprecedented in the history of life on Earth. There are three primary reasons for this.

Firstly, mechanisation of both industry and agriculture in the last century resulted in vastly improved labour productivity which enabled the creation of goods and services. Since then, scientific advance and technological innovation — powered by ever-increasing inputs of fossil fuels and their derivatives — have revolutionised every industry and created many new ones. The subsequent development of western consumer culture, and the satisfaction of the accompanying disposable mentality, has generated material flows of an unprecedented scale.[7] The Wuppertal Institute estimates that humans are now responsible for moving greater amounts of matter across the planet than all natural occurrences (earthquakes, storms, etc.) put together.

Figure 1:
Global Consumption Inequality
24 % of the global population — mostly in the high-income countries — accounts for:

92% cars
70% CO2 emissions
86% copper and aluminium
81% paper
80% iron and steel
48% cereal crops
60% artificial fertilizer

Secondly, the sheer size of the human population is unprecedented. There are more people alive today than there have been in all human history. Every passing year adds another 90 million people to the planet. Even though the environmental impact varies significantly between countries (and within them), the exponential growth in human numbers, coupled with rising material expectations in a world of limited resources, has catapulted the issue of *distribution* to prominence. As Figures 1 and 2 make clear, global inequalities in resource consumption and purchasing power mark the clearest dividing line between the haves and the have-nots. It has become apparent that present patterns of production and consumption are unsustainable for a global population that is projected to reach between 8 — 12 billion by the year 2050.[8] If ecological crises and rising social conflict are to countered, the present rates of over-consumption by a rich minority, and under-consumption by a large majority, will have to be brought into balance.

Thirdly, it is not only the rate and the scale of change but the *nature* of that change that is unprecedented. Human inventiveness has introduced chemicals and materials into the environment which either do not occur naturally at all, or do not occur in the ratios in which we have introduced them. These persistent organic pollutants are believed to be causing alterations in the biosphere and geo-chemical cycles, the effects of which are only slowly manifesting themselves, and the full scale of which is beyond calculation. CFCs and PCBs are but two examples of the approximately 100,000 chemicals currently in global circulation.[9] (Between 500 and 1,000 new chemicals are being added to this list annually.) The majority of these chemicals have not been tested for their toxicity on humans and other life forms, let alone tested for their effects in combination with other chemicals. These issues are now the subject of special UN and other inter-governmental working groups.

The significance of such biospheric intervention

The cumulative effects of these human interventions are gradually beginning to manifest themselves. Table 1 lists a few indicators of the state of the global environment.

Collectively these phenomena signify a major *discontinuity*, a tectonic shift in our relation with the biosphere. In terms of their message, they amount to what Norman Myers calls 'a whole flock of miner's canaries singing with decibels of warnings.'[10] As Clive Ponting, the historian, has noted, humans are distinct from all other species in their relationship to the ecosystem in two ways. 'First, they are the only species capable of endangering and even destroying the ecosystems on which they depend for their existence. Second, humans are the only species to have spread into every terrestrial ecosystem and then, through the use of technology, to have dominated them.'[11]

Table 1: Indicators of Global Environmental Stress (a partial listing)

Forests — Deforestation and degradation remain the main issues. 12.1 million hectares of forest were lost every year in the decade 1980-1990. The largest losses of forest area are taking place in the tropical moist deciduous forests, the zone best suited to human settlement and agriculture; recent estimates suggest that nearly two-thirds of tropical deforestation is due to farmers clearing land for agriculture. There is increasing concern about the decline in forest quality associated with intensive use of forests and unregulated access.

Soil — As much as 10% of the earth's vegetated surface is now at least moderately degraded. ... Trends in soil quality and management of irrigated land raise serious questions about longer-term sustainability. It is estimated that about 20% of the world's 250 million hectares of irrigated land are already degraded to the point where crop production is seriously reduced.

Fresh Water — Some 20% of the world's population lacks access to safe water and 50% lacks access to safe sanitation. If current trends in water use persist, two-thirds of the world's population could be living in countries experiencing moderate or high water stress by 2025.

Marine fisheries — 25% of the world's marine fisheries are being fished at their maximum level of productivity and 35% are overfished (yields are declining). In order to maintain current per capita consumption of fish, global fish harvests must be increased; much of the increase might come through aquaculture which is a known source of water pollution, wetland loss and mangrove swamp destruction.

Biodiversity — Biodiversity is increasingly coming under threat from development, which destroys or degrades natural habitats, and from pollution from a variety of sources. The first comprehensive global assessment of biodiversity put the total number of species at close to 14 million and found that between 1% and 11% of the world's species may be threatened by extinction *every decade*. Coastal ecosystems, which host a very large proportion of marine species, are at great risk with perhaps one-third of the world's coasts at high potential risk of degradation and another 17% at moderate risk.

Atmosphere — The Intergovernmental Panel on Climate Change's *Second Assessment Report* has established that human activities are having a discernible influence on global climate. CO_2 emissions in most industrialised countries have risen during the past few years and very few countries are likely to stabilise their greenhouse gas emissions at 1990 levels by 2000 as required by the Climate Change convention.

Toxic chemicals — About 100,000 chemicals are now in commercial use and their potential impacts on human health and ecological function represent largely unknown risks. Persistent organic pollutants are now so widely distributed by air and ocean currents that they are found in the tissues of people and wildlife everywhere; they are of particular concern because of their high levels of toxicity and persistence in the environment.

Hazardous wastes — Pollution from heavy metals, especially from their use in industry and mining, is also creating serious health consequences in many parts of the world. Incidents and accidents involving uncontrolled radioactive sources continue to increase, and particular risks are posed by the legacy of contaminated areas left from military activities involving nuclear materials.

Waste — Domestic and industrial waste production continues to increase in both absolute and per capita terms, worldwide. In the developed world, per capita waste generation has increased threefold over the past 20 years; in developing countries, it is highly likely that waste generation will double during the next decade. The level of awareness regarding the health and environmental impacts of inadequate waste disposal remains rather poor; poor sanitation and waste management infrastructure is still one of the principal causes of death and disability for the urban poor.

Source: United Nations, 1997. *Report of the Secretary-General, Overall Assessment of Progress Achieved since UNCED* (advance unedited text).

Recent human development patterns have not only affected ecological systems but are also rapidly changing social systems. Arguably two of the most powerful forces of societal change in modern times have been:

- colonialism, with its lasting legacy of unequal political and economic relations between and within countries; and
- scientific and technological development, which has changed virtually every aspect of contemporary life.

These and other forces have contributed to a highly polarised world where disparities in wealth and income (see Figure 2), power and status, are deepening and continue to be marked by differences in, *inter alia*, gender, race and ethnicity, and national origin. Viewing the human predicament in ecological and evolutionary perspective is fundamental to an understanding of the significance of current changes. Taking the long view shatters the complacency of business-as-usual attitudes that 'unsustainability' is just a phase humanity is going through. Despite the complexity and uncertainty of global changes, there appears to be scientific consensus (see Box 1) on most of the following three points:

- first, the magnitude of the impact that humans, a juvenile species in evolutionary terms, are exerting on life-support systems;
- second, as Gaia theoreticians — who view the planet as a self-regulating system — point out: the Earth is indifferent to humans, it will ultimately recover, even though the time-scale will be eons;
- the need for change to ensure a future for human beings.

Box 1:

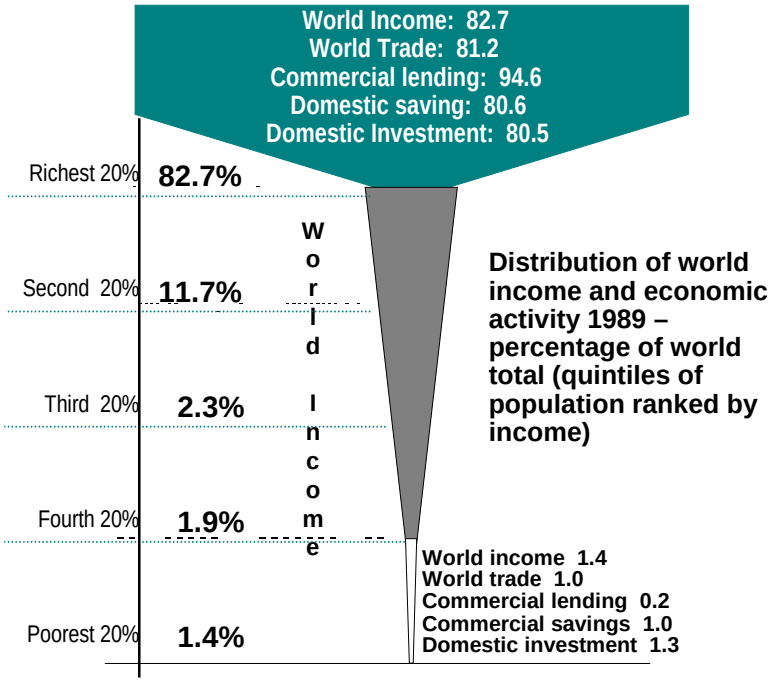
Scientists' Warning to Humanity

The scientific consensus on the seriousness of global environmental concerns is not illusory. To prove this point, in 1993, 58 of the world's most prestigious Scientific Academies issued the *World Scientists' Warning to Humanity* (a fragment of which appears here). The document was signed by over 1,600 leading scientists — including more than half of all living Nobel laureates in science. The *Warning* asserted the collective voice of the scientific community against the views of a small but vocal minority of 'contrarions' who dispute the existence of environmental crises.

... there is no doubt that the threat to the ecosystem is linked to population size and resource use. Increasing greenhouse gas emissions, ozone depletion and acid rain, loss of biodiversity, deforestation and loss of topsoil, shortages of water, food, and fuel indicate how the natural systems are being pushed ever closer to their limits... .

We the undersigned, senior members of the world's scientific community, hereby warn all humanity of what lies ahead. A great change in our stewardship of the earth and the life on it is required, if vast misery is to be avoided and our global home on this planet is not to be irretrievably mutilated[12].

Figure 2: Global Income and Wealth Disparities



Source UNDP 1992

The evolution of sustainability itself

While *Our Common Future*, the report of the World Commission on Environment and Development (commonly known as the Brundtland Commission) is widely credited with having popularised the concept of sustainable development, it does in fact have a longer lineage. The year 1972 was a watershed in marking both the first International Conference on the Human Environment in Stockholm and the publication of the provocative report *Limits to Growth* by the Club of Rome which highlighted the imminent threat of 'overshoot' (a systems-analysis term for exceeding the carrying capacity).

> ***This we know. The earth does not belong to man; man belongs to the earth. This we know. All things are connected like the blood which unites one family. All things are connected.***
> **Chief Seathl**

Throughout the 1970s and 1980s a steady stream of books and reports began to appear, preoccupied with the question of environment and development. This stream would turn into a deluge in the sustainability-friendly 1990s.

The *World Conservation Strategy*, the manifesto published collectively in 1980 by the World Conservation Union (IUCN), the United Nations Environment Programme (UNEP — set up after the Stockholm conference), and the World Wide Fund for Nature (WWF), stands out as an early — but at the time largely overlooked — international attempt at mobilising public action to address emergent environ-mental challenges (see Box 2).

More recently, environmentalists have argued that the intellectual history of the concept of sustainability can be traced back to the terms 'stationary' or 'steady-state economy' used by 19th-century political economists.[13] For John Stuart Mill, the 19th-century political economist, 'stationary' was not a static concept but referred to a balance between production and natural resources implying equality of access to natural resources for successive generations.

These concerns are not only to be found in dissident western intellectual traditions but can be traced in the oral histories of indigenous cultures. For example, the principle of inter-generational equity is captured in the Inuit saying, 'we do not inherit the Earth from our parents, we borrow it from our children'. The Native American 'Law of the Seventh Generation' is another illustration.

Box 2:

Caring for the Earth's
Principles for Sustainable Living

1. Respect and care for the community of life
2. Improve the quality of life
3. Conserve the Earth's vitality and diversity
4. Minimise the depletion of non-renewable resources
5. Keep within the Earth's carrying capacity
6. Change personal attitudes and practices
7. Enable communities to care for their own environments
8. Provide a national framework for integrating development and conservation
9. Create a global alliance

Source: *Caring for the Earth. A Strategy for Sustainable Living.* IUCN / UNEP / WWF. (1991). Gland, Switzerland.

According to this, before any major action was to be undertaken its potential consequences on the seventh generation had to be considered. For a species that at present is only 6,000 generations old, and whose current political decision-makers operate on time scales of weeks, or five years at most, the thought that other humans have based their decision-making systems on time scales of 300 years seems inspiringly sage but politically inconceivable.

Conflicts and controversies

At the beginning of this chapter the observation was made that sustainable development is not a self-evident concept but a politically contested one. Despite a plethora of varying definitions, at its core, sustainability refers to three simple concerns:

- the need to arrest environmental degradation and ecological imbalance;
- the need not to impoverish future generations;
- the need for quality of life and equity between current generations.

Added up, these core concerns are an unmistakable call for transformation. Business-as-usual is no longer an option. Social institutions — including economic systems and political arrangements — cannot continue as they are. This is not an agenda for the faint-hearted. Little wonder then that ever since *Our Common Future* popularised what had hitherto existed on disciplinary margins or NGO agendas, there has been an avalanche of books, reports, and articles on the subject, addressing sustainable development from every conceivable angle.[15] In the ensuing war of definition, almost 300 different interpretations of the concept have been identified (see Box 3). These differing — sometimes conflicting — interpretations are not accidental. They are the products of conflicting worldviews, differing ideologies, varied disciplinary backgrounds, opposing knowledge traditions, value systems and vested interests.

Such differences in understanding and approach make consensus towards common agendas difficult. Furthermore, in a sharply divided world it is not uncommon for the rich and powerful to have one agenda; and the poor and under-privileged to have another.

Why the need for conceptual clarity?

But why does this matter? Is it not futile to quibble over conceptual definitions when the key issue is to devise strategies and set targets to put the concept into practice?

While action is urgently needed, understanding the concept and agreeing upon principles for action is paramount. Two examples bring this point home. The first is from Canada, one of the first countries to embrace 'sustainable development' as official national policy. In 1992 a three-volume survey of how Canadian municipalities were attempting to translate sustainability in the urban context found a spectrum of definitions of sustainable development formulated by municipal officials. The author concluded that the exercise underscored how 'poorly the concept is understood and put to practice, despite all the rhetoric since the Brundtland report'.[16].

> *... operationalising the concept (of sustainable development) is no simple task. Firstly, scientific knowledge about critical natural environmental thresholds and impacts on ecological systems is uncertain. Secondly, because the concept challenges established practices and power relations, there are forces seeking not merely to avoid its rise to public policy prominence, but, for vested economic and political interests, to impose particular interpretations on it.*
>
> Healy and Shaw, *Regional Studies*, 199?/772[14]

The second example comes from the UN Secretary-General's review of global progress on sustainable development since UNCED. The report notes that one of the constraining factors to further progress has been that: '... not all Governing Bodies of international organizations, even within the UN system, have the same understanding of the concept of sustainable development. Some have adopted programmes of environmentally sustainable development, others have called for sustainable human development while others have talked of conservation or other types of environmental plans. This has led to some confusion regarding the core issues of sustainable development.'[17]

Evidently, clarity about the concept is crucial when it comes to selecting *which issues* are to be emphasized, *whose needs* and interests are to be prioritised, and *who* is to be involved in the decision-making. This in turn informs what

Box 3: (Selected) Definitions of Sustainable Development

Our Common Future (Brundtland Commission Report), World Commission on Environment & Development, 1987

1. *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*
2. *... sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the orientation of the technological development, and institutional change are made consistent with future as well as present needs.*

Caring for the Earth **(IUCN, WWF, UNEP, 1991)**
Sustainable development means improving the quality of life while living within the carrying capacity of supporting ecosystems.

Maastricht Treaty on European Union **(Article 2, Treaty on European Union, 1992**
(Sustainable development is) a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment.

European Community *Fifth Environmental Action Programme* (CEC, 1993)
(Sustainable development is) continued economic and social development without detriment to the natural resources on the quality of which human activity and further development depend.

International Council of Local Environmental Initiatives (ICLEI)
Sustainable development is development that delivers basic environmental, social and economic services to all residents of a community without threatening the viability of the natural, built and social systems upon which the delivery of these services depends.

The Green Economy**, Michael Jacobs (1991:79-80)**
Sustainability means that the environment should be protected in such a condition and to such a degree that environmental capacities (the ability of the environment to perform its various functions) are maintained over time: at least at levels which give future generations the opportunity to enjoy an equal measure of environmental consumption.

Blueprint for a Green Economy ('Blueprint 1')**. David Pearce, *et al* (1989), Earthscan, London**
Weak Sustainability: Only the aggregate of stocks of capital, regardless of their type, has to be held constant for future generations; these forms of capital are completely substitutable for each other. 'It is the aggregate quantity that matters and there is considerable scope for sustituting man-made wealth for natural environmental assets' (Pearce *et al*, 1989:48)

Sensible Sustainability: No further decline is accepted for known critical natural stocks, while for others substitution between natural and man-made capital is allowed for.

Strong Sustainability: The overall stock of natural capital should not be allowed to decline.

Absurdly Strong Sustainability: No substitution is permitted between the various kinds of natural capital stocks; each stock has to keep to at least its current level.

Ecology teaches us that there are no environmental solutions to environmental problems, except over geological time scales. There are only economic, social and political solutions because the causes of environmental degradation are economic, social and political by nature.

Charles Secrett,
Friends of the Earth

framework is to be set and what policies and instruments are to be employed. Such considerations matter because the defining of issues and the negotiation of interests is not an apolitical process, it is an intensely political one. Several analysts have emphasised this point: '... the realisation of environmentally sustainable strategies is not simply a problem of technology or ecosystemic understanding, but of politics, institutions and the articulation and implementation of public policy'.[18]

Two controversial examples serve to illustrate this point of the power of definition and, subsequently, policy formulation.

What is more unsustainable: population growth or car growth?

The first case relates to those two favourite bogies of many environmentalists: population growth and cars.[19]

Population growth rates, in relation to available resources, have long been held to be a key source of environmental degradation. Population control has therefore been a central focus of many international aid programmes, which use an assortment of incentives and inducements to lower fertility in poor countries.

There is not one environmental crisis, affecting everybody in the same way. There are many different crises, and the one each of us experiences depends on a number of facts about us — where we live, how much money we have, (and) what generation we belong to.

Michael Jacobs
The Green Economy, 1991:20-21[22]

Car growth, on the other hand, is growing four times as fast as the human population. There are, however, no population control programmes for cars. Traffic growth targets are seldom set (or seriously implemented) and policy makers seem incapable of arresting the inexorable growth in private vehicles. Experience has shown that restrictions have been opposed by the automobile industry and western consumers alike as an attack on free trade and personal freedoms respectively. Critics charge that it is therefore evidently easier to control the fertility of the poor in Southern countries than the mobility of car-dependent consumers in Northern countries.[20] Such policy choices beg the question: whose interests are being served, and at whose cost?

Whose Common Future?

The case of *Our Common Future* is also instructive here.

While the report is credited for catapulting the issues of environmental degradation and unequal development onto the international stage, it was also profoundly critiqued for its ambiguity and unwillingness to draw out the policy implications of its own analysis. It condemned the environmental impact of economic growth; but called for more growth. It deplored growing inequality in the world; but was silent on resource distribution.[21]

Critics charged that the report sought to be 'all things to all people', obscuring real world issues of power, conflict, and responsibility. While some people identified it with the message of ecological integrity, economic transformation and social justice, others identified it with the promise of sustained growth, that it was possible to be 'green and rich at the same time'. No

doubt any report that was endorsed by free-market Heads of State and anti-poverty activists alike was bound to suffer from some degree of schizophrenia.

In sum, the impassioned debates surrounding the Brundtland Commission report, and the political confrontations at the later Earth Summit (Rio 1992), underscore the fears and divisions at the heart of the sustainability debate. It is these that are driving — or hindering — different sustainability agendas.

The Flashpoints

If the core elements of sustainability — ecology, economy, and equity — be regarded as the tips of a triangle (see Figure 4), then it is the relationship between ecology and economy, and economy and equity respectively, that constitute the flashpoints in the sustainable development debate. More specifically, the themes are: the weakness of economic models, the nature of growth, the culture of consumption, and equity.

Box 4: Environmental Functions

Environmental functions provided by the Earth can be divided into three categories:

- *Sources*: Water, food, timber, energy, minerals, and other natural resources; recreation and other amenities.
- *Sinks*: Carbon dioxide and 'waste' recycling,
- *Life support **services***: Climate regulation, nutrient recycling, ozone protection, etc.

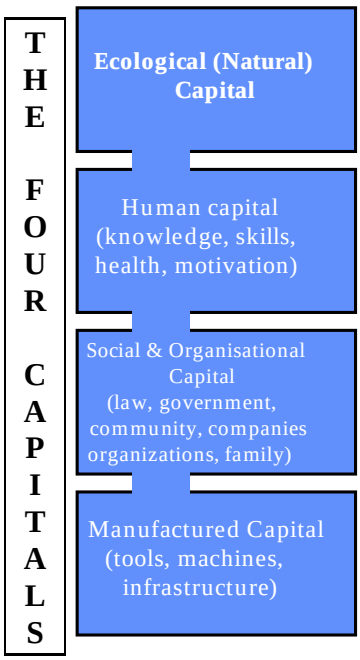
Environment or Economy?

Perhaps the most evident clash of interests and competing worldviews is between ecologists and economists (summarised in Annex 1).

In everyday life, sustainability choices are typically described as being about economic growth *or* environmental quality, conservation *or* jobs. Framed in such a way, it is no secret that precedence is usually given to immediate economic needs. Critics argue, however, that the choice is a false one: the environment is not only the 'long-term economy' but a healthy environment is a precondition for a healthy economy. The competitive edge gained by those countries who have shrewdly invested in strong environmental standards and nurtured ecologically responsible industry supports this point.

Nevertheless, there is no fudging the very real differences that lie at the heart of the environment-economy dispute. Ecologist Bill Rees argues that sustainability is a 'more complex problem from the ecological perspective than it appears to be from the economic mainstream'.[23] Expansion-orientated business and industry call for 'sustained growth' environmental scientists scorn such notions in a world of limited resources and oppose 'unfettered expansion of economic activity in rich nations'.[24] As one green economist

Figure 3: The Four-Capital Model



The four-capital model of wealth creation, developed by Paul Ekins and others, is central to 'new economics' and green economic thinking. It expands on conventional economic categories of land, labour and manufactured capital, by including other aspects of natural and social wealth. A healthy society is one in which all four capitals are well maintained - not some at the expense of others.

Adapted from: Ekins *et al* , Gaia Books, 1992.

states: 'the conflict between current economic growth patterns and sustainability constraints hardly needs to be argued: it is the whole basis of the environmental crisis. If current patterns of economic growth were simply to continue ... environmental degradation will get worse'.[25]

In recent years there has been strong criticism of mainstream (neo-classical) economics for its short-sightedness on environmental and social (e.g. equity, gender and culture) factors. This failing is not only inefficient, it leads to the 'externalising' — or passing on to society or future generations — of environmental and social costs.

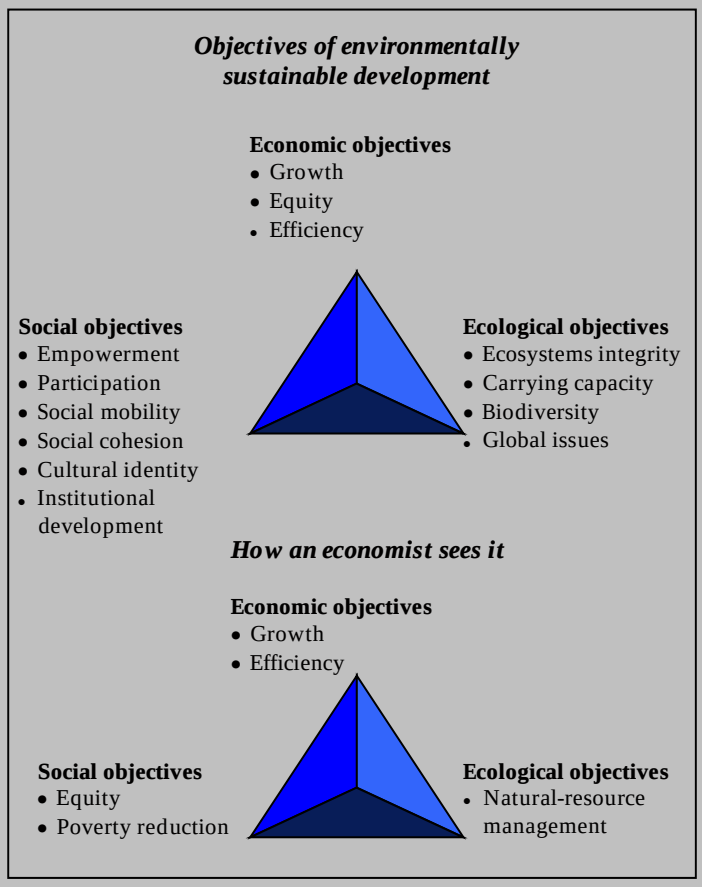
Economic indicators such as GNP have also come under fire for their inadequacies in guiding ecologically viable economic policy. Above all it is the *nature* of growth, and the demands of a consumer culture for it — 'the notion that the role of a human being is to maximise his or her consumption'[26] — that are irreconcilable with ecological objectives of respecting biospheric integrity in a context of rising population, rising consumerism, and rising environmental stress.[27]

It is this last issue that remains one of the central flashpoints in the environment-economy link. Positive steps towards a more balanced and ecologically sound relationship are, however, being made. For example, the development of industrial ecology with its focus on a circular rather than a linear economy, has found a receptive ear in progressive industry circles. Strides are being made in several areas to increase resource and energy productivity (make 'more with less') by factors of 4 to 10.[28] These are being advocated by research institutes, lobbying associations[29] and the European Commission to reduce both 'input' and 'throughput' in the economy.

The discipline of economics itself is slowly being transformed by practitioners bringing in new thinking on ecological and social connections. For example, recent theorising has focused on the need to maintain and enhance 'natural capital': the objective being to live off the income rather than deplete stocks (see Figure 3, the Four-Capital model).

More generally, the environment-economy link has become part of political debate; it has even become fashionable to talk in terms of the 'triple bottom line': environment, economics and equity. Institutions such as the World Bank have also established units to study the challenges of

Figure 4: Sustainable Development: — The World Bank's New Thinking



Source: Adapted from the World Bank, 1994:2

environmentally sustainable development (see Figure 4).

Equity

While much progress is being made to improve resource efficiencies, far less progress has been made to improve resource distribution. Currently, just one-fifth of the global population is consuming three-quarters of the earth's resources (Figure 1). If the remaining four-fifths were to exercise their right to grow to the level of the rich minority it would result in ecological devastation.

So far, global income inequalities (see Figure 2) and lack of purchasing power have prevented poorer countries from reaching the standard of living (and also resource consumption / waste emission) of the industrialised countries. Countries such as China, Brazil, India, and Malaysia are, however, catching up fast. In such a situation, global consumption of resources and energy needs to be drastically reduced to a point where it can be repeated by future generations. But who will do the reducing? Poorer nations want to produce and consume more. Yet so do richer countries: their economies demand ever greater consumption-based expansion. (Parallel conflicts of interest can also be found at the local and national level.) Such stalemates have prevented any meaningful progress towards equitable and sustainable resource distribution at the international level. These issue of fairness and distributional justice remain unresolved, but high on the political agenda. Box 5 and Table 2 describe some of the efforts made towards a resolution of these conflicts by the UN, governments, NGOs, and others.

In summary, sustainability is not a self-evident concept. It has both biophysical, social and economic dimensions. The social dimensions are the most politically contested and the assumptions lying behind talk of environment, development, equity, and sustainability need to be interrogated before a commonality of interests can be assumed.[30] In practical terms this means that depending on the interpretation, policy choices could favour (one or in combination): technocratic solutions; (re)distributive measures; market-based instruments; individual value and lifestyle changes; or wide-scale economic and institutional reform.

The next chapter looks at the rapidly changing international and European environmental policy context in the post-Brundtland era and how it is influencing the municipal agenda.

Box 5: Changing Production and Consumption Patterns: Efficiency and Sufficiency Revolutions

Poverty and environmental degradation are closely interrelated. While poverty results in environmental stress, the major cause of global environmental deterioration is an unsustainable pattern of consumption and production, particularly in the industrialized countries, which aggravates poverty and imbalances.

Achieving sustainable development will require efficiency in production and changes in consumption in order to optimize resource use and minimize the creation of waste. This will require reorienting patterns of development in industrial societies which have been copied in much of the developing world.

Proposals in Agenda 21 call for greater attention to issues around consumption and for new national policies to encourage the shift to sustainable consumption patterns.[1]

These passages from Agenda 21 are the result of intense political negotiation at the Rio Earth Summit (1992) between Northern and Southern countries. Their importance has been underscored by their recurrence in almost every major UN conference document since UNCED. The challenge issued to industrialised countries in these passages is clear, but underestimated, even in the Agenda 21 text. Leading European researchers estimate that resource efficiencies of more than 90% over the next 50 years are needed to meet growth in demand without causing ecological collapse. Others add that this 'eco-efficiency revolution' must be matched by a 'sufficiency revolution' to meet global resource equity goals.

The response to these passages has been varied: inter-governmental institutions such as the OECD and the CSD have established working groups. NGOs, such as Friends of the Earth, World Wide Fund for Nature, and ANPED have mobilised campaigns. Institutes such as the IISD have engineered global electronic discussion forums. Energy and design pioneers at the Wuppertal Institute and the Rocky Mountain Institute have promoted products based on Factor 4 resource and energy efficiencies. By and large, the response of national governments and industry has been marked by a prioritising of the *efficiency in production* half of the challenge. *Changes in the culture of consumption* (the sufficiency revolution) has proved harder to tackle and governments have been chided for ducking their responsibilities. Here leadership by the Norwegian government in organizing a (now yearly) ministerial-level gathering on the subject in Oslo in 1994 has been crucial to setting an official dialogue in motion. The 'Oslo process' has placed the issue on governmental agendas and some — including the Unites States, the world's largest consumer — have established committees to study the issue of changing consumption patterns.
The role of municipal authorities and their associations in the official debates has so far been marginal. Some are now beginning to take up the issues at the international and local level.

[1] Section 1, Chapter 4 of Agenda 21, *emphasis added*

Table 2: Friends of the Earth's Environmental Space Approach

The pressure group Friends of the Earth has responded to the challenge of global consumption inequality by developing the environmental space approach based on the principle of fair shares. Environmental space is defined as 'the total amount of pollution, non-renewable resources, agricultural land and forests that can be used globally without impinging on the access of future generations to the same amount'. The fair share (equity) principle holds that 'Each country has the right to the same amount of environmental space per capita'. Participants in Friends of the Earth's *Towards Sustainable Europe* Campaign have conducted national studies to calculate the environmental space for 30 European countries. The studies call for quantifiable resource targets to be set by national governments and the adoption of specific sustainable consumption and production policies by consumers and industry. The Campaign calculates that if such policies are adopted now, European countries can make the transition to more sustainable and equitable societies within one generation.[31]

Selected environmental space calculations from Friends of the Earth's study *Towards Sustainable Europe*

Resource	Present use per capita/year	Environmental Space per capita/year	Change needed (%)	Target 2010 per capita/year	Target 2010 (% change)
CO_2 emissions[1]	7.3t	1.7t	77 %	5.4t	26 %
Primary energy use	123 GJ	60 GJ	50 %	98 GJ	21 %
Fossil Fuels	100 GJ	25 GJ	75 %	78 GJ	22 %
Nuclear	16 GJ	0 GJ	100 %	0 GJ	100 %
Renewables	7 GJ	35 GJ	+400 %	20 GJ	+74 %
Non-renewable raw materials[2]					
Cement	536 kg	80 kg	85 %	423 kg	21 %
Pig iron	273 kg	36 kg	87 %	213 kg	22 %
Aluminium	12 kg	1.2 kg	90 %	9.2 kg	23 %
Chlorine	23 kg	0 kg	100 %	17.2 kg	25 %
Land use (EU 12)	0.726 ha			0.64	12 %
Arable	0.237 ha	0.10 ha	58 %	0.15 ha	37 %
Pasture	0.167 ha	0.09 ha	47 %	0.113 ha	32 %
Net import of agricultural land	0.037 ha	0.00 ha	100 %	0.0185 ha	50 %
'Unused' agricultural area	0 ha			0.47 ha 0.48	
Unprotected woodland	0.164 ha	0.138 ha	16 %	0.138 ha	16 %
Protected area	0.003 ha	0.061 ha	+1933 %	0.064 ha	+2000 %
Urban area	0.053 ha	0.0513 ha	3.2 %	0.0513 ha	3.2 %
Wood[3]	0.66 m3	0.56 m3	15 %	0.56 m3	15 %
Water[4]	768 m3	n / a	n / a	n / a	n / a

1: Present use for Europe-NIS, environmental space and target for Europe
2: Present use for EU 12, environmental space and target for Europe
3: EU + EFTA + CEE
4: The environmental space for water cannot be calculated on a European level

2

Towards a positive policy context for sustainability?

The preceding chapter has argued that the scale of our environmental and social challenges is profound and that the stakes are very high. However, as the variety of interpretations of sustainable development demonstrates, perceptions of the problems vary and this affects whether — and what type of — corrective actions are taken. In recent years a number of high-level international conferences on sustainability-related issues have been held. These conferences have shaped the international policy environment and catalysed a similar process of policy development at the regional level. They have also provided a new context and rationale for local authority action on sustainable development. This chapter discusses the impact of two significant international conferences: the Rio Earth Summit and Habitat II. It then analyses the European environmental policy context, including the Maastricht Treaty of the European Union, and the efforts of the European Commission to define a new sustainability agenda for urban authorities.

The international context

For all its internal contradictions, noted in the last chapter, the Brundtland Commission report *Our Common Future* marked a watershed in international deliberations on the environment, economy, and equity nexus. The report's message of human survival at threat succeeded in attracting political attention in a way in which other equally significant UN-sponsored reports had failed, such as *North-South: A Programme for Survival* (Brandt Commission report, 1980) and *Common Security*: *A Programme for Disarmament* (Palme Commission, 1982) had failed to. The process that *Our Common Future* set in motion provides the context for much of current policy-making and legislation on sustainability issues.

The immediate outcome of *Our Common Future* was the United Nations' Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992. Popularly known as the 'Earth Summit', this event was the largest and most celebrated international conference ever organized by the UN. The attendance was unprecedented: 178 countries; 120 Heads of State; 8,000 journalists; and more than 30,000 people at the official governmental summit and parallel NGO Global Forum. The Earth Summit resulted in five official documents:

- Rio Declaration
- Agenda 21
- Biodiversity Convention
- Climate Convention
- Forest Principles.

The conference also established two limited funding mechanisms for Eastern and Southern countries:

- the Global Environment Facility (GEF), administered jointly by the World Bank and UNEP, to support programmes in the focal areas of biodiversity, climate change,

international waters and ozone layer depletion;[32]

- Capacity 21, a programme to support follow-up on Agenda 21, administered by the United Nations' Development Programme (UNDP).

Following pledges made at Rio, an institution — the Commission on Sustainable Development (CSD) — was later established to monitor and report on progress in implementing the UNCED agreements. The New York-based CSD is responsible for coordinating the first UNCED review in June 1997. This conference, billed as Earth Summit II, will be marked by a Special Session of the UN General Assembly.

> UNCED was ... *a tale of two cities in more ways than one. What for government officials was yet another process of inter-governmental negotiation, was for NGOs an occasion for networking and lobbying, for journalists a good story, for academics a paradoxical combination of folly and wisdom, for political leaders and celebrities a photo-opportunity, for environment ministries a chance to establish themselves at home as serious players, for foreign ministries another threat from ubiquitous global conspiracies against the national interest, for environmentalists hope and for developmentalists danger.*
>
> Tariq Banuri, *Global Ecology*, 1993:50.

Agenda 21: Earth's Action Plan

By far the most ambitious, and perhaps the most important in terms of its agenda-setting achievements, is the ±800-page Agenda 21. As is common UN practice, the document was drafted by the UNCED secretariat, subjected to intense negotiation at the PrepComs (preparatory committees, a sort of inter-governmental collective bargaining process), and finally ratified by governments in Rio. The document covers actions in 40 different areas (see Box 6). It also identifies nine major groups whose participation is vital to realising sustainable development: women; children and youth; indigenous people; NGOs; local authorities; workers and trade unions; business and industry; scientific and technological community; and farmers.

Sceptics ask whether there is any real value to Agenda 21, given that it is after all a consensus document born of political compromise and closed-room inter-governmental deals. More importantly, they challenge, the compliance of the document is not even legally binding. How different is Agenda 21 from all the solemn international agreements that have preceded (and followed) it but since disappeared from view?
These issues of compromise and compliance are important and not entirely unrelated. Agenda 21 has indeed come under fire from many quarters — not in the least from NGOs - for its failure to address issues of the unequal global economy and political relations. It is argued that issues such as the need for structural change in high-income countries, corrupt govern-ments and bureaucracies, the role of transnational corporations, and the influence of international financial institutions — in short what are seen as vested interests in maintaining the status quo — are studiously avoided.[33] Critics argue that key obstacles to Agenda 21's implementation remain; the three below are often singled out for special attention:

- *Southern focus.* Agenda 21 is geared towards action in developing countries but, as the International Institute for Environment and Development (IIED) points out, 'it is the North which has the primary responsibility to change its development model, both to combat global environmental problems (e.g. climate change) and to remove the external obstacles to sustainability in the South (e.g. debt, trade and agricultural policies)'.[34]

- *Changes in national economic sovereignty*. The internationalisation of financial markets has diminished the capacity of governments to manage their economies. In the post-Agenda 21 era the impact of this has been visible from events in France to Mexico. Additionally, for Southern countries, traditional sources of capital such as aid and multilateral financing have been drying up and, in some regions, overtaken by private capital.[35] Agenda 21 however is a step behind this reality.

- *Role and responsibility of transnational corporations (TNCs) overlooked.* Large transnational corporations are the primary forces behind economic globalisation. Their power is such that they can either be formidable obstacles or positive engines for change. According to the World Bank, TNCs control 70% of world trade (over 40% of which is carried out within TNCs). The top 500 TNCs control two-thirds of world trade, including the important trade in commodities that many developing countries are dependent on. The 15 largest global corporations today have a gross income larger than the Gross Domestic Product of over 120 countries.[36] TNCs also account for half of all CO_2 emissions and have been implicated in several documented cases of environmental abuse. Despite their global dominance they operate unregulated on the international stage. Critics charge that none of these issues of lack of control and democratic accountability were addressed by Agenda 21.

Despite these shortcomings, it can be argued that Agenda 21 has proved a useful document for at least three reasons. Worldwide, it has:

- provided a framework for discussion on sustainable development;
- introduced the need for holistic approaches and integrative strategies;
- strengthened the principles of participation and partnership, recognizing the imperative for bringing together diverse constituencies in the search for, and implementation of, potential solutions.

On the issue of compliance, unlike its predecessors, Agenda 21 has so far managed to stay its course for at least two reasons.

First, there is a well-mobilised and increasingly diverse constituency promoting attention to Agenda 21. Many of the major groups recognised by the document have made it their own by tailoring their own versions of Agenda 21. Examples are the mushrooming Local Agenda 21s developed by local authorities, environmental and other NGOs, youth and community groups; Education 21, and UNIFEM's Women's Agenda 21.

Second, there is an institutional base. The UN responded to demands from NGOs and other pressure groups for institutional follow-up to the Rio Summit by establishing the UN Commission on Sustainable Development (CSD). The CSD helps facilitate the reporting requirement built into the text of Agenda 21. For example, Agenda 21 mandates that all countries have to establish national-level commissions or coordinating mechanisms to develop an integrated approach to sustainable development. Thus far almost 150 countries have national sustainable development bodies or mechanisms in place largely as a result of the impetus given by Rio and Agenda 21. Finally, all UN Member States are encouraged to submit reports to the CSD and participate in activities related to the UNCED review in 1997.

Box 6: Agenda 21 — Outline

Chapter 1. Preamble

Section 1: Social and Economic Dimensions

Chapter 2. International cooperation to accelerate sustainable development in developing countries and related domestic policies

Chapter 3. Combating poverty

Chapter 4. Changing consumption patterns

Chapter 5. Demographic dynamics and sustainability

Chapter 6. Protecting and promoting human health

Chapter 7. Promoting sustainable human settlement development

Chapter 8. Integrating environment and development decision-making

Section 2: Conservation and Management of Resources for Development

Chapter 9. Protection of the atmosphere

Chapter 10. Integrated approach to the planning and management of land resource

Chapter 11. Combating deforestation

Chapter 12. Managing fragile ecosystems: Combating desertification and drought

Chapter 13. Managing fragile ecosystems: Sustainable mountain development

Chapter 14. Promoting sustainable agriculture and rural development

Chapter 15. Conservation of biological diversity

Chapter 16. Environmentally sound management of biotechnology

Chapter 17. Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources

Chapter 18. Protection of the quality and supply of fresh-water resources: Application of integrated approaches to the development, management and use of water resources

Chapter 19. Environmentally sound management of toxic chemicals, including prevention of illegal international traffic in toxic and dangerous products

Chapter 20. Environmentally sound management of hazardous wastes, including prevention of illegal international traffic in hazardous wastes

Chapter 21. Environmentally sound management of solid wastes and sewage-related issues

Chapter 22. Safe and environmentally sound management of radioactive wastes

Section 3: Strengthening the Role of Major Groups

Chapter 23. Preamble

Chapter 24. Global action for women towards sustainable and equitable development

Chapter 25. Children and youth in sustainable development

Chapter 26. Recognizing and strengthening the role of indigenous people and their communities

Chapter 27. Strengthening the role of non-governmental organizations: Partners for sustainable development

Chapter 28. Local authorities' initiatives in support of Agenda 21

Chapter 29. Strengthening the role of workers and their trade unions

Chapter 30. Strengthening the role of business and industry

Chapter 31. Scientific and technological community

Chapter 32. Strengthening the role of farmers

Section 4: Means of Implementation

Chapter 33. Financial resources and mechanisms

Chapter 34. Transfer of environmentally sound technology, cooperation and capacity-building

Chapter 35. Science for sustainable development

Chapter 36. Promoting education, public awareness and training

Chapter 37. National mechanisms and international cooperation for capacity-building in developing countries

Chapter 38. International institutional arrangements

Chapter 39. International legal instruments and mechanisms

Chapter 40. Information for decision-making

Rio's agenda for local authorities

Agenda 21 has a particular resonance for local authorities. It marks the first major success of local authorities to have their new role as key players in the sustainability debate formally recognised. It has been estimated that almost two-thirds of the actions in Agenda 21 require the involvement of local government. Agenda 21 devotes an entire chapter to local authorities as one of its nine 'major groups'. This chapter (see Box 7) was itself the result of active involvement by groups such as the International Council for Local Environmental Initiatives (ICLEI), the United Towns Organization, European Commission delegates and others.

The UN cycle of conferences

The 1990s have been a very busy decade for international policy making. The issues have ranged from the use and management of natural resources (UNCED and its resultant conventions), to demographics and reproductive rights (International Conference on Population and Development, 1994); poverty and social inequalities (the Social Summit, 1995); the status of women (the Fourth World Conference on Women, 1995) and the regulation of global trade (General Agreement on Trade and Tariffs, 1994). The results of these conferences will be contributing to shaping the global policy agenda in the first decades of the 21st century.

Although the majority of these conferences have some bearing on the kind of societies we will be living in, and how they will be run, two summits stand out in their relevance for local authorities: the UN World Conference on Social Development or 'The Social Summit' (Copenhagen, 1994) and HABITAT II 'The City Summit' (Istanbul, 1996). Both addressed themselves to concerns faced daily by many local authorities: homelessness, unemployment, crime, poverty, social exclusion, pollution, waste disposal, traffic congestion, overstretched or underfunded services, etc. Of the two, the Social Summit, despite its important focus on development and the threats to social cohesion and sustainable livelihoods everywhere, was comparatively downplayed in industrialised countries. Perhaps due to a reluctance to admit that

Box 7: Agenda 21's Chapter 28 on Local Authorities

Basis for Action

28.1. Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and environmental policies and regulations, and assist in implementing national and subnational environmental policies. *As the level of governance closest to the people, they play a vital role in educating, mobilising and responding to the public to promote sustainable development.*

Objectives

28.2. The following objectives are proposed for this programme area:

(a) *By 1996, most local authorities in each country should have undertaken a consultative process with their local populations and achieved a consensus on a 'Local Agenda 21' for the community*;

(b) By 1993, the international community should have initiated a consultative process aimed at increasing cooperation between local authorities;

(c) By 1994, representatives of associations of cities and other local authorities should have increased levels of cooperation and coordination with the goal of enhancing the exchange of information and experience among local authorities;

(d) *All local authorities in each country should be encouraged to implement and monitor programmes which aim at ensuring that women and youth are represented in decision-making, planning and implementation processes.*

(emphasis added)

The Final Text of Habitat II's World Plan of Action is only a gentle starting point for beginning to influence national actions. ... If, in a year or so, a handful of countries have adjusted a handful of policies or practices, then probably the event justifies itself. ... And beneath the surface, there are the indirect benefits of teaching countries — powerful and potentially arrogant countries, or poor and potentially troublesome countries — the techniques of international democracy.

Richard Best
Chair, Habitat II UK Council

issues of poverty and exclusion were not the sole prerogative of the poorer countries. While some local-government representatives were present at the Social Summit there was little organized activity by international local authority associations. Habitat II, in contrast, attracted unprecedented local authority attention and the two-week conference in Istanbul marked their political coming of age.

Habitat II 'The City Summit'

Officially known as the Second UN Conference on Human Settlements (the first conference being held in Vancouver in 1976), Habitat II had been organized to raise public awareness about the problems and potentials of human settlements, and to seek commitment from the world's governments to make all locales of human habitation healthy, safe, just, and sustainable.[37] Attendance at the official conference was beyond expectation: more than 3,000 government delegates from 171 countries; approximately 600 local-authority representatives; over 2,000 accredited NGO representatives; some 3,000 journalists; and representatives of trade unions, intergovernmental organizations and other major groups . Some 8,550 people participated in the parallel NGO Forum which saw over 1,700 meetings and events.[38]

Habitat II addressed itself to two fundamental questions:

- How can adequate shelter and livelihoods for all of the world's ever-growing and primarily urban population be ensured?
- How can sustainable human settlements be created in an urbanising world?

These issues are central to the social and economic challenges of sustainable development and of crucial importance for local government.

The conference had not been nicknamed the 'City Summit' for nothing. Human civilisation is rapidly becoming an urban one. We will enter the new millennium with more than 50% of people living in cities. The pace of this change has been breathtaking: since the beginning of this century, the percentage of global urban populations has almost quadrupled and the trend is set to continue. Urban areas are larger, more energy-consuming, more resource-depleting, more waste-emitting and more populous than they have ever been. By 2025 there will be an estimated 100 megacities in the world (the majority being in Asia) with populations exceeding five million each.

The implications of such a rapid transformation of human habitat, and the accompanying take-over of other species' niches, has given pause for concern. As Wally N'Dow, Secretary-General of Habitat II asks: 'Can the planet accommodate an urbanised human species, drawing its resources from an increasingly global hinterland? Can the human race cope with high levels of urban density, living solely in high-rise concrete canyons? Or, indeed, can it cope with urban sprawl, and with urban motorway networks stretching out over vast distances? Can planners, architects, administrators, and ordinary citizens create a sustainable and acceptable life in a world composed principally of large cities?'[39]

How did Habitat II address this call? After two weeks of deliberation the assembled governments issued two final documents negotiated at the conference: the Istanbul Declaration and the Habitat

Agenda. Declarations have become customary at international conferences and can be regarded as a general statement of intent, the appetiser before the main course.

The 15-paragraph 'Istanbul Declaration' reaffirmed the commitment by governments to 'better standards of living in larger freedom for all humankind' and noted the common but differentiated responsibilities of governments on global environmental issues; the need for gender equality in policies, programmes and projects; it also called for the mobilisation of financial resources at national and international level, and promoted local action guided through 'local programmes based on Agenda 21, the Habitat Agenda, or any other equivalent programme'.[40]

The 'Habitat Agenda: the World Plan of Action' was, however, the main course. This was the more substantive document and directly relevant to agenda-setting and policy-making for local authorities as urban managers.

Habitat II's innovations

Habitat II improved upon the cycle of UN conferences preceding it with a number of precedent-making substantive, organizational, and procedural innovations. Noteworthy amongst these were the UNCHS's 'Best Practices Initiative', an idea taken over from the European Commission's Sustainable Cities Project, and the strong focus on partnerships, in the spirit of subsidiarity and community, in the Habitat II process.

The Best Practices Initiative (see Box 8) was designed to stimulate action towards realisation of the conference's objectives — shelter for all and sustainable human settlements — and to facilitate information exchange by compiling a computerised data bank of easy-to-access case studies and initiatives.[41] More than 500 case studies were collected and of these 12 outstanding ones were recognised at the Best Practices Award ceremony which opened the conference (see Box 9).

Wally N'Dow, Secretary-General of Habitat II, reminds us that technical fixes are not enough. People's involvement and a good knowledge base are necessary for sustainable urban development. The five lessons mentioned here emerged from preparatory work for the Habitat II confernce.

Box 8:

BEST PRACTICES
THE FIVE LESSONS

1. ***Spread the good news***
There are many fascinating initiatives already taking place throughout the world's cities. Habitat and its partners have helped groups to prepare reports and to make films of these best practices and to disseminate them to interested parties. This process will help to widen knowledge and deepen the understanding of urban challenges and opportunities so that realistic steps can be taken at local, national, and international levels.

2. Simplify complex issues
Modern cities are complex organisms. This means successful implementation of initiatives must be analysed and effective processes for implementing projects identified at their simplest levels.

3. Tailor actions to local situations
How applicable are best practices when applied to cities outside their own regions? For urban best practices to be transferable from one city to another, implementation must be closely tailored to local institutions.

4. Exchange people between cities
The sharing of best practices between cities is an essential tool for urban sustainable development. Once outside interest in a project has been established, site visits are of critical importance.

5. Change the way urban institutions work
Allowing people direct access to best practices through a process of decentralised cooperation is vital. Material collected in a central computerised data bank is a gold mine for all the world's cities to excavate.

Source: Habitat II Secretary-General, Wally N'Dow, quoted in *The Gaia Atlas of Cities*, 1996.

Box 9:

HABITAT II
The 12 Best-Practice Award Winners

1. Project on sites and services for family groups with low-income living in the north of Gran, Buenos Aires, Argentina.
2. Integration council in the favelas' rehabilitation process, Fortaleza, Brazil.
3. Metro Toronto's Changing Communities: Innovative Responses, Metro Toronto, Canada.
4. Post-Calamity Reconstruction of Anhui Province's Rural Areas, China.
5. Successful institutionalisation of community-based development in the commune of Adjame, Abidjan, Côte d'Ivoire.
6. A women's self-help organization for poverty alleviation in India: the SEWA Bank, India.
7. Shelter upgrading, Agadir, Morocco.
8. City management in Tilburg, The Netherlands.
9. Local initiative programme: Community planning process and city/neighbourhood partnership in Lublin, Poland.
10. Community Information Resource Centre (CIRC), Alexandra, South Africa.
11. City of Chattanooga, Tennessee, USA.
12. 'Don't Move, Improve', Community-owned-and-governed Urban Revitalisation Project, South Bronx, New York City, USA.

The United Nations Center for Human Settlement (UNCHS) will organize a second best-practices award to coincide with World Habitat Day in October 1998.[2]

The second noteworthy innovation was the way in which the conference process was opened up to participation by diverse interested parties, termed 'partners'. These partners included local authorities, the private sector, NGOs (comprising environmental, women's, and youth groups), community-based organizations, and the financial community. NGOs organized their traditional parallel NGO Forum (which many delegates described as being where the real 'buzz' was). While NGOs had become regular participants in UN conferences after long years of struggle, for most of the other partners it was their first time. These newcomers also organized a number of caucuses and parallel meetings which fed into the official process. An example of this was the World Assembly of Councils and Local Authorities (WACLA) organized by the International Union of Local Authorities (IULA) and ICLEI (see Box 10). This gathering served both to strengthen international cooperation of local authorities and to influence the official conference process.

The involvement of diverse groups of civil society in what has traditionally been a closed-shop forum for inter-governmental policy-making marks a significant break with the past. At Habitat II the process was immeasurably enriched by the recognition and involvement of other 'experts' on the issues. As a result, perhaps the Habitat Agenda's Global Plan of Action will now stand a far greater chance of being implemented. The conference concretised the principle of spreading reasonsibilties and created a sense of joint ownership of the process and its products.

One senior Habitat official cautions, however, against taking the subsidiarity principle too far. While local authorities and other stakeholders were important, he said, the principle responsibility for implementation still lay with governments, and tendencies to further devolve their duties must be resisted.

[2] For further information, contact: Best Practices and Local Leadership Programme, UNCHS (Habitat), P.O. Box 30030, Nairobi, Kenya. E-mail: BestPractices@unchs.org

Box 10: **The World Assembly of Local Authorities (WACLA)**

WACLA, held directly prior to the Habitat II conference in Istanbul, was the largest representative meeting of local authority officials from over the world. Over 500 local governments leaders from over 95 countries gathered to discuss their contributions to creating sustainable human settlements.

WACLA produced an Assembly Declaration that 'referred to the importance of decentralisation and democratisation, the need to combat social exclusion, the creativity and innovative capacity of local leadership, the value of developing partnership approaches with all vital local forces, the transformational power of technology, and the mutual benefits to be obtained from decentralised cooperation and international exchanges of experience.'

The Declaration also contained amendments calling for:

- a worldwide Charter for local government to guide national governments and international agencies on the basic principles which should underlie any democratic local-government system;
- an appeal for those countries without democratically elected local authorities to be encouraged to introduce the necessary changes to allow citizens to freely elect their local representatives;
- a clause seeking to strengthen the role of women in municipal decision-making.

Source: *Habitat Debate*, UNCHS, September / December 1996, pp. 16-17.

The European context

It has been argued that the European Community, and at present the European Union, is increasingly providing a 'positive context for sustainable cities'.[42] (Cities as used here refer to urban settlements of all scales.) With 79% of its population living in urban areas, Europe is the most urbanised region in the world.[43] The environmental impact of European cities and their potential to contribute to the 'sustainability transition' has of late focused the minds of European policy makers and advisers alike.[44]

Defining the European urban environmental policy agenda

Although the European Union as such has no urban policy, a number of recent reports and directives on rban environment and spatial planning[45] have particular relevance for local and regional governments striving for policy coherence.

Of these reports, the European Commission's *Green Paper*[46] *on the Urban Environment* (1990) has arguably been the most influential in establishing the symbiotic link between the health of human habitats (mainly cities) and the health of the environment. In pre-Habitat II interviews with 12 EU Member State ministers it was cited by five of them as the 'one book which inspired (their government's) actions in urban planning'.[47] This Green Paper urged a more explicit focus on the urban environment and quality of life issues, and it advocated an integrated approach to resolving urban community problems. The paper led to the establishment of the

Community policy on the environment shall aim at a high level of protection. ... It shall be based on the ***precautionary principle*** *and on the principles that* ***preventative action*** *should be taken, that environmental damage should as a priority be* ***rectified at source*** *and that the* ***polluter should pay****. Environmental protection requirements must be integrated into the definition and implementation of other policies.*

The Maastricht Treaty on European Union, Article 130r ***(emphasis added)***

European Commission's Expert Group on the Urban Environment in 1991.
As was noted in Chapter 1, however, the environment cannot be considered in isolation from human economic activities; sustainable development requires the integration of environmental, social and economic concerns. The linkages between the economy and the environment were explored in another influential EU document, the *White Paper on Growth, Competitiveness, and Employment* (1993). This paper argued *inter alia* for a harmonising — upwards — of community environmental standards and laws. It also advocated investment in environmental technologies and job creation in the environmental sector to combine economic and environmental objectives. The paper is largely remembered, however, for the stir that its tenth chapter caused.
Chapter 10 called for a 'new development model' in an effort to reverse the 'present negative relationship between environmental conditions and the quality of life on the one hand and economic prosperity on the other'. The new model advocated was to be based on 'dematerialised' growth and predicated on certain key economic reforms. These reforms included greening accounting systems (such as Gross National Product) to reflect the social and ecological costs of material growth, and shifting taxation from environmental 'goods' such as income and labour, to environmental 'bads' such as high resource and energy use. The paper marked a radical departure from conventional EU policy pronouncements and reflected growing unease in some quarters with the inability of the traditional development model to deliver increased employment or quality of life.

The Maastricht Treaty

More generally, however, while provocative papers might push thinking further and widen the official parameters for discussion on sustainability, it is the *Treaty on European Union* (Maastricht Treaty, 1992) and *'Towards Sustainability': The Fifth Environmental Action Programme* which define the scope of the European Union's actions towards the environmental dimensions of sustainability. The EU's trade and development cooperation policies, the internal market and the structural funds[48] are arguably as important, if not more decisive, in determining Europe's realisation of sustainability objectives. While there is a recognition that these issues cannot be separated out from an integrated discussion of sustainable development, the practice is still one of 'sectoral apartheid'.

The Maastricht Treaty refers to sustainable development in Article B under general conditions and article 2 under principles. Elsewhere however the treaty refers less to sustainable economic development and more to environmental protection, social cohesion, and sustainable economic growth.[49] Environmental protection is seen in instrumental terms as being necessary for economic growth. Social cohesion is similarly valued for the conditions that it creates in fostering enterprise and economic growth. There is little doubt that at its core the Maastricht Treaty's fundamental purpose is to ensure the success of the Single European Market for Member States. As such, it defines sustainable economic growth as the primary policy objective.

The Maastricht Treaty does, however, mark a significant departure from the past in its admission that growth is no longer to be achieved at any cost. Environmental constraints are recognised and, importantly, in addition to Article B and article 2, the Treaty contains specific environmental provisions (Articles 130r to 130t) which establish some fundamental sustainability principles for community environment policy such as the precautionary principle, the polluter pays principle and the subsidiarity principle (Articles A and 3b). This last principle is of particular significance for

local authorities as, in theory, it empowers them to act directly to resolve local challenges. The Maastricht Treaty interprets the subsidiarity principle *vis-à-vis* local authorities in at least three respects:

- *policy implementation*: local authorities are recognised as partners in the implementation of EU legislation, programmes, and projects;
- *direct links with European Commission services*: financial instruments and other EU mechanisms provide for direct communication between municipalities and the European Commission in Brussels;
- *city jurisdictions empowered*: the competence of cities to set their own environmental policy is given a firmer footing in EU law.[50]

Currently, several European environmental NGOs are engaged in a *Greening the Treaty* lobbying process targeted at the European intergovernmental conference (June 1997) to revise the Maastricht Treaty.[51]

The Fifth Environmental Action Programme

The Fifth Environmental Action Programme gives a more coherent European Union response to the sustainability challenge. Adopted in February 1993, *Towards Sustainability: The Fifth Environmental Action Programme* (1993-2000), bears the first distinct marks of a document consciously striving for issue integration — economy, environment, society — at various levels. It also recognises the role of different social actors in implementation. If its drafters had not been participating in the Rio process, they had certainly been listening in on some of the UNCED PrepCom discussions.

The Vth Action Programme's release was timed with the publication of the *State of Europe's Environment* report and the Programme is analytical in its approach to the trends identified by the report.

Unlike its predecessors, the Fifth Environmental Action Programme not only assigns joint and shared responsibility for the environment between the EU and Member States, it also addresses a broader audience. The Executive Summary emphasises that the new framework for action on environment and development 'requires positive will at all levels of the political and corporate spectrum, and the involvement of all members of the public active as citizens and consumers in order to make it work'.[52] Significantly, the Vth Action Programme marked the first time that an integrated approach was advocated by the European Commission. The programme takes an integrated and strategic approach to sustainable development at the EU level in its consideration of five key sectors — industry, transport, agriculture, energy and tourism. In an attempt to avoid the implementation gap that has been the bane of earlier efforts, the Programme identifies objectives and targets for each sector, singles out the implementing bodies, recommends diverse techniques, and urges partnership.

The Vth Action Programme is the EU's flagship sustainable development programme. After three years how has it fared in practice?

The first official *Progress Report* on *Implementation of the European Community Programme 'Towards Sustainability'*, published by the European Commission (1996), provides a comprehensive evaluation. On the whole, it gives the programme middling marks. Its assessment can be summarised as: 'Good start. Could do much better'. The Progress Report, however, also makes several recommendations for ways to accomplish the Programme's aims with particular relevance for local authorities. The Report notes the difficulty of addressing the EU's complex and interrelated environment and development problems by relying on a sector-by-sector approach. As one

> *In the long term, meeting the challenge for sustainability requires major changes in attitudes, in society, in the operation of economies and in the influence of economic thought. It is potentially a daunting prospect. However ... in the short term much can be achieved through incremental steps in the right direction — seeking to 'reduce unsustainability' as much as to 'achieve sustainability'. It is already possible to suggest many such steps for cities in Europe.*
>
> *European Sustainable Cities*, 1996:1

commentary on the Report summarises, 'Sectoral EU strategies which lack an overall framework fail to consider the interdependence of urban problems and to take full advantage of the capacity of cities to create synergies'.[53] The Progress Report accordingly suggests a focus on the 'urban environment as a cross-cutting theme' in view of the increasing significance of cities as empowered and active loci of change, and the potential of land-use planning as an instrument with significant multiplier effects.[54]

Another evaluation of the Vth Action Programme, this time by the European Environment Bureau (EEB),[55] is more critical than the EC *Progress Report*. The EEB commends the focus on policy integration and emphasis on shared responsibilities and partnerships but notes some significant omissions:

- objectives and targets set by the Vth Programme are not reviewed;
- conclusions of the four major UN conferences (Rio, Copenhagen, Cairo and Beijing) are not integrated;
- no advance is made on thematic coverage in the Vth Programme in response to Agenda 21 (adopted afterwards) in key areas such as desertification and mountains;
- the Agenda 21 commitment to establish a European Council for Sustainable Development is not honoured;
- three of the 10 urgent European priorities identified by the European Environment Agency (EEA) — soils, desertification, and military activities — are ignored;
- the EEA's warning that achieving sustainable development is impossible with present instruments and in an adverse macro-economic climate (recession and unemployment) is not taken into account ;
- the equity dimension of sustainable development is unrecognised and key targets groups such as the poor and unemployed are overlooked;
- the 'partnership' playing field is not level for all social and economic stakeholders, as current partnership mechanisms such as the 'preferential alliance' favour the business sector.

European Sustainable Cities

The latest stage, and arguably the most exciting, in the development of the European urban sustainability agenda is marked by the release of *European Sustainable Cities.* This is the final report of the Expert Group on the Urban Environment within the framework of the Sustainable Cities Project. Just as the Green Paper on the Urban Environment was a high-water mark in the boost it gave to policy consideration of the urban dimension, and for bringing in the potential of land-use planning to prominence, the EC Expert Group's European Sustainable Cities report promises to be influential in the decision-making process and implementation. Its focus is on shifting the policy discussion towards more holistic and participatory urban management practice and policy development .

The report marks the latest stage of the Sustainable Cities Project, supported by the European Commission, the aims of which are to 'develop a set of ecological, socio-economic and organizational principles and tools for urban management which may be applied to a variety of European urban settings'.

In an echo of the criticism of the Vth Action Programme for being overly focused on a sectoral approach, the Expert Group declares that it 'strongly advocates the development of city-wide management strategies for sustainability'. The report demonstrates this by applying an ecosystems approach to four priority policy areas in turn — sustainable management of natural resources, socio-economic aspects of sustainability, sustainable accessibility, and sustainable spatial planning. It draws conclusions from this study for European urban systems and local authorities, and makes numerous practical recommendations addressed to different levels of government at the EU and Member State levels. (Box 11 notes the principles for sustainable urban management advanced by the report.)

The report addresses itself primarily to municipal managers. It notes the significant differences between European cities and regions but highlights the common forces of change in the European urban system affecting the environment and local economies.[56] These forces include:

- the impact of economic integration and restructuring;
- the expansion of the EU;
- the Single Market;
- migration from Central and Eastern European countries;
- phenomena such as social polarisation and the 'new patterns of economic advantage and disadvantage' appearing across Europe.

The report is frank in its critical assessment of the Single Market which, it asserts, 'as it currently operates — presents challenges for sustainability. In particular, too little attention is being paid to the environmental impact of the increased movement of goods and people, and to the adverse effects on local economies and, more generally, on local ways of life'.[57]

The report combines a deft consolidation of the best of earlier EU policy thinking and practice, with pertinent data, inspiring illustrations, relevant examples, and a crisply argued case for a new model of urban management based on ecosystems thinking, new tools and bottom-up participatory mechanisms.

Taken together, the recommendations of the 200+ page report are a call for a radically different way of addressing the social and ecological concerns of urban managers and their communities.

Box 11: Principles for Sustainable Urban Management

Environmental limits — applying the precautionary principle so as not to exceed the Earth's carrying capacity

Demand management — managing demands rather than meeting demands

Environmental efficiency — reducing the use of natural resources, increasing durability

Welfare efficiency — obtaining the greatest human benefit from each unit of economic activity

Equity — social solidarity and equitable distribution of wealth

European Sustainable Cities, 1996

The city as ecosystem

In particular, viewing the city in ecological terms as a dynamic organism resident in a wider urban ecosystem (see Figure 5) marks a profound departure from perceiving the city solely as a site for clean-up involving top-down measures. This conceptual shift in management approach can be likened to the revolution underway in industrial ecology and product management where linear end-of-pipe pollution control thinking is giving way to closed-loop thinking. The report also uses 'ecology as

a metaphor or model for the social and economic as well as physical processes of cities, viewing the city itself as a complex, interconnected and dynamic system'.[58] An illustration of this new approach is the report's approach to transport issues. The report stands received assumptions about transport on their head with its advocacy of the demand management principle. It argues that, 'It is essential to develop measures to reduce the need to travel, rather than continuing to emphasise measures which seek to minimise travel time'.[59]

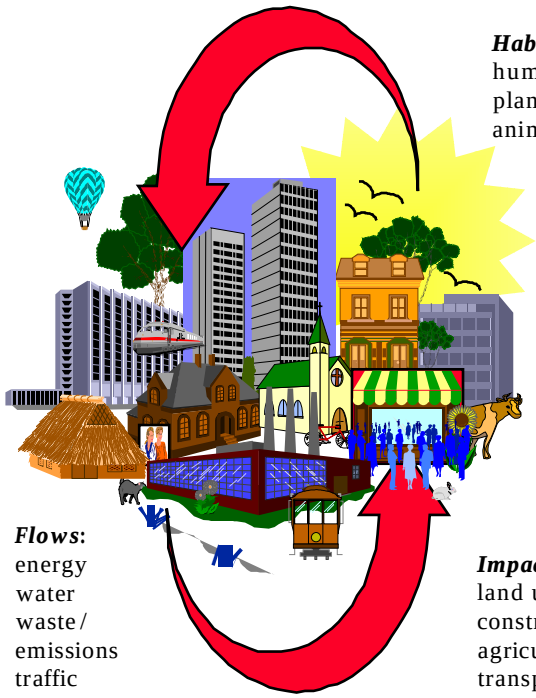
The Expert Group places great faith in the conviction that individual municipalities can do a 'great deal ... to improve conditions in their localities'.[60] The Sustainable Cities report indeed offers much in the way of inspirational examples, innovative approaches, and practical tips to demonstrate how much can be done to green cities and regions. Despite its emphasis on local action however, the report also addresses the larger issue of whether local governments will be able to follow suit and, if not, what obstacles lie in the way and how can they be tackled. It recognises that local action is 'limited by national and international frameworks' and calls upon governments to 'reform the economy at national or international level to bring market price signals in line with sustainability. This will require shifts of taxation from labour to resources, encouragement of longer-term patterns of investment and regulation to encourage more environmentally efficient resource use and production systems. It will also require greater powers for local government to influence the economy at local and regional level...'. In addition to these changes, the report calls for new tools and systems to enable local government to do more, such as:

- stronger and better Environmental Impact Assessment (EIA) systems, and their extension into Strategic Environmental Assessment (SEA);
- ecological tax reform;
- hypothecation of environmental taxes;
- progressive pricing structures for utilities;
- US-style least-cost planning regulation of utilities;
- 'whole-life' investment appraisal methods.[61]

In summary, the report is a very positive attempt to mainstream concepts about sustainable and equitable settlements that have long been at the cutting edge of systems analysis and 'green' thinking. The Habitat II process, and the prominence it gave to approaches to city management that take a leaf out of ecology, marks the intellectual coming of age of such concepts.

The next chapter looks at the variegated landscape that European local authorities operate in and how they (and cities in other parts of the world) are responding to the challenges presented by unsustainable human development.

Figure 5: The City as Eco-system



Habitat:
humans
plants
animals

Flows:
energy
water
waste / emissions
traffic
goods
capital
humans

Impact:
land use
construction
agriculture
transport
consumption
waste & emissions

"Wen we study a forest ecosystem, we see cycles, the energy cycle, the water cycle, how nutrients move through the chain. There is no waste, no energy shortage, no water shortage. Nature in balance is a closed loop." This is the model for the cyclical city; the city ecosystem, where there is no waste, no shortages, the city is in balance with nature.

Box 12: Chattanooga, Tennessee: 'Belle of the Sustainable Cities Ball'

Thirty years ago the US government labelled Chattanooga, Tennessee, the dirtiest city in America. Today the city is hailed as a sustainability success story by the President's Council on Sustainable Development. Chattanooga's turnaround has inspired communities worldwide and the former manufacturing centre is now selling itself as a world leader in the sustainable cities movement. In a matter of decades, the city of 150,000 has transformed its city centre into a prime job centre and bustling tourist attraction (with a state-of-the-art aquarium); created a revitalised waterfront to which birds are now returning; re-used a former Army facility, once the largest producer of TNT worldwide, as a manufacturing site for electric buses; is attracting clean industry through the development of an eco-industrial park[3]; and is experimenting with 'zero-emission' manufacturing processes.

The secret of Chattanooga's success lies in visionary civic leaders, a committed and engaged local population, public-private partnerships and adventurous financial investors willing to fund a series of environmental innovations. The process began in 1984 when city residents 'responded to a planning initiative by saying that they wanted more than a strong local economy. They wanted to go fishing without driving out of town, and to be able to eat the fish they caught without worrying about their health'.[4] This led to a visioning process, Vision 2000, which brought together city residents from all walks of life to identify the city's problems — and to find solutions. Forty goals, ranging from providing affordable housing to river clean-up, were set. Pre-existing urban revitalisation initiatives fed into, and were transformed by, this process of ecology-based urban renewal.

The experimentations continue and the city has adopted sustainable development as its motto — expressed in the shorthand 'equity, environment and economy'. This has become its unique selling point. While Chattanooga's gains are impressive, whether its performance can live up to its marketing claims over time remains to be seen. The city still suffers from chronic urban sprawl and the loss of habitat and agricultural land as do most American cities.

Box 13: Curitiba, Brazil: A Laboratory for Sustainable Urban Development

Curitiba is one of the fastest-growing industrial cities in Brazil with a population of over 2.1 million. Yet, compared to other cities its size, Curitiba has significantly less pollution, no gridlocked city centre, a slightly lower crime rate and a higher educational level among its citizens. The city is held up as an example of far-sighted and unconventional planning. For example, its 'design with nature strategy' has increased the amount of green space per capita (during a period of rapid population growth), and its mass transit strategy has cut total travel time by a third for its citizens, and contributed to the city having one of the lowest rates of ambient pollution in the country. Curitiba's success lies in the gradual institutionalisation (over a period of 30 years) of urban development policies explicitly favouring: public transport over private automobiles; appropriate rather than high-tech solutions; innovation with citizen participation instead of master planning; incentive schemes to induce changes in business , household and individual behaviour; and labour-intensive approaches rather than mechanization and massive capital investment. Such policies were officially adopted in the 1970s by Jaime Lerner, a visionary mayor who was also an architect and planner, and have helped pre-empt the usual growth-related problems faced by comparable cities.

Among Curitiba's innovative features are:

- *transport* — an express bus-based transportation system, designed for speed and convenience which is also self-financing, affordable, wheelchair-accessible, and offers balanced routes;
- *solid waste* — a garbage-purchase programme which pays low-income families in bus tokens or food in exchange for waste; more than 70% of households also sort recyclable materials for collection;
- *housing* — a low-income housing programme with ready access to jobs in Curitiba's Industrial City (which generates one-fifth of all jobs in the city; polluting industries are not allowed).
- *incentives* — provision of public information about land to fight land speculation;
- *environmental education* — free, practical short courses for workers and residents on the environmental implications of their work are offered by Curitiba's Free University for the Environment.

Adapted from: Jonas Rabinovitch and Josef Leitman, 'Urban Planning in Curitiba', *Scientific American*, March 1996.

3

Responding to a new paradigm: the challenge for local authorities

Across the globe, municipalities and their communities are responding to the challenges of making the sustainability transition. Some of these outstanding examples are honoured in the Habitat Best Practices Award mentioned in the previous chapter.

Two of these, Chattanooga and Curitiba (see Boxes 12 and 13) illustrate the differences in motivation that can impel cities in differing locations and conditions to innovate. Chattanooga was driven to change by the economic, social and health impacts of chokingly high levels of industrial pollution. Within 10 years the city had turned itself around from being the 'most polluted city' in the USA to becoming its 'sustainable development capital'. This story is having a powerful 'demonstration effect' on other cities. But if Chattanooga was a city that was *forced* to react, Curitiba is an example of a *proactive* city, an administration that planned for change rather than be overtaken by change. To be sure, neither city is sustainable in the full sense of the word: they both have large 'ecological footprints', there is still racial division and urban sprawl in Chattanooga, and poor sanitation and squatter settlements in Curitiba. But both cities are unlearning old ways and learning new ways in partnership with their communities and this is the essence of the sustainability challenge.

Sustainable cities and Sustainable communities

These two cities are part of the 'sustainable cities' movement that has grown from a trickle to a stream in some parts of the world — and is a virtual deluge in others. There is also talk of a 'sustainable communities' movement, which is not necessarily the same as the 'green cities', 'eco-cities', or 'healthy cities' movement.

To the uninitiated, the profusion of such initiatives and the proliferating literature on the subject can be perplexing. Are the people behind this movement the same? Do they share the same backgrounds? Are they talking about the same things? Do they have similar approaches? Do they have the same agendas? In this area of locally 'applied' sustainability distinct traditions, patterns, and discourses can be traced. In a useful review of the sustainable communities literature, primarily in the Canadian context, Mark Roseland has attempted to disentangle the different threads for the uninitiated.[62]

Roseland identifies 10 different variations in the literature that reflect the differing worldviews and backgrounds of the authors. The literature can be placed across a spectrum of concerns reflecting the following themes:

- the costs of sprawl

- sustainability by design
- sustainable urban development
- sustainable cities
- local sustainability initiatives
- sustainable communities
- community self-reliance
- green cities
- ecocities
- ecocommunities

Roseland associates these 10 variations with four types of agents in the sustainability debate: the designers, the practitioners, the visionaries, and the activists. Roseland acknowledges that overlap between and among categories is possible. Table 3 details the orientations of these four categories, their focus and the means they advocate.

Sustainable cities ..

Although North America-based, Roseland's categories are also broadly recognisable in the European context. Here the dividing line is strongest between the 'Designers' of Roseland's category and the rest. European literature on 'sustainable cities' is dominated by a focus on planning, design and the built urban environment. Many of the 'green cities' and 'eco-cities' reflect the concern with making urban 'hardware' more efficient, attractive, and environmentally sound. The developing field of Urban Ecology is, however, bringing different professional interests together and fuzzing the dividing line between designers and practitioners. Sybrand Tjallingi's 'Ecopolis' framework (see Table 4), dissects the city into its various parts — its flows, its area, and its participants — and is exemplary of this more holistic approach geared towards planners and urban managers. The European Sustainable Cities report also advances an ecosystems approach fusing ecology and systems thinking. The 'city metabolism' approach, popularised by Herbert Girardet, is another useful way of visualising the city and how to make it more sustainable. Girardet's approach stands out for its inclusion of ecological, global and equity dimensions.

> *For cities to become sustainable, they need to develop a strong awareness of the ways they affect the world. They must create their own control systems, acting like thermostats, continually monitoring their global and local environmental impacts. Responding to this feedback, eco-cities would take all the necessary measures for global and local ecological rebuilding into their grasp. They would reorganize their transport, energy, food, and sewage systems for maximum efficiency and minimal environmental impact. Eco-cities would acknowledge the limits of the Earth's carrying capacity by nourishing the well-being of their local hinterland. Global dependence would be replaced by more sustainable local living.*
>
> Herbert Girardet
> *The Gaia Atlas of Cities*, 1996:156.

Perhaps the most porous categories are those of Roseland's Practitioners, Visionaries, and Activists. There are many examples of where ideas or individuals have broken out of disciplinary / professi onal categories. Indeed this process is the origin of change itself. Municipal innovators such as Curitiba's Jaime Lerner and Seattle's J. Gary Lawrence have shown how even in local government it is possible to occupy several of the categories at the same time by learning from others and not being afraid to experiment.

Sustainable communities...

The 'sustainable communities'[63] discussion shares many of the concerns of the 'sustainable cities' discussion. It can be argued, however, that it is distinct from the sustainable cities discussion in at least two respects: it has a more explicit focus on people and lifestyles; and it foregrounds issues of democracy, participation and political engagement. While it is strongly

Table 3: The Four Main Drivers of the Sustainable Cities

The Four Main Drivers of the Sustainable Cities/ Sustainable Communities Movement				
	Designers	**Practitioners**	**Visionaries**	**Activists**
Orientation	architects, planners, consultants, and related professionals	politicians, local government professionals, citizens and community organizations	agriculturists, economists, architects, planning theorists, appropriate technologists	writers, community activists, bioregionalists, social ecologists and other environmentalists
Focus	new developments	existing settlements, municipalities	communities of association and interest, as well as of place	human scale, sustainable settlements based on ecological balance, community self-reliance, and participatory democracy
Means	reducing sprawl, design to encourage the revival of public life (e.g. townscapes, streetscapes, malls and squares)	local initiatives to create local sustainable development action strategies	reducing resource waste energy efficiency, stressing passive solar heating and cooling, encouraging local food production and reliance on local resources, fostering creation of on-site jobs and neighbourhood stores to revitalise communities and eliminate wasteful commuting	decentralised, grass-roots, co-operative developments

Adapted from: M. Roseland, ORTEE, 1996

influenced by the environmental movement it also brings in other traditions — community development, urban health, social justice, Third World development, etc. — to varying degrees (see Box 14). Local Agenda 21, particularly where it is initiated by community organizations themselves, is often being used as a framework to work out sustainable community concerns or 'repackage' existing ones.

Where are local authorities in all this?

Local authorities are playing a role in both discussions. While as urban managers and practitioners their natural affinity is with the narrower focus of the sustainable cities' stream of thinking, local authorities are also slowly being brought into the sustainability communities fold through the need for civic engagement. Channels which are facilitating this cross-over are, *inter alia*, visioning exercises for the 21st century, Local Agenda 21s, sustainability indicator programmes, and 'mixed' environmental forums. The sustainable communities agenda is a broad one: it interprets sustainability in the fullest sense of the word. Most local authorities have not moved as far as to adopt this agenda yet. While the rhetoric is often one of support, in practice local authorities' focus continues to be on the practical 'nuts and bolts' of urban environmental management. Adopting a sustainable communities focus is seen by some as the next challenge.

Local authorities: the changing governance context

Local authorities have however themselves become the trend-setters, as the signatories of the Aalborg Charter (see Box 15) and the Berlin Charter (Box 18) show. They have gone from playing bit parts in the international arena to performing centre stage as a key partner alongside governments at Habitat II. In what would have been unimaginable 20 years ago, some municipal governments are now having to 'glocalise' policy: make policy not just in a local context but in a global context. There is a profound change in the context of governance. This is by no means uniform across countries (or sometimes even within them, e.g. Germany, United Kingdom) but the overall trend is indicative of the changing role of local authorities.

What are the drivers of this change?

At the risk of over-simplification, the forces driving this changing role can be described as 'top-down' and 'bottom-up'. The 'top-down' factors have to do with the changing nature and role of the state The 'bottom-up' factors are expression of demands for democratic decentralisation, local control and community empowerment.

Table 4: Ecopolis Strategy Framework

motto	THE RESPONSIBLE CITY	THE LIVING CITY	THE PARTICIPATING CITY
object	**flows**	**areas**	**participants**
social objective	• production • quality	• usefulness • attractiveness	• prosperity • well-being • justice
problems	• depletion • pollution • disturbance • ('push-off' problem)	• health problems • damage to functions • loss of differentiation of plant and animal life	• alienation • indifference
'ecopolis' objective	• sustainable flow management • planning for prevention	• sustainable use of areas • planning with local potentials	• sustained commitment to ecological relationships • planning for self-organization
policy theme	• integral 'chain' management • source-directed policy	• spatial- and area-directed management • effect-directed policy	• target group policy
Guiding principles			
	1. creating conditions for operation of the market 2. creating conditions for co-operation 3. visible ecological relationships 4. enforcement	1. economical in use, prevention 2. re-use 3. renewable resources 4. responsibility for quantity and quality of 'flows'	1. use of local natural and cultural potential 2. spatial structure for 'flow' management 3. health and differentiated human habitat 4. habitats, corridors and stepping stones for plants and animals

Box 14:
Sustainable Communities. Two Views from Opposite Sides of the Atlantic

East Hampshire District Council, England (UK)[5]

JUST IMAGINE...
A sustainable community lives in harmony with its local environment and does not cause damage to distant environments or other communities - now or in the future. Quality of life and the interests of the future generations are valued above immediate material consumption and economic growth.

In a sustainable community ...

1. Resources are used efficiently and waste is minimised by closing cycles.
2. Pollution is limited to levels which do not damage natural systems, including human health.
3. People's good health is protected by creating safe, clean, pleasant environments and health services which emphasise prevention of illness as well as proper care for the sick.
4. The diversity of nature is valued and protected.
5. Where possible, local needs are met locally.
6. Everyone has access to good quality food, water, shelter and fuel at reasonable cost.
7. Everyone has the opportunity to undertake satisfying work in a diverse economy. The value of unpaid work is recognised, whilst payments for work are fair and fairly distributed.
8. Access to facilities, services, goods and other people is not achieved at the expense of the environment or limited to those with cars.
9. People live without fear of personal violence from crime or persecution because of their personal beliefs, race, gender or sexuality.
10. Everyone has access to the skills, knowledge and information needed to enable them to play a full part in society.
11. All sections of the community are empowered to participate in decision-making processes.
12. Opportunities for culture, leisure and recreation which are not achieved at the expense of the environment are readily available to all.
13. Places, spaces and objects combine meaning and beauty with utility. Settlements are 'human' in scale and form. Diversity and local distinctiveness are valued and protected.

Text prepared by Dr Ian Barrett, Environment Coordinator.[6]

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12 Principles of the *Sustainable Communities Working Group* Ontario Round Table on Environment and Economy (ORTEE)

'A sustainable community is one which:
1. Recognises that growth occurs within some limits and is ultimately limited by the carrying capacity of the environment;
2. Values cultural diversity;
3. Has respect for other life forms and supports biodiversity;
4. Has shared values amongst the members of the community (promoted through sustainability education);
5. Employs ecological decision-making (e.g. integration of environmental criteria into all municipal government, business and personal decision-making processes;
6. Makes decisions and plans in a balanced, open and flexible manner that includes the perspectives from the social, health, economic and environmental sectors of the community;
7. Makes best use of local efforts and resources (nurtures solutions at the local level);
8. Uses renewable and reliable sources of energy;
9. Minimises harm to the natural environment;
10. Fosters activities which use materials in continuous cycles;
11. Does not compromise the sustainability of other communities (a geographic perspective);
12. Does not compromise the sustainability of future generations by its activities (a temporal perspective)'.

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[5] East Hampshire District Council's 13 themes are the same as those adopted by the LGMB indicators project. (Roger Levett, personal communication.)

[6] Printed in *Towards Local Sustainability. A Review of Current Activity on Local Agenda 21 in the UK.* United Nations Association Sustainable Development Unit and the Community Development Foundation, 1995:16.

Box 15: The European Sustainable Cities and Towns Campaign

We, cities and towns, ... seek to achieve social justice, sustainable economies and environmental sustainability. Social justice will necessarily have to be based on economic sustainability and equity, which require environmental sustainability.

Excerpt from the 'Charter of European Cities and Towns Towards Sustainability' (popularly known as The Aalborg Charter')

The Sustainable Cities and Towns conference, held in Aalborg (May 1994), was attended by more than 600 representatives of cities, institutes, NGOs, and the European Commission. They had gathered to exchange experiences in urban environmental policy and to discuss the draft report of the EU Expert Group on the Urban Environment. The conference, jointly convened by the City of Aalborg and the European Commission, and prepared by ICLEI, led to the development of the Aalborg Charter.

To date more than 300 municipalities have signed the Charter. By signing the Charter, European cities, towns and counties commit themselves to entering into Local Agenda 21 processes and to developing long-term action plans towards sustainability.

The conference also launched the European Sustainable Cities and Towns Campaign. The Campaign's objective is to promote development towards sustainability at the local level through Local Agenda 21 processes. It seeks to do this by strengthening partnership among all actors in the local community as well as interauthority cooperation.

The Campaign is also meant as a forum for debate and development of ideas. Any European local authority (city, town, county or association of local authorities) may join the Campaign by signing or adopting the Aalborg Charter. There is no participation fee. Campaign members are encouraged to actively participate through a variety of means, including:

- organizing and participating in conferences and workshops;
- writing or editing publications to be made available under the Campaign umbrella;
- sharing experiences and exchanging information.

At present, five major networks are involved in coordinating the Campaign: ICLEI; UTO-UTDA (United Towns Organization — United Towns Development Agency); CEMR (Council of European Municipalities and Regions); WHO-HCP (World Health Organization — Healthy Cities Project), and Eurocities.

The Second European Sustainable Cities and Towns conference was held in Lisbon in October 1996. At the conference, five cities — the Hague, (Netherlands), Dunkerque (France), Leicester (UK), Albertslund (Denmark), and Graz (Austria) — were honoured with the Sustainable European Cities Award.

Adapted from the Campaign flyer and the Aalborg Charter. Details on the Campaign and network members in Part II.

Redefining the state

The nature of the state is changing, and this is affecting not only social welfare systems but governance itself. Some commentators speak of the 'retreat' or 'withdrawal' of the state, arguing that the state has not survived the conservative political and economic revolutions of the 1980s. Modern-day market liberalism presupposes a hands-off, minimalist government; under this model, government is to have an enabling not a directive role. Indeed it is the case that liberal and conservative governments alike are *inter alia* progressively downsizing the state's social service role, reducing its economic intervention role, introducing strong fiscal discipline, and increasingly devolving work to parastatal agencies. The hesitancy of some governments to play a more interventionist role is in many cases closely tied to pressures to cut public spending and keep costs low. The effect of this climate of fiscal conservatism is summed up in the attitude of a senior British minister: 'If government direct, then they have to pay for it'.[64]

The ideal of a sustainable community

A sustainable community has a stable, dependable and diversified economic base that does not over-stress the carrying capacity of natural systems, maintains the supply and quality of non-renewable resources, and strives continually to reduce its demands on non-renewable resources. Its economy provides both a range of opportunities for rewarding work, and a level of prosperity on the basis of which, equitably shared, the community actively and continuously works to satisfy the basic needs of every one of its members and to provide each with the opportunity to fulfil his or her potential, within a supportive social environment, a safe, liveable physical environment, and a clean, healthy, vital natural environment. A sustainable community does not achieve or maintain its own sustainability at the cost of the sustainability of other communities/ecosystems, including that of the broader community/ecosystem of which it is a part.

Nigel Richardson, ORTEE, Canada

The result of such policies has been to give a larger role to both local government and the private sector. Local government, in particular, has become charged with ever greater responsibilities, the efficiency argument holding that central government is too distant and cumbersome to react speedily and efficiently to local problems . This transfer of responsibilities has not always been accompanied by the corresponding resources and authorities. As one analyst[65] has summarised of the UK context, 'Responsibilities have been devolved downwards, but power has been concentrated upwards'.

The trend of increasing decentralisation of the state's traditional functions is, however, not likely to abate soon. No less than the World Bank, whose traditional partners are governments, has given its imprimatur to such moves. At an international congress of local authorities in 1995, the World Bank vice-president argued that states must relinquish their central role and empower local authorities as they are in the best position to respond directly to citizens' needs.[66]

Demands for democracy

The bottom-up pressure for change is coming from citizens' groups and other social forces calling for greater local democracy, a larger voice in community decision-making, and accountability from the arm of government closest to them. This is perhaps the most challenging for local authorities as it often involves an organizational cultural change to work on an equal footing with

Table 5: **Number of Municipalities active in Local Agenda 21** ***(circa 5/96)***

Country	Total	Local Agenda 21 Participation	Participation in %	Signatories of Aalborg Charter
Austria	2351	105 (Climate Alliance)	ca. 4 %	2
Belgium - Wallonia - Flanders	 262 308	no data	no data	 1 3
Denmark	275	50-100	66.6 %	8
Finland	455	41-100	>10%	18
France	36,763	10 (+22) Environmental Charter	unclear	13
Germany	16,121	200	>10 % (~1.5 %)	16
Greece	500	no data	no data	4
Ireland	118	118	100%	3
Italy	8,201	ca. 2460	ca. 30 %	15
Luxembourg	118	no data	no data	0
Netherlands	625	403	65 %	7
Norway	435	435 (EPLL)	99 %	6
Sweden	288	288	100 %	12
United Kingdom	541	ca. 300	ca. 60 %	70
Total	67,361	ca. 2000	ca. 3 %	166

Adapted from: Klaus Fiedler, *Die Lokale Agenda als Chance für die Kommunale Umweltvorsorge*, ICLEI 1996

community groups and to delegate authority to them.

Local authorities helping themselves — and each other

In the main, local authorities have not been slow to respond to the changing political climate and the new demands made on them. If there is one thing that has been boosted by recent changes in the political climate and the new demands made of local authorities, it is inter-municipal networking. This has been particularly important to the strengthening of local authorities new roles and capacities. City networks themselves have been stimulated of late by the European Commission which already in 1992 was reported to be financing up to 15 city networks. The European Sustainable Cities and Towns Campaign (see Box 15), which has been created by the European Commission as a tool for self-help and to stimulate cooperation between city networks, is one such promising effort.

Environmental Charters and Local Agenda 21

The new assertiveness has been particularly apparent at the international level, where both municipal networks and city mayors associations have begun to engage in high-level conferences. The 1990 World Congress of Local Governments for a Sustainable Future is regarded by many as having marked the formal entry of local authorities into the international sustainable development debate. The conference gave birth to the International Council for Local Environmental Initiatives (ICLEI), which has itself played a dynamic role in promoting Local Agenda 21 efforts and facilitating information exchange. Agenda 21's mandate to develop consultative Local Agenda 21 programmes, and the elevation of the subsidiarity principle (e.g. in the Maastricht Treaty), have been particularly helpful for local authorities in countries with strongly centralist state tendencies or political traditions.

For example, Britain's Local Government Management Board (LGMB), has put Chapter 28 of Agenda 21 to good use. Its Agenda 21 resource packets and pioneering 'Sustainability Indicators Research Programme' have set the standard nationally and been an inspiration in other countries.[67] In the process the LGMB has shown how a self-confident and resourceful local government association can succeed in creating space for discussion of sustainability, democracy, and active citizenship despite the odds.

> *Fortunately, in the face of global challenges, many local authorities have started taking single-handed initiatives to address the root causes of environmental decline. From recycling systems and traffic-reduction programs to local bans of CFCs and city-to-city third world partnerships, local governments are serving as laboratories for policy invention in the environmental arena. The concrete innovations that they are testing are providing models for national-level policies and programs.*
>
> World Congress of Local Governments for a Sustainable Future, 1990

Local Agenda 21 is proving to be an increasingly important mechanism for local authorities to begin developing consultative, long-term local action plans for sustainability. According to recent UN estimates, '... almost 2,000 local governments from 49 countries, are pursuing Local Agenda 21 action plans through official planning processes in partnership with the voluntary and private sectors in their communities'.[68] At the European level, however, only 3% of local authorities are reported to be engaged in Local Agenda 21 exercises. This Figure masks widely varying participation rates: ranging from 100% in Sweden and Ireland to negligible rates in France and Belgium (see Table 5). In many countries, Local Agenda 21 is still perceived by local authorities to be redundant as they already have well-demanding environmental charters, programmes and statutory responsibilities. Here Local Agenda 21 is seen as little more than an environmental awareness-raising tool and yet another demand. In other countries, however, such as Norway, Germany, and the UK, Local Agenda 21 is often being used to revitalise environmental campaigns and steer political attention to local concerns; in the process engendering strong inter-municipal cooperation.[69]

Box 16: The Local Agenda 21 Experience. Successes from Three Different Localities

Some of the most exciting initiatives under the framework of Local Agenda 21 are taking place in the United Kingdom — in communities of all shapes and sizes. The examples below are reported in *Turning Point 2000,* and come from a mega-city (London), an urban borough in South London (Sutton), and a predominantly rural county (Gloucestershire).

LONDON — 'How can we ensure that Londoners and their institutions play a life-enhancing, not life-destroying, role in the world?'. The report ***Creating a Sustainable London*** [7] could provide a guide for cities all over the world. It defines a sustainable city as a 'city that works so that all its citizens are able to meet their own needs without endangering the well-being of the natural world or the living conditions of other people now or in the future'. At present London imposes a giant 'ecological footprint' of resource demands and pollution over a vast land area — nearly equal to the entire area of Great Britain, though much of the land actually affected lies abroad. London's food supplies are transported long distances from all over the world. The timber and paper London uses require an area of forest about five times its own size. London's direct energy use of about two supertankers per week is quite unsustainable, and there is not yet a single building in the London area equipped with Photovoltaic panels. London generates 15,450,000 tonnes of waste a year, of which 90% is still dumped. And so on.
Policy recommendations cover: energy production; green spaces and local food; health at work and for those out of work; community businesses and the informal economy; transport and planning; self-build housing; and education for self-help, empowerment and human development. A directly elected strategic authority for London is proposed, and a high-profile London Citizen's Forum to enable Londoners to keep sustainable development at the top of the city's agenda.

SUTTON — ***From Rio to Sutton***[8] is the first report of a community partnership — local government, local business and local voluntary sector — working towards a sustainable Sutton. A Local Agenda 21 Forum is supported by six Working Groups — on transport, community well-being, sustainable land use and nature conservation, sensible consumerism, and local economics — and by Action Groups on telematics, home energy conservation, global action plan, etc. On most of these topics sustainability indicators and targets are being established, and leaflets have been produced. Themes include : 'Ecology begins at home!' and 'Improve your neighbourhood and you improve the world!'.

GLOUCESTERSHIRE — Vision 21 is Gloucestershire's Local Agenda 21 launched in 1994 in response to the Rio Earth Summit. Vision 21 has been heralded as a pioneering example of successful partnership between local government and the voluntary sector. In this partnership, the local educational charity, the Rendezvous Society, offers coordination, administration and guidance, while the County and District councils support the process with finance, information and officer time. Vision 21 coordinator, Lindsey Colbourne, reports a surprising degree of consensus among groups as diverse as teenagers and business leaders, parishes and adult education workers on the kind of future the people of Gloucestershire want:

- appropriate use of technology to achieve society's goals, not to shape them;
- a thriving countryside, with more small farms using methods and up-to-date technologies to grow more local food for local consumption;
- new forms of work, more evenly distributed, blurring the distinction between people employed and unemployed, reducing the gap between rich and poor, with more time being spent working for the family and local community;
- a new approach to travel, involving less use of cars, and more public transport cycling and walking;
- more opportunity for education and decision-making, with education being 'more relevant to life';
- a greater sense of security and community, supported by patterns of work which mean greater equity, reduced poverty, and more time for socialising and being at home; and
- less stress.

Vision 21's experience is recounted in the report *Sustainable Gloucestershire.*[9] Source: *Turning Point 2000,* January 1997:8-9; Vision 21, *National Enquiry pack,* 1996:1.

Box 17: Key Lessons Learned from Gloucestershire's *Vision 21* Experience

Organization, Coordination and Communication

* **have a local NGO coordinate the process** — with the backing of all local authorities in the area, and at least one leading local business. NGOs are not afraid to 'have a go' — they can (and are expected to) take risks — local authorities cannot, and they don't carry all the public vs local authority baggage;
* **focus on the future of the whole area** — not just the operations of a single organization (such as the local council). It is important to build a picture that includes everyone as part of the solution, encouraging partnerships, etc.;
* **if possible, adopt a more holistic approach to sustainability than is achieved through purely an issue-based Working Group structure** (which reinforces old boundaries). Working Groups are a good resource and a good starting point, but implementation should be carried out on a 'community' basis ;
* **if you are having Working Groups, have an equal distribution between social, environmental and economic issues** in the choice of Working Group topics;
* **decentralise** (empower, subsidiarity) — within a clear framework (organizational and strategic) as far as possible;
* organize yourselves in clearly accountable, open ways — avoid cliques and think tanks; direct democracy rather than representatives?;
* **adopt good communication methods right from the start** — look after people, do not just rely on written reports. Talk to them, value them.

Process

* **focus on Local Agenda 21 as a long-term process** — a journey towards a vision with short-term successes and key milestones along the way (such as preventing a parish footpath from closing, 'involving 2,000 people by 1997' or 'producing a Local Agenda 21 in 1996');
* **pay careful attention to group processes and facilitation** — providing opportunities for skill development and learning at all times;
* **make events as participatory as possible** — minimising 'important speakers' and plenary sessions, maximising individual engagement, self-managed groups, discussion and feedback;
* **work with 'common ground'** — rather than consensus, recording areas which are not agreed;
* **adopt 'evolutionary process' methods** — which enable the process to be shaped by all involved.

Involving People

* **identify and involve your area's stakeholders** — do this right from the start, don't rely on the Agenda 21 stakeholder list (nine major groups);
* **use local people as experts** — as far as possible, with all views valued;
* **keep the process open to all at all times**;
* **work with the current agendas, concerns and aspirations of people and organizations** — enabling them to make the links to sustainable development, and offering sustainable solutions to their needs;
* **have people involved as individuals** — unless there is a specific (facilitated) event which is designed for representatives of organizations;
* **have practical actions that people can get involved with** — many people are excluded from 'roundtables', Working Groups etc. Make sure that there are clear ways for everyone to take part in an existing activity, not everyone wants to create their own;
* **nurture, support and communicate individually**;
* **demonstrate ways of involving people in decision-making**.

Product

* **ensure early successes** — have early victories while working towards long-term goals;
* **offer solutions rather than prescriptions** — demonstrate the usefulness of sustainable solutions — but prepare the 'power base' which encourages solutions to be explored;
* **balance *process*** (e.g. using new ways of involving people in decision-making), ***paper*** (e.g. reports, research) **and *practical projects*** (e.g. starting a community business, opening a community meeting place);
* **publicise products** — so that people know what will be produced and when to expect them as well as when they have been produced;
* **make sure the purpose of the product is clear** — nothing will fulfil all expectations, different products for different processes.

Adapted from: *National Enquiry pack*, Vision 21, 1996:5.

At their best, Local Agenda 21 exercises are being used to bridge different local constituencies' concerns (jobs, health, housing, transport, discrimination, crime), to integrate environmental concerns and to generate coherent and participatory programmes for quality of life, social equity, ecological well-being and strengthening local economies (see Boxes 16 and 17). At their worst, Local Agenda 21 exercises are simply being (mis)used as public-relations gimmicks, repackaging existing environmental projects and making short shrift of the public participation element.

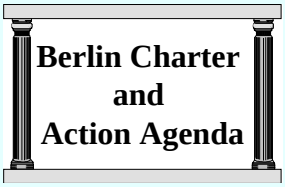
Earlier traditions of municipal activism

Taking the initiative is not, however, altogether new to local authorities. They have over the years developed their own tradition of 'thinking globally, acting locally.' Several European municipalities have, for example, cultivated international contacts through 'sister cities' or city twinning schemes. Recent examples of environmental twinning[70] with countries in the former Eastern block are an expansion of this. Many local authorities have also — along with their community organizations — engaged in major political issues of the day. They have championed human rights, established solidarity links, fought against apartheid, provided aid and humanitarian assistance, and even declared themselves 'nuclear-free zones'. Such action has given rise to the term 'municipal foreign policy' and demonstrated how effective international 'community development initiatives'[71] can be. The local authority / NGO network, Towns and Development (see Box 18) exemplifies coordinated action and lobbying in this area. Some of the local authorities that are setting the pace in the European sustainable cities movement, such as The Hague, Manchester and Albertslund are beginning to build upon this tradition by bringing together those parts of their communities working on seemingly disparate, but complementary, issues — such as North-South development and environmental defence — to work collectively on the integrated challenges of sustainable development.

> *Communities moved much faster than their national governments in the fight against global warming, ozone depletion, and deforestation. They initiated comprehensive programs to conserve energy and water, to build bicycle paths and mass transit, to ban chlorofluorocarbons, to recycle wastes, and to avoid using tropical timber. Over 150 European municipalities joined the Climate Alliance, committing themselves to cutting carbon-dioxide emissions in half by the year 2010. The Green Campaign in Colombia pushed the nation's thousand-plus municipalities to rethink their development plans in more environmentally sensitive ways. the International Council for Local Environmental Initiatives (ICLEI) now helps several hundred municipalities worldwide share state-of-the-art technologies and policies for environmental protection.*
>
> Michael Shuman,
> *Towards a Global Village*, 1994:4.

What are the chances, however, of a truly pan-European movement for sustainable communities — as is the aspiration of the European Sustainable Cities & Towns Campaign? As we saw in Chapter 2, the changing international and European context has created new opportunities for local authorities to act proactively in driving the new sustainability agenda. The changing nature of governance has also placed new demands on local authorities. Many local authorities are themselves responding to this with vision and creativity. On the whole, however, pan-European action is challenged by a widely varying 'playing field' for action.

Box 18: The Berlin Charter



The Berlin Charter was adopted by a large number of local authorities and NGOs at the International North-South Conference on Local Initiatives for Sustainable Development in Berlin, October 1992. The Charter has been endorsed by the German parliament, with specific motions supporting the need to strengthen North-South initiatives and to empower municipal self-management structures in the South to promote regional and local self-help.

The Berlin Charter is being promoted by **Towns and Development** (T&D) and underpins this international network's work on environment and development cooperation work. T&D counts local authorities, NGOs, and community groups among its members and works for improved cooperation among them by promoting North-South partnerships and joint action for sustainable development at the local level. The Berlin Charter and Action Agenda, along with Agenda 21 provide the foundation for T&D's approach and inform its work which presently focuses on: sustainable behaviour, awareness raising/development education, twinning/linking, technical assistance, projects, campaigning, networking, and fair trade.

Local authorities who are members of T&D commit themselves to changing Northern industrialised countries' trade, aid, and debt relations with the South, and to implementing Local Agenda 21 in cooperation with NGOs and community groups.

T&D has produced a useful guide to good practice, *Sustainable Lifestyles:* (1995)

Local authorities in Europe: a variegated landscape

European local authorities are marked by widely varying responsibilities, competences, capacities, organization, and power. These differences are themselves the products of varying state structures, ranging from centralised unitary states such as the UK to federal states such as Germany (see Table 6). In Germany itself there are many different systems of local government with different electoral rules.

A 1994 comparative survey[72] of environmental structures in local and regional authorities, conducted by the Council of European Municipalities and Regions (CEMR), provides useful information in mapping the European local authority terrain. A few examples from the areas of finance, competence, responsibilities, partnership, and political traditions suffice to bring out the extent of the differences, and the nature of the commonalities.

Finance and revenue

If there is one issue that is common to all local authorities, it is the contentious issue of finance. Lack of finance and insufficient political will are perceived to be the major stumbling blocks to making the 'sustainability transition' real. In Portugal, Germany, Ireland, and Spain the state of local government coffers is viewed as being in crisis. In the UK the subject is highly politically charged. In Ireland declining central government financial support has forced local authorities to introduce — and increase — user fees for some municipal services and to cut back on other services.

While most European local authorities raise local revenue through taxes, fees, and levies, and receive central government funds, the degree varies considerably. In The Netherlands, for example, 92% of local authority income comes from central government — mainly in the form of tied grants. By contrast, in Portugal there is no such system of central government grants. Here local authorities are financially autonomous to the extent that they may, as in France, raise moneys from foreign banks. In Denmark and Luxembourg there is wide latitude for local authorities to raise and to create their own forms of taxation, respectively, whereas in the UK there are strict controls on both amounts and methods of taxation.

Table 6: Territorial Organization of EU Local Authorities

AUSTRIA	**GERMANY**	**NETHERLANDS**
9 Länder (federal states)	16 Länder (federal states)	12 provinces
99 districts (including 15 cities)	444 districts (including 115 city districts)	633 municipal authorities
2347 municipalities	14727 municipalities	
BELGIUM	**GREECE**	**PORTUGAL**
3 administrative regions	13 regions	2 autonomous regions
3 (linguistic communities)	51 prefectures	18 districts
10 provinces	359 urban municipalities	305 municipalities
589 communes	5562 rural municipalities	
DENMARK	**IRELAND**	**SPAIN**
14 districts	4 provinces	17 regions
277 municipalities	8 regional authorities	50 provinces
	29 county councils	8098 municipalities
	5 city corporations	
	83 urban authorities	
FINLAND	**ITALY**	**SWEDEN**
19 regional councils	20 regions	24 counties
1 Åland provincial government	102 provinces	23 provincial assemblies
455 municipalities	8097 municipalities	288 municipalities
12 provinces (1 + Åland)		
FRANCE	**LUXEMBOURG**	
26 regions	3 districts	
100 departments	118 municipalities	
36547 municipalities		
UNITED KINGDOM		
England	*As of April 1, 1997:*	*As of April 1, 1998:*
14 unitary councils	27 unitary councils	46 unitary councils
35 county councils	35 counties	34 counties
274 district councils	260 district councils	238 districts
32 London boroughs	32 London boroughs	32 London boroughs
36 metropolitan borough councils	36 metropolitan borough councils	36 metropolitan borough councils
Wales	***Scotland***	***Northern Ireland***
22 unitary councils	32 unitary councils	26 district councils
		9 area boards

Source: Committee of the Regions

Competences and legal standing

While international agreements such as Agenda 21 and the Habitat Agenda, and the Maastricht Treaty's enshrining of the subsidiarity principle, mark out a greater role for local authorities, national legal competences and constitutional standing continue to be decisive in enabling or constricting local authorities room for manoeuvre.

In Germany, for example, municipalities have — within constitutional limits — wide competences for public affairs, local affairs and issuing regulations in their jurisdictions. Similarly, Danish municipalities are granted a generous range of competences (with exceptions such as engaging in trade and enterprise). In Portugal the constitution lays down principles of autonomy for local government, and in the Netherlands local authorities are governed by the Municipal Law. In the UK, however, the lack of a written constitution has meant that there is no definition of the function of local authorities, with much being left up to central government dispensation.

Responsibilities

Most European local authorities share some statutory service responsibilities such as: street cleaning, water supply, sewage and waste collection (but not always disposal and recycling), housing, police, fire brigade, parks, cemeteries and crematoria, cultural and recreational facilities, lighting, local roads, public transport, some educational, health, and other social services. However in other areas there is considerable diversity. These include:

- traffic management
- energy efficiency and conservation
- toxic-waste disposal
- land-use planning
- air quality
- promotion of eco-efficient products and services

> *Sustainability must be community-led and consensus-based because the central issue is will, not expertise; only a community-based process can overcome the political, bureaucratic and psychological barriers to change... . But these bottom-up, citizen-led processes must be combined with top-down government support ... because it is still only government that have the regulatory and taxing powers to secure the transition to sustainability.*
>
> Ronald Doering, Executive Director, National Round Table on the Environment and the Economy, Canada[73]

- groundwater protection
- protection of water bodies
- economic development, etc.

Environmental education

The ability to inform attitudes and influence unsustainable lifestyles through educational campaigns and information drives is similarly heterogeneous. For example, in Sweden, Denmark and the Netherlands there are many awareness-raising instruments at the disposal of local authorities. In Spain, however, environmental education (as with education generally) is controlled by the central government, and in France it is the responsibility of the Ministry of the Environment with some involvement by the private sector.

Energy

As the European Sustainable Cities report emphasises, the ability to manage urban flows such as energy and transport is one of the fundamental pillars of the ecosystem approach. Again there is much variety in responsibility and competence here. Denmark stands out with its decentralised energy provision and management system. Municipalities often own or have a share in energy plants which make innovative (for some, routine for others) closed-loop energy systems such as Combined Heat and Power (CHP) and District Heating systems possible. Elsewhere, as in France and the UK, energy policy is similarly formulated by central government, but executed through

public and private utilities respectively with little opportunity for municipal experimentation.

Transport and mobility

Many 'sustainable cities' studies agree that one of the areas requiring drastic structural reform is mobility management. An integrated approach involving measures such as traffic calming, promoting public transport, cycling and walking, reducing travel needs by increasing accessibility, etc., can seldom be instituted by a sole municipality unless it has wide-ranging powers (and even then cooperation with other authorities and stakeholders is required).

This is also, however, one of the areas with the most marked differences in municipal competences in Europe. For example, in Germany providing footpaths and cycle tracks is a municipal duty, while in Italy and Spain this is an area for the voluntary sector. According to the CEMR survey, in Spain municipal transport responsibilities amount to little more than requiring detours from city centres for heavy vehicles. On the whole, however, it is noteworthy — and perhaps not surprising — that cities with the most advanced integrated transport policies, such as the well-known examples of Freiburg, Copenhagen and Groningen, are those cities with wide competences and the capacity to provide strong incentives for modal change.

Partnership and public consultation

Administrative style, openness, and relations with local social and economic actors are all areas where municipalities have greater room to stamp their own identity. Many local authorities, particularly small ones, develop close, mutually supportive links with local groups and institutions. Nevertheless a national framework mandating transparency, local accountability and meaningful participation — key elements of good governance — by citizens groups and other actors is a prerequisite for effective and sustained change. Here, mechanisms such as open information policies (e.g. toxic registers), strong public 'right to know' laws, public hearings on developments, legally binding public referenda on contentious issues, can all contribute to creating an empowered and active citizenry (more on this in the next chapter). At a pan-European level, this area is still in its infancy with significant internal variation. Countries such as Denmark, Germany and the Netherlands have however made notable progress (often in response to demands by environmental groups and citizens organizations).

Political traditions and strength of democratic civic institutions

Just as EU Member States do not all share the same economic starting points, there are also significant variations in political traditions, state-society relations and customs of decision-making. These differences affect the manner in which issues are addressed, how they are tackled and who is involved. (It should also be noted that there is further differentiation in political cultures and traditions at the sub-national level.)

The Netherlands, for example, has a distinctive consensus-based approach to decision making — born it is said out of a need for collective defence against the ever-present danger of flood waters. Germany's 'free states' (Freie Städte) such as Hamburg and Nürnburg still have distinct political cultures with rituals reflecting their historic status although their powers are similar to those of other city authorities. Democratic traditions also vary considerably: England having the oldest parliamentary democracy, whereas in some southern Member States it is a relatively recent phenomenon. Portugal,

for example, established its democratic system in 1976. Greece and Spain saw the restoration of democracy in 1975 and 1978 respectively. Despite the recency of institutionalised democracy in these countries, it can be argued that they have managed to preserve local systems of mutual aid and self-help — which impart considerable social cohesion and stability — in a way that has been eroded in their Northern European counterparts.

The above-mentioned factors and different political cultures, state-society relations, administrative systems, and levels of civic organization have, *inter alia*, led to the development of different national and regional priorities. One can find a whole spectrum of initiatives and discourses at the European level. In Greece, for example, the battle against pollution, the establishment of more confident NGOs, and the struggle to prise open municipal structures might be starting points. In Italy and Spain, the need for coordination of initiatives, demands for decentralisation, awareness raising and public participation.

In Portugal, the need for environmental standards, enforcement, and public awareness raising. In France, the broadening of the environment discussion and building of alliances with social actors. In Germany and Austria, responding to issues of diversity, economic security and North-South relations. In Ireland, meeting the triple challenges of service delivery, open government, and local pollution costs. In the UK, quality of life, responsive government and the democratic deficit. Whatever the differences in issue emphasis, certain cross-cutting themes appear to be common to all: implementation and monitoring, gaining political support, connecting with communities; achieving policy integration and synthesis.

Box 19: **Environmental Budgeting**

Three German cities and one county are pioneering the system of Local Environmental Budgeting at the municipal level. Environmental Budgeting is a conscious imitation of financial budgeting. It seeks to set up a budget for natural resources and environmental quality. Environmental budgeting relies on environmental indicators instead of setting monetary values for the environment. Environmental quality targets serve as budget limits. The pilot projects are being coordinated by the ICLEI European Secretariat.

The primary aims of the projects are:

- to plan and control the consumption of environmental goods throughout the budgeting period;
- to enable decision-makers and administrations to set priorities in environmental policy and explain their needs to other policy departments;
- to present the state of the environment in a way that it is understandable for the public and provides comparison with environmental targets.

Characteristics of the system are:

- a periodic Environmental Budget in which the political decision-making bodies lay out the framework for environmental spending within the budget limits of the ecological system;
- Environmental Budget Controlling (accounting), in order to avoid 'ecological overspending' in the course of the budget year;
- Environmental Budget Balancing at the close of the budget year.

The first phase of the pilot projects has demonstrated that it is possible to implement Environmental Budgeting based on available data and with limited staff capacity. An Environmental Budgeting system can make a major contribution to setting up and implementing Local Agenda 21.

Adapted from: Christoph Edmenger, ICLEI European Secretariat, 1997

The need for capacity building and power sharing

It is evident that strategies for sustainability must be appropriate to diverse national circumstances and democratically negotiated needs and priorities. The above review reinforces three important points raised by many commentators *vis-à-vis* local authorities' ability to respond to the challenges of unsustainability:

- local authorities need to be suitably empowered by national government, parliament, and the judiciary to discharge effectively their new roles, as agreed in numerous international and European treaties. This not only involves the devolution of relevant powers and responsibilities but also the financial means appropriate to the tasks entrusted to them;
- local authorities cannot solve the problems of resource depletion, environmental degradation, inequity, deprivation and other sustainability-related problems by themselves. Central government has an indispensable role to play in providing *inter alia* strong leadership, supportive national policy and legislative contexts, guidance and incentives. Cross-coordination with government at all levels and relevant agencies needs to be developed and strengthened. Effective city networks can play an important role in such developments.
- local authorities themselves need to apply the subsidiarity principle to their communities and perfect the art of *enabling* rather than the art of *directing*. This will require a cultural shift from regarding citizens as simply customers of local authority services to partners in democratic local governance. In effect, new forms of power sharing.

Responding to the challenges

As we have seen in this and previous chapters there is growing political and civic pressure on local governments to reform. Ecological and social challenges have added greater urgency to this need and there have been some supportive changes in the macro — primarily environmental — policy arena. On the other hand, the everyday realities of economic recession, fiscal pressures on EU governments to meet monetary convergence targets, unemployment, social polarisation and rising ethnic tensions are creating a fraught and conflictive policy environment.

From rhetoric to practice...

In the midst of this, local authorities are experimenting with new tools such as environmental budgeting (see Box 19), and new frameworks such as Local Agenda 21, to meet these collective challenges. Box 20 provides a skeletal overview of some of the tools and measures that are proving popular at the municipal level. (Boxes 21 and 22 outline some of the socio-economic and management principles for sustainable development of relevance for cities.)

Innovations

Many local authorities across Europe have begun mapping their local sustainability challenges through participatory indicator initiatives (as in the UK, France, and the Netherlands), or by engaging in round tables with local stakeholders (see Box 23). Other local authorities have begun using tools as varied as eco-procurement, environmental impact statements, and environmental management systems (EMAS) to put their ecological houses in order. A few are exploring innovative concepts such as environmental space, ecological footprinting and zero emissions for their potential contribution to establishing resource consumption limits and introducing industry ecology systems for local businesses. Mechanisms to revitalise local economies such as LETs (Local Exchange Trading) systems and urban agriculture have already been adopted in various communities. The power of design (see Box 24) and sound land-use planning to promote better living and secure sustainability objectives is making an impact in cities as far flung as Davis, California, and Curitiba, Brazil. Part II of this report guides the reader to a number of sources for details

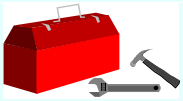
on many of the above-mentioned approaches, concepts and cases.

In conclusion, despite their difficulties, many local authorities recognise that they still command significant resources, and can exercise influence through the diverse roles they play in their communities. Local authorities wear many hats (*only a partial listing*):

- builders;
- contractors;
- procurers;
- educators;
- employers (the largest in Europe);
- information providers;
- local lawmakers;
- landowners;
- managers;
- planners;
- regulators;
- service providers; and
- role models.

In these different capacities, local authorities have the potential to set new priorities, transform policies and entrench 'good practice' to make visible progress towards sustainability. Many are already demonstrating this. As has been reiterated throughout this report, they cannot do this in isolation or without themselves undergoing change. The next chapter considers this last point — the need for democratic local government and a new professionalism — in greater detail. It ends with a discussion of two mechanisms — the ecological footprint and urban agriculture — that can make practical contributions towards local sustainability in different ways.

Box 20: A Sample of Tools and Measures for Local Authorities



Management and Planning Tools

- environmental management systems
- environmental budgeting
- environmental impact assessment / strategic impact assessment
- urban ecology-based land-use planning
- target-led resource planning
- least-cost planning
- 'planning for real' techniques
- internal environmental audits
- a framework for local action
- environmental taxes, charges and levies
- pricing structures (full-cost accounting)
- utility regulation
- investment appraisal
- environmental considerations in budgeting
- environmentally competitive procurement & tendering

Monitoring and Reporting

- sustainability indicators
- setting measurable targets (e.g. environmental space) & time frames
- state of the environment reporting

Collaboration and Partnership

- professional education; focus on values and culture
- conflict-resolution training
- cross-disciplinary working
- education and information strategies
- mechanisms for community consultation and involvement (e.g. roundtables, visioning exercises, referenda)
- Local Agenda 21
- Global Action Plan
- Ecofeedback schemes
- formal partnerships between municipalities and other agencies
- green city / sister-city cooperation

Reforming the Local Economy and Built Environment

- green and socially responsible consumption
- eco-labelling
- eco-businesses
- zero-emission industry
- energy efficiency and conservation strategy
- targeted-inward investment strategy
- LETs systems
- business sustainability awards / schemes
- ecological building, architecture and design
- urban agriculture

Details on many of the above can be found in Part II of this report.

Box 21: Guiding Social and Economic Principles for Sustainable Development

- **Use of appropriate technology, materials and design.** This is particularly useful where low-cost indigenous solutions take precedence over expensive imported models.

- **Create new indicators for economic and environmental wealth.** Move away from relying on Gross National Product as the primary indicator of national wealth, since it ignores environmental 'capital stocks'.

- **Create new indicators for economic and environmental productivity.** This will encourage a shift away from wasteful production and from unsustainable use of non-renewable resources; productivity must be gauged as an outcome of the inputs of natural resources.

- **Establish acceptable minimum standards through regulatory control.** Improved market incentives will always need to be accompanied by legislative back-ups which set minimum standards in environmental matters.

- **Continue action to internalise environmental costs into the market.** This guideline subsumes such well-known environmental principles as 'polluter pays' and 'user pays'.

- **Ensure social acceptability of environmental policies.** Policies designed to improve the urban environment should not result in a net decline in the quality of life of disadvantaged groups, both in cities and globally.

- **Widespread public participation.** This should be encouraged in strategy formulation, policy implementation and project management.

Adapted from: Haughton and Hunter, *Sustainable Cities*, 1994

Box 22: Guiding Management Principles for Sustainable Development

- **Subsidiarity.** Responsibility for the implementation and management of urban environment programmes must rest at the lowest feasible appropriate level of government.

- **Flexibility in devising and implementing environmental policy regimes.** Tackling environmental problems will be most successful using a variety of instruments (e.g. legislative, market, fiscal), allowing flexibility to meet local needs.

- **Long-term strategies are necessary for environmental management.** This requires a strategic vision centred upon improving the quality of urban life, encouraging residents to 'think globally; act locally'.

- **Improved coordination across environment-related policies.** Between inter- and intra-governmental coordination can enhance complementarities between environmental and other policies, and public-private partnerships.

- **Non-discrimination and equal right of hearing.** This would ensure that transboundary pollution issues could be resolved by all those affected on a basis of equal rights.

Need for better availability and understanding of environmental information. Communities and businesses should be informed of environmental consequences of development proposals as a matter of right, including across national state boundaries if appropriate. Better availability of information is also important, to improve decision-making.

Adapted from: Haughton and Hunter, *Sustainable Cities*, 1994

Box 23: Canadian Round Tables

In the words of the Ontario Round Table on Environment & Economy (ORTEE), a round table is simply a 'special forum in which a variety of interests are represented in a non-hierarchical setting. As an advisory board to their government or municipality, the round table is a preliminary step towards decision-making. As an independent group of concerned people, a round table can focus on action. The main idea is to bring together people with vastly different backgrounds, experiences and views in order to reach a consensus on a vital issue or issues that affects all of them'. Canadian round tables have secured a special place in the history of the sustainability movement. Although round tables are not a Canadian invention, the Canadian versions have inspired home-spun copies in far-flung parts of the world. Their spirit of open dialogue has caught the imagination of people with diverse — and often diverging — interests, seeking vehicles for confronting the issues instead of each other.

Box 24: Sustainability and City Design

The hidden potential of design to secure sustainability objectives is getting the attention of planners, architects and community organizations. A recent video documentary featuring three American cities — Chattanooga, Tennessee; Portland, Oregon; and Suisun City, California — profiles the importance of design and community involvement in urban revitalisation. The documentary, 'Back from the brink: Saving America's cities through design', reaches the following common sense conclusions:

- 'Downtowns (city centres) matter and must not be left to rot.
- Both public sector leadership and active community involvement are crucial.
- New institutions with new agendas are usually needed.
- Cities need specific goals, plans and projects for revitalisation, including implementation strategies addressing financial and regulatory issues.
- Good design makes a big difference.'

Source: *Washington Post*, November 30, 1996, quoted in *Attaché*, 1996:3.

4

Practising sustainability: challenges and innovations

It has been observed that there are 'Ten key elements for sustainable human settlements...: resource budgeting; energy conservation and efficiency; renewable energy technology; long-lasting built structures; proximity between home and work; efficient public transport systems; waste reduction and recycling; organic waste composting; a circular city metabolism; and a supply of staple foods from local sources'.[74] It is beyond the limited scope of this report to do all of these areas justice. However, this final chapter picks up on just two approaches that address the recurring themes of global responsibility and local self-sufficiency: the ecological footprint and urban agriculture.

The chapter begins, however, by focusing on an area that is still relatively underexposed in the literature on, and practice of, sustainability: the need for 'sustainable administrations' and a new professionalism.

Internal challenges and the need for a new professionalism

There is no doubt that many factors will obstruct the change needed for sustainability. These include psychological and structural ones such as a lack of understanding or social denial; a lack of knowledge and information; or the inertia of the built environment.

Lack of money, is also often cited as a limiting factor, although it is not always the most crucial one. As Nigel Richardson points out, '[a] sustainable community action plan has much less to do with spending "new money" than rethinking the best use of the money that is already being spent. In some respects it may even result in spending less money: for example using natural systems rather than concrete to manage storm drainage'.

Political and administrative inertia

As noted in the previous chapter, the inertia of the political and administrative environment — the practice of business-as-usual — can prove to be the greatest stumbling block.

While an impressive ± 300 local authorities have signed the Aalborg Charter, representing over 80 million citizens, there are still more than 78,000 that have not. Many are still stuck in old patterns of thinking and performing. According to this model, local government plays a limited role, works with a select range of professionals, and is organized on the basis of functional specialisation. Service delivery, economic development, and providing a regulatory environment are the principal tasks of local authorities. Social welfare, environmental protection, and economic development are typically the domains of different departments with little integration. Where environmental and economic concerns do intersect they are perceived as incompatible or trade-offs, with economic development — however

short-term and ecologically damaging — being granted precedence. Environment in this context means little more than tree planting, wildlife conservation, and curbside recycling.

Democratising local government: achieving the 'impossible'

As the last chapter has emphasised, one of the recurring themes in the sustainability debate (most apparent in the community-based discourse) is the concern with democracy. This concern is variously articulated using the language of public participation, community empowerment, decentralised decision-making, and democratic governance. Richardson, sums up the opinions of many in his observation: 'One of the biggest problems is that our 19th century system of government is poorly suited to 21st century conditions and needs, and tends to resist new perceptions of the 'public interest' and of democratic governance'.[75] If this is the case then don't local governments themselves have to undergo some change, if not wholesale reform?

Local authorities and the local action sector

> ***... the dozens of helpful tools and initiatives available to assist local authorities will not suffice unless the manner in which they are implemented and administrated is addressed... . 'Sustainable administration' should be open, decentralised, democratic, participatory, and flexible.***
>
> ***Mark Roseland, 1996***

Many commentators believe that local authorities have, in Agenda 21's words, a 'vital role in educating, mobilising, and responding to the public to promote sustainable development' because they are 'closest to the people.' While this is certainly true in the sense of being the closest arm of government to the people, it is not always true in other respects and neither are municipality-community relationships tension-free. Distance between local authorities and the communities they serve can be created through factors such as: manner of administration; behaviour; methods; quality of service; the staff's gender and race make-up; its attitude towards, and relations with, the local population; etc. In a context where local authorities are urged to become *enablers* rather than *directors*, and *partners* rather than *overlords*, it is pertinent to ask whether local authorities are up to this *role change*, and if so how this reversal can be brought about.

Distance and distrust

Research commissioned in the UK by Lancashire County Council has found 'an apparently pervasive lack of trust in the goodwill and integrity of national government, and doubts about the ability or willingness of local government to achieve positive improvements in the quality of people's lives (not least because local authorities' powers are seen as diminishing). There is a danger that ... proposals by such bodies ... to advance sustainability will be interpreted as self-interested and even as likely to marginalise people further (particularly those in lower income groups)'[76].

This is not just a local problem. Research conducted in seven European countries — the Netherlands, Belgium, Ireland, the UK, Spain, Portugal and Greece — by the European Foundation for the Improvement of Living and Working Conditions (EFILWE) — although not explicitly focused on sustainability issues — has yielded complementary results.[77]

The study, a major investigation of social change and local action in disadvantaged urban areas, concluded that: '... on the whole the disposition of public authorities towards local action sectors is reactive, providing marginal support, and then at particular times enlisting the sector for high-profile and usually short-

term projects on which the authority stamps its own identity'.[78] Some common themes amongst policy makers (including those at the municipal level) were found to be:

- 'a general attitude of **approval** for greater citizen involvement, especially in disadvantaged areas;
- a certain **remoteness** of many policy-makers **from the autonomous side** of local action and unawareness of its extent and nature;
- much more **familiarity with the officially led or externally led** local organizations;
- in practice, a **preference** for supporting authority-led initiatives rather than fostering independent initiatives;
- in some policy areas an **unawareness of the relevance** of local action...' *(emphasis in original)* [79]

Table 7 summarises the characteristic strengths and weaknesses of large local authorities, public agencies and small municipalities in the eyes of the surveyed local populations in the seven countries.

Such sentiments, though they can by no means be generalised to all local authorities across Europe, must give municipal officers pause for thought. The rhetoric of partnership and participation will ring hollow if, as the EFILWE study found, the user of local authority services is seen only 'as a customer, having the right to complain, but not as a partner, having the right to initiate and be involved in decisions'.[80] Unless local authorities are able to connect with all segments of their communities they will not be able to mobilise all segments. And unless local authorities are able to bridge the credibility gap they will not gain the trust needed for genuine partnership with their communities.

Table 7: Strengths and Weaknesses of Local Government Institutions

Large local authorities & public agencies	*Small municipalities*
• Major resources • Key responsibilities and powers • Democratic legitimacy • Expertise • Economies of scale	• Close to local action • Democratic legitimacy • Some resources
• Poor inter-agency co-ordination • Rigid issue boundaries • Paternalistic view of people with disadvantages • Short-term view of interests of the locality (political fashions) • Tendency to requisition rather than facilitate citizen action	• Tendency to monopolise local action • Dis-economies of scale

From: Chanan, 1991:122

Connecting with local community action

This is not a minor challenge. There is little doubt that local government -as with all levels of government – will have to undergo both a role change and a culture change to be able to make good on the new demands made of them.

Surprisingly this area is one of the most neglected in the entire discussion on sustainable cities. Although a few writers[81] have addressed the professional, behavioural and attitudinal challenges in store, on the whole, the subject has received only passing mention.

Solutions can, however, be found in unlikely quarters. One of them is learning from the experience of rural development in developing countries. As with the EFILWE example, much

can be gained from the experiences of the poor and from disadvantaged communities.

> *Normal professionalism, meaning the concepts, values, methods and behaviour dominant in professions, tends to put things before people, men before women, the rich before the poor, and the urban and industrial before the rural and agricultural. It values and uses measurement more than judgement, and methods which are often reductionist, simplifying the view of complex reality ... Finally, normal learning is from 'above', from teachers, books, and urban centres of knowledge, and not from 'below', from rural people, let alone in a manner shared with them.*
>
> Robert Chambers[83]

Robert Chambers, a sociologist who has worked for decades promoting 'development from below' in the South, writes of the need for a '*new* professionalism'. His insights on rural community development are simple but powerful and have wider application. 'Solutions', he writes, 'can be sought through reversals, through turning the normal on its head. Professionally, this means putting people before things ... Bureaucratically, it means decentralising power, destandardising, and removing restrictions. ... In learning, it means gaining insight less from 'our' often out-of-date knowledge in books and lectures, and more from 'their' knowledge of their livelihoods and conditions ... In behaviour, it means the most important reversal of all, not standing, lecturing and motivating, but sitting, listening and learning'[82].

While these precepts might be of help in re/connecting municipalities with their communities, the challenge of consulting and empowering the *whole* community – including the marginalised and disadvantaged – requires additional tools. It has been found that traditional approaches such as fora, round tables (see Box 24), and visioning exercises – the favourite tools of Local Agenda 21 exercises – typically fail to reach underprivileged or socially marginalised groups such as women, ethnic or racial minorities, refugees, the disabled, low income single parents, the unemployed, etc. The EFILWE study notes the tendency of local authorities to prefer working with *institutions* which are readily identifiable and bring professional resources, rather than community inhabitants' own citizen groups (which often lack status and resources). The study further notes how this focus nurtures a 'consultative elite' who invariably find a place on fora, ostensibly established for cross-sectional community representation, but which effectively become exercises in bringing institutions together. In the process, the public participation objective is defeated.

The study does, however, have some pointers for concretising the principle of citizen empowerment. It argues for strengthened social rights and a framework for effective participation of the local action sector. Despite much talk, this appears to be 'lacking almost everywhere'. Why the local action sector? Because, argues the report, 'The primary concern of independent local groups is *how to get people together to solve a local problem, meet social needs or influence authorities.* Their concern is therefore with social policies in the broadest sense and with local development and democracy'[84].

The study demonstrated how, across Europe, local community action groups are hidden from view and their development initiatives and vital role in building social cohesion invisibilised. Any strategy for public involvement must therefore begin with a mapping of the local community action sector.

Concretely, local authorities can being to remedy this situation by:

- creating consultation structures which **balance** a 'forum **of all the relevant institutions** with a forum of **all the relevant citizen groups'**;
- resourcing and providing support for the independent growth, not incorporation, of local action groups;
- pressing for coordinated national policies to strengthen and sustain community groups in their various functions as sources of social cohesion, arbiters of social and environmental policies, defenders of common interests, an independent citizen power base, etc.[85]

Ecological footprinting: reconnecting the effects of environmental degradation with the causes

In Chapter 1 we saw how human society is not separate from the environment but is a sub-system of the biosphere and entirely dependent upon it. From an ecological point of view, the fundamental question for sustainability is whether 'nature's productivity (is) sufficient to satisfy present **and anticipated** demands by the human economy indefinitely?'[86] The state of the environment indicators from Chapter 1, demonstrate how dangerously close the expansion of the human economy has brought societies to biophysical limits and the endangering of global life support systems.

Despite this state of affairs, the global economy continues to expand. More cars are manufactured, more meat is eaten, more flights are flown, more paper is produced and more buildings are constructed. Environmentalists argue that such growth is unsustainable. Each of these activities either depletes non-renewable fossil fuels, reduces ground water levels, pollutes the atmosphere, diminishes species habitats, destroys forests, or causes top soil loss. As consumers, however, what most of us see is only the 'throughput' – the goods we actually use. We seldom see the other two ends of the 'life cycle' – the depletion of natural resources and the waste and discharge. When the negative aspects of such consumption manifest themselves in air pollution, leaching landfills, or toxic waste, communities and policy makers readily mobilise to take remedial action. But in a global economy the ecological impact of products, services, and investment is not merely local it is global. Most cities and communities in the western world[88] have, through the internationalising of trade, become dependent on vast 'global hinterlands' for their daily supplies of essential goods and services. This fact is obscured and the connections between western consumption habits and phenomena

> ***A local authority which wanted to mobilise energy for dynamic improvement of local conditions could do no better than develop a proactive strategy for supporting its local community sector.*** [87]
>
> ***Out of the Shadows, EFILW, 1991***

Box 25:

Six to Twelve New Planets Needed!

Footprint analysis seems to confirm what many already suspect. In the absence of an energy efficiency and de-materialisation revolution, continued throughput-based economic growth can only be purchased at the cost of liquidating natural capital. Wackernagel and Rees challenge the Brundtland Commission's prescription of 'more rapid growth in both industrial and developing countries' and its presumption that 'a five- to ten-fold increase in world industrial output can be anticipated by the time world population stabilises some time in the next century' is ecologically viable. The Ecological Footprinters calculate that if the current world population requires at least 9.6 billion hectares, a five- to ten-fold increase in economic output would entail a total productive land requirement of 48 to 96 billion hectares. In short, failing several technological revolutions, our descendants would need six to twelve additional planets to service their needs.

such as tropical deforestation or the collapse of fisheries in the North Atlantic (to take two well-known examples), is not commonly made.

This is where the Ecological Footprint tool can step in to reconnect human consumption and production with its ecological and social consequences. The rationale behind it is that if the consequences of people's actions are made apparent to them, there will be a greater incentive to correct negative effects and feedbacks.

What is the Ecological Footprint?

The Ecological Footprint (EF), developed by Canadian ecologist and planner William Rees, is basically an accounting tool that uses land as the unit of measurement to assess *per capita* consumption, production, and discharge needs. It starts from the elementary assumption that 'every category of energy and material consumption and waste discharge requires the productive or absorptive capacity of a finite area of land or water. If we (add up) all the land requirements for all categories of consumption and waste discharge by a defined population, the total area represents the Ecological Footprint of that population on Earth *whether or not this area coincides with the population's home region*.'[89]

Land is used as the unit of measurement for the simple reason that 'Land area not only captures planet Earth's finiteness, it can also be seen as a proxy for numerous essential life-support functions from gas exchange to nutrient recycling ... land supports photosynthesis, the energy conduit for the web of life. Photosynthesis sustains all important food chains and maintains the structural integrity of ecosystems.'[90] Although the size of an Ecological Footprint, also termed Appropriated Carrying Capacity (ACC) would vary according to socio-economic and technological factors one point is constant: the flows and capacities 'occupied' by one population are not available for another as these resources are finite.

Figure 6: The Ecological Footprint

The Ecological Footprint is a measure of the 'load' imposed on nature by a given population. It represents the land area necessary to sustain current levels of resource consumption and waste discharge by that population.

Illustration: Phil Testemale

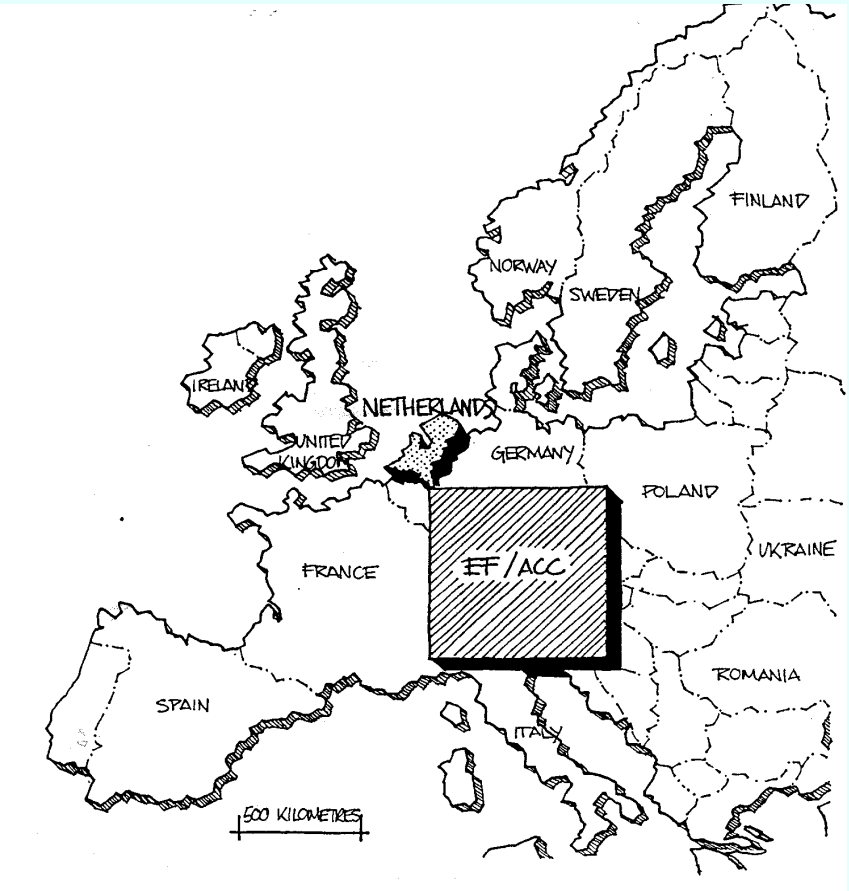
What does the Ecological Footprint tell us?

Ecological footprint analysis can tell us in a vivid, ready-to-grasp manner how much of the Earth's environmental functions are needed to support human activities. It also makes visible the extent to which consumer lifestyles and behaviours are ecologically sustainable or unsustainable (see Box 25). Using the EF / ACC analysis, Rees and Wackernagel have

Figure 7: The Ecological Footprint of the Netherlands

For urbanization, food, forest products and fossil-fuel use, the Dutch use the ecological functions of a land area over 15 times larger than their country.

Illustration: Phil Testemale



calculated that the Ecological Footprint of the average American is – conservatively – 5.1 hectares *per capita* of productive land. With roughly 7.4 billion hectares of the planet's total surface area of 51 billion hectares available for human consumption, if the current global population were to adopt American consumer lifestyles we would need two additional planets to produce the resources, absorb the wastes, and provide general life-support functions.

Ecological footprints have been calculated for numerous nations (see Table 8), cities, communities, and even individuals. The London-based IIED has calculated that London's ecological footprint is 120 times the size of the city. The footprint of the average Dutch person (see Figure 7) is slightly less at 3.3 hectares per capita but still import 'land services' fifteen times the territory of the Netherlands itself.

The message of the ecological footprint is that lifestyles and behaviour, industrial production and trade, institutions and politics must change. Humanity must learn to live off the income of the 'natural capital', and maintain natural stocks rather than continuing to mine them. Wackernagel and Rees suggest that one way would

be to focus 'more on living locally than on consuming globally.'[91]

How can local authorities use the Ecological Footprint tool?

The concept is catching on among groups ranging from planners, educators, community leaders, NGOs, and local authorities. For example, community groups are demanding ecological footprint studies in Leeds and Berlin; a public debate series is being organised in the Netherlands to encourage take up; and the local authority in Mikkeli, Finland is already using it as a basis for its sustainability policies.[92] A recently-published illustrated handbook describes the origins of the tool, addresses methodological concerns and provides a step-by-step approach to calculate footprints.

Whether used as an analytical, process, or guidance tool, two of the valuable pedagogical features of the EF are that it: (i) makes issues of ecological scarcity and unequal consumption vividly apparent at one and the same time; and (ii) makes comparison possible. Typically one or the other is obscured in discussions on sustainability. The tools value for local authorities can be clubbed under four categories: planning, decision-making, training and awareness raising, and reporting and monitoring. It can be used for:

- community consciousness-raising;
- Environmental twinning , Sister Cities, North-South linking and joint action work;
- staff training;
- consensus building;
- state of the environment reporting;
- as a sustainability indicator. It combines the three desired elements of indicators: it can be used for policy steering, it is transparent, and easy to communicate.

Urban agriculture: not only food for thought, but also action

According to the vision of the European Sustainable Cities report, and works such as *Ecopolis*, in the near future the work of city managers should be 'flow management' to ensure the health of the city's 'metabolism'. One of the options that is literally lying on cities' doorsteps is permaculture-based[93] urban agriculture. Urban agriculture is the quintessential elegant solution – simple yet with a strong multiplier effect.

Table 8: Comparing Average Consumption in Canada, the USA, India and the World

Consumption per person in 1991	**Canada**	**USA**	**India**	**World**
CO2 emission (in tonnes per year)	15.2	19.5	0.81	4.2
Purchasing power (in $ US)	19,320	22,130	1,150	3,800
Vehicles per 100 persons	46	57	0.2	10
Paper consumption (in kgs / yr)	247	317	2	44
Fossil energy use (in Gigajoules / yr)	250 (234)	287	5	56
Fresh water withdrawal (in / yr)	1,688	1,868	612	644
Ecological Footprint (hectares/person)	***4.3***	***5.1***	***0.4***	***1.8***

From: Wackernagel and Rees, 1996:85

> *... in order that England may live in comparative comfort, a hundred million Indians must live on the verge of starvation – an evil state of affairs, but you acquiesce in it every time you step in a taxi or eat a plate of strawberries and cream.*
>
> George Orwell
> *The Road to Wigan Pier*, 1947(?)[94]

> *...despite the worldwide process of decolonisation, there is today many times more land being used in the developing world to meet the food and other biomass needs of the Western countries than in the 1940s before the process of decolonisation began.*
>
> *State of India's Environment 1984/5*[95]

It has been estimated that 50 % of European urban areas are green spaces.[96] These green spaces not only provide a new habitat for urban wildlife but can be selectively harvested to provide food for city dwellers. Many Asian countries rely on urban agriculture for subsistence and surplus. China, the most populous nation on Earth, manages to feed its population well and adequately with far less of an ecological impact[97] than richer countries largely thanks to the age-old system of urban farming. The majority of Chinese cities produce their own food in urban farming belts, some up to 85 per cent. The cities return the goodness to the soil by returning human and organic kitchen waste as fertiliser.[98] The key to this prodigious output lies largely in the permaculture methods applied and the 'gardening' scale of the agricultural enterprise. Permaculture design can greatly increase yields through methods including aquaculture, stacking, and multiple output. In a graphic case of 'small is beautiful', one hectare of cultivated land in China produces nine times as many calories as a hectare in the USA.[99]

Urban agriculture in Europe

Urban farming and permaculture based systems are by no means unknown in Europe. Danish local authorities have been supporting permaculture and community supported agriculture schemes for many years. A major urban permaculture project in the Vesterbro inner city region of Copenhagen is part of a city revitalisation scheme. In the UK, the Stroud Sustainable Village project has played a pioneering role in setting up a permaculture based new development with strong support from the local authority.[100] Many cities still have kitchen gardens, forests and urban farms although cheap energy and labour costs have encouraged the unsustainable international trade in foods. Today, average food products such as yoghurt and tomatoes typically travel thousands of miles before they arrive on dinner plates.[101] These food miles are of major environmental concern and long-distance food provision is unlikely to be viable in the long-term.

Organic growers argue that organic agriculture principles should be employed where possible to maximise the ecological soundness of urban farming, in combination with permaculture design principles to make the most of limited spaces. While urban farming might not be appropriate in regions with severe weather conditions or contaminated lands, it is an option that can add to the social, physical, ecological, and economic health of communities. The benefits are numerous. Urban gardens and farms can:

- create a sustainable local food supply if properly managed;
- contribute to nutrient recycling by returning (where appropriate) organic waste to the soil;
- save on human and organic waste disposal costs;
- act as educational centres;
- combat 'remoteness' by enabling alienated city-dwellers to develop a relationship with the land;
- employment generation and skill creation;

> ***We can solve the problems of remoteness by developing communities which are self-reliant. This is not the same as total self-sufficiency; there will always be a need for some trade with other communities and other parts of the world. Self-reliant communities are ones where producing goods for local needs is the norm rather than the exception, where travel outside the community is a pleasure rather than a daily economic necessity, and where people are more than cogs in vast machine. Developing this kind of community means putting power in the hands of local people, rather than national or multi-national organisations. This is not power over anyone else, but the power to decide how to run our own lives.***
>
> **Patrick Whitehead,**
> ***Permaculture in a Nutshell*,. 1993:52.**

- add to local biodiversity;
- support the local economy;
- counter current European subsidy systems that work to the advantage of intensive agriculture-based large farm-firms and often driven small farmers off the land;
- promote the organic food sector;
- contribute to global food security.

Local authorities can – also in their role as landlords – promote urban farming and community supported agriculture and related systems through diverse means depending on their competences. These means could involve financial incentives to farm or consume produce; through procurement for the local authority itself or by other public bodies; through public endorsement and support; and by supporting the work of urban agriculture associations.

Putting it all together ...

This chapter has focused on three seemingly disparate 'soft' areas: local government culture and attitudes, the ecological footprint and urban agriculture. Some readers might wonder why these have been selected instead of 'hard' areas such as energy, transport or waste which could be perceived as being of far greater relevance for city managers and other local authority officials.[102] These themes have been chosen because they touch on – and connect – the various concerns that are being raised by different protagonists in the sustainability movement – not just local authorities. These concerns relate to the need for:

- changes in institutions and mindsets;
- re-connecting the consequences of local actions with wider (national or global) effects;
- self-sufficiency in basic needs such as food provision; and
- a reconnection with nature.

While there are many challenges for local authorities – both those who work in them and with them – among the most fundamental is finding ways of addressing issues holistically with the active participation of all constituencies. It is hoped that the focus on community action groups, tools such as the ecological footprint, and measures such as urban agriculture can make some contribution to this effort.

Conclusion

Ultimately, community sustainability ... means a new way of thinking about our relations with other people (in our own community and in others), about our jobs, about our natural environment and the human needs it serves, about the future of our children and their children, and about the governance of our communities at every scale. This new way of thinking stresses the need for cooperation in seeking common, fundamental goals, to accompany, if not replace, competition in promoting interests.

Nigel Richardson, ORTEE, 1996

Part I of this report has attempted to provide an overview of sustainable development for local authorities. It has taken a broad-brush approach both to the subject matter and to the readership. It has placed the discussion of sustainable development in a global context rather than merely in a national or regional context as many other books of this nature do. It has also assumed that this report will be read not only by local authority officials with little prior expertise in this area, but also by their social partners such as community groups, businesspersons and locally active individuals.

The report has described the emergence of sustainable development and the ecological and social crises the concept addresses. It has also discussed some of the debates and controversies surrounding the interpretation and application of the term. Developments at the international and European policy level relevant to sustainability have been examined in Chapter 2. Chapter 3 has highlighted the increasing prominence of local authorities as major players in agenda-setting and influencing policymaking on sustainability issues at the international level — and also the national level in some cases. It has described some of the on-the-ground experiences of local authorities and others active in the sustainable cities and sustainable communities movements. It has also presented the variegated landscape that European local authorities occupy, and addressed those aspects of it that facilitate or impede progress towards sustainable development.

This report has described the many different approaches that local authorities are adopting — ranging from city-twinning and intervention in social issues to new tools and frameworks such as Local Agenda 21 — to address their social and ecological problems. It has noted that local authorities almost everywhere are active in much positive action for change. While there are many challenges facing local authorities there is also much that they can do — and are doing — to address them, in their different capacities.

The report has argued that for local authorities to be fully up to the task, however, they will need enabling policy environments and appropriate powers. On the other side of the coin, local authorities themselves will have to undergo a process of transformation. This will necessitate changing bureaucracies and mindsets internally, working with new partners, and renewing local authorities' commitment to local constituencies to regain the trust of the communities they serve.

Annex 1: Comparing competing paradigms

Property or Quality	Expansionist Worldview	Steady-State (Ecological)Worldview
Epistemological & scientific origins	Modern roots in the Enlightenment and scientific revolution (Copernicus, Galileo, Bacon, Descartes, Newton) of 16th + 17th centuries; Newtonian analytic mechanics	Roots in 20th century physics & biology; Prigoginian self-organization (dissipative structures), non-equilibrium thermodynamics, complex systems theory, deterministic chaos, and systems ecology.
Central scientific premise	Nature knowable through reductionist analysis, observation & experimentation; observer separate from observer; nature objectified (origin of objective knowledge)	Behaviour of natural systems unknowable (unpredictable) at whole systems level;[103] uncertainty large and irreducible within wide margins; holistic approaches provide best understanding of global change, but whatever our investigative stance, humankind an integral part of ecosphere; there is no truly objective knowledge.
Structure of analytic models	Simple, linear, deterministic, and single equilibrium oriented; management strategies assume smooth change & complete reversibility.	Complex, non-linear, dynamic, & characterised by multiple equilibriums; management strategies therefore recognize abrupt discontinuities, dynamic boundary conditions, & potential irreversibilities.
Attitude toward people and future	Emphasis on individual & immediate national interests, primary concern for present generation, comfortable with time & space discounting.	Greater emphasis on community & collective interests generally, concerned about present and future generations, cautious about conventional discounting.
Perspective on nature	Humankind master of nature; people can adapt environment at will to serve their wants & needs. Nature valued mainly as source of resources and sink for wastes.	Humanity lives in state of obligate dependency on ecosphere; resources ultimately control people; few examples of industrial man (sic) successfully managing or controlling resource systems sustainably (e.g., fisheries, forests, agricultural soils). In addition to production value, nature has intrinsic worth, value for own sake.
Economic paradigm and connectedness to ecosphere	Neoliberal (neo-classical) economics: treats economy as separate from and independent of nature; analytic models generally inorganic and mechanical, lacking physical representation of material & energy transformations & structural & time-dependent processes of ecosphere (see Christensen 1991).	Ecological economics: sees economy as fully contained, dependent, integral subsystem of ecosphere to be analyzed as extension of human metabolism. Understanding the physical / material transformations that bind economy & ecosystems, maintaining essential ecosystems functions, & recognizing lags & thresholds characterising ecosystems behaviour are paramount to sustainability.
Starting point for analysis	Circular flows of exchange value between firms and households (with money as metric).	Unidirectional & irreversible flows of low-entropy energy / matter from nature through the economy & back in degraded form.[104] (Physical measures of stocks & flows should at least supplement money as metric.)
Role and ecological efficacy of markets	Free market stimulate (through rising scarcity value & corresponding prices) both conservation of depletable assets and search for technological substitutes; free markets & technology can therefore help decouple economy from nature.	Markets work as described for limited range of familiar non-renewable resource commodities, but prices for renewable flows are inadequate indicators of ecological scarcity. Market prices reveal only exchange value at margin and do not reflect size of remaining natural capital stocks, whether there are critical minimal levels below which stocks cannot recover, nor the ultimate contribution of such stocks to humane existence or survival. Most important, there are no markets for many biophysical goods (e.g., ozone layer) & essential life-support services (e.g., photosynthesis & waste assimilation) that have immeasurable positive economic value.
On substitutability of natural capital	Natural capital & manufactured capital are near-perfect substitutes. Technology can make up for any depleting natural resource. (Typical quote of proponents: 'exhaustible resources do not pose a fundamental problem' [Dasgupta & Heal 1979, 205].)	Natural capital complementary to, & often pre-requisite for, human-made capital. Given market failures noted above, the standard measures of scarcity (prices & costs) may fail absolutely to induce either the conservation of vital stocks or technological innovation. In any case, unlikely that humans will devise technological substitutes for many ecospheric life-support functions whose loss would be irreversible and potentially catastrophic.

Source: Abridged from Rees, W. 1995:345-346

Comparing competing paradigms (continued)

Property or Quality	Expansionist Worldview	Steady-State (Ecological)Worldview
Attitude toward economic growth/Social role of growth	Growth in both rich and poor countries is essential as only practical means available to alleviate human poverty within nations and to address material inequities between countries.	Any available ecological space for growth should be allocated to third world. In any event, growth cannot be relied on as only means to relieve poverty; need for significant intra- and international redistribution of wealth and access to nature's services. Political, social, economic & institutional reform needed to facilitate necessary behavioural, value, & attitudinal changes. This requires sophisticated public education programs on sustainability issues.
Ecological role of growth	Growth in developed world will increase market for products of developing countries. This will, in turn, enrich the third world, helping to provide the surpluses needed for rehabilitation and future sustainable use of natural capital. (This paradigm often sees depletion of natural capital and local pollution as a third world problem.)	Cannot safely grow our way to sustainability, particularly in first world — global economy already running massive hidden ecological deficit, attributable mostly to industrialized countries. Far from providing surpluses needed to rehabilitate natural capital, material growth based on current economic assumptions & available technology depends on its further depletion, increasing the sustainability deficit & leading to accelerated ecological decline. Real wealth measured by enduring cultural artefacts, supportive socio-political institutions, growing natural capital stocks, & long-term ecological security.
Nature of limits	There are practical limits on human population, but no constraints on economic growth (i.e., on per capita gross domestic product or GDP); technology can generally substitute for depleted natural capital and, over time, economy can be dematerialised by increases in economic and technological efficiency.	There are real biophysical constraints on both population and material throughput growth; humankind must live on natural capital generated by remaining stocks of natural capital. Total human impact or load is product of population times average per capita material consumption (including waste output) & cannot be reduced below critical maximum safe levels by efficiency gains in foreseeable future.
Stance on carrying capacity[105]	There are no limits to regional or global carrying capacity; trade can relieve any locally significant limiting factors and technological advances will alleviate more general scarcities (see above).	Carrying capacity is finite & declining & should become fundamental component of demographic & planning analysis. Trade & technology only appear to increase local carrying capacity, while actually reducing it on global scale. Meanwhile, all trading regions exceed their own territorial capacities, become dependent on imports of depletable resources, & ultimately reach same limiting factor. (At this stage, there are no further safety valves.)
On Gross Domestic Product (GDP) as welfare indicator	GDP (or per capita GDP) an imperfect indicator but correlates well with standard measures of population health and remains best overall measure we have of human welfare.	GDP inadequate as measure of social & ecological welfare: silent on distribution of benefits of growth; per capita GDP can rise while money income of people falls in real terms. Worse, GDP includes both depreciation of manufactured capital (i.e., decreases in value of capital)[106] & defensive expenditures against pollution or other forms of ecological decline as positive entries; totally silent on depreciation of natural capital. GDP can therefore continue to increase creating illusion of increasing well-being, while economic, ecological, & geopolitical security all being eroded (Herman Daly's 1991b 'anti-economic growth — i.e. growth that makes us poorer rather than richer' [p.242]).
Attitude toward economic globalization	Deregulation, global markets, & free trade will enhance economic efficiency and contribute to greater social equity & international security through expansive growth in world product (GWP).	Deregulation, expanding markets, & free trade will indeed increase gross global product; however, under prevailing assumptions & terms of trade, they will also increase income disparities & accelerate depletion of natural capital thereby decreasing both ecological & geopolitical security.

[1] *Sustainable Mediterranean*, a newsletter published by ECOMED is a valuable communications tool.
[2] The European Sustainable Cities Report and good practise cases are available from different sources (European Commission, ECLEI, Euronet) and in different communication means (paper, electronic etc.) (see also Part II for more details). 'Local Sustainability: European Sustainable Cities Good Practice Information Service' has many good practice case studies from this and other reports its Internet web site:- http://cities21.com/europractice
[3] Vitousek, P, P. Ehrlich, A. Ehrlich, and P. Matson. 'Human Appropritation of the Products of Photosynthesis' in *BioScience*. Vol.34, No.6. 1986:368-373.
[4] Cited in Rees, William E. 'Achieving Sustainability: Reform or Transformation?' in *Journal of Planning Literature*, Vol. 9, No. 4, May 1995:343.
[5] Raup, D.M. 'Biological extinction in Earth history', *Science*. No. 231. 1986:1528-1533.
[6] The inversion here of the more commonly used term 'hunter-gatherer' is not accidental. Advances in anthropological and archeological research suggest that gathering and hunting groups lived primarily by gathering which generally provided a nutritionally adequate diet. Hunting was a secondary, more intermittent activity often relying on scavenging of animals killed by other predators. The exception to this general rule is the Arctic region where suitable plant food sources are scarce and hunting dominates subsistence. Source: Ponting, Clive**.** *A Green History of the World*. Penguin Book. 1991: 19-22.
[7] Schmidt-Bleek, Friedrich. *The Fossil Makers. Factor 10 and More.* Wuppertal Institute for Climate, Environment, and Energy. 1995:13.
[8] UNFPA, *World Population Report*, 1996
[9] UN DPCSD, Secretary-General, *Overall Assessment of Progress Achieved Since UNCED*. Advance Unedited Text. 1997
[10] Quoted in *People & the Planet*, Vol. 5, No. 2, 1996:27.
[11] Ponting. op cit. 1991:17
[12] Noted in comments by Paul Ehrlich's (letter to the editor), *World Watch*. September/October 1995.
[13] Hueting, Roefie & Lucas Reijnders. 'Duurzaamheid is een objectief begrip' in *ESB* 8-5-1996:425.
[14] Patsy Healey and Tim Shaw, 'Planners, Plans and Sustainable Development', *Regional Studies*, Vol. 27.8, p.772.
[15] For more in-depth treatment of the theoretical and political discussions surrounding sustainable development see: Michael Redclift, *Sustainable Development: Exploring the Contradictions*, London, Metheun, 1987; M. L'el'e Sharachchandram, 'Sustainable Development: A Critical Review', *World Development*, Vol. 19, June 1992: 607-621; Wolfgang Sachs, ed.,*Global Ecology: A New Arena of Political Conflict*, Zed Books, London, 1993; Wackernagel, M. and W.E. Rees, *Our Ecological Footprint. Reducing Human Impact on the Earth***.** The New Catalyst. Bioregional Series, 1996; Jacobs, Michael, *The Green Economy*, Pluto Press,1991.
[16] Quoted in Roseland, Mark. *Sustainable Communities. An Introduction to the Literature.* Ontario Round Table on Environment and Economy. Downloaded from ORTEE's Internet web site. 1996.
[17] Op cit, UN DPCSD 1997.
[18] Op cit, Healy and Shaw.
[19] Although cars are used as an illustration here, other examples of rising consumerism such as air travel, meat consumption, and consumer goods could serve just as well.
[20] E.g. Wolfgang Sachs in *Global Ecology*, 1992.
[21] Herman Daly,'Population, Technology and Lifestyle: Ten reasons why Northern Income Growth is not the solution for Southern Poverty', in R. Goodland, H.E. Daly, S El Serafy, (eds), *Population, Technology and Lifestyle: the Transition to Sustainability*. Washington, Island Press.1992.
[22] Jacobs, Michael. *The Green Economy. Environment, Sustainable Development and the Politics of the Future*. Pluto Press. 1991:20-21
[23] Rees, op cit. 1995:348.
[24] Ehrlich, op-ed, *World Watch*, 1995:5-6.
[25] Michael Jacobs, op cit. 1991:103.
[26] Paul Ehrlich, op cit. 1995:5-6.
[27] The social critique of unrestrained growth, traditionally a sacred cow of economic life, has been strengthened by phenomena such as 'jobless growth' and the inability of market economies to close widening income inequalities.
[28] For fifty practical examples of such factor four productivity see, Ernst von Weizäcker, Amory Lovins and Hunter Lovinset, *Factor Four*, Pluto Press, 1996.
[29] See *The Carnoules Declaration*, 1995, by the Factor 10 Club. Available from: Wuppertal Institute for Climate, Environment and Energy, Döppersberg 19, D-42103 Wuppertal, Germany.
[30] Redclift, Michael quoted in Wackernagel M. and W. Rees**.** *Our Ecological Footprint. Reducing Human Impact on the Earth***.** The New Catalyst. Bioregional Series. 1996:33.

[31] *Towards Sustainable Europe* (1996), has been produced for Friends of the Earth Europe by the Wuppertal Institute. This report and the country studies can be purchased from the Towards Sustainable Europe Campaign headquarters at Friends of the Earth Netherlands (The address and other Campaign details can be found in Part II.)

[32] For a fuller account of the issues and controversies at the Earth Summit see *The Road to Rio* and *Global Ecology*, Zed Books, 1993.

[33] Michael McCoy and Patrick McCully, *The Road from Rio*: *An NGO Action Guide to Environment and Development*, International Books, WISE. 1993; Wolfgang Sachs, *ed*. *Global Ecology*, Zed Books, 1993.

[34] Nick Robins, *Tracking the Ecological Footprint*, IIED, 1993:3.

[35] According to a recent UN report, 'Average ODA (Official Development Assistance) for the 1993-95 period has been lower than the 1990/2 period both in absolute value and as a percentage of GNP and is the lowest in the last 30 years. Only four countries achieved the goal of 0.7% of GNP (Gross National Product). These were Denmark, the Netherlands, Norway and Sweden. ... Clearly, the decline in ODA is not consistent with the expectations raised by UNCED...'. UN Secretary-General's report, Op cit, 1997.

[36] All figures from Tim Lang & Colin Hines, *The New Protectionism*, The New Press, 1993.

[37] Summary Report on the Second UN Conference on Human Settlements (Habitat II), *Earth Negotiations Bulletin*, IISD, Vol. 11, No.37, 17, June 1996:1.

[38] From *Habitat Debate*, UNCHS, September / December 1996, p. 1.

[39] Quoted in Girardet, Herbert. *The Gaia Atlas of Cities: New Directions for Sustainable Urban Living*, Gaia Books Limited. 1996: foreword.

[40] *Earth Negotiations Bulletin*, op cit. 1996:4

[41] Contact details on this and other resources provided by the UNCHS can be found in Part II of this report.

[42] *European Sustainable Cities*, Report by the Expert Group on the Urban Environment, European Commission. 1996: 7.

[43] Op cit, Girardet, 1996.

[44] This is not to say that urban policy has been entirely overlooked in the past. Examples are the European Urban Renaissance Campaign (1980-1982) and the CLRAE's European Urban Charter (see Part II of this Guide).

[45] Notable examples are the EU's *Europe 2000: Outlook for the Development of the Community's Territory – a Preliminary Overview* (CEC, 1991); *Europe 2000+: Cooperation for European Territorial Development* (CEC, 1994);

[46] The 'green paper' and 'white paper' system is taken from British parliamentary custom, where a green paper signifies a discussion document and a white paper official government policy.*)*

[47] Cited by ministers for urban affairs from Denmark, Ireland, Finland, Spain, and Sweden, in *What Future for Urban Environments in Europe? Contribution to Habitat II*, European Foundation for the Improvement of Living and Working Conditions. 1996.

[48] The World Wide Fund for Nature (WWF) has a project 'EU Structural Funds: New Partnerships for Sustainable Development in the Regions'which examines the impact of the EU's Structural Funds on the environment and stimulates efforts to 'green' the funds. For further details contact WWF's European Policy Office.

[49] For an assessment of the implications of the Treaty on European Union for the environmental policy of the EC and the Member States, see *Maastrict and the Environment*, Barbara Verhoeve *et al*, Institute for European Environmental Policy, August 1992.

[50] Noted in *European Sustainable Cities*, op cit. 1996:8.

[51] For further information see: Ralph Hallo, *Greening the Treaty II: Sustainable Development in a Democratic Union*, European Environment Bureau, May 1995. The Greening the Treaty process involves the following organizations: Climate Action Network, European Environment Bureau, Transport and Environment, Friends of the Earth, Greenpeace, and WWF.

[52] Op cit, 1996:9.

[53] Op cit, 1996:10.

[54] Op cit, 1996:9-10.

[55] The EEB is the Federation of Environment Associations to the EU, representing 164 associations in 26 countries. From *Metamorphosis*, EEB Newsletter, No. 2, April 1996:1-2.

[56] For a detailed assessment see, *Urbanisation and the Function of Cities in the European Community*, European Institute of Urban Affairs, 1992.

[57] Op cit, 1996:4-5.

[58] Op cit: 1996:5

[59] Op cit: 1996:218

[60] Op cit: 1996:4

[61] With thanks to Roger Levett, one of the report authors, for these insights.

[62] Roseland, op cit. 1996. (no page numbering in original)

[63] Although these labels are often used as self-identification tags in practice, here they are being used as conceptual categories. Admittedly there is fusion occuring constantly, and this section does not suggest that there are necessarily categorical differences between the sustainable cities and sustainable communities streams.
[64] Lord Mackay quoted on a BBC Radio 4 interview, October 1996.
[65] Geoff Mulgan, DEMOS, U.K., BBC television interview.
[66] World Bank vice-president, Ismael Serageldin quoted in 'Topman Wereldbank wil meer macht voor gemeenten' in *de Volkskrant*, 8.9.95.
[67] Details on the LGMB and its various other useful publications (including training and guidance material) can be found in Part II.
[68] Op cit, UN Secretary-General's report, 1997, advance unedited copy.
[69] A recently published Report for Practioners provides a detailed comparison of the Dutch, Danish and British experiences, Stephen Young, *Promoting Participation and Community-based Partnerships in the Context of Local Agenda 21*. Copies are available from: Department of Government, Manchester University, Oxford Road, Manchester M13 9PL, UK. (Send a stamped, self-addressed envelope.)
[70] For a review of European Commission supported projects see *Environmental Twinning: A Status Report*, Stichting Milieu Educatie / Institute of Environmental Education, Utrecht, 1993.
[71] For further information see, Michael Shuman, *Towards a Global Village: International Community Development Initiatives.* Pluto Press, 1994.
[72] *Environmental Local and Regional Structures in the European Community. Comparative Study*, CEMR Environment Committee, Brussels. 1994.
[73] Quoted in Richardson, Nigel. *Making our Communities Sustainable: The Central Issue is Will*. Sustainable Communities Resource Package, Ontario Round Table on Environment and Economy, 1996 (Downloaded from web site, no page numbering.)
[74] Noted in *Human settlements as part of a sustainable future*, (1996) report of a post-Habitat II consultation. Available from the Building and Social Housing Foundation (Memorial Square, Coalville, Leicestershire LE67 3TU). Price: £5 + postage and packing. The report's Agenda for Action also contains 24 points for action by individuals and communities at the national and the global level.
[75] Nigel Richardson, op cit. 1996.
[76] Quoted in Church, Chris. op cit, 1995:5.
[77] Gabriel Chanan, *Out of the Shadows. Local Community Action and the European Community*, European Foundation for the Improvement of Living and Working Conditions. Ireland. 1992. The study also discovered that environment (including the physical condition of the neighbourhood) followed by transport, to be the 'commonest problem overall, both unprompted and prompted. It was also highest for most localities individually'. 1992:38.
[78] Ibid. 1992:118
[79] Ibid. Emphasis in original.1992:110
[80] Ibid. 1992:119.
[81] E.g. Chris Church and Michael Roseland.
[82] Robert Chambers, 'In Search of Professionalism, Bureaucracy and Sustainable Livelihoods for the 21st Century', *IDS Bulletin*, Vol. 22, No. 4, October 1991:8.
[83] Robert Chambers, op cit. 1991:5-6.
[84] Gabriel Chanan, op cit. 1992:139.
[85] Ibid. Emphasis in original. 1992:138.
[86] Wackernagel and Rees, op cit. 1996: 40.
[87] Gabriel Chanan, op cit. 1992:118
[88] And increasingly in other more affluent newly-industrialised countries.
[89] Wackernagel and Rees, op cit. 1996:51. Italics in original.
[90] Ibid. 1996:56.
[91] Ibid 1996:141.
[92] The Second Conference on European Sustinable Cities and Towns held in Lisbon, October 1996, endorsed the value of the Ecological Footprint and several local authorities are beginning to apply it in their Local Agenda 21 work.
[93] Originally a derivation of permanent agriculture, permaculture has now evolved to include applications in building, town planning, water supply and purification, and even commercial and financial systems. Permaculture is essentially a design system based on the principle of making useful and mutually enhancing connections in a wholistic way. Applied to agriculture, permaculture is not the same as organic agriculture. There is a difference in both approach and methods. From: Patrick Whitehead, *Permaculture in a Nutshell*, Permanent Publications, 1993.

[9494] Quoted in IIED report.
[95] Quoted in Nick Robins, *Tracking the Ecological Footprint*, IIED U.K., 1995:4
[96] Girardet, op cit, 1996:30.
[97] Whether this will continue to be the case if in some doubt. Following the western pattern of development, China's rapid urbanisation has seen the paving over of fertile land for motorways and real estate development. Secondly, rising affluence is also seeing a change in diet with greater consumption of imported foods and meats with multiple ecological impacts.
[98] Girardet 1996:157, 163. Lowe, Marcia D., *Shaping Cities: The Environmental and Human Dimensions*, Worldwatch Paper 105. October 1991:45.
[99] Op cit, *Permaculture in a Nutshell*, 1993:63.
[100] Both examples from *Permaculture in a Nutshell*, op cit, 1993:60.
[101] The Wupperal Institute has estimated that the average strawberry yoghurt in Germany has travelled 7,000 kilometres before it is finally consumed.
[102] These three areas are indeed among the most fundamental sustainability issues. However, a report of this size and a varied readership has its limitations. These areas, and others of more traditional local authority attention, are far more ably addressed in some of books mentioned in the introduction (and in part II).
[103] Includes social and economic systems, that is, any self-organizing system.
[104] Even 100% material recycling would consume net energy and matter.
[105] Carrying capacity is usually defined as the maximum sustainable population in a given area but is better thought of as the maximum sustainable human 'load' (Population x Resources Consumption). See Catton 1986.
[106] The rationale is that the capital depreciation is ultimately a cost of doing business.